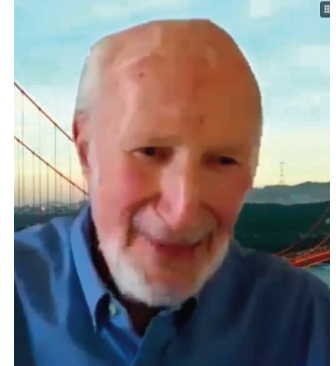
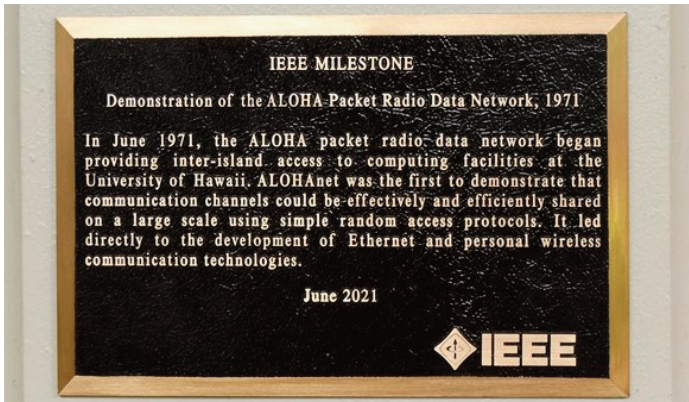


## ALOHAnet: World's First Wireless Network



**Dr. Franklin Kuo and Dr. Norman Abramson attended the Milestone ceremony virtually.**

On October 13, 2020, Hawaii celebrated the installation of its fourth IEEE Milestone (for the ALOHAnet) with the world.

Hawaii established a significant first with this celebration: The first IEEE Milestone to be virtually broadcast worldwide due to the COVID-19 pandemic.

IEEE established the Electrical Engineering Milestones program in 1983 to honor significant achievements in the history of electrical and electronics engineering.

Due to the COVID-19 pandemic, the University of Hawaii at Manoa College of Engineering decided on two ceremonies to recognize ALOHAnet: a Fall 2020 virtual installation ceremony and a June 2021 mini symposium physical ceremony to commemorate the 50th anniversary of the initial ALOHAnet broadcast in June 1971.

Dr. Brennon Morioka, Dean of the University of Hawaii at Manoa College of Engineering served as Master of Ceremonies and speakers for the ALOHAnet Installation ceremony were:

- Dr. David Lassner; President of the University of Hawaii;
- State of Hawaii Governor David Ige;
- Dr. Norman Abramson, co-PI for ALOHAnet;
- Dr. Franklin Kuo, co-PI for ALOHAnet;
- Kathy Land, IEEE President-Elect.

With the exception of Gov. Ige, all of the speakers are IEEE Fellows or Senior Members.

The video recording of the October 13, 2020 ALOHAnet Installation Ceremony may be accessed at: [https://www.youtube.com/watch?v=moqUllww\\_fqQ&feature=emb\\_rel\\_end](https://www.youtube.com/watch?v=moqUllww_fqQ&feature=emb_rel_end).

The official University of Hawaii communications site has an article that has the recognition attributed to the University of Hawaii College of Engineering and its graduates: <https://www.hawaii.edu/news/2020/10/13/aloha-net-honored-as-engineering-milestone/>.

An excerpt from Dr. Vinton Cerf, Google's chief internet evangelist and "Father of the Internet":

"The University of Hawaii'i is the gift that keeps on giving, and it has been giving for 50 years and more," Cerf said. "We benefit from that. Imagine the industries that have grown up around people who have learned skills from the University of Hawaii'i."

Peer recognition of ALOHAnet and its co-Principal Investigators, Dr. Norman Abramson and Dr. Franklin Kuo during the Virtual Installation Ceremony included:

- Dr. Vinton Cerf "Father of the Ethernet"
- Dr. Robert Metcalfe "Father of Ethernet". Bob Metcalfe actually studied under Dr. Abramson at the University of Hawaii College of Engineering for a month while a graduate student at Harvard University. He took the ALOHA protocol and improved it to build Collision Sense Multiple Access/Collision Detect (CSMA/CD) for Ethernet while at Xerox Palo Alto Research Center (PARC). In fact, he originally named Ethernet, "Altos Aloha Network".

