2015 SOEST Open House Program

Friday 23 October (8:30 am–2 pm) & Saturday 24 October (10 am–2 pm)

Tent A	Information	**Tent D**	C-MORE (Kids' activities), SOEST Maile Mentoring Bridge
Tent B	HIMB, Marine Option Program, Waikīkī Aquarium	**Tent E**	Particles in the Air, COSEE Island Earth, Hawai'inuiākea School of Hawaiian Knowledge
Tent C	NOAA, NWS	**Tent F**	Lava Flows (Demonstration)
POST 121	Lunch Storage Room		

Outdoor Activities

Make-A-Quake (MSB Lawn)
Students hit a sledge hammer on a plate and watch the readout of sensors spaced around the yard.

Hawai'i Underwater Robot Challenge (MSB lanai)
The Hawai'i Underwater Robot Challenge is a competition for high-school and middle-school students, building robots to carry out missions under water. Try piloting an underwater robot in the testing tank.

Environmental Sensors (MSB lanai)
Brian Glazer lab & Mike Guidry's embedded systems lab will combine forces to jointly host an indoor/outdoor wireless sensor, environmental electronics, and biogeochemistry extravaganza.

Studying the impact of mangrove removal on He'eia Fishpond (MSB lanai)
Video of He'eia Fishpond before and after mangrove removal. There will also be a display of our sampling equipment and devices.

Explosive Eruptions (outside POST facing Sakamaki Hall)
Safe demonstration of a 10 meter high explosive eruption fueled by liquid nitrogen, including birds-eye footage from drones and playback from a high-speed camera. Hands-on experiments with smaller eruptions fueled by dry ice (CO_2).

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

Sea Snails of Hawai'i (Tent B)
Learn all about the amazingly adapted marine snails of Hawai'i in this hands-on activity by the Waikiki Aquarium. Behold beautiful, shiny cowry shells to tiny 'opihi to triton's trumpet, Hawai'i's largest snail.

Cool the Ocean Challenge (Tent B)
Stop by for our cool seas challenge. Participants will learn about climate change research, then answer questions for a chance to do the cool water drop on a marine biologist sitting in our ocean planet. Maybe your teacher will want to take the cool seat!

Marine Debris — Trash Talk (Tent C)
Come see our marine debris wheel, and learn about the trash that is floating in the ocean. Disentangle some marine debris and enjoy other educational activities.

Papahānaumokuākea: get to know the "other" islands in your Hawaiian Archipelago (Tent C)
Get a glimpse of the Northwestern Hawaiian Islands and learn fun facts with our wheel game. You can also check out the interactive kiosk to explore the remote islands, or participate in a fish coloring activity.

Humpback Whales (Tent C)
Got whales? Test your whale skills and participate in a special whale trivia. You can also take part in activities that demonstrate how whales feed and how blubber insulates.

NOAA Fisheries — Corals and YOU (Tent C)
Learn fun facts about marine habitats in Hawai'i, including corals, and spin the engaging prize wheel game. Learn how your actions can affect the marine environment and what steps you can take to mitigate your impact.

Hawai'i in 3D (Tent C)
Take our 3D glasses and check out the 3D map of the Hawai'i archipelago. Topography and bathymetry of the archipelago will become visible. Our Q&A questions will prove your knowledge of coastal resilience.

Weather Ready Nation (Tent C)
Visit the National Weather Service office and explore hands-on activities at the booth.

The Microbial Oceanography Passport Station (Tent D)
Earn passport stamps by going to selected exhibits on microbial oceanography. Return with a completed passport and enter a raffle for a stuffed microbe!

The Amazing Invisible World! (Tent D)
What exactly is in the water where you swim, paddle, fish, and surf? Come join a microscopic voyage of discovery as we check out the weird and wonderful miniature life forms known as phytoplankton and zooplankton.

Ocean Acidification: Changing Oceans and the Future of Hawai'i's Marine Life (Tent D)
Carbon dioxide levels are increasing in our atmosphere and oceans at a rapid rate, making the water more acidic and harmful for some marine life. Come talk to researchers who are working on this problem in Hawai'i and learn what you can do about it.

The Plankton Toss! (Tent D)
Learn about the marine food web and visit the carnival at the same time! You must toss different types of plankton into the mouths of their predators.

Microbe City (Tent D)
What does a microbe city look like? Also known as a Winogradsky column, it's a colorful column of sand that is home to a diverse group of microorganisms.

Teacher Resources and Opportunities (Tent D)
This is a must-stop for teachers to learn about C-MORE's Science Kits, such as our popular Marine Mystery & Plankton Kits, which are free for teachers to borrow.

Knot tying (Tent D)
If you are going to go to sea, you need to know how to tie knots. Learn how to tie the most used knots aboard ships.

