

Mahalo!



*Ryan, Stephanie, Ed, and Shannon Laws (left to right order) at the establishment of the Global Environmental Science Endowed Scholarship.*

## Acknowledgments

Dr. Edward A. and Mrs. Stephanie S.L. Laws recently established the Global Environmental Science Endowed Scholarship to support undergraduate students in the Global Environmental Science program in the Department of Oceanography. The gift will provide standout GES students with tuition and other academic financial support, allowing them to focus on their studies, be rewarded for excellent work, and be able to take advantage of research opportunities for their faculty-mentored thesis projects.

The University of Hawai'i at Mānoa Department of Oceanography presents

# SPRING 2019



GLOBAL ENVIRONMENTAL SCIENCE

Friday, May 3, 2019

Marine Sciences Building Room 114

10:00am - 11:30am

Reception to follow

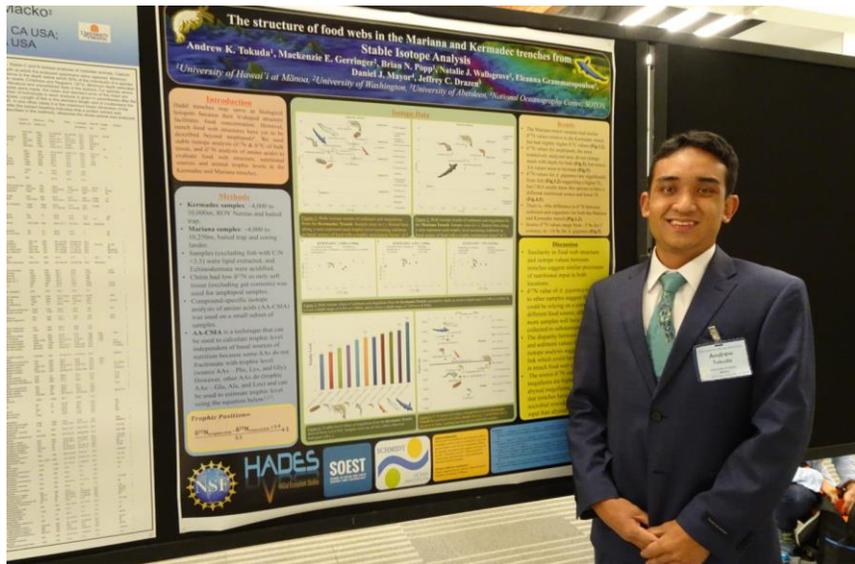


Photo courtesy of Andrew Tokuda. Andrew presented his poster on trench food web structure at the 15<sup>th</sup> Deep-Sea Biology Symposium, held in Monterey, CA, in September 2018. (Photo taken by Jeffrey C. Drazen)



Photo courtesy of Amanda Wong. Amanda collecting *Syzygium sandwicensis* seeds for her thesis. (Photo taken by Eric Klingberg)



Photo courtesy of Honour Booth. Honour extracts sunscreen chemicals from water samples she collected from Hanauma Bay. (Photo taken by Honour Booth)

### Supporting Undergraduate Research

If you would like to support the Global Environmental Science Program, please consider making a donation online:

<https://giving.uhfoundation.org/funds/12721704>



## 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 Emeritus Oceanography Professor Dr. Fred Mackenzie, the GES program is known for its rigorous math and science foundation, integrated study of environmental- and sustainability-related issues, and faculty-mentored research thesis requirement. This research experience results in every GES graduate having completed a faculty-mentored research project, written a thesis, and presented their research results in a public forum. As a result of the challenging curriculum and research thesis requirements, 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 GES

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## GES Symposium

GES students presenting at this symposium conducted basic research, analyzed their results, and compiled their findings into a thesis format. Many theses are converted into peer-reviewed 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 today's presenters.

## Agenda

**10:00 Welcome**

**10:05 Cuong Tran**

*Updating Historical Shoreline Change Rates of North Kā'anapali, Honokōwai, and Kahana, West Maui*  
Mentor: Charles "Chip" Fletcher (Earth Sciences)

**10:20 Honour Shore Ai Lin Booth**

*Assessing the Sunscreen Sheen: Determining the Presence and Persistence of Organic Ultraviolet Filters in the Waters of the Hanauma Bay Marine Life Conservation District*  
Mentor: Philip Williams (Chemistry)

**10:35 Brenna Carroll**

*Effects of Future Ocean Conditions on the Microbiome of Crustose Coralline Algae with Implications for Coral Settlement and Growth*  
Mentor: Craig Nelson (Oceanography)

**10:50 Keku'iapōiula Keliipuleole**

*Ka pilina o nā Hā'uke'uke: A Study of the Morphology and Genetic Connectivity of the Culturally Significant Sea Urchin, *Colobocentrotus atratus*, in Hawai'i*  
Mentor: Robert Toonen (Hawai'i Institute of Marine Biology)

