STEMWORKS™ PRESENTS

Hawaii STEM Virtual Conference

THURS – SAT
MAY 7 – 9

2020

Mahalo to our Sponsors

Microsoft

Department of the Navy — ONR Science & Technology

Air Force Research Laboratory

County of Maui, State of Hawaii

MEDB Ke Alahele Education Fund

acom — Maui High School Arts + Communication

bizzyb

Hawaiian Electric

mālama maunalua

esri

CYBER HAWAII

WHAT IS STEMWORKS?

ABOUT STEMworks™

As the flagship program of the Maui Economic Development Board, Inc., 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.

"I'm inspired daily when I see our Kalama students after school working diligently on new projects. From sketching mascots to interviewing, coding to 3D printing; there is so much love and passion at our school. I'm proud to be apart of MEDB's STEMworks team."
Ms. Karen Wright, Kalama Intermediate

STEMworks™ K-12 SCHOOLS

HAWAI'I ISLAND
Honoka'a High & Intermediate School
Kea'au High School
Kealakehe High School

MAUI
Baldwin High School
Kalama Intermediate School
Kamali'i 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

LANA'I
Lana'i High & Elementary School

MOLOKA'I
Moloka'i Middle - 'O Hina I Ka Malama
Moloka'i Middle School
Moloka'i High - 'O Hina I Ka Malama
Moloka'i High School

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

KAUA'I
Kaua'i High School

"I'm proud of introducing and promoting STEM at Wailuku Elementary and its students. I'm happy the kids get a taste of coding, engineering, robotics, science and investigating to help solve the problems of Maui and the world. I'm happy to introduce the spark that may lead to our future scientists."
Mr. Ryan Towata, Wailuku Elementary

Program Schedule

THURSDAY, MAY 7, 2020

10:00 AM   **KICK-OFF!**
- Welcome
- Zoom Housekeeping
- Agenda
- Microsoft Sponsor Welcome – Celeste Alleyne
- Video Learning Library
  Link: https://bit.ly/2020STEMVideoLibrary

10:10 AM   **5X5 SESSIONS**
- Kendra Ishihara - *Volcanologist HVO*
- Marissa Cameron-Howell - *Engineering Applications Software Engineer, NASA JPL Laboratory*
- Gretchen Chiques - *Solutions Engineer, Esri*
- *Heidi Kane, Hydrologist, USGS*
- Elizabeth Benyshek - *Program Manager, WAI*

10:40 AM   **TRANSITION –** *Stay in Zoom or go to TEAMS Link*

10:45 AM   **BREAKOUT SESSION**
- Esri – Getting Started with Dashboards
  Presented by Charlie Fitzpatrick (Zoom)
- Microsoft - Learn to Code Stream Minecraft & Mixer
  Presented by Kristina Cook, Trent Rulloda, Taylor Tanahashi
  Link: https://bit.ly/MinecrafterMixer

11:30 AM   **COSPACES EDU FUN WITH MERGE CUBES**
Presented by Michael Fricano II

12:00 PM   **BREAK!** *Grab your lunch!*

12:05 PM   **STEMMY AWARDS & LUNCH**

12:40 PM   **BREAKOUT SESSION**
- Blue Planet
  Presented by Griff Jurgens (Zoom)
- Microsoft - Start Your Business & Build Your Brand
  Presented by Kristina Cook, Trent Rulloda, Taylor Tanahashi
  Link: https://bit.ly/BizBuildBrand

1:20 PM   **KEYNOTE – Gretchen O'Hara VP at Microsoft**

1:40 PM   **WRAP UP & MAHALO!**

Program Schedule

FRIDAY, MAY 8, 2020

10:00 AM   **HACKATHON KICK-OFF!**

- Welcome
- Challenges Introduction from MM
- Presentations from Subject Matter Experts

10:30 AM   **BREAKOUT INTO TEAMS** – *Get started on BizzyB Journal*

4:45 PM   **RETURN TO MAIN ZOOM ROOM & REFLECT**

5:00 PM   **ZOOM ROOM CLOSES**

SATURDAY, MAY 9, 2020

10:00 AM   **HACKATHON KICK-OFF!**
- Welcome
- Quick Update
- Breakout into Teams

