Hawaii STEM Conference

PROGRAM
HAWAII CONVENTION CENTER, HONOLULU, HAWAII
WWW.HAWAIISTEMCONFERENCE.ORG

PRESENTED BY STEMWORKS™

STEM works.

Sponsors

FUNDERS

Department of the Navy — ONR Science & Technology (USN / USMC)

County of Maui, State of Hawaii

Air Force Research Laboratory

MEDB Ke Alahele Education Fund

TERABYTE (PREMIER)

creative industries HAWAI'I

DBEDT

KAISER PERMANENTE. thrive
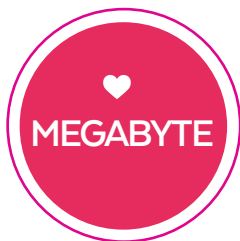
MEGABYTE

Bank of Hawaii Foundation
Mike Lyons Maui Community Award

KILOBYTE

Microsoft

verizon

Hawai'i Energy

blue planet FOUNDATION

BYTE

Hawaiian Electric

SketchUp

Hawai'i Geographic Information Coordinating Council — www.HIGICC.ORG

Hawaii Association of Independent Schools

Public Schools of Hawaii Foundation

USS BOWFIN

TRANSFORM HAWAI'I GOVERNMENT — Every Citizen • Every Service • Every Island

Sempra Renewables

engie

Friends of Hawaii STEM Conference

acom — Maui High School — ARTS + COMMUNICATION

King Kekaulike High School

PIPER

Pinay

KRS

Aloha & Welcome!

Expect to be amazed and see why we all LOVE STEM at the 9th Annual Hawaii STEM Conference.

STUDENT STEM SESSIONS	TEACHER PROFESSIONAL DEVELOPMENT	5X5 STEM INDUSTRY CONNECTIONS
STEM COMPETITIONS	STEMworks™ STUDENT SPOTLIGHT	STEMworks™ EXHIBITOR PLAYGROUND
STEMMY'S AWARD BANQUET	STAR PARTY	HACC4EDU COMPETITION

Two full days of immersive experiences!

STEMworks™, a program of Women In Technology, is excited to partner with talented industry and educational professionals during our annual Hawaii STEM Conference! This two day immersive event will engage students and teachers while connecting them to the many rewarding and challenging STEM careers.

Join us as we explore the latest technology tools and resources designed to inspire problem solving, critical thinking, innovation, collaboration and communication.

Discover your passion as we celebrate STEM in Hawaii!

Warmest Aloha!
The STEMworks™ Team, Hawaii

#I♥STEM

STUDENTS
DISCOVER
NEW CAREERS

INDUSTRY
5x5
session

Be inspired

"During the 5x5 session, we had a conversation with experienced people in the field we are interested in, helping to prepare us for the future.
Roosevelt, Grade 10

Be empowered

An industry leader taught me that a science degree was very realistic and can be applied to many different jobs.
Farrington, Grade 11

Be bold, engage

5x5 gave us many learning experiences. There were many life lessons, most of which we can use now.
Stevenson, Grade 7"

APRIL 10 | 3:00 PM - 4:30 PM
KALĀKAUA BALLROOM

MAHALO TO PARTICIPATING COMPANIES

- 3G Solutions
- American Red Cross
- Burns & McDonnell Engineering
- Chaminade University of Honolulu
- CIO Council
- City/County of Honolulu
- Corteva Agriscience™ Agriculture Division of DowDuPont™
- DevLeague
- Hawaii Center for Advanced Transportation Technologies
- Hawaii Energy
- HIGICC

- Hawaii Green Growth
- Hawaii Pacific Health
- Hawaii Technology Development Corporation
- Hawaiian Electric
- Hobnob
- Maui Hui Malama
- National Security Agency
- Navy Information Operations Command
- NOA Botanicals
- Pacific Aviation Museum Pearl Harbor
- Pacific Center for Advanced Technology Training
- Pacific Point Inc

- Papahanumankea/NOAA
- Patsy T. Mink Center for Business & Leadership - MCBL
- Resource Mapping Hawaii
- Royer Studios
- TBG/ NOAA
- The Nature Conservancy Hawaii
- University of Hawaii – Honolulu Community College
- US Army Corps of Engineers, Honolulu District
- UH/USFWS/USGS
- and more!

#CREATE
#INNOVATE

APRIL 10 | **4:30 PM - 6:00 PM**
LEVEL 4, ROOFTOP GARDEN

Join us to celebrate the STEM
service learning projects created by
Hawaii STEMworks™ students.

STEMworks™ empowers students with professional and technical skills, while providing work-based learning opportunites that build critical and creative thinking. As students design real solutions for today's needs, they are gaining the skills to successfully meet tomorrow's challenges.

STUDENT SPOTLIGHT

STEM WORKS

STEM SERVICE-LEARNING CURRICULUM FOR HAWAI'I

STEM WORKS THINKit

STEM WORKS SOFTWARE CAMPS

STEM WORKS DRONE DESIGN & BUILD

STEM WORKS TECHNOLOGY TOOLS AT A GLANCE

STEM WORKS COMMUNITY RESOURCE GUIDE

STEM WORKS GEOGRAPHIC INFORMATION SYSTEM (GIS) CURRICULUM

Hawaii STEM Conference
Download Knowledge. Upload Service.

STEM WORKS
Download Knowledge. Upload Service.

STEM WORKS after SCHOOL

COLLEGE TOOL KIT

STEM WORKS SERVICE-LEARNING ENGINEERING DESIGN PROCESS TOOLKIT

STEM WORKS TEACHER PROFESSIONAL DEVELOPMENT TRAINING

STEM WORKS Energy

STEM WORKS EXPLORING HAWAII'S WATERSHED THROUGH STEM CURRICULUM

STEM WORKS INDUSTRY CONNECTIONS & INTERNSHIPS

STEM LENDING LIBRARY

www.stemworkshawaii.org

ABOUT STEMworks™

As the flagship program of the Maui Economic Development Board's Women in Technology, STEMworks™ is a Service-Learning initiative designed to engage, inspire, and motivate K-12 students and underrepresented groups toward STEM careers to create a better world.

STEMworks™ trains students and teachers in industry-standard software and engineering design practices using hands-on curriculum, regional conferences and workshops. The goal is to work with educators, industry partners and community members to build a thriving STEM education-to-workforce pipeline throughout Hawaii.

OUR MISSION

Provide students and teachers resources, inspiration, and tools that empower them to improve their community and world.

STEMworks™ K-12 SCHOOLS

MAUI

Baldwin High School
Kamaliʻi Elementary School
King Kekaulike High School
Lahainaluna High School
Lahaina Intermediate School
Lokelani Intermediate School
Maui High School
Maui Waena Intermediate School
Pukalani Elementary School
St. Anthony School
Wailuku Elementary School

MOLOKAʻI

Molokaʻi Middle - ʻO Hina I Ka Malama
Molokaʻi Middle School
Molokaʻi High - ʻO Hina I Ka Malama
Molokaʻi High School

LĀNAʻI

Lanaʻi High & Elementary School

OʻAHU

Castle High School
Farrington High School
Hawaii Technology Academy
McKinley High School
Mililani High School
Moanalua High School
Roosevelt High School
Waipahu High School

HAWAIʻI ISLAND

Honokaʻa High & Intermediate School
Keaʻau High School
Kealakehe High School

KAUAʻI

Kauaʻi High School

HAWAIʻI STEMworks™ FACILITATORS

Alana Tyau-LaChance
Alexus Yoro
Anne Bailey
Beth Conroy-Humphrey
Carolyn Bush
Carrera Catugal
Charleen Ego
Cindel Jacintho
Claire Gragas
Colin McCormick
David Negaard
Dawn Shin
Debbie Hisashima
Dexter Corpuz
Diane Tom-Ogata
Dutch Akana