Life at Sea: A Day in the Life of an Oceanographer! (Tent D)
Have you ever thought about becoming an oceanographer or marine biologist? Today is your chance to try on gear that you'll need to work on a ship and try out some of the equipment, too — bring your camera for the perfect photo opportunity!

SOEST Maile Mentoring Bridge (Tent D) ***Friday only***
Learn about the SOEST Maile Mentoring Bridge Program ("Maile"), which supports undergraduate Native Hawaiians, kama'āina, and other underrepresented ethnic minorities in the ocean, earth, and environmental sciences through unique mentoring relationships that offer encouragement and the sharing of knowledge. Maile advisors and participants will be available to talk story about the benefits of Maile and mentorship.

Particles in the air (Tent E)
How high are the clouds? We can measure that by shining an invisible infrared beam upward and finding how long it takes for the light to bounce back from the clouds.

COSEE Island Earth (Tent E) ***Friday only***
We will be demonstrating our new Traditional Knowledge Teaching Boxes, soon to be available in early 2016 for teachers. There are four themes, each of which comes with its own lessons and materials. Stop by to check them out, and also try your luck at our marine science trivia game!

Native Hawaiian Student Services (Tent E) ***Friday only***
Learn about the Hawai'inuiākea School of Hawaiian Knowledge and Native Hawaiian Student Services, which supports undergraduate Native Hawaiians, kama'āina, and other underrepresented ethnic minorities in any and all majors at UH Mānoa. Our services are to provide internships, research opportunities, workshops and activities, etc. to help students create relationships and share knowledge of Hawaiian culture as well as provide opportunities to help others accomplish the educational and personal goals.

Lava Flows (Tent F)
We will use molten wax and a thermal video camera to demonstrate the emplacement of lava flows.

HIG Building

Draining the ocean around the Hawaiian Islands (HIG 1st Floor Video Wall)
Discover what it is like to go out to sea using scientific research vessels to image the ocean floor. The large video wall will allow you to explore the features of the seafloor along the Hawaiian Archipelago.

Crushing Cans (HIG 1st Floor by elevator)
Learn about density differences between cold and warm air, and watch a can get crushed by a sudden pressure difference.

Sonar Science: Using Sound to Map the Seafloor (HIG 1st Floor)
This exhibit is a small-scale interactive demonstration showing how sonar is used to map the seafloor. Visitors will be able to arrange geologic features such as volcanoes and mountain ranges, plan out the route for the "research vessel," and watch as the features are mapped in real-time on a touch-screen display.

UH Sea Grant Hanauma Bay Education Program (HIG 1st Floor)
Hanauma Bay Education Program will share the excitement of the reef marine life and place histories of Hanauma Bay through hands-on activities and displays.

Hawai'i Sea Grant/Center for Marine Science Education (HIG 1st Floor)
Acoustics listening/viewing station. Visitors can talk into a hydrophone and see their voice on a spectrogram, and listen to sounds from ocean animals.

Driving Forward with Hydrogen Fuel Cells (HIG 1st Floor) ***Friday Only***
Hydrogen fuel cells are an alternative to generating power from burning fossil fuels. They use hydrogen and oxygen from air to generate electricity and water instead of heat and air pollution. We have an interactive demonstration of hydrogen production from water and a model of a fuel cell powered vehicle.

Squeeze water into ice (HIG 105)
Come see how a high pressure device called Diamond Anvil Cell turns liquid water into ice at room temperature.

Spectroscopy fun (HIG 107)
Play with a spectrograph and see what colors are in the white light. Play with large fresnel lens to focus sunlight and create small fires.

Coastal wave dynamics (HIG 109)
Learn about what causes ocean waves and how they move and break nearshore.

Surf's up! (outside HIG 109)
Ever wondered how wave height is measured? Come learn about how our network of wave buoys across the Pacific Ocean provides real-time wave observations 24/7.

Buoyancy, ocean gliders (HIG 155)
In addition to buoyancy demonstrations we have some buoyancy driven instrumentation on display.

The Magic of Green Screens — Weather Wonders (HIG 309)
Learn about how green screen technology is used for TV weather forecasts and movies! You'll get to take a photo with an exciting weather phenomenon (hurricane, tornado, lightning, and much more) that will be emailed to you as a keepsake!

Lightning! (HIG 310)
How does lightning form? Where does it tend to strike? What should you do if caught in a thunderstorm? A very brief discussion of how lightning forms will be given accompanied by some great photos. This short talk will be given multiple times as people fill the room.

'Ilima SACNAS Chapter at UH (HIG 311)
The 'Ilima Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Chapter at UH is dedicated to advancing underrepresented minorities in STEM fields and their attainment of advanced degrees, careers, and positions of leadership in a global community. The chapter is open to all O'ahu undergraduates, graduate students, faculty, and professionals in STEM disciplines. Our exhibit provides exciting "hands on" demonstrations of live small marine animals in touch tanks and other just-for-fun activities.