2:00 PM   **TEAM PITCH PRACTICE**

3:00 PM   **SHOWCASE**

4:45 PM   **ANNOUNCE WINNERS**

5:00 PM   **HACKATHON ENDS!**

Hawaii STEM Conference

https://bit.ly/HISTEMVirtualCon2020
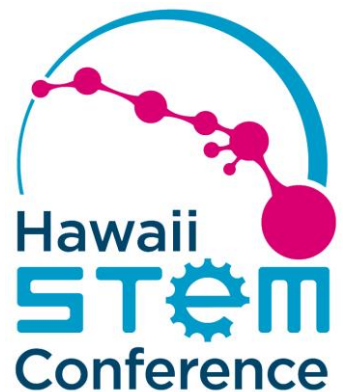
Keynote Speaker

Gretchen O'Hara

VP at Microsoft leading the
Artificial Intelligence Country
Strategy & Sustainability

Gretchen O'Hara is a business builder who creates and leads teams that create from whitespace and build ecosystems empowering customers and partners. As VP, AI Country Strategy & Sustainability Partnership at Microsoft, Gretchen is building the path for Microsoft's US acceleration of its Artificial Intelligence, cloud and sustainability initiative to become carbon negative by 2030. AI and Sustainability will change and shape how we live, it is through strategic partnerships, Innovation, and ecosystem activation that Microsoft will achieve these ambitious goals. Gretchen is also a passionate advocate for women and girls in STEM and the cloud. She is a Co-Founder of Women in Cloud (WiC), an organization taking-action with global leaders, corporations, and policy-makers to help create $1 billion in economic access and opportunity by 2030. Her mission is to live every moment with passion and compassion and leave a legacy of global tech success that stands the test of time.

Speaker

Charlie Fitzpatrick EsrimK-12 Education Manager

Before coming to Esri in 1992, he taught social studies in grades 7-12, mostly 8th grade geography. When not busy helping people make maps and analyzing data using GIS, he likes to go scuba diving around coral reefs. His favorite place to dive is Molokini.

Griff Jurgens
Education Director of Blue Planet Foundation

Griff leads Blue Planet's education programs, student and teacher engagement activities, and youth outreach. He graduated with a Bachelor's Degree in Elementary Education from the University of Northern Iowa, where he also played collegiate athletics. Griff began his teacher career in Southern California and has been an educator in the public, private, and charter school systems since 2005. Preserving the future has been a common thread throughout his career, from spearheading green initiatives like the Go Green and Garden Clubs and a school-wide recycling program, to his most recent initiatives at Blue Planet like Changemakers and the Climate Crew. Griff also works on sustainability films like the Emmy Award-winning Netflix documentary *Chasing Coral.* When he is not spreading the word about clean energy, he is at the beach, gigging with his band (the Maneki Nekos), or spending time with his three-legged cat, Tripod Eddie
(Insta-famous @tripod_eddie)

Michael Fricano II
Technology Integration Specialist & MakerEd Educator at 'Iolani School

Michael is a Technology Integration Specialist & MakerEd educator at 'Iolani School in Hawaii. He also runs the ARVREduHub.com, an educator resource with everything you need to learn how to integrate AR and VR in your K-12 classroom. Michael has been presenting on a variety of EdTech topics for more than 10 years and has been exploring, experimenting, and sharing about AR and VR for more than 4 years.

Industry 5 x 5 Session

Marissa is an Applied Science Systems Engineer at the NASA Jet Propulsion Laboratory in Pasadena, California. Originally from El Paso, Texas, she was a non-traditional student - taking evening classes at the local community college while working full-time. She moved on to receive her Bachelor's and Master's Degrees in Geophysics from the University of Texas at El Paso. She then received her PhD in Geology and Geophysics from the University of Hawaii at Manoa in 2018, with a dissertation on mapping and modeling Ganymede and Europa -- icy moons of Jupiter. Her current work uses her science background to inform engineering efforts, such as using geology to find safe landing sites on Europa for a future robotic mission. In her free time, she performs in a local belly dance fusion dance troupe.
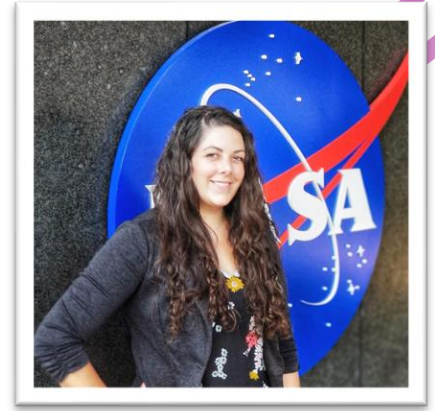
Dr. Marissa Cameron Howell
Engineering Applications Software
Engineer at NASA
Jet Propulsion Laboratory