Elliot Buccat
Emilio Macalalad
Emily Haines-Swatek
Gretchen Romerdahl
Howard Kam
ʻIolani Kuoha
Jared Nagura
Jasmine Domingo
Jennifer Suzuki
Joanna Kobayashi
Joe Celebrado
John Bonewitz
Jon Furukawa
Julia Wyse
Justin Brown
Justine Rambaua

Kaeo Kawaa
Kaeo Ripani
Kahoʻiwai Kawaʻa
Karen Taroma
Karen Wright
Keith Imada
Kepa Meno
Krystle Dunn
Leah Aiwohi
Lori Koyama
Lori Mizue
MahinaHou Ross
Manuel Jadulang
Marc LaChance
May Richard
Namthip Sitachitta

Randy Weir
Robert Shizuma
Robin Bob
Roxanne Agtang
Ryan Towata
Seth Carper
Summer Cretton
TC Luckey
Tessie Lumabao
Tom Norton
Tracy Poouahi
Trisha Roy
Tyson Kikugawa
Wendy Wells

8:30 - 9:00 AM

Aloha
AND
WELCOME

KALĀKAUA BALLROOM

9:30 - 11:00, Room 316C
Bringing STEM Stories to Life with Magic Move on Keynote
Presented by: Ben Mountz, Apple Distinguished Educator, Hanalani Physics Teacher
Why do people get so bored by traditional presentations? Why is "death by PowerPoint" so deadly? The reason is humans are more engaged by movement. Motion presents a contrast to the status quo and movement suggests a change in condition, usually brought about by some influence. In this session, you will experience how powerful Magic Move can be for students inside the classroom. With Hanalani students sharing their examples and hands on instruction, you will walk away with the ability to bring STEM in your classroom to life!
**Apple devices will be provided for this session.

9:30 – 11:30, Room 316A
K-20 Cybersecurity Education: Programs & Resources for Educators
Presented by: Steve LaFountain, Blair Taylor, Lisa Houck, Towson University/NSA
This workshop will provide a wealth of useful information and resources for educators who are looking to teach cybersecurity. We will talk about several funded projects that are producing curriculum, faculty development, and curriculum libraries. Teachers who are interested will leave with access to several solid starting points for learning about and teaching cybersecurity.

9:30 – 11:30, Room 316B
Science Teacher – STEM Teacher: What's the Difference?
Presented by: Terry Talley, Ed.D., STEMscopes
The National Institute for STEM Education (NISE) certifies teachers, campuses, and districts in STEM teaching using a competency-based, academic coach-led online learning platform in which educators produce a portfolio of work that demonstrates proficiency across the 15 STEM teacher actions! Join us to learn more about becoming a Nationally Certified STEM Teacher!

11:15 – 12:45, Room 316C
Bringing STEM Stories to Life with Magic Move on Keynote
Presented by: Ben Mountz, Apple Distinguished Educator, Hanalani Physics Teacher
Why do people get so bored by traditional presentations? Why is "death by PowerPoint" so deadly? The reason is humans are more engaged by movement. Motion presents a contrast to the status quo and movement suggests a change in condition, usually brought about by some influence. In this session, you will experience how powerful Magic Move can be for students inside the classroom. With Hanalani students sharing their examples and hands on instruction, you will walk away with the ability to bring STEM in your classroom to life!
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11:45 – 12:45, Room 316B
The Path to 100% (Energy Efficiency and Renewable Energy)
Presented by: Griff Jurgens, Blue Planet Foundation
Educators will learn how to utilize Hawai'i Energy and Blue Planet Foundation's renewable energy and energy efficiency resources to help students understand tough energy concepts. They will also receive information on programs that help Hawai'i residents save energy, and save money. Educators will learn about the free energy efficiency presentations and approved energy curriculum that are offered throughout the islands that further students' understanding of how to live an energy efficient lifestyle.

12:00 - 2:00, ROOM 316A
Wearable Technology Through Micro:bits!
Presented by: Shane Asselstine and students, Momilani Elementary School
In this session, you will learn about physical computing and how it enables us to create wearable technology! Physical computing is when software and hardware interact with the analog world, much like a Fitbit or similar devices. We will use Micro:bits to light up LEDs, communicate between devices, and use sensors like the motion detector or compass. Micro:bits are pocket sized computers that allow you to get creative with digital technology. Whether you are just starting out with computer science, or are looking to take your program to the next level, this session will spark ideas and expand your options!

1:00 – 3:00, Room 316B
Cybersecurity Topics of Today: Social Engineering, Mobile Forensics and Bitcoins!
Presented by: Dr. Debasis Bhattacharya, University of Hawaii, Maui College
This workshop introduces topics we are well familiar with – phishing, malware, botnets as well as new emerging topics such as crypto currencies. Teachers will leave with a better understanding of the field as well as tips and techniques to teach this topic in their classrooms!

1:30 – 2:30, Room 316C
Making Formative Assessment Fun!
Presented by: John Allen, Luane Higuchi, Donn Yamamoto, Austin Zavala, Miki Kamimura
Kevin Matsunaga, University of Hawaii, STEM Pre-Academy
Tired of surveys? Join us as we explore different technology tools and resources that will help you to formatively assess your students in a fun and engaging way. **Participants must bring a laptop or mobile device in order to participate in the session activities.

2:30 – 4:30, Room 316A
Google Earth & Tour Builder App Smashing: CREATE Virtual Field Trips to Travel the World
Presented by: Michael Fricano, `Iolani School

The new Google Earth has a great exploration feature called Voyager which allows you to experience interactive stories from around the world while sharing information through pictures, video, text, and 360° photospheres. It's one thing to take your students on a voyage, but what if your students could CREATE these voyages themselves? They can! Learn how you and your student can App Smash Google Earth and Tour Builder to create your very own immersive virtual field trips.

2:30 – 4:30, Room 316C
DSLR Basics
Presented by: John Allen, Luane Higuchi, Donn Yamamoto, Austin Zavala, Miki Kamimura, Kevin Matsunaga, University of Hawaii, STEM Pre-Academy

Using a DSLR camera can be a daunting task. With so many buttons and features, it's hard to decide where to start. Visual Storytelling: DSLR Basics gets you started in developing the skills needed to bring video/photography and visual storytelling into your classroom. In this workshop, you will be introduced to the specific features of the DSLR camera that help you achieve the shots you've always wanted. Learn how to turn off the "auto" pilot and grab full control of your camera to create amazing images and stories. **Participants must bring a DSLR Camera in order to participate in the session activities.

3:10 – 4:30, Room 316B
Bringing Data to Life: Place-Based Oceanographic Research in the Classroom.
Presented by: Lindsey Benjamin, Davin Sasaki, University of Hawaii, STEM Pre-Academy

This hands-on workshop for grade 6-12 teachers will use an online ocean computer model and local, research-quality data in the C-MORE Science Kits to explore water circulation in our ocean. Water takes about 1000 years to travel around the world and return to its starting point, and the chemical ingredients change during that journey in predictable and measurable ways. Ocean surface currents, on the other hand, transport river outflow, dust blown from deserts, oil from spills, and plastic debris much faster. Lessons aligned with NGSS and their classroom application will be included. Ideas for further use of these resources in place-based lessons, both in and out of science classrooms, will be discussed.

9:30 – 10:30, Room 316A
Game Development with Google Apps
Presented by: Dr. Chanelle Tolentino, Hawaii Technology Academy
Participants will learn the difference between HTML, CSS, & JavaScript, how to build a game development course, and build a simple webpage. Participants will receive JavaScript source code to see a basic animation. **Participants must have own laptop/tablet to participate.