**11:05 No'eau Machado**

*Nā wai momona 'o Meheanu: Correlation of He'eia Fishpond Plankton Community Abundance and Distribution in Response to Environmental Conditions*  
Mentor: Rosanna "Rosie" Alegado (Oceanography)

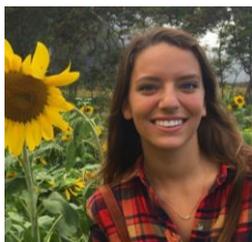
## Biographies



### **Honour Shore Ai Lin Booth**

*Mentor: Philip Williams*

When Honour began surfing regularly as a teenager, her mother always reminded her to use sunscreen, and she would argue that it was putting a chemical into the environment. The question of how much sunscreen actually goes into the environment remained with her into college, which inspired her to develop her research project. Since entering UH Mānoa and the GES program in the fall of 2016, Honour has been on the dean's list and received various scholarships, and attended conferences including the International Coral Reef Symposium. In addition, Honour was selected as a Peter J. Rappa Sustainable Coastal Development Fellow, which gave her the opportunity to work with the City & County of Honolulu Office of Climate Change, Sustainability and Resiliency, an achievement of which she is most proud. This spring, she will also be graduating with a Bachelor of Art degree in Chemistry. Honour was born and raised in Honolulu, HI.



### **Brenna Carroll**

*Mentor: Craig Nelson*

Brenna chose the GES program because she wanted a diversified view of environmental science that took all areas of study into account. Brenna has been a proud member of the Nelson lab in the Center for Microbial Oceanography: Research and Education Hale since entering UH Mānoa and the GES program in spring of 2015. She was introduced to Crustose Coralline Algae (CCA) by a laboratory mate and realized how vital they are to reef environments, which then inspired her to develop her research project and bring awareness to the importance of CCA. For her work on CCA, Brenna was awarded one of the Best Undergraduate Poster Presentations at the 44th Annual Albert L. Tester Memorial Symposium held in Honolulu, HI. Brenna was born in Atlanta, GA, and raised in Half Moon Bay, CA.



### **Keku'iapōiula Keliipuleole**

*Mentor: Robert Toonen*

Ku'i focused on the intertidal marine sea urchin species *Colobocentrotus atratus*, also known as *hā'uke'uke*, because there are no regulations on harvesting such a culturally important species. For her research on *hā'uke'uke*, Ku'i has won several awards including Outstanding Undergraduate

Presentation from the Society of Chicanos/Hispanics and Native Americans in Science (SACNAS)-'Ilima Chapter Symposium, First Place in Genetics from the Emerging Researchers National Conference in STEM, and, most recently, the 'Ōiwi Distinguished Scholars Award from the Lāhui Hawai'i Research Center. She has also been invited to meet with the Congressmen and women in Washington D.C. to discuss the importance of undergraduate research as well as her award-winning research on *hā'uke'uke*. Ku'i was born and raised in Honolulu, specifically Pālolo Valley, on the island of O'ahu, HI.



### **No'eau Machado**

*Mentor: Rosie Alegado*

No'eau knew the GES program was perfect for him as soon as he read about it. The program allowed him tailor his curriculum to study the environment, sustainability, and science, and also Hawaiian culture and sustainable food production systems. He chose a research project at He'eia Fishpond under the mentorship of Dr. Alegado, whom he deeply respects, because he wanted a project which allowed him to give back directly to Hawai'i. Since entering UH Mānoa and the GES program in the fall of 2015, No'eau has been a constant dean's lister and recipient of various scholarly awards, including the 'Ōiwi Distinguished Scholars Award and 'Ōiwi Undergraduate Research Fellowship, both from the Lāhui Hawai'i Research Center. No'eau was born and raised in Kāne'ohe, HI.



### **Cuong Tran**

*Mentor: Chip Fletcher*

Cuong was admitted to UH Mānoa in the fall of 2015, and decided to transfer to the GES program after participating in a service project trip to Molokai in the spring of 2016, where he rediscovered his passion for environment conservation. Cuong has always enjoyed going to the beach; Baby Beach in his hometown of Lāhainā is his "happy place", a place to think, reflect, and get inspired. A family tragedy along this very beach propelled him into researching anthropogenic climate change, which affects shoreline communities. Cuong is a constant dean's lister and recipient of multiple scholarships, including the NOAA Ernest F. Hollings Scholarship. He is an active member of both honor societies on campus and has participated in several conferences. Cuong was selected as a student marshal to represent and lead the SOEST graduating class in the 108<sup>th</sup> Annual Commencement Exercises. Cuong was born in Ho Chi Minh City, Vietnam, and raised in Lāhainā, HI.