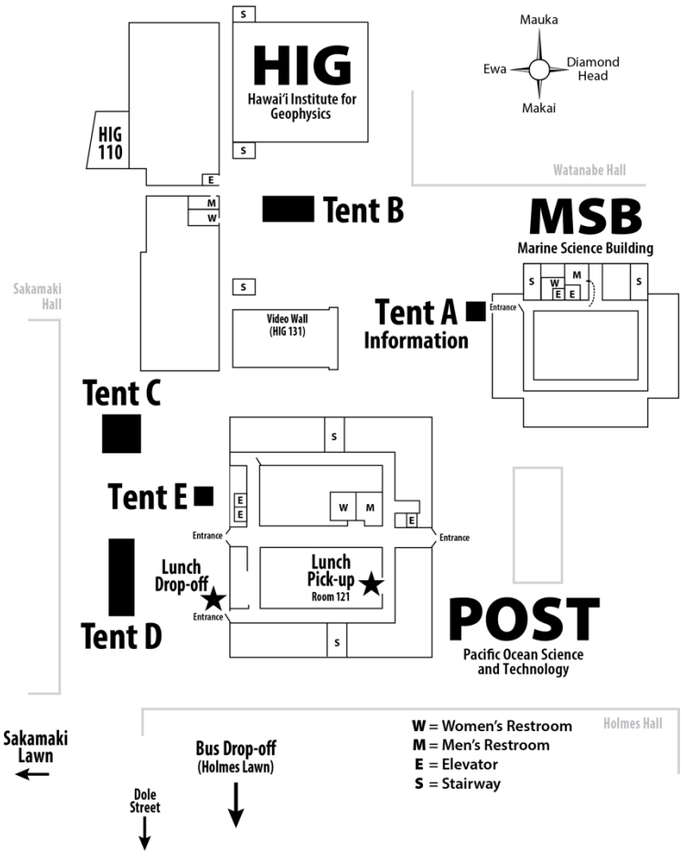
EARTH LIFE OCEAN CLIMATE ATMOSPHERE ENERGY SPACE

2019 SOEST Open House Program

Friday 25 October (8:30 am–2 pm) & Saturday 26 October (10 am–2 pm)

Tent A Information
Tent B Fish Printing, He'eia Fishpond, Reefs, Snails
Tent C NOAA
Tent D Lava Flows, Microbes, Marine Debris, Maile Mentoring
Tent E Moon Globe
POST 121 Lunch Storage Room



OUTDOOR ACTIVITIES

Underwater Robots (MSB lanai)
Learn about underwater robots built by students and try piloting one yourself!

Global Environmental Science Undergraduate Program (MSB lanai)
Experience the Global Environmental Science program's holistic approach to studying Earth's physical, chemical, and biological systems... from the mountain to the sea!

Restoring Hawai'i's Aquatic Resources with Hawai'i's Division of Aquatic Resources (MSB lanai)
Come learn about DLNR-DAR projects in the Coral Restoration Nursery and Sea Urchin Hatchery that restore and rehabilitate habitat.

Make-a-Quake (MSB lawn)
Students hit a sledgehammer on the ground and receive print-outs of their quake.

Exploring the Oceans with Technology (Sakamaki Lawn)
Interactive and visual material demonstrating technologies such as drones and virtual reality that are used to collect and visualize information about our oceans.

Meet Kamakai, the Inflatable Humpback Whale (Sakamaki Lawn) *Saturday only*
Kamakai, a life-sized inflatable humpback whale, lets you experience how large whales really are. You can also walk inside to see the inflated internal organs.

Explosive Volcanism (outside POST, Ewa side)
Rapid expansion of confined gas drives this dramatic demonstration of the principles at work in explosive volcanic eruptions.

Gyotaku Fish Prints (Tent B)
Gyotaku is an old form of recording a fisherman's catch. Create your own gyotaku fish prints.

Help Cool the Planet, Save the Reefs (Tent B)
Learn about coral reefs, global climate change, and how your actions can help keep the planet cool. Plus! Dump a bucket of cold water on our staff or a person from your group.