9:30 – 11:30, Room 316 B
Cue the Coding "Diva" Robot – Emotive AI at Its Best!
Presented by: Naomi Harm, Innovative Educator Consulting & Wonder Workshop
Join the coding fun and come to this session to explore and discover how Cue the coding diva robot engages ALL girls with computer science explorations. You will experience interactive and responsive communication unlike any other robot through emotive AI of the 4 different personality types to discover witty text chats, reactive and proximity sensor behaviors, programmable LED's, recording of audio sound, and interactions using block based code and JavaScript programming. Naomi Harm will also introduce you to the WHY behind computer science and innovative STEM approaches to empower the "next generation" of female leaders through robust mentoring resurces. These learning experiences will include how to motivate young female students to "lean in" and to further pursue their STEM passions through computational thinking activities, a maker creation culture, and an entrepreneurship mindset.

9:30 – 10:30, Room 316C
Maunakea Scholars – Bringing Astronomy into the Classroom
Presented by: Mary Beth Laychak, Canada France Hawaii Telescope
Karen Umeda, Momilani Elementary
The Maunakea Scholars Program enables high school juniors and seniors to conduct research and submit proposals to compete for telescope observing time just like actual astronomers. It provides phenomena-driven STEM education opportunities to students that are aligned to the Next Generation Science Standards. The first program of its kind internationally, MKS leverages the most powerful telescopes in the world for the direct educational advancement of Hawaii high school students.

10:45 – 12:15, Room 316A
Using Spheros to Teach Integrated STEM Lessons
Presented by: Aaron Sickel, Brett Tanaka, Faith Ishihara, Jeanine Nakakura
Hawaii State DOE: Office of Curriculum, Instruction, and Student Support (OCISS)
Spheros are spherical robots designed for students to engage in coding and robotics learning experiences. In this exploratory playground session, teachers will participate in stations to explore coding activities with Spheros, and examine K–12 lesson applications that integrate Spheros with other STEM disciplines. An emphasis will be placed on lessons that meet essential features of STEM education, including real-world applications, purposeful STEM integration, and student-centered learning experiences. This session is designed for teachers of all K–12 grade levels.

10:45 – 12:45, Room 316C
Cybersecurity K–12 Curriculum Framework
Presented by: Ashley Greeley, Purdue University
This workshop will present a scope and sequence framework for integrating cybersecurity across K–12 to include access to several lessons.

12:00 – 1:00, Room 316B
Build a Bot. Change the World
Presented by: Julianna Smith, RoboNation/AUVSI Foundation
RoboNation introduces SeaPerch and SeaGlide: Kit based, hands-on introductory robotic programs. SeaPerch is a curriculum based underwater ROV program. Approachable, affordable, creative and fun, SeaPerch is the perfect first step for kids that love water, their local community and want to make a difference using technology. SeaGlide is a mini-underwater glider and new hands-on STEM program designed to introduce students to autonomous systems. Designed as an intermediate level, students learn how to program an Arduino controller to regulate the buoyancy engine of the glider, but the real fun begins after the build. Students become inventors - scientists that solve challenges faced by conservationists, oceanographers, astronauts and explorers. With SeaGlide as an investigative platform, the benefits are endless.

12:30 – 2:30, Room 316A
Beyond Coding in the Classroom
Presented by: Mellanie Soriano, Jay Giang, DevLeague LLC.
The time is now for education to catch up with our technologically enhanced society. Students should have a relevant, modern, customized education that helps them develop 21st-century skills. We are engineers with a passion for teaching, now we want to share our experience with educators trying to bring coding into their classrooms. In this session, we will talk about where to begin with bringing coding and technology into the classroom, how to introduce coding, tips on how to overcome challenges with teaching code, how to teach experience as well as knowledge, and becoming a mentor, not just a teacher. We will dive into the challenges faced with teaching at every grade level and creating curriculum to scale. Most importantly, we will be discussing how to empower students with a "can-do" mindset so they can grow to be independent. We want teachers to be comfortable being uncomfortable and incorporate new ways of thinking to enhance their classroom learning experiences.

1:00 – 3:30, Room 316C
NASA: Rock the Class: Lunar and Meteorite Sample Certification
Presented by: Karen C. Roark, NASA AMES Research Center
Certification for Handling Real Moon Rocks Lasts a Lifetime! Educators have to be certified to

borrow the Lunar and Meteorite Sample Disks by attending this NASA Certification Workshop provided by a NASA Authorized Sample Disk Certifier. NASA makes actual samples from the historic Apollo missions available to lend to teachers. By attending this certification process enables teachers to bring the excitement of real lunar rocks and regolith samples to their students. This workshop is recommended for classroom teachers for all grade levels. The workshop will include hands-on activities and free classroom materials for math, science, and technology.

1:30 – 2:30, Room 316B
Demystifying the NGSS: Earthquake Proof Towers and Engineering Design
Presented by: Terry Talley, Ed.D., STEMscopes
While investigating the phenomenon of waves, we will use three models to design and build earthquake proof towers that can withstand the devastating horizontal S-waves. Through this hands-on investigation, using models, simulations, and tower engineering we will demystify the 3D NGSS Standards for waves, the practices of engineering design, and how best to teach them through STEM.

2:45 – 3:45, Room 316A
Intro to SketchUp: 3D Modeling for the Classroom
Presented by: Steven Griffin, SketchUp
SketchUp is an easy to use 3D modeling tool for a wide range of applications, ranging from architecture and engineering to 3D printing. In this hands-on workshop, attendees will have the opportunity to master the fundamentals and learn how to incorporate SketchUp into classroom lessons

2:45 – 4:15, Room 316B
Redesigning Your Classroom Learning Spaces to Make Room for Makerspaces
Presented by: Naomi Harm, Innovative Educator Consulting and Wonder Workshop
Today's classroom learning environments are more important than ever before. Learning spaces need to invoke creativity, inspiration, and a space to continuously collaborate with one's peers. This session will walk you through design elements to transform your classroom environment into a dynamic collaborative makerspace learning hub. Naomi Harm will showcase how to energize the physical space with optimal student choice and voice activities that will include DIY tinkering, LED circuit cards, robotics, coding, and 3D printing activities.

3:30 – 4:30, Room 316C
NASA: Art & the Cosmic Connection
Presented by: Karen C. Roark, NASA AMES Research Center
An interdisciplinary program developed by scientists, artists, and educators to encourage learners to explore the mysterious worlds in our solar system and their geologic stories. The planets, moons and small bodies of our solar system are places of wonder and intrigue. NASA spacecraft are visiting these fascinating places, capturing images of otherworldly features that just beg to be explored! What do these captivating images tell us? With the tools provided in this workshop, learners of all ages can begin to understand and interpret the features on distant objects in our solar system. Using the elements of art students learn to analyze the mysterious surfaces of our rocky celestial neighbors as well as our beautiful Earth. Fusing art and science education inspires students to explore both disciplines. Students create art inspired by planetary images, and their understanding of planet surfaces deepens when observing them through an artist's lens.

STEMworks

PLAY GROUND

Hours of Play!

TUE, APRIL 10	WED, APRIL 11
9 AM - 4 PM	8:30 AM - 4:30 PM

OVER 55 MINI STEM SESSIONS
Room 313ABC

SCAN FOR MINI
SESSIONS TIMES

STEMworks™ THINKit
Presented by: Hawaii STEMworks™ Facilitators
Dream, Invent, Design, and Test with THINKit!
STEMworks™THINKit available for Elementary, Middle, & High School Kits. Learning is a creative endeavor where ideas become powerful tools. THINKit is designed to nurture creativity to develop inventive and entrepreneurial thinking. By design, THINKit provides teachers with a continuum of tools that advance critical thinking and skill development from kindergarten to college to career!

STEMworks™ presents the National Geographic Giant Traveling Map
Presented by: Merrill Ranken
Explore geospatial skills that tie into cross curricular areas! The 26'x35' Giant Vinyl Traveling Map of the Pacific Ocean features National Geographic K-12 curriculum! Rent this map from STEMworks™ for your classroom!