Kewalo Marine Laboratory (HIG 311)
Posters and graduate students from select research and educational programs at the Kewalo Marine Laboratory.

Laser Demonstration to show aerosol properties (HIG 313) ***Saturday only***
Discussion of aerosols in the atmosphere, their physical properties, and optic effects. A small laser demonstration will be given to show aerosol properties.

MSB Building

Tsunami Debris, Marine Debris and the Garbage Patch (MSB 100)
The story of tsunami debris drifting from Japan to the West Coast and Hawai'i told by observations and computer simulations. Actual pieces of tsunami debris will be on display.

Carbon Dioxide and its effect on ocean life (MSB 100)
A demonstration of how the gases from the exhaust of power plants and cars make our oceans more acidic, affecting life in the ocean.

SOEST Speakers' Room (MSB 114)
In a series of 15-minute talks, you'll hear from enthusiastic SOEST scientists about the most interesting aspects of their research. Think TEDx SOEST! Also in this line-up will be student panels where SOEST students share their excitement and experiences, and answer your questions.

From Creatures of the Sea to Rocks and the Unknown (MSB 203)
See what is in the water with you when you are swimming, view live plankton under the microscope, view preserved samples of strange creatures from the deep ocean, and see how minerals fluoresce under ultraviolet light and how this property can be used to identify them. And, movie footage from a recent cruise to the North Pole!

Fluorescent Rocks (MSB 203)
This display will introduce visitors to the wonderful world of fluorescent rocks. When certain rocks are exposed to ultraviolet (UV) radiation, they absorb it and re-emit light of a different wavelength (color).

Zooplankton — microscopic ocean drifters (MSB 305)
Learn about the tiny animals that are at the base of the pelagic food chain. View live plankton under the microscope, watch videos, and participate in hands-on activities.

Station ALOHA (MSB 306)
Station ALOHA is located approximately 60 miles off the North Shore of O'ahu and is the focal point of a range of oceanographic studies where varied research projects have converged for over 26 years to produce a remarkable collection of observations about our dynamic oceans and atmosphere.

Surf Forecasting (MSB 307) ***Friday Only***
Basic science behind surf forecasting and examples will be shown.

Weather in a Tank (MSB 315)
Watch different oceanographic and atmospheric processes such as the Pacific garbage patch and an ocean gyre in our rotating tank.

Environmental Sensors in Embedded Systems Lab (MSB 318)
Brian Glazer lab and Mike Guidry's embedded systems lab will combine forces to jointly host an indoor/outdoor wireless sensor, environmental electronics, and biogeochemistry extravaganza.

Journey into the Deep (MSB 602)
Come with us on a journey thousands of feet below the sea surface, down into the darkness of the deep ocean. This is the largest ecosystem on our planet and yet it is the least explored. Visit our lab to see specimens from the Antarctic deep ocean, wood falls and whale falls, and polymetallic nodule fields in the Pacific.

Hawai'i's Deep-Sea Creatures (MSB 604)
In the dark, cold depths of the oceans, life thrives. Learn about what lives there and how by examining real deep-sea fishes, shrimps, and other animals.

POST Building

Water Reuse for Energy Crop Growth (POST 06) ***Friday only***
Wastewater is treated and recycled to aeroponic growth chambers cultivating energy crops.

Biocarbon Production in Hawai'i (outside POST 114) ***Friday only***
Biocarbon (charcoal) is the most promising of all biofuels. In addition to barbeque, charcoal is a required reductant in the production of silicon used in laptop computers, cell phones, cameras, and televisions.

COSEE Island Earth (POST 127) ***Saturday only***
We will be sharing how scientists explore patterns in the natural fluorescence of coral to observe and monitor coral health. Stop by to check it out, and also try your luck at our marine science trivia game!

Coral Reproduction in Hawai'i (POST 127)
Reproduction is an important facet of the life cycle of reef-building corals, but one that is difficult to observe. We will provide pictures and videos of coral spawning, coral larvae, and small corals settled on tiles to describe coral reproduction in Hawai'i.

Future Flight Hawai'i – 3, 2, 1, Blast Off (near POST 501)
Launch a straw rocket to the Moon, Mars, and beyond… and play the space game wheel of questions.

Hawai'i Space Grant Consortium (POST 501)
Learn about NASA opportunities that are available for undergraduate college students and activities that make up the HI STEM pipeline catered to students at every age group.

Planetary Impact Cratering (near POST 508)
Learn how impact craters form with small-scale impact experiments.