• Dr. Robert Kahn at the time was the Director at ARPA/IPTO stated, "The ALOHA system was to packet radio like the original timesharing computer was to Arpanet".

ALOHAnet consisted of three parts and established a number of firsts in communications, networking, and radio. The three components of the ALOHAnet (aka ALOHA System) were:

- ALOHA protocol
  - o Random access-based packet protocol
- ALOHA System
  - o Comprised of a mainframe computer, remote terminals, terminal connection units, and radio equipment in the first star, or hub-and-spoke configuration and to use a shared access medium.
- ALOHAnet

o Comprised of the ALOHA protocol and the ALOHA System.

o Acronym for "Additive Links On-line Hawaii Area network".

Prior to the ALOHA protocol, there was no existing packet-switching or packet-based protocols. This is the reason that Bob Metcalfe came to the University of Hawaii College of Engineering to study under Dr. Norman Abramson.

Prior to the ALOHA system, mainframe computers (PCs were at least a decade away) were connected to one another via dedicated, leased telephone lines or dedicated satellite circuits, not a broadcast technology that is inherent to radio.

Prior to the ALOHAnet, there were no computer networks. ARPAnet became operational in 1975; ARPAnet computer-computer connections or nodes, were dedicated, leased telephone lines.

Prior to the ALOHAnet the concept of shared medium access did not exist. Radio is inherently a shared access medium.

Prior to the ALOHAnet, there were no wireless computer communications. The Department of Defense allowed ALOHAnet to utilize an experimental UHF frequency.

Other significant firsts for the ALOHAnet included:

- Established and operated a UHF terrestrial data network within the state of Hawaii by December 1971.
- December 1972.
  - o The University of Hawaii at Manoa IBM 360 mainframe became the first ARPAnet node to be connected via satellite. This allowed connectivity between ALOHAnet and ARPAnet.
- 1973.



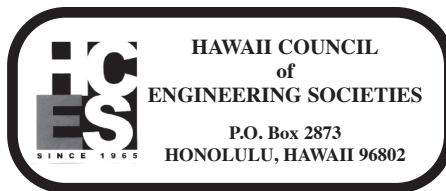
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**WILIKI MAILING LIST**

Additions and/or corrections to the Wiliki mailing list should indicate the proper society, institution or association. Corrections to email addresses should be submitted to your society coordinator.



HOME PAGE: [hceshawaii.org](http://hceshawaii.org)  
EMAIL: [hcesorg@gmail.com](mailto:hcesorg@gmail.com)

**2020-2021 OFFICERS**

|             |                       |                  |
|-------------|-----------------------|------------------|
| Chair:      | Donna Kishi           |                  |
| Vice-Chair: | Roger Babcock         |                  |
| Secretary:  | Kristen Yoshida       |                  |
| Treasurer:  | Jay Stone             |                  |
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| APWA        | R. Char               |                  |
| ASCE        | E. Arakawa            |                  |
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| HWEA        | R. Babcock            |                  |
| IEEE        | G. Torigoe            |                  |
| ITE         | W. Yamamoto           |                  |
| SAME        | L. Wong               |                  |
| SEAOH       | K. Hashimoto          |                  |
| SFPE        | S. Dannaway           |                  |
| SWE         | K. Yoshida            |                  |
| UHM CoE     | S.K. Choi             |                  |

**2021 HCES LIFETIME ACHIEVEMENT AWARD**  
CALL FOR NOMINATIONS – Deadline: 18 December 2020

The "HCES Lifetime Achievement Award (LTAA)" is provided annually to recognize the lifetime achievements of an outstanding retired engineer and is bestowed upon this individual who has contributed significantly to the development of engineering in the State of Hawaii, and who has made a noteworthy impact to the local engineering community. This award will be presented at the HCES Engineers Week Banquet on 20 Feb 2021.