Hacking STEM with Microsoft YouthSpark
Presented by: Todd Beard Kristina Cook
Swing by the Microsoft booth to explore the latest technologies, including VR and Mixed Reality Demonstrations. Dive into our Hacking STEM hands-on activities, and learn how you can build affordable inquiry and project-based activities to visualize data across STEM curricula. Plus, racecars!

Energy Efficiency Unlocked
Presented by: Tony Kawal, Griffith Jurgens
Through hands-on activities, such as life-size Jenga and an immersive virtual tour, the "Energy Efficiency Unlocked" booth shows visitors ways they can save both energy and money. Try your hand at producing enough energy to power a light bulb, and enter for a chance to win two stand-up paddle boards by playing our digital "Efficiency Unlocked" game!

Piper Computer Kit
Presented by: Chris Bouman
The computer that prepares kids for a lifetime of building technology.
Come by the Piper booth and see hands-on how engaging learning computer science can be! Piper is designed for students 2nd grade and above and focuses on CREATING TECHNOLOGY in a very fun and engaging way. The Piper booth will have full demonstrations going at all times. Come build a Piper Computer, build electronics with our RaspberryPi Edition Games and program with Blockly and Python. ***FREE PIPER GIVEAWAY

Pacific Fleet Submarine Museum at Pearl Harbor
Presented by: Captain Pete Miller, US Navy, Retired
Alan Ito, Information Security Officer at Hawaii Pacific Health
Submarines and STEM; we're giving away all our secrets!
The BOWFIN submarine and museum is about to start an extensive renovation and modernization. Come by and see what we have going on, ask questions about submarines, and help us shape future STEM learning curricula!

Sphero - #BeyondCode
Presented by: Jeff Couch
SpheroEdu provides a toolset that is unbounded in its potential. While coding and 21st Century skills are necessary, our program also goes Beyond Code by incorporating robotics and technology with collaborative STEAM activities, nurturing students' imaginations in ways no other education program can.

STEMscopes: NGSS PreK-12 STEM Science
Presented by: David Alviar; Terry Norman
STEMscopes is a comprehensive, digital, and hands-on science curriculum that addresses the 3 dimensions of the NGSS for PreK-12 that puts teacher support at its center. With supplemental print and kits to support inquiry-based student investigations to explore, touch and explain phenomenon, it is complete with teacher resources to teach in a STEM-focused classroom.

RoboNation
Presented by: Cheri Koch, Julianna Smith
RoboNation is a nonprofit organization whose mission is to provide a pathway of hands-on educational experiences that empower students to find innovative solutions to global challenges. We envision a world where technology unites people to learn, share and create. Join us and start your journey with SeaPerch and SeaGlide.

Girls Who Code
Presented by: Emily Ong
Girls Who Code is a national non-profit working to close the gender gap in technology. Our Clubs are free after-school programs for 6-12th grade girls to use computer science to impact their community and join our sisterhood of supportive peers and role models. Visit us to learn more about how to launch your own Girls Who Code Club, form a Community Partnerships to receive Partnership Benefits, and get some Girls Who Code swag!

Crosscutting Concepts
Presented by: Scott Moening; Xandy Whitman
Our products break the mold of the usual classroom environment, they are engaging and exciting for high school and post-secondary education.

Hawaii/Pacific Basin Area Health Education Center
Presented by: Alejandro Campos, Jolene Muneno
The MISSION of the Hawaii/Pacific Basin AHEC is to improve the health of the underserved through education. There are four main activity areas: Educating and recruiting students to health professions from K-12 schools.

Hardware Science
Presenter: Lisa Loo, Melanie Ho
Science is everywhere and can be found in commonplace items all around us. Hardware Science is a program that supports STEM education by incorporating regular hardware store items in science projects. By using easy to find supplies from your local hardware and craft stores, Hardware Science makes learning relatable to all ages.

Oceanit RiSE – Resilient, Sustainable Engineering
Presenter by: Grant Tokumi
Oceanit's RiSE team is working to deliver an innovative, effective, and sustainable network of infrastructure and coastal communities that are capable of surviving and functioning under extreme stress; recovering quickly from extreme events and chronic changes such as sea level rise, beach erosion, decaying reefs/increased wave energy, and much more.

SketchUp for Schools
Presented by: Joy Tennenbaum, Steven Griffin
SketchUp for Schools is a fun and easy way to bring 3D modeling and digital design into your classroom. Whether you are working on architecture, engineering design, or 3D printing, SketchUp for Schools will help bring your ideas to life. And best of all, it's free!

UH-College of Education, Waiʻanae Intermediate School and Voyager PCS
Presented by:Kekaha Spencer, Brigitte Russo, Alison Yasuoka
Come and learn about two amazing projects created by Wai`anae Intermediate and Voyager School in partnership with UH College of Education and NSF. Learn about creating Student Community Stewards and Mālama Kahawai. Both projects are aligned with NGSS and the Nā Hopena A`o (HA) Framework.

Bishop Museum Education
Presented by: Romee Gaoiran, Keah Watkins
Explore Hawaii's land, sea, and sky through the collections, exhibits, and programs of the Bishop Museum. Get hands-on with specimens, or learn about planetarium and science programs offered for field trips and sleepovers.

Bloxels
Presented by: Amber Schey
Bloxels uniquely unlocks students' innate creativity by leveraging something they love: video games. Students can play fun games and channel their creative potential as they gain greater understanding of important topics like design logic, and computer science and demonstrate their knowledge of history, science and mathematics and more through the games they create.

STEM WORKS PLAYGROUND

Exhibitor	Mini-session	TUESDAY		WEDNESDAY	
		Start	End	Start	End
Sphero	Come Play and Learn with Sphero	11:00 AM	11:30 AM	11:00 AM	11:30 AM
Girls Who Code	Learn about Girls Who Code!	2:00 PM	2:30 PM	2:00 PM	2:30 PM
	Women in Tech Spotlight!	3:00 PM	3:30 PM	3:00 PM	3:30 PM
Hawaii/Pacific Basin Area Health Education Center	Hawaii Pre-Health Career Corps: A Pipeline Program for High School & College Students	9:00 AM	9:30 AM	9:00 AM	9:30 AM
		1:00 PM	1:30 PM	1:00 PM	1:30 PM
Hardware Science:	Rocket Launcher	9:30 AM	10:15 AM		
Hawaii Energy & Blue Planet Foundation	Efficiency Unlocked	10:00 AM	10:20 AM	10:00 AM	10:20 AM
		1:30 PM	1:50 PM	1:30 PM	1:50 PM
RoboNation	Underwater Fun with SeaPerch and SeaGlide	2:30 PM	2:50 PM	2:30 PM	2:50 PM
STEMscopes	Getting to Know STEMscopes	9:00 AM	9:20 AM	1:30 PM	1:50 PM
		10:00 AM	10:20 AM	2:30 PM	2:50 PM
		11:00 AM	11:20 AM	3:30 PM	3:50 PM
	STEMrangers: Science Night	1:00 PM	1:20 PM	9:30 AM	9:50 AM
		2:00 PM	2:20 PM	10:30 AM	10:50 AM
		3:00 PM	3:20 PM	11:00 AM	11:50 AM
Piper	Teaching with Piper	11:30 AM	12:30PM	10:00 AM	11:00 AM
		3:00PM	4:00PM		
Bishop Museum Education	Hot Spot Geology Show	10:00 AM	10:30 AM	10:00 AM	10:30 AM
		2:00 PM	2:30 PM	2:00 PM	2:30 PM
	Classify It!	11:00 AM	11:30 AM	11:00 AM	11:30 AM
		3:00 PM	3:30 PM	3:00 PM	3:30 PM
Microsoft YouthSpark	Hacking STEM with Microsoft YouthSpark	9:00 AM	1:00 PM	8:30 AM	9:15 AM
		2:45 PM	4:00 PM	2:00 PM	3:00 PM

