About GES

The Department of Oceanography launched the undergraduate Global Environmental Science (GES) program in 1998 with the generous support of the Pauley Foundation. The vision and brainchild of Oceanography Emeritus Professor Dr. Fred Mackenzie, the GES program is known for its rigorous math and science foundation, integrated study of environmental- and sustainabilityrelated issues, and faculty-mentored research experience requirement. This research experience results in every GES graduate having completed a facultymentored research project, written a thesis, and presented their research results in a public forum. As a result of the challenging curriculum and research experience requirement, GES graduates are well-prepared to enter the workforce in environmental science-related fields and industries or continue on to graduate studies in many different subjects in the sciences, social sciences, law, medicine, and engineering.

Contact Information

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Spring 2023

GES SYMPOSIUM

May 5, 2023, Friday 10:00 am -12:30 pm MSB 114

Reception to follow on MSB Lanai

GES Symposium

GES students presenting at this symposium conducted faculty-mentored research, analyzed their results, and compiled their findings into a thesis format. Many theses are converted into peerreviewed journal publications; a feat usually accomplished by students once in graduate school. The GES Symposium is a celebration and culmination of undergraduate research efforts and experiences, so join us in supporting, engaging, and applauding our presenters.

Agenda

10:00 Opening Remarks

10:10 Jasmine Awaya

"Fragment Size and Density Effects on the Growth and Survival of Montipora capitata" Mentor: Dr. Robert Toonen (Hawaiʻi Institute of Marine Biology)

 Brandon Dela Cruz
"Spatiotemporal Analysis of Distribution Patterns of E. coli in an Urban Wetland"
Mentor: Dr. Henrietta Dulai (Earth Sciences)

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Agenda cont.

10:50	Carla Mae Esquivel "Philippine Box Jelly Project: Educational Outreach To Raise Awareness, Reduce Injury And Save Lives" Mentor: Dr. Angel Yanagihara (Pacific Biosciences Research Center)
11:10	Madelyne Harding "Context-Dependent Social Behavior in Gold Dust Day Geckos (Phelsuma Laticauda)" Mentor: Dr. Amber Wright (School of Life Sciences)
11:30	Kyra Leon "Quantifying the Transition from Occasional to Chronic Coastal Flooding" Mentor: Dr. Philip Thompson (Oceanography)
11:50	T ehani Malterre "Potential Threats to Water Quality in an Urban Wetland Farm" Mentor: Dr. Henrietta Dulai (Earth Sciences)
12:10	Quinn Moon "Are Critically Imperiled Six-Lined Racerunner Lizards Native or Introduced?" Mentor: Dr. Robert Thomson (School of Life Sciences)

Biographies



Jasmine Awaya

Born and raised in Kailua, Oʻahu, Jasmine had a deep connection and love for the ocean and the coastal environment at an early age, so much so that she decided to be a marine biologist when she grew up so she could study the ocean and the organisms within it. Upon graduating high school, Jasmine was accepted to UH Mānoa as a marine biology major, but changed to GES when she learned that GES offered a wide variety of studies as well as strong student support. Coral reefs were a huge interest of hers; they supported a diverse ecosystem and provided nooks and crannies that hid amazing marine life. In her search for potential mentors, Jasmine found Dr. Robert Toonen, who worked with corals at the Hawaiʻi Institute of Marine Biology (HIMB), which

was right in her backyard. Coincidentally, it was always her goal to be able to work there. Throughout her time at UH Mānoa, Jasmine has consistently been on the Dean's list. Her plan after graduation is to take a year off to work and travel, while gaining new experiences before applying to graduate school.

Brandon Dela Cruz

Brandon started his academic journey at Leeward Community College, taking his time before transfering to UH to figure out what he wanted to do in life. Just before he called it quits he met Dr. Donn Viviani from the Oceanography department. Donn had a large impact on Brandon, and believed in him and encouraged him to keep pushing forward. From there, Brandon started to put the pieces of his identity together and became a determined hardworking student. Brandon consistently made the Dean's list and was accepted for multiple scholarships based on his academic merit, something he previously thought would be unattainable. His GES thesis was fully funded by UROP and received grants from the NSF. Throughout his time in GES, Brandon worked as a student researcher for NOAA and HIMB, and an undergraduate GIS researcher for the NASA funded



Pu'uloa Environmental Justice project. Through exploring his interests in GES, Brandon discovered a passion for groundwater-hydrology and accepted internships with the City & County of Honolulu Storm Water Quality Division and AECOM as an Environmental Scientist. Brandon's dream is to use his knowledge and experiences to give back to his community and home by protecting and preserving the islands for future generations.