The LTAA Selection Committee will select the recipient. Nomination packages shall be preferably submitted via email to [bill.lee@coffman.com](mailto:bill.lee@coffman.com) or may be mailed to:

Coffman Engineers  
745 Fort St, Suite 400  
Honolulu, Hawaii 96813  
Attention: Bill Lee

**Nominations must be received via email or postmarked prior to 18 December 2020.**

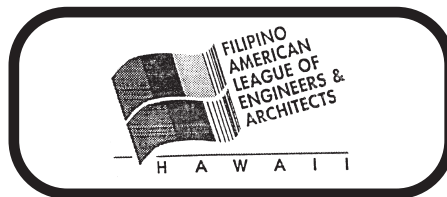


<http://www.hawaiispe.org/>

**HSPE Officers for 2020-2021**

Acting Pres.: Sara Doi  
[sdoi@bowersandkubota.com](mailto:sdoi@bowersandkubota.com)  
Pres. Elect: Irina Constantinescu  
[IConstantinescu@BrwnCald.com](mailto:IConstantinescu@BrwnCald.com)  
Vice Pres: vacant  
Past Pres: Sara Doi  
[sdoi@bowersandkubota.com](mailto:sdoi@bowersandkubota.com)  
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[kkunimune@bowersandkubota.com](mailto:kkunimune@bowersandkubota.com)  
HOD '19-'21: Mike Silva  
[mike@femaui.com](mailto:mike@femaui.com)  
Big Island Dir., NICET Chair '19-'20: Curtis Beck  
[curtbegood@mail.com](mailto:curtbegood@mail.com)

Nominations for the 2021 **Engineer of the Year AND Young Engineer of the Year** candidates are being accepted. Nomination forms are available on the HCES website at [hceshawaii.org](http://hceshawaii.org) or by contacting Kurt Kunimune at [kkunimune@bowersandkubota.com](mailto:kkunimune@bowersandkubota.com). The awardees will be presented at the Engineer's Week Banquet in February of 2021. Nominations will be due by December 30, 2020. Mahalo!

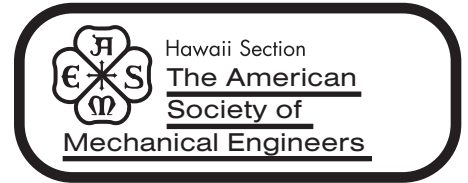


P.O. Box 4135, Honolulu, Hawaii 96812  
Website: <http://www.falea.org>

**2020-2021 Officers/BoDirectors**

President: Ferdinand B. Guinto  
Secretary: Majella D. Stevenson  
Treasurer: Joel L. Francisco  
Public Rel. Off: Maricel O. Guinto  
Immediate Past President: Gene C. Albano, Jr.  
Directors: Angelie L. Armas  
Riza Marie Gatdula/Cao  
Maritez A. Marquez  
Joey G. Resurreccion  
Elvi M. Sutherland  
Roger A. Urbi

FALEA is once again accepting scholarship applications for graduating high school senior or current college students of Filipino ancestry with preference for students who are pursuing post-secondary majors in Science Technology Engineering and Math (STEM). Applications can be obtained from the FALEA website [www.FALEA.org](http://www.FALEA.org). Applications can be submitted via email to [FALEA@falea.org](mailto:FALEA@falea.org) no later than December 31, 2020. If sending via postal mail, applications must be postmarked no later than December 31, 2020. Scholarship recipients will be notified via phone or email of selection by January 20, 2021.



[www.asme-hi.com](http://www.asme-hi.com)

**ASME-HI 2020-2021 Officers**

Chairperson: Froilan Garma 321-2691  
[Froilan.B.Garma@jci.com](mailto:Froilan.B.Garma@jci.com)  
Vice-Chair: Derick Kam  
[derickFPE@gmail.com](mailto:derickFPE@gmail.com)  
Secretary: Jason Frifeldt 358-6322  
[frifelj@yahoo.com](mailto:frifelj@yahoo.com)  
Treasurer: Kevin Dang 737-1708  
[dangk001@hawaii.rr.com](mailto:dangk001@hawaii.rr.com)  
Past-Chair: Derek Sato  
[derek.sato@hawaiianelectric.com](mailto:derek.sato@hawaiianelectric.com)  
HCES Rep: Derick Kam  
Alternate: Froilan Garma

**NEXT ASME-HAWAII GENERAL MEMBERSHIP MEETING**

Date: Date yet to be determined depending on COVID-19 status and current State Social Distancing proclamation relaxation and depending if remote-virtual meeting conducted.  
Time: usually from 5:30 pm to 6:45 pm  
Place: Pre-COVID-19 at Johnson Controls, 550 Paiea Street (map and parking instructions found on the Hawaii Section website)  
Agenda: A copy of the agenda will be on the Section website.

As usual, all members, students and guests are invited and encouraged to attend our meetings. Please contact Chairman Froilan Garma for directions and for more information.