Exhibitor	Mini-session	TUESDAY		WEDNESDAY	
		Start	End	Start	End
STEMworks™: The Giant Traveling Map (please remove shoes to explore)	Explore geospatial skills that tie into cross curricular areas! The 26'x35' Giant Vinyl Traveling Map of the Pacific Ocean features National Geographic K-12 curriculum! Rent this map from STEMworks™ for your classroom!	Globe Grab & Ocean Motion Twister (K-12) 11:45 AM	12:15PM	Hot Spots & Sliding Plates (upper Elem+) 10:45AM	11:15AM
		Hot Spots & Sliding Plates (upper Elem+) 12:15PM	12:45PM	Walking the Ring of Fire (upper Elem+) 11:30AM	12:00PM
				Globe Grab & Ocean Motion Twister (K-12) 12:45PM	1:15PM
		Ocean Currents & Marine Debris (upper Elem+) 3:45 PM	4:00 PM	Ocean Currents & Marine Debris (upper Elem+) 2:45 PM	3:15 PM
UH-College of Education, Wai`anae Intermediate School and Voyager PCS	Creating Student Community Stewards			8:30 AM 1:00PM	9:30 AM 2:00PM
	Mālama Kahawai: Caring for Streams Curriculum			10:00 AM 2:45PM	11:00 AM 3:45PM
STEMworks THINKit™	Raspberry Pi	11:00 AM	12:00 PM	8:30 AM	9:30 AM
	3-D Printing			11:30 AM	12:00 PM
	Snap Circuits	9:30 AM	10:30AM	9:30 AM	10:30AM
	STEM in Early Elementary!			10:30 AM	11:30 AM
	Wonder Workshop's Dash & Dot	10:30 AM	11:00 AM		
	Makey-Makey	12:00 PM 12:30 PM	12:30 PM 1:00 PM	12:00 PM 12:30 PM	12:30 PM 1:00 PM
	Hue Animation Studio	1:00 PM	1:30 PM	1:00 PM	1:30 PM
	Ozobots	1:30 PM	2:00 PM	1:30 PM	2:00 PM
STEMworks Energy™ (Introducing Immersive 3D Virtual Reality Experience)	Solar Power and Electricity	2:00 PM	2:30 PM	2:00 PM	2:30 PM
	Wind Power, Generators & Hydrogen Fuel Cell Cars	2:30 PM	3:00 PM	2:30 PM	3:00 PM
	Renewable Energy Foundations & Alternative Fuels	3:30 PM	4:00 PM	3:30 PM	4:00 PM
	Energy Transfer & Efficiency			4:00 PM	4:30 PM

Teach Every Child Computer Science!

STEMworks™ is excited to be the Code.org Regional Partner for Hawai'i and to help ensure every child in the state has access to quality computer science education!
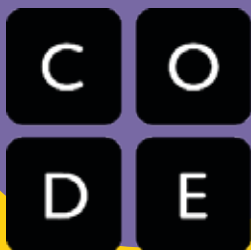
Code.org® Regional Partner

Join us!
April 10
3:30 - 4:30
Room 307A

Whether you're a computer science expert or a complete novice, Code.org provides resources, curricula, and training to teachers so that you can SUCCESSFULLY engage a diverse group of students to learn foundational computer science concepts and more preparing students for the 21st century!

Grades K-5 — COMPUTER SCIENCE FUNDAMENTALS (CSF)

Grades 6-10 — COMPUTER SCIENCE DISCOVERIES (CSD)

Grades 9-12 — COMPUTER SCIENCE PRINCIPLES (CSP)

Applications for 2018-19
https://bit.ly/2DnYqDW

Interest list for 2019-20
https://bit.ly/2GlP1uR

QUESTIONS
Denissa Andrade
denissa@medb.org
808.270.6805

Manda Tong
manda.tong@medb.org
808.270.6809

STEM works Energy

360 Desktop & Virtual Reality Apps

Your classroom is the place to explore careers & meet Hawai'i Renewable Energy Professionals

START YOUR VIRTUAL EXPERIENCE

Biodiesel

Energy Efficiency

Stablizing the Grid

- Biodiesel
- Photovoltaics
- Energy Efficiency
- Agriculture
- Wind Energy
- Electric Grids
- Electric Vehicle
- Career Interviews

STEM works

Available on the App Store

GET IT ON Google Play

www.stemworkshawaii.org

10:00 - 10:30 AM

Aloha AND WELCOME

KALĀKAUA BALLROOM

12:00 – 1:00, Room 302A
Body Lingo Bingo: What Your Body Language is Telling Others
Presented by: Alexis Dascoulias, Camp CenterStage/Maui OnStage
One of the most pervasive forms of communication is not the spoken word, but our body language. Body Lingo Bingo will explore non-verbal communication including body posture, gestures, eye contact and facial expressions. Learn how to walk into a room with confidence and read other people's body language. This extremely interactive workshop will give you more confidence and teach you how to read other people's body language. Ever wonder what it means when someone scratches their nose?

12:00 – 1:30, Room 311
Cue the Coding "Diva" Robot – Emotive AI at Its Best!
Presented by: Naomi Harm, Innovative Educator Consulting & Wonder Workshop
Join the coding fun and come to this session to explore and discover how Cue the Robot engages ALL girls with computer science explorations. You will experience interactive and responsive communication unlike any other robot through emotive AI of the 4 different personality types to discover witty text chats, reactive and proximity sensor behaviors, programmable LED's, recording of audio sound, and interactions using block-based code and JavaScript programming.
Naomi Harm will also introduce you to the WHY behind computer science and innovative STEM approaches to empower the "next generation" of female leaders through robust mentoring resources. These learning experiences will include how to motivate young female students to "lean in" and to further pursue their STEM passions through computational thinking activities, a maker creation culture, and an entrepreneurship mindset.

12:00 – 1:30, Room 307A
I Am a Scientist
Presented by: Lori Shimoda and Katelynn Perrault, Chaminade University
Transform yourself into a scientist and experience the thrill of biotech research while conducting an experiment using cool scientific equipment. Meet Chaminade Science majors who will share what it's like to be a college student, and the opportunities in education, research, leadership, personal development, and community service available at Chaminade.

12:00 – 1:00, Room 303A
"Non-Traditional Pathways to Engineering"
Presented by: Dr. Song Choi, Jill Nakatsu, Kelli Ching, UH College of Engineering
Ever wonder if there were 'other' pathways to a successful career in engineering even though you didn't consider engineering as a career coming out of high school? Here's your chance to explore these other options via work experience, continuing education options, and community college courses. Come talk to our pre-engineering and STEM advisors and mentors in forging the proper pathway to fit your needs.

12:00 – 3:00, Room 304A
Ignite > Inspire > Invent the Future of Innovation & Entrepreneurship for Our Hawai`i
Presented by: Elena Farden, Elemental Excelerator & Stephanie Shipton, Education Incubator
The answers for a more sustainable and resilient Hawai'i live within you. It's time to share your solutions on redesigning how we learn, how we live, and how we innovate towards a healthier future in our island home. Students will work in groups to ideate, prototype and share out their ideas.

12:00 – 2:00, Room 305B
After Effects – Basics
Presented by: Maui High School ACOM
This session will provide a detailed introduction to the industry standard for motion graphics – Adobe After Effects. In this workshop, we will be focusing on motion graphics and creating animations within After Effects. No footage will be required as we are diving into the visual effects aspect of After Effects and basics of VFX. ***Must have Adobe Suite downloaded on device.

12:30 – 1:30, Room 302B
Art of Networking
Presented by: Myhraliza Aala, UH College of Engineering
Whether you're wanting to make new friends, create study groups or make a career connection, networking can help facilitate those needs. In this session, you will learn strategies for effective networking and have fun "role playing" those strategies from sample scenarios provided. The session also touches on professional communication styles in this ever-growing world of social media.

