UNIVERSITY OF HAWAI'I AT HILO
MASTER IN SCIENCE IN TROPICAL CONSERVATION BIOLOGY AND ENVIRONMENTAL SCIENCE PROGRAM

PROFESSIONAL INTERNSHIP PRESENTATIONS PROGRAM

Thursday

May 6, 2021

8:30 AM - 2:00 PM

https://hawaii.zoom.us/j/99299776224
Password: TCBES

http://bit.ly/TCBES

8:30-8:45 AM: OLI, LAND ACKNOWLEDGEMENT, INTRODUCTION TO THE PROGRAM

PRESENTATION TIME	GRADUATE STUDENT	PRESENTATION TITLE
8:45-9:30 AM	Jordyn Anderson	Assessing re-attachment potential and the aquaculture feasibility of native Hawaiian algae.
9:30-10:15 AM	Sebastian Ma'a	Expanding the capacity for the preservation and restoration of native forest habitats on the Island of Hawai'i.
10:15-11:00 AM	Sarah Norrbom	Surveying the Oregon Coast: Work in Conservation and Preservation of Estuarine Systems

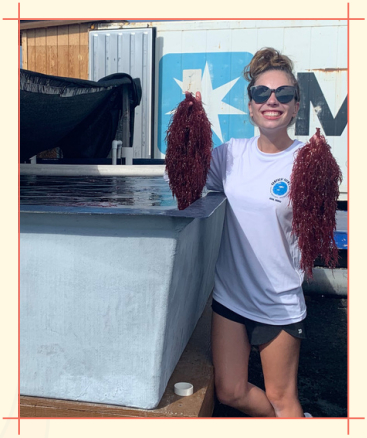
11:00-11:30 AM: LUNCH BREAK

11:30-12:15 PM	Kawehi Lopez	Shifting into the new normal: invasive species outreach in the age of COVID-19.
12:15-1:00 PM	Geoffrey Grimmett	The contribution of lead contamination sites to childhood lead poisoning in the Hawaiian Islands.
1:00-1:45 PM	Carmelita Villalobos	Monitoring the Hawaiian monk seal population on Hawai'i island.

1:45-2:00 PM: CLOSING

JORDYN ANDERSON

ASSESSING RE-ATTACHMENT POTENTIAL AND THE AQUACULTURE FEASIBILITY OF NATIVE HAWAIIAN ALGAE



Native Hawaiian algae face a suite of threats in the face of climate change, invasive species, overharvesting, and ocean pollutants. These plants are important to not only the ecosystems, but also to the people of Hawai'i, where they are utilized as a food source, in addition to being a part of the culture in many other aspects. But, even today, there remain gaps in knowledge surrounding native algae, including their potential to re-attach to substrate and their suitability foruse in large-scale aquaculture facilities. Understanding these characteristics of native species of algae could aid in restoring currently struggling wild populations, and supplement Hawaiian communities with once plentiful species. Therefore, studies, such as the work conducted for my professional internship experience, must be done, and facilities created to explore these, as well as other key features of native Hawaiian algae to promote their restoration.

Mentors:

Karla McDermid - Ph.D., Professor in Marine Biology at the University of Hawai'i at Hilo

Ms. Keelee Martin - Ocean Era Algae Technician

JORDYN ANDERSON IS ORIGINALLY FROM JUST OUTSIDE OF SEATTLE, WASHINGTON. AFTER GETTING HER UNDERGRADUATE DEGREE IN MARINE BIOLOGY FROM THE UNIVERSITY OF HAWAI'I AT MĀNOA, JORDYN MOVED TO HAWAI'I ISLAND WHERE SHE IS A MASTER OF SCIENCE STUDENT IN THE TROPICAL CONSERVATION BIOLOGY AND ENVIRONMENTAL SCIENCE PROGRAM AT THE UNIVERSITY OF HAWAI'I AT HILO. WHILE ATTENDING THE UNIVERSITY OF HAWAI'I AT HILO, SHE HAS HAD THE FORTUNE OF BEING A GRADUATE TEACHING ASSISTANT, INSTRUCTING THE UNIVERSITY'S INTRODUCTION TO MARINE BIOLOGY LAB, AND CO-INSTRUCTING THE LECTURE WITH HER MENTOR, DR. KARLA MCDERMID. IN THE FUTURE, SHE HOPES TO REMAIN IN THE FIELD OF EDUCATION, WITH A PARTICULAR EMPHASIS ON HANDS-ON AND PLACE-BASED LEARNING ACHIEVED THROUGH LABORATORY AND EXPLORATORY TYPE INSTRUCTION.