He'eia National Estuarine Research Reserve (Tent B)
Muliwai or estuary—where fresh and salt water mix, and fish grow up. Can you guess the amount of salt in water using only your taste buds? Take a virtual tour of the He'eia estuary.

Hawaiian Sea Snails (Tent B)
Learn about Hawaiian sea snails through a hands-on matching game.

Trash Talk (Tent C)
Learn about the sources and impacts of marine debris and simple solutions to prevent it!

Fish Life History (Tent C)
Learn how little parts of a fish can tell us different things about their life history characteristics.

Hawai'i Weather (Tent C)
Check your weather knowledge, learn about weather safety, and see how flash flooding happens.

3D Corals are Too Hot to Handle (Tent C)
Touch a one-of-a-kind 3D printed coral polyp model that "bleaches" when exposed to warm water. Explore a 3D simulation of a night time reef dive with UV sensitive coral reef models. Immerse yourself in virtual reality underwater coral reef experience!

Federal Fisheries Enforcement (Tent C)
What do you want to know about federal fisheries enforcement? We are here to answer your questions!

Special Places (Tent C)
Learn about important habitats that support important marine species.

Science of Marine Trash (Tent D) **Friday only*
This exhibit will show how marine debris is transported across the oceans, how garbage patches are created, and the impact of marine debris on marine life.

HPU's Center for Marine Debris Research (Tent D)
Learn about the latest marine debris research at CMDR and a method for capturing debris and separating natural and synthetic material.

We Are SOEST (Tent D)
Come learn about what the SOEST Maile Mentoring Bridge has to offer. While you're with us, color in portions of our logo to add to our SOEST Maile Mentoring Bridge mosaic.

Marine Microbe (Tent D)
Learn about microbes in the sea: who we are; where we live; and what we eat! There will be an educational and interactive poster board for kids and learning resources for teachers/parents.

Knot Tying (Tent D)
Have you ever been on a boat? Do you fish? Kayak? If so, you need to know how to tie knots and we can show you how!

Life at Sea (Tent D)
Life at Sea lets visitors gear up in personal protective equipment (life vest, hard hat), stand at the rail of a ship, and throw "grappling" lines overboard to try and retrieve science instruments floating in the "water." Just like being on a real ship!

Wax Lava Flows (Tent D)
We use melted wax as an analog to real lava flow. This allows us to study how lava flows travel down slope, go around obstacles, and cool.

Crushing Cans (Tent D)
Learn about density differences between cold and warm air, and watch a can get crushed by a sudden pressure difference.

Moon Globe (Tent E)
Come see a six-foot diameter Moon globe and learn about the geology of the Moon, where the astronauts landed, and potential sites for future missions.

HIG BUILDING

Exploring the deep with Schmidt Ocean (HIG Video Wall, HIG 131) **Friday only*
Stunning video from recent expeditions aboard *R/V Falkor* will take you from hydrothermal vents to coral reefs.

Hawai'i King Tides Project (HIG 1st Floor outside Video Wall)
Come learn about our Community Science project on King Tides, the highest high tides of the year! Photographing King Tides gives us a snapshot of what our future shorelines may look like with rising sea levels. Also learn about sea level rise and areas at risk of flooding by exploring the Hawai'i Sea Level Rise Viewer, an online interactive mapping tool.

Seafloor Mapping Boat (HIG 1st Floor outside Video Wall)
Learn how underwater maps are made using technology similar to the echolocation of dolphins. You can create a ship track for a miniature boat that uses sonar waves to produce a real-time 3D map of a model seafloor.

HIG BUILDING (continued)

Nā Kilo ʻĀina (HIG 1st Floor outside Video Wall)
Healthy and thriving communities.

Melting Ice, Rising Seas (HIG 1st Floor, Makai stairwell)
Glaciers and icebergs are melting! We will show what is causing the sea level to rise.

Laser Spectroscopy (outside HIG 107)
Learn how standoff laser spectroscopy is used to remotely explore planetary and Earth surfaces and detect minerals and hazardous materials.

Coastal Waves and Beach Profile Changes (HIG 109)
Ocean wave characteristics, beach erosion, and migration of sand bars will be demonstrated in a wave flume.