12:30 – 1:30, Room 305A
2D Game with Unity
Presented by: Monir Hodges, Honolulu Community College-PCATT

This session is an introduction to the Unity 2D game development. You will learn the basics of Unity software and create a simple 2D game that shows the principles of working with Unity in creating a 2D game. The 2D game solution will be provided at the end of session.
***Laptops will be provided for this session.

12:45 – 2:45, Room 306B
LED Poke Ball Keychain
Presented by: Kapiʻolani Community College – STEM Program

Join the students from the Kapiolani Community College STEM Program for a Make-And-Take LED keychain workshop. Learn basic solder skills, create a basic circuit and build reusable props. Leave with basic abilities to fearlessly tinker, reuse and repurpose old tech and keep them from our landfills.

1:00 – 2:00, Room 303B
Speed Mentoring: A Networking Game for Curious and Driven Students
Presented by: Patsy T Mink Leadership Alliance

Fast, fun and focused — partake in a series of 10-15 minute quick-fire mentoring sessions with young charismatic female leaders that share your interest in education, career and leadership development. Our two-way mentoring game is based on equality and the belief that we all have something unique to give and receive. You will have the opportunity to meet female leaders in various fields as you take turns discussing with a mentor, sharing wisdom, gaining diverse input on your current challenges while making new business relationships. Intentionally intimate—each group is limited to 12 to 20 individuals.

1:00 – 3:00, Room 306A
Elevating STEM Education Through Advocacy and Student Voice
Presented by: David Miyashiro & Aisha Heredia, HawaiiKidsCAN
Ready or not, the jobs of the future are going to increasingly require STEM and computer science skills and students should have the opportunity to thrive in this new economy. Research shows that not enough students in Hawaii have access to quality computer science learning opportunities, especially female students and students from low-income households. Today's students and teachers can be better prepared to face this future by becoming advocates for a high-tech education system. This session will walk participants through the 50CAN framework; the field tested approach that 50CAN has used for 7+ years to run advocacy campaigns in states across the country. Participants will have the opportunity to apply the 50CAN advocacy framework to policy debates on STEM education that are currently happening at the Hawaii State Legislature. Through advocacy, we will teach participants how to fight for the education system they want to see!

1:30 – 2:30, Room 312
Circuit Playgrounds: Coding Meets Making
Presented by: Todd Beard, Microsoft Innovative Educator
This session uses microcontrollers to teach making on almost any device. Using devices of all types students can use Blockly programming or JavaScript to create code to run on their devices. As we learn about loops, conditionals, events and the code that controls them, we will complete a basic tutorial before opening the class up to choosing from all sorts of student-created projects such as laser tag, magic wands, and wearables. Your mission: Examine the workspace, tools, and tutorials. Code "a magic wand" then work together or in small groups to create "wearable" maker project!

1:30 – 2:30, Room 303A
Energy Efficiency Superheroes
Presented by: Griffith Jurgens, Blue Planet Foundation & Tony Kawal, Hawaii Energy
The Blue Planeteers are here to save the day! These animated superheroes teach students new energy concepts and how to be more energy efficient. Students will learn about the history of climate change and the impact of their carbon footprint. By reviewing infographics, watching energy videos, and playing a Jenga-like game that symbolizes the power grid, students will be equipped with the tools to tackle the most difficult energy challenge of their generation.

1:45 to 3:15, Room 311
Motivating Girls to "Lean In" To Pursue Passion-driven Careers in STEM
Presented by: Naomi Harm, Innovative Educator Consulting & Wonder Workshop
Are you looking to motivate yourself to pursue a passionate career in STEM? Join this session to discover innovative STEM approach to empower the next generation of female leaders through a "startup" classroom culture. Naomi will immerse you in creative and collaborative learning experiences of how to motivate girls to "lean in" and further pursue their STEM passions within a making culture of computational thinking, robotics, and the new literacy of coding. You will leave this session empowered with new ideas and resources to inspire, mentor and model STEM career choices, while motivating your female students to lead with passion-driven purpose, technical expertise and global women entrepreneurship.

1:45 to 3:15, Room 307A
I Am a Scientist
Presented by: Lori Shimoda and Katelynn Perrault, Chaminade University
Transform yourself into a scientist and experience the thrill of biotech research while conducting an experiment using cool scientific equipment. Meet Chaminade Science majors who will share what it's like to be a college student, and the opportunities in education, research, leadership, personal development, and community service available at Chaminade.

1:45 to 2:45, Room 302A
Is That Really What You Said?
Presented by: Alexis Dascoulias, Camp Centerstage/Maui OnStage
Have you ever arrived at the end of your day to discover that something you said before your first class has been completely turned around? This workshop will guide you through steps to help you become a more effective communicator by developing your speaking and listening skills. Practice the important act of mirroring and reflecting when listening and how to check in with someone if you are doing all the talking.

1:45 to 2:45, Room 302B
Art of Networking
Presented by: Myhraliza Aala, UH College of Engineering
Whether you're wanting to make new friends, create study groups or make a career connection, networking can help facilitate those needs. In this session, you learn strategies for effective networking and have fun "role playing" those strategies from sample scenarios provided. The session also touches on professional communication styles in this ever-growing world of social media.

1:45 to 2:45, Room 305A
Android App Development with Android Studio
Presented by: Monir Hodges, Honolulu Community College – PCATT
This session is designed for programmers and non-programmers to create a simple app using Android Studio. Any programming experience is helpful, but not necessary. You will learn how to create an android app and view it via the emulator or transfer it to your Android phone. The completed App software will be provided at the end of session.
*** Laptops will be provided for this session

2:00 – 3:00, Room 303B

Speed Mentoring: A Networking Game for Curious and Driven Students
Presented by: Patsy T Mink Leadership Alliance

Fast, fun and focused — partake in a series of 10-15 minute quick-fire mentoring sessions with young charismatic female leaders that share your interest in education, career and leadership development. Our two-way mentoring game is based on equality and the belief that we all have something unique to give and receive. You will have the opportunity to meet female leaders in various fields as you take turns discussing with a mentor, sharing wisdom, gaining diverse input on your current challenges while making new business relationships. Intentionally intimate—each group is limited to 12 to 20 individuals.

2:00 – 3:00, Room 305B

E Makaikai ia Moloka'i
Presented by: Kauiwai Poepoe Mollena, Ioane Sibayan, Kamahina Kaiama Kanuha, Luniehu Pedro, O Hina I Ka Malama, Molokai High School, Hawaiian Immersion Language Program

Participants will go on a virtual field trip of Molokai visiting different shoreline environments to see the natural and cultural resources of the area. We will also share some of the annual community activities that we participate in including La Hanohano o Lili'uokalani, where we honor Queen Lili'uokalani near the time of her birthday, ka Molokai Makahiki and Earth Day.

4:30 - 6:00 PM
ROOFTOP GARDEN

STEMworks™
STUDENT SPOTLIGHT

6:00 - 9:30 PM
STAR PARTY
KALĀKAUA BALLROOM C

STUDENT
PROFESSIONAL DEVELOPMENT SESSIONS
APRIL 11
WEDNESDAY | PŌʻAKOLU

8:00 AM
GROUP PHOTO

Aloha
AND
WELCOME

IN FRONT OF ROOM 313C
WEAR STEM CONFERENCE T-SHIRTS

8:30 – 9:30, Room 302A
Change the Way You See Everything: Asset Based Thinking
Presented by: Alexis Dascoulias, Camp CenterStage/Maui OnStage
This refreshing new way to shift your mindset creates monumental results. Making small shifts in your day to day thinking is proven to promote greater resilience, optimism and confidence. Many outcomes in our lives are the result of our perception and thinking – so keep them positive and powerful!