**ASME HAWAII "Senior" SECTION OFFICERS ELECTION**

ASME-HI is planning a SurveyMonkey election and survey for 2020-2021. The candidates on the ballot are as follows:  
Chairperson: Derek Sato  
Vice-Chairperson: Froilan Garma  
Treasurer: Kevin Dang  
Secretary: Raymond Liu  
Member at Large: Ronald Flegal  
Group Page Administrator: Ed Chang  
Please be aware that an email message will be sent to the membership telling how to access the ballot and survey.

**ASME HAWAII STUDENT SECTION 2020-2021 OFFICERS**

The University of Hawaii at Manoa, Department of Mechanical Engineering, ASME Student Section officers are as follows:  
Chairperson: Daryll Suyat  
Vice-Chairperson: Roxanne Agtang  
Treasurer: Jordyn Maeda  
Secretary: Leah Toma  
Financial Chair: Evan Peng  
Events Chair: Shaun Ildefonso  
Historian: Judy Phan  
Webmaster: Linda Qu  
and Faculty Advisor: Dr. Sangwoo Shin  
**"Wishing all our fellow Mechanical Engineers HAPPY HOLIDAYS!"**





### 2020-2021 ASCE Hawaii Section Officers

President: Dayna Nemoto-Shima, P.E.  
email: [dnemoto@ascehawaii.org](mailto:dnemoto@ascehawaii.org)  
Pres.-Elect: Clifford Lum, P.E.  
email: [clum@ascehawaii.org](mailto:clum@ascehawaii.org)  
Vice Pres.: Reyn Hashiro, P.E.  
email: [rhashiro@ascehawaii.org](mailto:rhashiro@ascehawaii.org)  
Treasurer: Eric Tomishima, P.E.  
email: [etomishima@ascehawaii.org](mailto:etomishima@ascehawaii.org)  
Secretary: Sheila Uyeoka, P.E.  
email: [suyeoka@ascehawaii.org](mailto:suyeoka@ascehawaii.org)  
Past Pres.: Jason Kage, P.E.  
email: [jkage@ascehawaii.org](mailto:jkage@ascehawaii.org)  
YMF Pres.: Carly Kaneko, P.E.  
email: [ckaneko@ascehawaiiymf.org](mailto:ckaneko@ascehawaiiymf.org)

### EXECUTIVE COMMITTEE MEETING

Last held: November 09, 2020

Next meeting: December 04, 2020

### ASCE HAWAII SECTION DINNER MEETINGS

The continued health and safety of our membership is our top priority and we will continue to monitor the COVID-19 pandemic. Future in-person ASCE Hawaii Section events, including our section dinner meetings, are still temporarily on hold. We will keep you informed via e-blasts and/or notices posted on our website at [ascehawaii.org](http://ascehawaii.org) when they will be scheduled. Please continue to stay safe, watch out for each other, especially our kupuna, and continue to be vigilant about best health practices.

### ASCE's COVID-19 RESOURCES PAGE

<https://collaborate.asce.org/covid-19/home>

Reminder that ASCE has launched a COVID-19 resources page with online tools and tips in one convenient place. The page includes links to free programs, training, and resources, the results of COVID-19 industry impact surveys, and relevant online discussions with fellow members. The page also offers several ways to work more effectively while at home and activities to take advantage of in the down time you may have – even fun things to do with the keiki! And don't forget that all members have 10 free PDHs! Now may be a good time to catch up on some of those technical on-demand webinars.

### COMMITTEE POSITIONS

ASCE Hawaii is looking for volunteers to fill the following committee positions: One (1) Student Practitioner Advisor (Senior Engineer, Life Member, or Retired professional preferred). If you are interested or have questions on any of these positions, please contact President Dayna Nemoto-Shima, [dnemoto@ascehawaii.org](mailto:dnemoto@ascehawaii.org).

### MEMBERSHIP

If you haven't already done so, please renew your ASCE membership, which includes 10 free PDHs. You can renew your membership at [www.asce.org](http://www.asce.org).