Elizabeth graduated from the University of Hawaiʻi at Mānoa with a Master of Science in Geophysics. Her research experience ranges from geologic mapping to computer programming. After graduating, Elizabeth worked as a Data Analyst at the School of Ocean and Earth Science and Technology (SOEST) and pursued her passion for sustainability and environmental protection through volunteering. Her passion took the lead in her life when she began her job as Program Manager at WAI: Wastewater Alternatives & Innovations, a new non-profit dedicated to reducing pollution from cesspools by providing the people of Hawaii with affordable and eco-friendly solutions to wastewater management. Elizabeth is also Vice Chair of the Surfrider Foundation's Oahu Chapter, a non-profit dedicated to the protection and enjoyment of the world's ocean, beaches and waves through a powerful activist network.

Elizabeth Benyshek
Program Manager at WAI: Wastewater
Alternatives & Innovations

Dr. Kendra J. Lynn is a Volcanologist who uses minerals and lavas to try and understand how, why, and when volcanoes erupt. With a Ph.D. from the University of Hawaii at Manoa, much of her research focuses on Kilauea and other Hawaiian volcanoes. She is currently a Postdoctoral Researcher at the University of Delaware working on volcanoes on the ocean floor. This summer she will join the team at the Hawaiian Volcano Observatory as a Research Geologist/Petrologist, where she will use her skills to help us understand Kilauea's explosive eruptive past.

Dr. Kendra J. Lynn
Volcanologist

Industry 5 x 5 Session

Heidi Kane
Hydrologist at the United States
Geological Survey (USGS)

Heidi has a well-rounded geoscience background that includes research interests in environmental earth and planetary science, climatology, and hydrological processes. She currently works full-time as a hydrologist with the U.S. Geological Survey (USGS). In this role she helps provide reliable, objective scientific information to address water-related issues in the State of Hawaiʻi and the U.S. Affiliated Pacific Islands. Heidi was formally the STEM Diversity Coordinator for the University of Hawaiʻi's Office of STEM Education (OSE) and program manager for the SOEST Maile Mentoring Bridge, a peer mentoring program which aims to inspire Native Hawaiians, kamaʻāina, and underrepresented ethnicities into geoscience professions at the School of Ocean and Earth Science and Technology (SOEST). In addition to being a hydrologist, she is finishing up a Masters' thesis under the direction of Dr. Thomas Giambelluca in the Department of Geography and the Environment at UH Mānoa.

Gretchen Chiques is a Solution Engineer for Esri supporting State and Local Government in Hawaii and the US Pacific Islands. She provides Geographical Information System (GIS) platform configuration guidance and best practices. Previous Esri, Gretchen, worked at the NOAA Office for Coastal Management-Pacific Islands as a Geospatial Team Lead supporting several initiatives such as the Coastal Change Analysis Program (C-CAP) land cover data, coastal lidar data, Pacific Sea Level Rise Viewer, and the Tsunami Evacuation Map Tool. Previous that she worked for more than ten years supporting the Department of Defense in Washington DC. Gretchen has a Bachelor's degree in Geology with a minor in GIS and a Master's degree in Geology focused in Remote Sensing, both from the University of Puerto Rico, Mayaguez Campus.
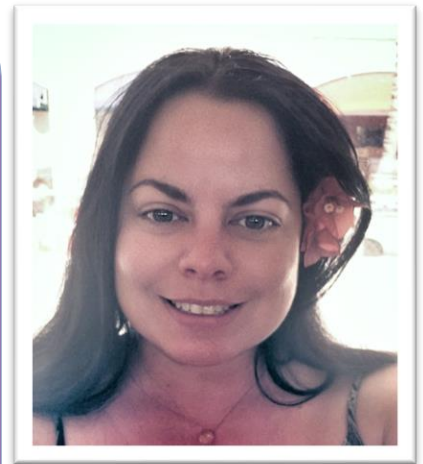
Gretchen Chiques
Solutions Engineer at Esri

2020 OYSTER HACK-A-THON

PRIZES

1ST PLACE WINNERS
2ND PLACE WINNERS
3RD PLACE WINNERS

MICROSOFT XBOX CONSOLE
RYZE TELLO EDU DRONE
DIY COMPUTER SPEAKER FROM KIWICO

ALL HACK-A-THON PARTICIPANTS WILL RECEIVE MICROSOFT GIFTS AND SWAG FOR JOINING IN ON THE FUN!