Surf's Up! (outside HIG 109)
What causes waves? And how do we measure waves? Stop by and find out how our network of wave buoys collects real-time wave observations, night and day!

Earthquake Preparedness and SmartPhone Earthquake Early Warning (HIG 110)
What should you do if you are in an earthquake? Join us to learn about Hawai'i's Shakeout earthquake drills and how scientists are developing earthquake early warning sensors using smartphones.

How Exhaust Fumes Threaten Our Precious Oceans (outside HIG 110)
How do exhaust fumes from cars make ocean water become more acidic and what are the consequences of an acidified ocean for marine life around Hawai'i?

Operation of the Electric Grid with Renewable Energy (outside HIG 153)
The exhibit explores how utilities manage the electric grid with significant amounts of different renewable energy resources.

Green Screen Magic (HIG 309)
Learn the magic of green screen technology used in TV weather forecasts and blockbuster movies. You choose the background and then take a green screen photo that is emailed to you!

Create a Hurricane! (HIG 310)
How does a hurricane form? What determines its path and whether it will make landfall? Come create ideal hurricane conditions by changing the winds, latitude, moisture, and sea temperature.

Cloud in a Bottle (HIG 311)
Learn how clouds form by creating your own cloud in a bottle!

MSB BUILDING

Microscopic Ocean Drifters—World of Plankton (MSB 203)
Come see plankton from Kāneʻohe Bay! Living plankton will be swimming under our microscopes. See how they are collected and how we study them. Learn about how they live, what they do, and why they are so important. Plus, make your own plankton art!

Research at the Kewalo Marine Laboratory (MSB 305)
Come experience the rich diversity of animals, plants and microorganisms that live in the Hawaiian near-shore marine environment.

Understanding Ocean Acidification (MSB 306)
Interactive demonstrations show how adding CO_2 to seawater and fresh water acidifies (lowers the pH) the water. Come learn why the reaction in seawater is different from the fresh water.

Surf Forecasting (MSB 307) *Friday only
Basic aspects of surf science and forecasting are explained. Details on current conditions and forecasts for the date of the talk will be given with live data.

An Ocean Gyre in a Tank (MSB 315)
Did you ever wonder what causes the mighty ocean currents? Feel the strange effects of rotation. See an ocean gyre, Kuroshio current, and garbage patch—in a tank.

Deep-sea Biology: Biodiversity, Exploration, and Exploitation (MSB 6th floor)
The deep sea is the largest ecosystem on the world with great diversity in animals and physical features such as seamounts, canyons, and hydrothermal vents. It is also one of the most understudied places on Earth.

POST BUILDING

Batteries and Fuel cells (POST 126) *_Friday only_
How do electrochemical power systems work? Learn about model fuel cells and batteries.

3, 2, 1 Blast Off!!! (POST 501)
Learn about the HSGC Hi-STEM Pipeline where "Space is our future!" Hone your science and math skills while you lift off to target nearby planets and stars in our solar system.

Radiation on Earth and in Space (outside POST 508)
Demonstration of environmental and cosmic radiation in our environment using radiation detectors and a cloud chamber.

Spectroscopy in Space Exploration (outside POST 517)
Come see how spectrometers are used to discriminate between different materials that look similar, such as salt and sugar.

Colors of Space (outside POST 521)
Demonstration of a thermal camera, what the Moon is made of, and an opportunity to see Moon rocks.

Understanding the Basics of Space Flight via Kerbal Space Program (POST 527)
Learn more about rockets through a demonstration of the game Kerbal Space Program! HSFL engineers will also talk about small satellites developed in Hawai'i.

Space Matters (outside POST 530)
Explore the four states of matter—solid, liquid, gas, and plasma—in an electrifying exhibit.

Meteorites (POST 544)
See ~30 different kinds of meteorites and learn how to recognize them. Learn how meteorites form and evolve, and what they tell us about the synthesis of the elements and the formation of the solar system.

Collecting Meteorites in Antarctica (POST 544)
Learn how and why scientists collect space rocks from Earth's natural freezer.