### ASCE HAWAII SECTION STUDENT SCHOLARSHIPS

Please help us increase our scholarship endowment so that we can recognize deserving students. We continue to accept tax-deductible donations with the goal of increasing the annual scholarships. Make your check payable to 'ASCE Hawaii Section' and include the note

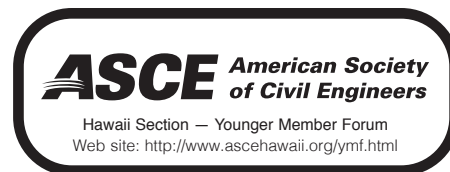
'Walter Lum Scholarship Fund' and mail to: ASCE Hawaii Section, P.O. Box 917, Honolulu, HI 96808-0917. If you have any questions, please contact Eric Tomishima at [etomishima@ascehawaii.org](mailto:etomishima@ascehawaii.org).

### ASCE JOB LISTINGS

The following job listings are currently posted on the ASCE Hawaii Section website:

- **AECOM** (Civil Engineers II)
- **City and County of Honolulu** (Civil Engineer III, IV, V, Mechanical Engineer V, & Electrical Engineer V)
- **G70** (Civil Designer, Civil Engineer, Civil Project Manager, Construction Manager)
- **HDR** (Senior Civil Engineer, Senior Engineering Project Manager, Project Manager, & Water/Wastewater Engineer)
- **Kennedy/Jenks Consultants** (Project Manager, Staff Engineer for Honolulu Office and Staff Engineer for Hawaii Office)
- **Nagamine Okawa Engineers Inc.** (Structural Engineer)
- **RM Towill Corporation** (Assistant Engineer I, Assistant Engineer II, Civil Design Engineer, Design Visualizer, 3D Modeler)
- **Stantec** (Task Order Manager, Office Engineer, Junior Office Engineer, Lead Engineer-Assistant Resident Engineer, Track Inspector, Sr. Project Scheduler)
- **SSFm** (Civil Engineer V, Structural Engineer IV)

For further information, please visit <http://www.ascehawaii.org/job-listings.html>.



### 2020-2021 YMF Officers

Carly Kaneko, President  
[ckaneko@ascehawaiiymf.org](mailto:ckaneko@ascehawaiiymf.org)  
Claire Fukuoka, Vice President  
[cfukuoka@ascehawaiiymf.org](mailto:cfukuoka@ascehawaiiymf.org)  
Brandon Uejo, Treasurer  
[buejo@ascehawaiiymf.org](mailto:buejo@ascehawaiiymf.org)  
Lance Lam, Secretary  
[llam@ascehawaiiymf.org](mailto:llam@ascehawaiiymf.org)  
Kapiolani Street, Past President  
[kstreet@ascehawaiiymf.org](mailto:kstreet@ascehawaiiymf.org)

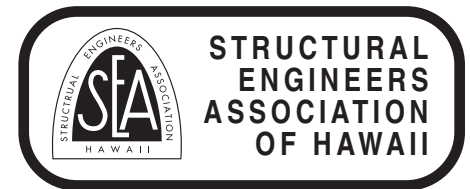
### YMF General Meeting

The next virtual YMF general meeting will be on Wednesday, January 6, 2021. Please send your RSVP to [ymf.hawaii@gmail.com](mailto:ymf.hawaii@gmail.com), link will be distributed to those who RSVP prior to the meeting. Please be sure to check out our website and social media channels for the most updated information and for details on virtual events. If you are interested in attending and learning more about the various professional, social and service opportunities available through YMF, please contact YMF at [ymf.hawaii@gmail.com](mailto:ymf.hawaii@gmail.com).

### Virtual Food Drive

During the months of September and October, the ASCE Younger Member Forum hosted a "Virtual Food Drive" to benefit the Hawaii Food Bank. Participants were tasked to fill and check out a "virtual shopping cart" with donation items of their choosing. The drive was coupled with weekly "Support Local" gift card raffles, through which members participating in the drive were entered to win gift cards to local restaurants as a small token of appreciation. Through the generosity of 34 donors and

additional gift cards donated by ASCE Hawaii Section leadership, the event was able to provide \$275 in gift cards in support of local restaurants as well as over \$1800 in support of the Hawaii Food Bank, which, by their estimates, will equate to over 4500 meals provided to those in need. Thank you to all of our participants!