Carla Mae Esquivel

Carla was raised in a coastal village in the Iloilo province of the Philippines. Being a non-traditional student, she decided to pursue higher education at Leeward Community College where she began studying for an associate's degree and the Marine Option Program. One of the oceanography classes required students to attend the SOEST Open House where she was inspired to pursue a bachelor's degree and she eventually chose the GES program. While a student at LCC and UHM, Carla acquired invaluable experiences working as student assistant at the National Marine Fish Service (Pacific Islands Fisheries Science Center) and NOAA (Coral Reef Ecosystem Program) and participating in one of the Hawai'i Ocean Time cruises to

Station ALOHA. She counts it a blessing that her thesis mentor Dr. Yanagihara actively visits the Philippines and started the "Operation Box Stop" project in 2017. One of her realizations was to find that the extant jellyfish species in her hometown are not the box jelly kind; although she learned there were box jelly sightings in towns less than 100 miles away. She is particularly interested in supporting works such as this in tropical marine ecosystem such as that of the Philippines.

Madelyne Harding

Madelyne is originally from Brodhead, Wisconsin and came to Hawai'i to run track and field for the UH Mānoa. Coming into college she believed she wanted to study marine biology but quickly realized that she loved all aspects of the world's cosystems and made the change to GES in her fourth semester. After listening to a lecture given by Professor Amber Wright on her own research with lizards, Madelyne approached Amber with questions on gold dust day geckos, finding little was known about their behaviors sparking the questions needed to begin her research. Along with competing in track until recently, she is a student hire at Lyon arboretum helping to develop cryo-storage protocols for sensitive plant species, a hostess, and a two-time

recipient of the Barbara Benson Wantuck scholarship. She plans on taking a year off to gain work experience before returning to school again.





Kyra Leon

Kyra was born and raised in Portland, OR, exploring the cold waters and tide pools of the Pacific Northwest. She first started at UH Mānoa in 2019 as a marine biology student. After taking OCN201 in her first semester, she was inspired to change her major to GES in order to explore a wider field of marine science. In working on her thesis, Kyra learned to code in python, and developed a stronger confidence in her own problem solving abilities and skills as a researcher. Kyra was awarded the NOAA Hollings scholarship in her sophomore year. Through the Hollings program, Kyra interned at the US National Ice Center in Suitland, MD. Throughout her time at UH, Kyra consistently earned a position on the Dean's list in addition to working on her

thesis, and other various jobs outside of school. Advising newer students and bringing the GES community together proved to be one of the most enjoyable parts of Kyra's time in GES, and she made many new and lifelong friends through the GES peers program. Kyra plans to graduate with an Honors certificate, and is interested in pursuing a graduate degree.

Tehani Malterre

Tehani decided to enter the GES program after high school following her lifelong passion for the environment and interest in understanding the environment through the lens of western science and Hawaiian culture. Through some of her mentors in the Maile Mentoring Program, she was connected with Dr. Henrietta Dulai, who served as her mentor for her GES thesis focused on pharmaceutical wastewater tracers at a local farm. During her time in the GES program, Tehani has had various summer internships with the National Oceanic and Atmospheric Administration (NOAA) through the NOAA Hollings Preparatory and Educational Partnership Program with Minority-Serving Institutions (EPP/MSI) Scholarship programs. Through these programs, she has met many amazing mentors and was able to present her work at various



conferences and symposiums throughout the years. Tehani will be continuing her education at the University of Hawai'i through the GES and MSF 4+1 program and is hoping to graduate with her Master's in Finance next spring and eventually obtain a certificate in 'ōlelo Hawai'i. She hopes to possibly continue her education with a PhD and eventually work in Hawai'i to address environmental issues that impact native species and the local community.

Quinn Moon

Growing up in Taos, New Mexico, Quinn developed a deep connection with the natural world at an early age. Full of a curiosity born exploring the Rocky Mountains as a child, Quinn joined GES in the Fall of 2023. Quinn feels he can deepen his relationship with the natural world through academic research. His research has ranged from restoration techniques of endemic Hawaiian trees to conservation phylogenetics of lizards. Building off his passions for forest restoration and biodiversity preservation, Quinn has developed a scientific skill set that includes advanced techniques in mycology and genomics. Quinn's research interests use a confluence of genomics and stable isotope biogeochemistry to study the evolution and ecology of plant associated fungi. Quinn's research has earned numerous awards, grants, presentations, and the publication of a



co-authored scientific paper. Quinn believes scientific research can be a tool in restoring our connection to and appreciation for the natural world. In the next step of a life dedicated to this goal, Quinn will begin a PhD at the University of Michigan this fall to study fungal diversity and molecular systematics as well as the ecology of nutrient transfer in plant-fungal interactions.