Inner Space: The "James Cameron Experience" (near POST 514) ***Friday only***
Come see the geology and biology of the world's deepest ocean trench, up close and personal with one of James (director of "Avatar") Cameron's science advisors who participated on his expedition in 2012 in which he successfully dove in his one-man submarine. Is this the inspiration for the oceans of Pandora?

The Colors of Space (near POST 521)
See actual Moon Rocks, learn how scientists determine the surface composition of planets, and see the latest data from two active NASA missions: MESSENGER images of Mercury and Lunar Reconnaissance Orbiter data of the Moon.

The Hawai'i Space Flight Lab presents Kerbal! (POST 524)
Learn about some of the fun and exciting things we do at the Hawai'i Space Flight Lab including Small Satellite design and testing and rocket launches. We will also be demonstrating the Kerbal Space program and explaining how it compares to real life!

Meteorites (POST 544)
This exhibit will contain more meteorites than any other exhibit in Hawai'i. A variety of meteorites will be on display to illustrate their properties.

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

Planetary Data Center (POST 544)
See globes, maps, and images of other planets studied by scientists at UH.

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

Meteorites from Mars (POST 544)
See actual meteorites from the Red Planet.

Meteorites from Asteroids (POST 544)
Learn where meteorites come from and how they get to Earth.

Visualizing High Resolution Planetary Images (POST 544)
With spacecraft imagery, NASA has turned the planets and their moons from tiny points of light into wondrous worlds. Come see high-resolution planetary images of Mars, Pluto, Mercury, and more.

Fun with Physics (POST 601)
Understanding fundamental physics is the key to studying our oceans, atmosphere, and solar system. Hands-on demonstrations of mechanics, pressure, light, and optics.

What's inside of a volcano? Rocks, water, and geothermal heat! (POST 619)
Hands on learning about exciting projects of Hawai'i's Groundwater and Geothermal Resources Center.

Electron Microprobe Facility (POST 621)
Come view meteorites and Hawaiian lavas at extremely high magnification, and get their chemical compositions in 10 seconds.

World-wide Seismic activity (outside POST 701)
Computer display of real-time seismic activity around the world and Hawai'i.

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

Magnificent Minerals, Crystals, and Gems (POST 702)
Why are some minerals and crystals usually not found in Hawai'i? Explore common rock forming minerals and why they can be so large. Discover unusual crystals and gemstone minerals found worldwide.

Rock Magnet (outside POST 702)
Choose your favorite rock for your very own rock magnet!

Exploring Minerals and Light (POST 703)
This hands-on activity allows us to explore how light can be used to reveal properties of minerals and other substances. Come learn how light interacts with common household items (e.g. plastic baggie, cellophane tape, bubble wrap) and minerals like calcite and muscovite!

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

Origins of Hawaiian Beaches (POST 703)
Ever wonder where Hawai'i's beach sands came from? Come explore their composition and origins… perhaps they came from volcanoes, coral reefs, or the shells of marine creatures!

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

Fun Fossils (POST 703)
Come see interesting and exciting fossils to touch and learn about.

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

See yourself LIVE in the magic world of infrared (POST 708)
Come learn what *you and your friends really look like* in infrared, and at the same time see how we use this technology to discover the giant loss of otherwise invisible groundwater to Hawai'i's oceans using airplanes and remote controlled drones!

Tracking groundwater flow to the ocean (POST 708)
Streams and groundwater transport pollutants from land to the ocean and this causes problems for our coral reefs. Do you know if your waste and fertilizers seep into the ocean?

In Fukushima's wake — natural and man-made radionuclides around us (outside POST 708)
Bring a banana and see how radioactive it is. Also learn about some of the impacts the Fukushima disaster had on Hawai'i.

Groundwater Contamination (POST 708)
A physical set up is used to simulate underground water flow and contamination. Water moves into the ground by simulated rain and is extracted by wells.

Women in Science (outside POST 712)
Members of the local chapter of Graduate Women in Science, will engage visitors of all ages through hands on activities that highlight the important contributions made by female scientists past and present.

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

Landslides and Rockfalls (POST 723)
Short video clips of spectacular rock falls and landslides from around the world.

Mapping Seamounts from Space (outside POST 813) ***Friday Only***
The ocean floor seats perhaps up to 100,000 underwater volcanoes (seamounts) but only a fraction have been mapped by ships. Using Satellite Altimetry we can detect and map all of them that are taller than 1 mile.

Quake Catcher (POST 832)
Experience the educational computer game that allows students to learn about seismology and earthquake preparedness.

Holmes Hall

Balloon Tower Exhibit & Various Lab Tours (Holmes 1st floor)
Future engineers will be able to demonstrate their engineering skills by working in groups to build free-standing balloon towers. For students interested in visiting Engineering research labs, a select number of labs will be available for viewing at pre-determined times. Schedules can be picked up at the Balloon Tower tables on the ground floor of Holmes Hall.