PO BOX 3348, HONOLULU, HI 96801  
Web Page URL <http://www.seaoh.org>

### 2020 BOD OFFICERS AND DIRECTORS

President: Danny Fujioka  
[dannyf@nagamineokawa.com](mailto:dannyf@nagamineokawa.com)  
Vice President: John Uno  
[john@mkellc.com](mailto:john@mkellc.com)  
Secretary: Jason Emoto  
[jasonemoto@gmail.com](mailto:jasonemoto@gmail.com)  
Treasurer: Kevin Galvez  
[kgalvez@baseengr.com](mailto:kgalvez@baseengr.com)  
Director (Yr 2): Brandi Castillo  
[Brandi.castillo@navy.mil](mailto:Brandi.castillo@navy.mil)  
Director (Yr 2): Kirk Hashimoto  
[kirk@ccpilhawaii.com](mailto:kirk@ccpilhawaii.com)  
Director (Yr 1): Rod Haraga  
[Rharaga.mih@gmail.com](mailto:Rharaga.mih@gmail.com)  
Director (Yr 1): Lauren Tolentino  
[lauren@bondedmaterials.net](mailto:lauren@bondedmaterials.net)  
Past President: Kevin Nakamoto  
[pukapig@yahoo.com](mailto:pukapig@yahoo.com)

### 2021 Board of Directors Nominees

Nominees for the 2021 SEAHO Board of Directors are:

Vice President – Craig Meierhoffer

Secretary – Clifford Lau

Treasurer – James Aoki

Director – Will Wong

Director – Justin Matoi

Voting will be conducted electronically through the new Wild Apricot membership application with instructions sent via email.

### Membership Applications

• Student membership applications from Jessica Lee, Jacob Passoff, and Luke Withy-Berry have been approved.

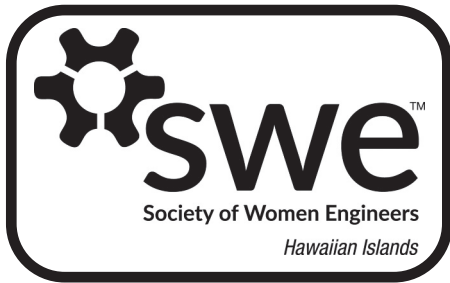
• An Associate membership application has been received from Patricia Paulino of MKE Associates. Please contact any SEAHO Board Member by December 31, 2020 to file comments regarding the application.

**Next Meeting** on December 2, 2020. For information, contact SEAHO President Danny Fujioka.



### 2019-2020 ITE Officers

President: Jennylyn Tapat  
[JTapat@wilsonokamoto.com](mailto:JTapat@wilsonokamoto.com)  
Vice Pres.: Kelly Akasaki  
[Kelly.akasaki@honolulu.gov](mailto:Kelly.akasaki@honolulu.gov)  
Sec/Treas: Jasmine Teramae-Kaehuaea  
[jkaehuaea@atahawaii.com](mailto:jkaehuaea@atahawaii.com)



HOME PAGE: <http://hi.swe.org>  
 EMAIL: [swe.hisection@gmail.com](mailto:swe.hisection@gmail.com)  
 Facebook: [www.facebook.com/swe.hawaiianislands](http://www.facebook.com/swe.hawaiianislands)

**2019-2020 SWE Hawaiian Islands (SWE-HI) Section Officers**

President: Dian Nguyen, [dungnguyen@gmail.com](mailto:dungnguyen@gmail.com)  
 Vice President: Andrea Mansfeld, [amansfeld@oceanit.com](mailto:amansfeld@oceanit.com)  
 Treasurer: Kristen Yoshida, [kristenhaau@gmail.com](mailto:kristenhaau@gmail.com)  
 Secretary: Chi Jow, [cjow.swehi@gmail.com](mailto:cjow.swehi@gmail.com)

The mission of the Society of Women Engineers is to empower women to achieve full potential in careers as engineers and leaders, expand the image of the engineering and technology as a positive force in improving the quality of life, and demonstrate the value of diversity and inclusion.

**\$50k Endowment Celebrates Hawaii's First Woman Engineer**

By Shawnja and Erin Yamaguchi

*New Scholarship honors one legacy and creates opportunities for new ones*



**Mae Nakatani Nishioka**

The Hawaiian Islands Section (SWE-HI) of the Society of Women Engineers (SWE) is excited to announce a \$50,000 endowment fund with our "first" scholarship to be awarded August 2021.

The Mae Nakatani Nishioka Scholarship Fund is an annual award managed by the Hawaii Community Foundation

on behalf of SWE-HI. This scholarship is open to Hawaii residents pursuing a STEM career and identifies as women, non-binary, transgender, two-spirit, and/or third gender.