Magic Planet (POST 544)
The "Magic Planet" is a digital projection globe that can display the solar system and help us explore planetary science.

Comparative Planetology (POST 544)
See how Earth compares to other planets in our solar system. View globes and 3-D images.

Our Moon in High-Resolution 3-D (POST 544)
See extreme close-up views of the Moon in 3-D and Apollo landing sites! Explore and understand the "Super Moon". Free NASA giveaways!

Fun with Physics (POST 601)
What do ice skaters, hurricanes, and solar systems have in common? Explore hands-on demonstrations of the basic physics governing the ocean, air, and planets, and the tools we use to study them.

What's Inside a Volcano? Rocks, Water, and Geothermal Heat! (POST 619)
See rocks from deep inside Earth (Hawai'i volcano) and learn about groundwater and geothermal energy!

The Active Earth (outside POST 701)
Real-time computer display of earthquakes occurring around the world.

Rock Magnets (outside POST 701) *_Friday only_
Choose your favorite rock for your very own rock magnet!

Please Touch! Violent Volcanoes, Beautiful Beaches, Magnificent Minerals, Fascinating Fossils (POST 702/703)
Ultra-microscopic views of very cool stuff from Planet Earth.

Mineral Museum (POST 702)
Where do beautiful minerals grow? From shallow crust to deep mantle, hot magma to cold lake bottoms, and dry desert soils—learn what controls the sizes, shapes, and colors of minerals as you experience the aesthetic beauty of specimens collected in Hawai'i and beyond.

Origins of Hawaiian Beaches (POST 703)
Ever wonder where Hawai'i's beach sands came from? Explore their composition and origin. Perhaps they came from volcanoes, coral reefs, or the shells of marine creatures!

Rocks of the World (POST 703)
Remarkable rocks from around the world—from Antarctica to Norway—will be displayed. Students can touch and ask questions about the origin of these rocks.

Extinct and Exotic (POST 703)
Come see and touch the remains of animals that are millions of years old and have been transformed to rock.

Sand Turns into Mountains and Mountains Turn Into Sand (POST 703)
Use microscopes and hand samples to see ancient life left inside rocks, how sands are transformed into mile-high mountains, and how mountains are then turned back into grains of sand!

Rocks of Hawai'i (POST 703)
Volcanic bombs, Pele's Hair, pillow lava, and more. See and feel interesting rocks formed by Hawaiian volcanoes.

Water, Water Pollution, and Our Oceans (Hawai'i Sea Grant) (POST 708)
Activities for all ages including instruments used to study environmental science in Hawai'i.

Groundwater Contamination (POST 708)
See how underground water flow and contamination are simulated. Water moves into the ground by simulated rain and is extracted by wells.

Beyond Visible—See Yourself in Infrared! (POST 708)
Come see what you and your friends really look like in infrared, and learn how we use this to discover the invisible, giant loss of groundwater to Hawai'i's oceans using airplanes and remote-controlled drones!

Build a Watershed in a Virtual Reality Sandbox (POST 708)
Build a watershed and explore how water flows through different landscapes using a hands-on interactive Augmented Reality Sandbox.

Radioactivity Around You (outside POST 708)
Learn about the physics of radioactive decay and measure radioactivity around you.

Insights into Rock Magnetic Properties (POST 716)
Come see how the magnetic properties of rocks and meteorites are measured, and learn about what rock magnetism can tell us about geologic processes and Earth.

Falling Rocks and Landslides (POST 723)
Rock falls and landslides occur in many parts of the world, including Hawai'i. See spectacular video footage of rock falls and landslides, and learn how they are being studied.

Project EPIK: Earth, Planets, Ike, and Kuleana (outside POST 724)
High School Students? Apply to the 2020 EPIK Summer Camp at UHM!! Teachers? Contact us to visit your classroom!!

The Earth Moves Me! Quakes, Shakes, and Plate Tectonics (outside POST 832)
What should you do if you are in an earthquake? Join us to learn about Hawai'i's Shakeout earthquake drills and how scientists are developing earthquake early warning sensors using smartphones.