SEBASTIAN ABRAHAM WAIOLA MA'A

EXPANDING THE CAPACITY FOR THE PRESERVATION AND RESTORATION OF NATIVE FOREST HABITATS ON THE ISLAND OF HAWAI'I

As the native forests of Hawai'i Island continue to face new threats in the form of invasive species, destructive pathogens such as Rapid 'Ōhi'a Death (ROD), and stochastic events, the need for island-wide native forest rehabilitation continues to intensify. To address these ecologic and anthropogenic issues, the County of Hawai'i Real Property Tax Division has expanded its native forest dedication program to provide private landowners with reduced property tax rates for dedicating their land to native forest, functional forest, or successional forest land-use designations. With native forest Bill 178 being recently signed into law, ordinance number 20 60 establishes a dedication process for forest preservation and restoration for private property owners who have a minimum of 2.75 acres of contiguous native forest habitat. To support this new legislation, through the work of my professional internship, new resources were created to maximize enrollment rates and the success of the individuals who are participating in this community-based native forest restoration program. Examples of the new resources created specifically for this new legislation include a native, non-native/non-invasive plant species list to help individuals determine what types of plants they can incorporate into their native forest restoration endeavors and a management plan template that allows landowners to develop management plans without the help of a certified natural resource management professional. This new legislation, which is the first of its kind in the State, facilitates community-based native forest restoration projects by increasing multi-stakeholder participation in the active care and management of native forest habitats throughout the County of Hawai'i.

Mentors:

Rebecca Ostertag - Ph.D., Biology professor at the University of Hawai'i at Hilo and the Associate Program Chair for the Tropical Conservation Biology and Environmental Science Masters program

Mrs. Lisa Miura -Division Head Administrator for the County of Hawai'i, Department of Finance, Real Property Tax Division

SEBASTIAN ABRAHAM WAIOLA MA'A COMES FROM A HUMBLE BACKGROUND WHERE HE WAS BORN AND RAISED IN SOUTH KONA ON THE ISLAND OF HAWAI'I AND GREW UP PLAYING IN THE COFFEE LAND, LEARNING HOW TO FISH WITH HIS DAD AND TWO YOUNGER SISTERS, AND SPENT MANY DAYS SURFING FROM DAWN UNTIL THE SUN DISAPPEARED FORCING HIM OUT OF THE WATER. WHILE HE HAS ALWAYS BEEN PASSIONATE ABOUT PRESERVING HAWAI'I'S UNIQUE CULTURAL AND NATURAL RESOURCES, HIS PASSION FOR CONSERVATION AND WATERSHED MANAGEMENT STARTED DURING HIS PARTICIPATION IN THE PACIFIC INTERNSHIP PROGRAM FOR EXPLORING SCIENCE (PIPES) PROGRAM WHERE HE DID WATER QUALITY MONITORING AND LOKO I'A REHABILITATION AT KALOKO-HONOKŌHAU NATIONAL HISTORICAL PARK, AND ASSISTED WITH WĒKIU BUG SURVEYS AND BIOACOUSTIC MONITORING WITH THE OFFICE OF MAUNAKEA MANAGEMENT. THESE EXPERIENCES HELPED HIM SEE FIRSTHAND HOW THE ACTIONS THAT TAKE PLACE UP MAUKA INFLUENCE COASTAL AREAS WHICH MOTIVATED HIM TO PURSUE A CAREER IN CONSERVATION AND ULTIMATELY, FUELED HIS DESIRE TO GET A MASTER'S DEGREE. HE GRADUATED WITH HIGH HONORS FROM THE UNIVERSITY OF HAWAI'I AT HILO WITH A BACHELOR OF ARTS IN GEOGRAPHY AND ENVIRONMENTAL STUDIES AND IS NOW A MASTER OF SCIENCE STUDENT IN THE PROFESSIONAL INTERNSHIP TRACK OF THE TROPICAL CONSERVATION BIOLOGY AND ENVIRONMENTAL SCIENCE PROGRAM AT THE UNIVERSITY OF HAWAI'I AT HILO. UPON COMPLETION OF GRADUATE SCHOOL, HE HOPES TO USE THE SKILLS AND KNOWLEDGE THAT HE HAS ACQUIRED DURING HIS ACADEMIC JOURNEY TO GIVE BACK TO THE COMMUNITY AND DO WHAT HE CAN TO PRESERVE AND PROTECT THE NATURAL WONDERS THAT MAKE HAWAI'I SO SPECIAL.

