



SCIENTISTS IN PARKS  
Fellows  
2021 Project Descriptions



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| <b>NPS UNIT: HAWAI‘I VOLCANOES NATIONAL PARK</b> | <b>PD #: 2021309</b> |
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**Project Title:** Develop climate change curriculum for high school students, focusing specifically on changes to the island of Hawai‘i

**Primary natural resource discipline:** Communication & Education

**Project keywords:** Hawaii, climate change, education, biology, culture

**Location:** Hawaii National Park, Hawai‘i

**COVID-19 NOTICE**

As the COVID-19 pandemic continues to change and evolve, project timelines and structure remain flexible and it may be necessary to postpone start dates, begin work remotely, or reformulate the project’s description. Should any development in the COVID-19 outbreak impair a project’s timeline or results, the SIP Team will work with the park and project mentors to assess the situation and determine the best course of action at that time.

**PROJECT DESCRIPTION AND WORK PRODUCTS**

**Position Description:** The island of Hawai‘i is already experiencing impacts of climate change and is particularly vulnerable to future impacts. Sea-level rise, coral bleaching, loss of fish stock, loss of agricultural lands, stronger storms, and the interrelated ecological effects of these events will make for profound changes on this small island community. Hawai‘i Volcanoes National Park, a UNESCO World Heritage Site and International Biosphere Reserve, will also be uniquely challenged in its mission to preserve natural and cultural resources for the enjoyment of future generations.

The proposed project, to create a climate change curriculum for high school students, focusing specifically on changes to the island of Hawai‘i, is an opportunity for an intern to independently conduct climate science research and to coordinate with cultural and natural resources staff from the park. The park education specialist will supervise and provide mentoring on curriculum writing. We also plan to apply for a Teacher-Ranger-Teacher position if they are made available this year. Ideally, if we can partner with a local high school teacher, the SIP intern and the teacher will work together on developing the curriculum. Perhaps the teacher will also be interested in forming a partnership with the park, heading into the school year, to run their students through the curriculum.

Prior to 2019, the park had been short-staffed in education and had not developed curricula for several years. Many schools from the Island of Hawai‘i, Oahu, and Maui visit the park year after year. The same education programs had been repeated. While valuable, they have not kept up with changes to the landscape of the park, nor with changes to curriculum standards. Thanks to the Mosaics-in-Science program, we have added 3 new curricula to our offerings – one for fourth graders and two for middle school students. Adding something at the high school level will enhance a continuum of education between local schools and the park. This has been identified as a high priority goal for the division of interpretation and education. Keeping students involved with the park through high school will provide a larger candidate pool for the park’s Youth Ranger program, which employs a small number of high school students for the summer. Youth Rangers sometimes have the opportunity to move into Pathways positions, and some have been hired into permanent Park Guide positions.

This curriculum writing project would address the need for communication and education on the topic of climate change and its impact on the island of Hawai‘i. "Mālama ‘āina" (caring for the land) is a highly valued concept in Hawaiian culture. It is a traditionally held value that continues into modern day. In fact, the Hawai‘i Tourism Authority is planning to weave this concept into its plans to attract and educate visitors to the state.

Local Hawaiian schools follow Common Core State and Next Generation Science Standards, but they also incorporate Hawai'i specific HĀ outcomes. These outcomes are meant to instill a sense of belonging to the special place of Hawai'i. The climate change curriculum will align with these standards, link scientific and cultural inquiries, and enable students to learn and be inspired by their home. By developing an ongoing partnership with a local high school class, we can include citizen-science and service learning projects throughout the school year, and provide a concrete means by which the students can have a real hand in mitigating climate change impacts on the 'āina.

We would like to apply for the Direct Hire Authority type of position if one is available. To fulfill the stringent requirements for this type of position, the intern will conduct interviews and field work with natural and cultural resources staff as part of the research process for the curriculum. The focus of this research is to find specific examples of climate change impacts on endangered species within the park, as well as archaeological resources at risk of destruction from sea level rise.

This position is offered through the National Park Service's Scientists in Parks Program in partnership with Ecological Society of America.