OYSTER CAGE DESIGN CHALLENGE – In this fast-paced challenge, students will learn about Malama Maunalua's mission to help improve water quality in their ahupuaa by growing oysters to filter local waterways, and MM's need for oyster cages. Teams of 3-5 students will meet in virtual breakout rooms, under the guidance of mentors, to research and discuss their oyster cage design. They will use the BizzyB platform to take their product from idea to market to pitch. At the end of this two-day challenge, students will pitch their product in a **virtual showcase event** to a team of judges. The winning team will have the opportunity to prototype and test their design in real life, as well as take home a prize.

STEMMY'S 2020

Designed by STEMworks students for STEMworks students.
Under the guidance of industry professionals, middle and high school students compete in fast-paced sessions which encourage creativity, design, problem-solving, and entrepreneurship. These competitions are designed to put the skills and creativity to the test!

PRE-COMPETITIONS

- Game Design Challenge
- T-shirt Design Challenge
- Leave your Mark-et Design Challenge
- Photography Competition

2019 GAME DESIGNER WINNER
BY: ANGELICA LEE
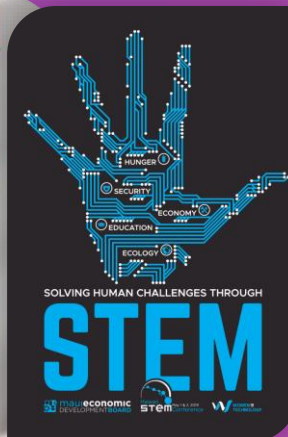
2019 T-SHIRT DESIGN WINNER
BY: REECE KIKUCHI

OPPORTUNITIES FOR
Teachers & Students

SUMMER INTERNSHIPS

State-wide internships for STEMworks High School & College Students will be determined based on evolving health and safety guidelines. Stay tuned for updates via the STEMworks website.
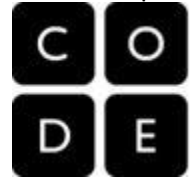
HAWAII TEACHER CON
CODE.ORG PROFESSIONAL LEARNING PROGRAM

For 6 – 12 grade teachers. Held virtually
TEACHERCON HELD: JULY 13 – 17, 2020 + for quarterly workshops
REGISTER BY: JUNE 1, 2020
REGISTRATION LINK: bit.ly/STEMworksCodePD

LENDING LIBRARY

Sign up for our Lending Library!
The STEM Lending Library contains resource materials and technology devices available for educational use for a subscription fee.
WEBSITE: https://stemworkshawaii.squarespace.com/stem-lending-library

RESOURCES AT A GLANCE

WEBSITE	LINK
2020 VIRTUAL HAWAII STEM CONFERENCE ZOOM ROOM	https://bit.ly/HISTEMVirtualCon2020 Meeting ID: 863 6428 6429 Password: 631931
2020 VIRTUAL HAWAII STEM CONFERENCE LEARNING LIBRARY	https://bit.ly/2020STEMVideoLibrary
LEARN TO CODE STREAM MINECRAFT & MIXER	https://bit.ly/MinecrafterMixer
Start Your Business & Build Your Brand	https://bit.ly/BizBuildBrand
STEM SCOPES PRESENTATION BY AMBER GUNNER	https://bit.ly/STEMscopesvid
HAWAII STEMWORKS	http://www.stemworkshawaii.org/

maui economic DEVELOPMENT BOARD   STEM WORKS   WOMEN IN TECHNOLOGY

VIDEO LEARNING LIBRARY RESOURCES

PRESENTATION	PRESENTER
MICROSOFT INTERNET OF THINGS	MICROSOFT
MINECRAFT AL FOR GOOD	MICROSOFT
INTRODUCTION OF GRETCHEN O'HARA	MICROSOFT – CELESTE ALLEYNE
GRETCHEN O'HARA KEYNOTE SPEECH	MICROSOFT – GRETCHEN O'HARA
HOW TO MAKE KAULA (ROPE) DEMO	DANIEL KAPALIKUOKALANI MAILE
PROTECTING YOUR PASSWORD	CYBER HAWAII – JILL TOKUDA
MAKE YOUR OWN MERGE CUBE	MICHAEL FRICANO II
CLIMATE CREW	BLUE PLANET – GRIFF JURGENS
SMALL KINE RIDICULOUS	BLUE PLANET – GRIFF JURGENS