



## About GES

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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 sustainability-related issues, and faculty-mentored research experience 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 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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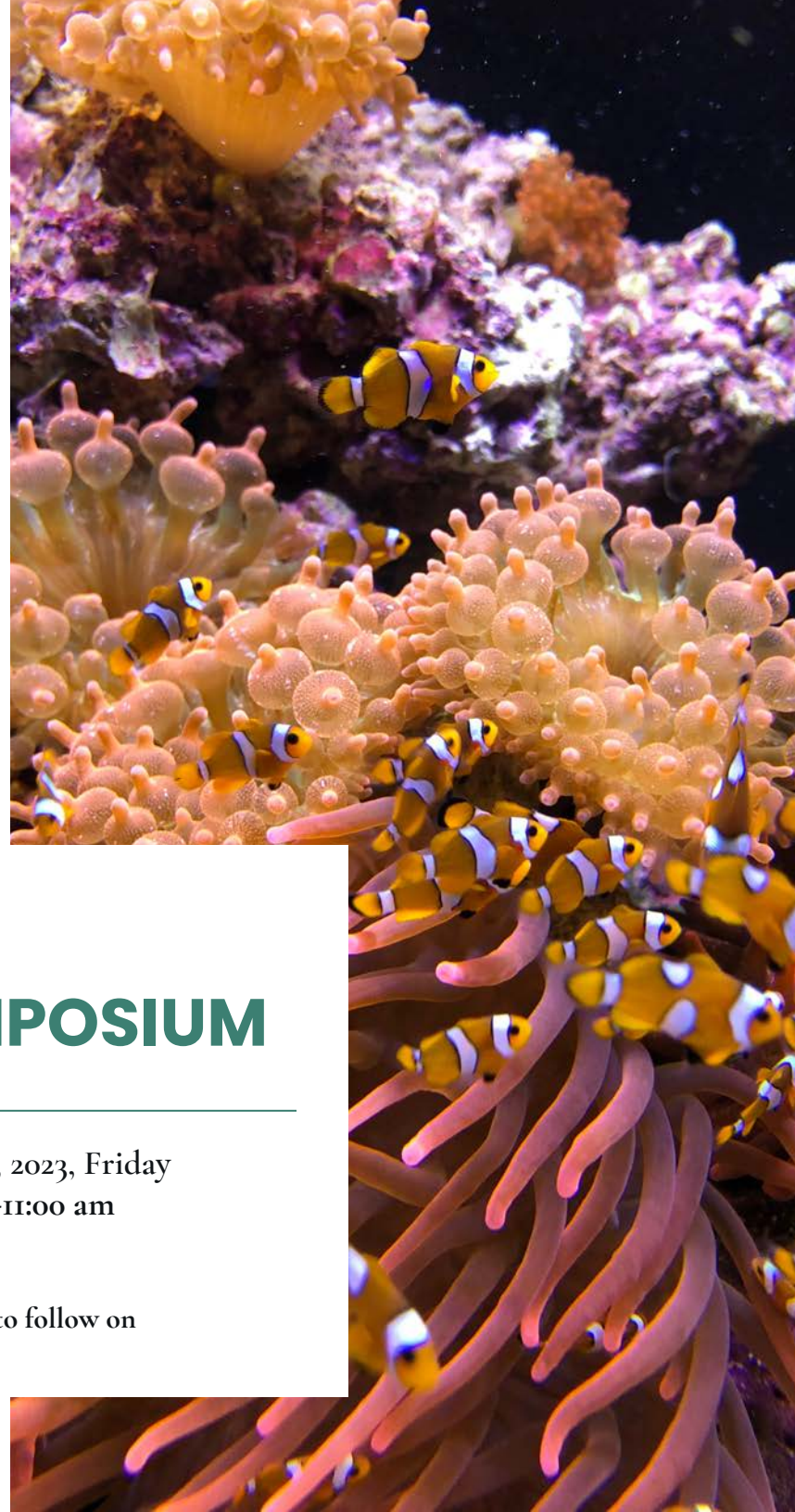
*Summer 2023*

## GES SYMPOSIUM

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August 11, 2023, Friday  
10:00 am -11:00 am  
MSB 114

Reception to follow on  
MSB Lānai







## 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 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 our presenters.

## Agenda

- 10:00 Opening Remarks
- 10:10 Caleb Mantanona  
*"Carbon Emissions of the 2022 Leilani Wildfire in Waikōloa, Hawai'i"*  
Mentors: Dr. Sumeet Saksena (East-West Center)  
Dr. Angela Sy (John A. Burns School of Medicine at the University of Hawai'i at Mānoa)
- 10:30 Ariel Thepsenavong  
*"Benefits of Locally Grown vs. Imported Agriculture: A Case Study of Sumida Farm"*  
Mentor: Dr. Kimberly Burnett (The Economic Research Organization at the University of Hawai'i at Mānoa)

## Biographies

### Caleb Mantanona

With roots in 'Ewa Beach, Hawai'i, Caleb was raised understanding the important connection between society and the environment. In high school, he took an environmental science course and participated in a summer program with KUPU which sparked his interest in green careers. Caleb matriculated into the GES program his freshman year and kept an open mind to anything that piqued his curiosity. During his time at UH Mānoa, he was able to gain valuable experiences by taking advantage of opportunities within and outside the university. He is grateful for his undergraduate education that has brought him a wide breadth of experiences, from a seafloor mapping research cruise along the R/V Langseth to shadowing healthcare workers at a Level 1 trauma center burn unit. Most recently, Caleb completed his senior thesis with Dr. Saksena from the East-West Center where he estimated the emissions of a large wildfire on Hawai'i island. Caleb plans to spend the next year traveling and gaining work experience before continuing his academic education.



### Ariel Thepsenavong



Born and raised on O'ahu, Ariel was always interested in STEM. Ariel was a recipient of the Provost Achievement Scholarship, and was initially an electrical engineering major. However, once she realized her true personal and career interests in environmental and human health and sustainability, she switched to GES in Fall 2021. Ariel was interested in researching topics that could benefit Hawai'i residents, and sought out her research mentor, Dr. Burnett, from the University of Hawai'i Economic Research Organization. Ariel's thesis focuses on the environmental and economic benefits of local agriculture using a local watercress farm as a case study. She hopes that her research will encourage more entities to support local agriculture and businesses. Ariel is interested in giving back to the community and helping Hawai'i become a healthier and happier place, both environmentally and socially. She is pursuing the GES Bachelor's-and-Master's pathway with the Office of Public Health and hopes to graduate with her Master's in Public Health degree in Spring 2025.