**Work Products:** One curriculum, ready for uploading into the NPS Education Portal website by the end of the internship. The curriculum will include both in-person field trip and distance learning components. This curriculum will align with NGSS education standards ESS3.D: Global Climate Change - Though the magnitudes of human impacts are greater than they have ever been, so too are human abilities to model, predict, and manage current and future impacts. and Through computer simulations and other studies, important discoveries are still being made about how the ocean, the atmosphere, and the biosphere interact and are modified in response to human activities. ESS2.D: Weather and Climate - Changes in the atmosphere due to human activity have increased carbon dioxide concentrations and thus affect climate. (HS-ESS2-4)  
The intern will also develop social media posts to promote the new curriculum, which will address the Common Core Standard ELA/Literacy SL.11-12.5 - Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. (HS-ESS2-4)

#### **NATURAL & PHYSICAL WORK ENVIRONMENT**

Hawai'i Volcanoes National Park is located in the town of Hawaii National Park, HI, and the education center is located on the summit of Kīlauea. This rainforest environment is at an elevation of 4,000 feet near the park main entrance. The park is in a rural area. Volcano Village, with a general store, some restaurants, gas station, post office, and a community center, is one mile from the park entrance. Park employees are also authorized users of the Kīlauea Military Camp campus, located within the park. The military camp has a cafeteria, gas station, post office, arcade, and gym. The closest large town is Hilo, a 29 mile, 45 minute drive from the park entrance. Hilo has larger shopping centers for food and supplies, and a downtown with restaurants, shops, and recreation opportunities.

Local weather at Kīlauea's summit (4000' elevation) varies daily and may be rainy and chilly any time of the year. Temperature varies by elevation. At the summit of the volcano, temperatures may be 12 to 15 degrees cooler than at sea level. The coastal plain at the end of Chain of Craters Road, where lava crossed the road in 2003, is often hot, dry, and windy with the possibility of passing showers.

The intern will be based at the Education Office with the Education Specialist. He or she will do moderate amounts of office work for research and curriculum writing time. The intern will also help to test a new curriculum and assist with other summer school groups as needed. Orientation and training will consist of some office time, but more time exploring in the park and attending interpretative tours. Depending on the situation with Covid-19, the internship may involve teleworking and distance learning calls with youth groups.

**QUALIFICATIONS**

Have a degree or working towards a degree in history, a natural science field, or education

- Experience developing school curriculum and/or experience working with students in a classroom or outdoor education setting
- Demonstrated interest in the natural history of park resources and/or natural or cultural history of Hawaii
- Ability to take directions and work independently
- Ability to work well with coworkers and function effectively as a member of a team
- Ability to sit and stand for moderate amounts of time

Preferred Skills (not required):

- Basic knowledge of volcanology
- Basic knowledge of Hawaiian culture and history

The applicant must be a U.S. citizen or U.S. National between the ages of 18 and 30 years old inclusive, or veterans up to age 35. Prior to starting this position, a government security background clearance will be required.

**VEHICLE AND DRIVER LICENSE REQUIREMENTS**

Applicant must have a valid drivers license and a good driving record.

A personal vehicle is RECOMMENDED but not required for this position.

**HOUSING**

Park housing is NOT available. The intern will be responsible for finding housing in the nearby area. Unfortunately, due to Covid-19 and its financial impact on park partners that previously provided for housing funding, the park is not able to provide housing for the intern. We can assist with housing research, as we do with other internship programs such as Kupu. Ideally, we can find a local candidate who already has housing on the island. However, as we have experienced with Kupu interns coming from the mainland, it is possible to find rentals in the towns between Volcano (closest to the park) and Hilo that start at \$500 per month. If living in Volcano, it is possible to bike to the park, and we can lend a bike to the intern. However, for shopping and exploring the island, there is the option to rent a car or take the Hele-on bus, which has a limited schedule. <http://heleonbus.org/>

**INTERNSHIP START/END DATES**

**Start Date:** 5/17/2021

Eleven weeks of the internship will be in the park. A mandatory Professional Development Workshop will be held in Washington, D.C. from August 1 – 5, 2021.