8:30 – 10:00, Room 307A
I Am a Scientist
Presented by: Lori Shimoda and Katelynn Perrault, Chaminade University
Transform yourself into a scientist and experience the thrill of biotech research while conducting an experiment using cool scientific equipment. Meet Chaminade Science majors who will share what it's like to be a college student, and the opportunities in education, research, leadership, personal development, and community service available at Chaminade.

8:30 – 10:30, Room 305B
Photoshop – Beginners
Presented by: Maui High School ACOM
This session will cover basic foundation in using Adobe Photoshop. Learn about special effects, image and photo manipulation. ***Must have Adobe Suite downloaded on your device.

8:30 – 11:30, Room 305A
Makey Makey Invention Design Challenge
Presented by: Michael Fricano II, Iolani School

Makey Makey is an invention kit for the 21st century that allows you to turn everyday objects into touchpads and controllers. In this workshop, you'll work through a quick-paced design challenge that'll have you inventing and solving real-world problems with the help of simple materials, Makey Makey, and Scratch coding. You'll get a quick introduction to the Makey Makey, form small groups, and be presented with a design challenge. Then you'll have approximately 2 hours to design and create. In the end we'll have an invention showcase. Are you ready to take the Makey Makey Invention Design Challenge?

9:00 – 10:00, Room 303B
Robots: Are they the 'immigrants' of the future?
Presented by: Dr. Song Choi, Jill Nakatsu, Kelli Ching, UH College of Engineering

As the development of robots, artificial intelligence, computer science, technology continue to rapidly increase at an exponential rate, are we being displace by these new 'immigrants' who are more intelligent, more dedicated, more durable than we are? What does the future hold for us as potential jobs and skills?

9:00 – 10:00, Room 304B
Energetic Ocean
Presented by: Rimma Murta & Dr. Sara Aronin, Maui Science Center

Participants will create a model of an offshore wind and wave energy farm using the benefits of wind turbines and wave energy converters to maximize energy output. Participants will then re-design their wind and wave energy farm based on various challenges such as migrating whales or shifting winds.

9:00 - 11:00, Room 311
DIVE-IN Engineering – A New Idea for the Maker Movement!
Presented by: Terry Talley, Ed.D., STEMscopes

In this interactive, engaging, and hands-on session, the DIVE process is investigated, while collaboration and consensus are challenged. Facilitation techniques are modeled. We will build, figure out the process through consensus, and walk away with new maker ideas for the STEM-Science Classroom with instructional practices true to engineering. Join us and see what it's all about!

9:00 – 11:00, Room 306A
Elevating STEM Education Through Advocacy and Student Voice
Presented by: David Miyashiro & Aisha Heredia, HawaiiKidsCAN

Ready or not, the jobs of the future are going to increasingly require STEM and computer science skills and students should have the opportunity to thrive in this new economy. Research shows that not enough students in Hawaii have access to quality computer science learning opportunities, especially female students and students from low-income households. Today's students and teachers can be better prepared to face this future by becoming advocates for a high-tech education system. This session will walk participants through the 50CAN framework; the field tested approach that 50CAN has used for 7+ years to run advocacy campaigns in states across the country. Participants will have the opportunity to apply the 50CAN advocacy framework to policy debates on STEM education that are currently happening at the Hawaii State Legislature. Through advocacy, we will teach participants how to fight for the education system they want to see!

9:30 – 10:30, Room 312
Building Machines That Emulate Humans
Presented by: Todd Beard, Microsoft Innovative Educator

Join us as we "hack" a robotic hand. Using everyday materials, combined with an Arduino Uno and the power of Excel, we will create a robotic finger sensor as we learn about engineering and the design process. Build robotic models from cardboard and straws to understand the anatomy and biomechanics of the human hand. Your mission: Conduct trials visualizing data in Excel to generate new ideas for improving the performance. Investigate other applications that can help society.

9:30 – 10:30, Room 306B
Learning to Measure Properties of Stars with Aperture Photometry Tool
Presented by: Dr. JD Armstrong, UH Institute for Astronomy

How do we know what a star is? What is a star made of? Students will learn where to get data, and how to measure the data to learn determine the age and distance to groups of stars called open clusters.

9:30 – 10:30, Room 304A
Technology Food
Presented by: Sarah Sterling, Tim Stevens and Krishna Bayyareddy, Monsanto

Have you ever wondered how we grow enough food to feed the 7.5 billion people that are in the world today? Come join us to learn about how STEM plays a gigantic role in the way we produce food. Spend time, with Monsanto scientists and learn how we use STEM technology for farming. We will learn the basics of identifying desired genetic traits for plants, creating a habitat that attract insects that will help save crops from pests, and how we apply different technologies that allows farmers to produce more food with fewer resources.

9:30 – 11:30, Room 317A
Wearable Technology through Micro:bit
Presented by: Shane Asselstine & students, Momilani Elementary

In this session, you will learn about physical computing and how it enables us to create wearable technology! Physical computing is when software and hardware interact with the analog world, much like a Fitbit or similar devices. We will use Micro:bits to light up LEDs, communicate between devices, and use sensors like the motion detector or compass. Micro:bits are pocket sized computers that allow you to get creative with digital technology. Whether you are just starting out with computer science, or are looking to take your program to the next level, this session will spark ideas and expand your options!

10:00 – 11:00, Room 302B
AFRL Planetarium
Presented by: Dr. Ryan Swindle & Julian McCafferty, Air Force Research Laboratory

Explore the heavens from the Air Force Research Laboratory's portable planetarium! Learn about popular night-sky objects that you can see from your backyard, either with the naked eye or the aid of a small telescope or binoculars. This Digital Planetarium Show will teach you how to understand astronomical coordinate systems, use important points to find stars, planets, constellations, and even satellites!

10:00 - 12:00, Room 302A
True Colors: What Makes You Successful
Presented by: Alexis Dascoulias, Camp CenterStage/Maui OnStage
Identify your true colors and personality traits by recognizing your values, motivations, strengths and stressors. Then use this knowledge as a tool to build better understanding and rapport with diverse groups. Understand better ways to communicate your ideas and relate to others. This is a true team building workshop.

10:30 – 12:00, Room 307A
I Am a Scientist
Presented by: Lori Shimoda and Katelynn Perrault, Chaminade University
Transform yourself into a scientist and experience the thrill of biotech research while conducting an experiment using cool scientific equipment. Meet Chaminade Science majors who will share what it's like to be a college student, and the opportunities in education, research, leadership, personal development, and community service available at Chaminade.

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Presented by: Todd Beard, Microsoft Innovative Educator
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10:45 – 11:45, Room 306B
Learning to Measure Properties of Stars with Aperture Photometry Tool
Presented by: Dr. JD Armstrong, UH Institute for Astronomy
How do we know what a star is? What is a star made of? Students will learn where to get data, and how to measure the data to learn determine the age and distance to groups of stars called open clusters.

10:45 – 11:45, Room 303B
Mission to Mars
Presented by: Denisse Aranda & Michael Richards, Science Camps of America
We want to send both humans and machines to Mars, but what are the engineering and design challenges that must be overcome? In this workshop, led by former NASA engineer Denisse Aranda, students are presented with various challenges that they must overcome to successfully complete their mission to Mars. For each challenge, students use hands-on activities and use the same engineering principles used at NASA to find and test their solutions.

10:45 – 11:45, Room 304A
Technology Food
Presented by: Sarah Sterling, Tim Stevens and Krishna Bayyareddy, Monsanto
Have you ever wondered how we grow enough food to feed the 7.5 billion people that are in the world today? Come join us to learn about how STEM plays a gigantic role in the way we produce food. Spend time with Monsanto scientists and learn how we use STEM technology for farming. We will learn the basics of identifying desired genetic traits for plants, creating a habitat that attract insects that will help save crops from pests, and how we apply different technologies that allows farmers to produce more food with fewer resources.