SARAH JEANNE NORRBOM

SURVEYING THE OREGON COAST: WORK IN CONSERVATION AND PRESERVATION OF ESTUARINE SYSTEMS

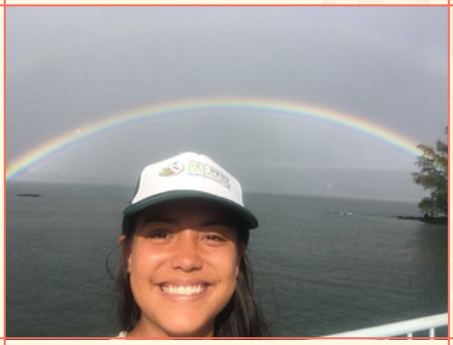
Estuaries provide several critical ecosystem functions and services, but are subjected to considerable ecological degradation due to a loss of habitat or a change in the quality of water. Therefore, dedicated organizations such as Tillamook Estuaries Partnership are needed to help conserve, manage, and restore estuaries from further degradation. My internship with Tillamook Estuaries Partnership focuses on various ways to assist in protecting these vital systems from directly collecting water quality data from the estuaries, learning the importance of native plant species to these systems, and organizing data on the current state of the estuary systems and surrounding watersheds to better identify future restoration, conservation, and management needs.

Mentor: Tamara Enz - Habitat Assessment and Monitoring Coordinator, Tillamook Estuaries Partnership

SARAH JEANNE NORRBOM IS ORIGINALLY FROM SALT LAKE CITY, UTAH. GROWING UP HER FAMILY DECIDED TO RAISE HER AND HER BROTHER TO LOVE BEING OUTDOORS AND TO APPRECIATE ALL THE WONDERS THAT NATURE HAD TO OFFER. SHE GRADUATED IN 2019 WITH A B.S. IN ENVIRONMENTAL SCIENCE FROM SOUTHERN NEW HAMPSHIRE UNIVERSITY AND IS A MASTER OF SCIENCE STUDENT IN THE TROPICAL CONSERVATION BIOLOGY AND ENVIRONMENTAL SCIENCE PROGRAM AT THE UNIVERSITY OF HAWAI'I AT HILO. HER CAREER INTERESTS AND ASPIRATIONS INCLUDE RESTORATION, CONSERVATION, AND MANAGEMENT OF ESTUARY AND MARINE SYSTEMS; AND WORKING WITH COMMUNITIES TO TEACH OTHERS ABOUT THE ENVIRONMENT AND HELP PEOPLE BUILD LASTING CONNECTIONS TO NATURE.

KAWEHI LOPEZ

SHIFTING INTO THE NEW NORMAL: INVASIVE SPECIES OUTREACH IN THE AGE OF COVID-19



The Big Island Invasive Species Committee (BIISC) works islandwide to prevent, detect, and control the establishment and spread of invasive species that threaten Hawai'i's environment, economy, and way of life. Motivating public action on invasive species issues requires the implementation of evidence-based outreach campaigns, which are usually delivered in a face-to-face environment. However, efforts to limit the spread of COVID-19 have facilitated a shift towards online learning, therefore creating opportunities for increased engagement on digital platforms. In this presentation, I will be discussing how BIISC has altered its outreach approach in response to the COVID-19 pandemic.`

Mentor: Franny Brewer - Communications Director at the Big Island Invasive Species Committee (BIISC)

KAWEHI LOPEZ GREW UP IN HILO AND CURRENTLY LIVES IN WAIMEA ON HAWAI'I ISLAND. HER PASSION FOR CONSERVATION AND WORKING WITH PEOPLE LED HER TO PURSUE A CAREER AS A SCIENCE COMMUNICATOR AND INFORMAL EDUCATOR. SINCE GRADUATING WITH HER B.A. IN ENVIRONMENTAL STUDIES FROM THE UNIVERSITY OF HAWAI'I AT HILO, KAWEHI HAS DEDICATED HER TIME TOWARDS ADDRESSING INVASIVE SPECIES ISSUES THAT ARE PLAGUING OUR ISLAND HOME. IN ORDER TO DEEPEN HER SCIENTIFIC FOUNDATION AND EXPAND HER COMMUNICATION SKILLS, SHE CHOSE TO PURSUE HER GRADUATE DEGREE IN TROPICAL CONSERVATION BIOLOGY AND ENVIRONMENTAL SCIENCE AT THE UNIVERSITY OF HAWAI'I AT HILO. UPON RECEIVING HER DEGREE, KAWEHI PLANS TO WORK WITH THE BIG ISLAND INVASIVE SPECIES COMMITTEE AS A COMMUNITY OUTREACH SPECIALIST.