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Explore the heavens from the Air Force Research laboratory's portable planetarium! Learn about popular night-sky objects that you can see from your backyard, either with the naked eye or the aid of a small telescope or binoculars. This digital planetarium show will teach you how to understand astronomical coordinate systems, use important points to find stars, planets, constellations, and even satellites!

11:00 – 12:00, Room 303A
Energy Efficiency Superheroes
Presented by: Griffith Jurgens, Blue Planet Foundation & Tony Kawal, Hawaii Energy
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11:00 – 12:00, Room 305B
Game Development with Google Apps
Presented by: Dr. Chanelle Tolentino, Hawaii Technology Academy
Participants will learn the difference between HTML, CSS, & JS, how to build a game development course, and build a simple webpage. Participants will receive JS source code to see a basic animation. ** Participants must have own laptop/tablet.

Stemmy's 2018

12:00 - 2:00 PM
KALĀKAUA BALLROOM

LUNCHEON
AWARDS BANQUET

Recognizing the 2018 STEM Champions

ON-SITE COMPETITIONS
Under the guidance of industry professionals, middle and high school students compete in fast-paced sessions encouraging creativity, design, problem-solving and entrepreneurship.
- HACC4Edu
- Quack-a-thon/Cybersecurity
- Product Pitch
- Royer Studios
- Video Competition
- 3Cs Competition

STEM COMPETITIONS
Middle and High School Students put their skills and creativity to the test! #challengeme
- ArcGIS Online US School Competition
- Game Design
- Music Competition
- Piper Design Challenge
- Photography Competition
- T-Shirt Design Competition
- THINKit Pet Protection

2:15 – 3:45, Room 317B
Music Production/Audio Engineering
Presented by: Cade Anderson, STEMworks™ Student, King Kekaulike High School

Learn the basics of a DAW (Digital Audio Workshop). The objective is to show how to use and navigate a program like FL Studios 12 and also how to create a simple beat.

2:15 – 4:15, Room 317A
Wearable Technology through Micro:bit
Presented by: Shane Asselstine & students, Momilani Elementary School

In this session you will learn about physical computing and how it enables us to create wearable technology! Physical computing is when software and hardware interact with the analog world, much like a Fitbit or similar devices. We will use Micro:bits to light up LEDs, communicate between devices, and use sensors like the motion detector or compass. Micro:bits are pocket sized computers that allow you to get creative with digital technology. Whether you are just starting out with computer science, or are looking to take your program to the next level, this session will spark ideas and expand your options!

2:15 – 4:15, Room 311
LED Poke Ball Keychain
Presented by: Kapiʻolani Community College – STEM Program

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"Non-Traditional Pathways to Engineering"
Presented by: Dr. Song Choi, Jill Nakatsu, Kelli Ching, UH, College of Engineering

Ever wonder if there were 'other' pathways to a successful career in engineering even though you didn't consider engineering as a career coming out of high school? Well, here's your chance to explore these other options via work experience, continuing education options, and community college courses. Come talk to our pre-engineering and STEM advisors and mentors in forging the proper pathway to fit your needs.

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Energetic Ocean
Presented by: Rimma Murta & Dr. Sara Aronin, Maui Science Center

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Technology Food
Presented by: Sarah Sterling, Tim Stevens and Krishna Bayyareddy, Monsanto
Have you ever wondered how we grow enough food to feed the 7.5 billion people that are in the world today? Come join us to learn about how STEM plays a gigantic role in the way we produce food. Spend time with Monsanto scientists and learn how we use STEM technology for farming. We will learn the basics of identifying desired genetic traits for plants, creating a habitat that attract insects that will help save crops from pests, and how we apply different technologies that allows farmers to produce more food with fewer resources.

2:15 – 3:15, Room 305B
Game Development with Google Apps
Presented by: Dr. Chanelle Tolentino, Hawaii Technology Academy
Participants will learn the difference between HTML, CSS, & JS, how to build a game development course, and build a simple webpage. Participants will receive JS source code to see a basic animation. ** Participant must have own laptop/tablet to participate.

2:15 – 4:15, Room 305A
DeCode
Presented by: Alyssa Knight & Tyler Nichols, DevLeague
Calling all Cryptographers! Can you help us crack the code? Is it a message from outer space? Are aliens trying to make contact? Learn to encrypt and decrypt secret messages as well as the history behind the cipher! Cryptography is an indispensable tool for protecting information in computer systems. By the end of this breakout sessions, students will be able to apply their new knowledge in creating their own ciphers programmatically in Python.

2:15 – 4:15, Room 306A
Elevating STEM Education Through Advocacy and Student Voice
Presented by: David Miyashiro & Aisha Heredia, HawaiiKidsCAN
Ready or not, the jobs of the future are going to increasingly require STEM and computer science skills and students should have the opportunity to thrive in this new economy. Research shows that not enough students in Hawaii have access to quality computer science learning opportunities, especially female students and students from low-income households. Today's students and teachers can be better prepared to face this future by becoming advocates for a high-tech education system. This session will walk participants through the 50CAN framework; the field tested approach that 50CAN has used for 7+ years to run advocacy campaigns in states across the country. Participants will have the opportunity to apply the 50CAN advocacy framework to policy debates on STEM education that are currently happening at the Hawaii State Legislature. Through advocacy, we will teach participants how to fight for the education system they want to see.

3:15 – 4:15, Room 312
Measuring Speed to Understand Forces & Motion
Presented by: Todd Beard, Microsoft Innovative Educator
Recent advances in automobile manufacturing has resulted in cars being made from much lighter materials. These newer, lighter-weight cars are now sharing the road with older heavier cars. As a result, the National Highway Traffic Safety Administration (NHSTA) has asked you and your team to conduct crash testing related to vehicle weight and its relationship to safety during collisions. **Your mission**: Learn and apply principles of forces and motion to determine the influence of an automobile's mass on the impact of a collision. Your contribution has the potential to positively impact today's society and save lives.

3:15 – 4:15, Room 306B
Learning to Measure Properties of Stars with Aperture Photometry Tool
Presented by: Dr. JD Armstrong, UH Institute for Astronomy

How do we know what a star is? What is a star made of? Students will learn where to get data, and how to measure the data to learn determine the age and distance to groups of stars called open clusters.

3:15 – 4:15, Room 303A
Energy Efficiency Superheroes
Presented by: Griffith Jurgens, Blue Planet Foundation & Tony Kawal, Hawaii Energy

The Blue Planeteers are here to save the day! These animated superheroes teach students new energy concepts and how to be more energy efficient. Students will learn about the history of climate change and the impact of their carbon footprint. By reviewing infographics, watching energy videos, and playing a Jenga-like game that symbolizes the power grid, students will be equipped with the tools to tackle the most difficult energy challenge of their generation.

3:15 – 4:15, Room 303B
Mission to Mars
Presented by: Denisse Aranda & Michael Richards, Science Camps of America

We want to send both humans and machines to Mars, but what are the engineering and design challenges that must be overcome? In this workshop, led by former NASA engineer Denisse Aranda, students are presented with various challenges that they must overcome to successfully complete their mission to Mars. For each challenge, students use hands-on activities and use the same engineering principles used at NASA to find and test their solutions.

3:15 – 4:15, Room 304A
Technology Food
Presented by: Sarah Sterling, Tim Stevens and Krishna Bayyareddy, Monsanto

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3:15 – 4:15, Room 304B
Energetic Ocean
Presented by: Rimma Murta & Dr. Sara Aronin, Maui Science Center

Participants will create a model of an offshore wind and wave energy farm using the benefits of wind turbines and wave energy converters to maximize energy output. Participants will then redesign their wind and wave energy farm based on various challenges such as migrating whales or shifting winds.

Mahalo nui loa!

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