GEOFFREY M. GRIMMETT

THE CONTRIBUTION OF LEAD CONTAMINATION SITES TO CHILDHOOD LEAD POISONING IN THE HAWAIIAN ISLANDS

Lead has been known to have potentially severe effects on environmental and public health with exposure being linked to cognitive and behavioral deficits in young children (Lanphear 2005; Hauptman 2017; Felton et al. 2019). Luckily, population studies have shown a steady decrease in blood lead levels since the introduction of lead poisoning mitigation and prevention policy in the 1970s (CDC 2019; Felton et al. 2019). However, there has recently been a slight rise in the 95th percentile of blood lead levels for children ages 1-5, which has also been observed in Hawai'i where elevated blood leadlevels have ranged from 0.8-1.4% of the total number of children tested (CDC 2019; Felton et al. 2019). Therefore, the internship project that I performed at the State of Hawai'i Department of Health's Hazard Evaluation and Emergency Response (HEER) Office allowed me to aid in the monitoring and prevention of this disease by assessing how environmental factors, specifically lead contaminated sites, may be contributing to childhood lead exposure in Hawai'i.

Mentor: Diana Felton - MD, State Toxicologist at the Hawai'i State Department of Health's Hazard Evaluation and Emergency Response Office

GEOFFREY M. GRIMMETT WAS RAISED IN ALEXANDRIA, VIRGINIA BUT CURRENTLY RESIDES IN MILILANI, O'AHU. HE GRADUATED WITH A B.S. IN CHEMISTRY FROM THE UNIVERSITY OF HAWAI'I AT MĀNOA AND IS A MASTER OF SCIENCE STUDENT IN THE TROPICAL CONSERVATION BIOLOGY AND ENVIRONMENTAL SCIENCE PROGRAM AT THE UNIVERSITY OF HAWAI'I AT HILO. A BIG SOURCE OF MOTIVATION FOR GEOFFREY IS HIS CURIOSITY ABOUT HOW THE HEALTH OF THE ENVIRONMENT AND HUMAN HEALTH ARE LINKED. THIS CURIOSITY RESULTED IN HIM WORKING ON A PROJECT AT THE HAWAI'I STATE DEPARTMENT OF HEALTH THAT ASSESSED HOW ENVIRONMENTAL FACTORS SUCH AS LEAD CONTAMINATED SITES CONTRIBUTE TO CHILDHOOD LEAD EXPOSURE IN HAWAI'I. HIS FUTURE ASPIRATIONS INCLUDE WORKING AS AN ENVIRONMENTAL HEALTH SPECIALIST OR AS AN ENVIRONMENTAL EPIDEMIOLOGIST.

CARMELITA INFRA VILLALOBOS

MONITORING THE HAWAIIAN MONK SEAL POPULATION ON HAWAI'I ISLAND

The Hawaiian monk seal (*Monachus schauinslandi*) is endemic to the Hawaiian Archipelago and is the only pinniped associated with coral reef ecosystems. Hunted to near extinction, only 1,400 individuals remain in the wild. With the help of The Marine Mammal Center, the population has been slowly increasing since the early 2000s but still faces a number of threats including fishery and human interaction. The Marine Mammal Center works daily to prevent human habituation and educate the public on the importance of these animals to the Hawaiian islands. The goal of my internship was to strengthen community relationships with Hawaiian monk seals through outreach and to protect the population by monitoring the individuals that frequent Hawai'i island.

Mentor: Lauren Van Heukelem - Response and Operation Coordinator, Ke Kai Ola

CARMELITA INFRA VILLALOBOS IS ORIGINALLY FROM ADDISON, ILLINOIS. WHILE OBTAINING HER UNDERGRADUATE DEGREE IN BIOLOGY AT DOMINICAN UNIVERSITY, SHE VOLUNTEERED AND TOOK AN ISLAND ECOLOGY CLASS AT THE SHEDD AQUARIUM IN CHICAGO. IT WAS HER EXPERIENCE THERE THAT CAUSED HER TO FALL IN LOVE WITH THE OCEAN AND SPARKED HER PASSION FOR CONSERVATION. CARMELITA MOVED TO HAWAI'I ISLAND IN 2019 TO FULLY IMMERSE HERSELF IN THE OCEAN AND PURSUE A MASTER OF SCIENCE DEGREE IN TROPICAL CONSERVATION BIOLOGY AND ENVIRONMENTAL SCIENCE AT THE UNIVERSITY OF HAWAI'I AT HILO. HER CAREER GOALS INCLUDE WORKING IN MARINE CONSERVATION AND USING COMMUNITY OUTREACH AND EDUCATION TO INSPIRE THE NEXT GENERATION OF ENVIRONMENTAL STEWARDS TO TAKE CARE OF THE PLANET.