This honors the legacy of Masako "Mae" Nakatani Nishioka, the humble and steadfast "girl" who in 1954 became the first woman graduate from the University of Hawai'i at Mānoa College of Engineering. Mae understood that gender parity is powerful. She loved mentoring students and sharing her passion with professionals in engineering and technology. She continues to pave the way by inspiring other students to create their own legacy.

From the government to the boardroom, 2020 was the year people of all races and gender took to the streets to educate the nation on systematic inequality. In Hawaii, more than 66 years earlier, that "girl" bravely broke glass ceilings that are still being broken today.

**ABOUT THE FUND**

**Society of Women Engineers (SWE HI) Scholarship Fund in Honor of Mae Nakatani Nishioka**

This fund, in honor of Mae Nakatani Nishioka and started in 2020, is for women majoring in engineering and technology. Requirements:

- Be a resident of the State of Hawaii
- Demonstrate financial need
- Be in good academic standing by maintaining a minimum cumulative GPA of 2.0
- Student intending to study or enrolled in an

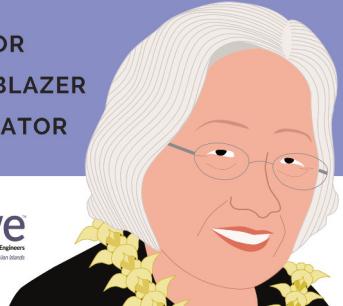
engineering or technology field.

- Undergraduate or graduate degree seeking student.
- Attending a 2 or 4-year institution
- Woman or other underrepresented gender in engineering or technology field, including, but not limited to: women, non-binary, transgender, two-spirit, and/or third gender.

Preference for recipients who were awarded in the immediate prior year if such recipient continues to meet the eligibility requirements and is in good academic standing.

**MAKERS FOR MAE**  
 FUNDRAISER FOR MEMORIAL SCHOLARSHIP  
 Honoring Mae Nakatani Nishioka  
 Hawaii's first woman engineer

**MENTOR**  
**TRAILBLAZER**  
**INNOVATOR**



**ABOUT SWE AND SWE-HI**

The Society of Women Engineers (SWE) is the world's largest advocate for women in engineering and technology. SWE helps over 40,000 members to reach their full potential and champions the value of diversity by being the catalyst for change. SWE - Hawaiian Islands Section (SWE-HI) works to advance gender parity and equality and hosts outreach programs to inspire the next generation of Hawaii engineers. Find out more at [hi.swe.org](http://hi.swe.org).

**PROF. KIM'S NEW BOOK ON OCEAN RESOURCES NOW AVAILABLE**

Can ocean thermal energy conversion and seawater utilization assist small island developing states? That's just one of the important questions that a new book edited by Civil & Environmental Engineering Professor Albert Kim asks. "Ocean Thermal Energy Conversion (OTEC): Past, Present, and Progress" is a fascinating read that readdresses the past achievements, present developments, and future progress of ocean thermal energy, and dares the reader to consider how the world can advance the utilization of ocean resources given that the 21st century has been characterized as an era of natural resource depletion, causing humanity to be faced with several threats due to the lack of food, energy, and water. It highlights the fact that climate change and sea-level rise are at unprecedented levels—phenomena that make predicting the future of ocean resources more complicated.



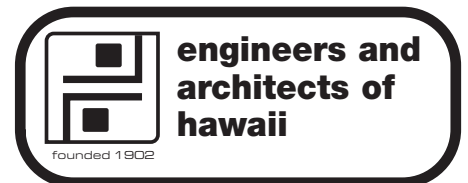
**Hawaii Section 2019-2020 OFFICERS**

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The local section, AAACE Hawaii, was originally established in 1973. It achieved both the Platinum and Gold Award for six consecutive years 2014-2019. Our local area continues to achieve CCP, CEP, CST and PSP certifications. For more information, please visit <http://web.aacei.org/certification> and our local website [www.aacehawaii.com](http://www.aacehawaii.com).



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**Friday December 4 and January 8th**

Visit EAH WEB page for program details and links on EAH Programs at [eahawaii.org](http://eahawaii.org).

**EAH Zoom Meeting: November 6 Friday Speaker: Sam Gillie, EAH Treasure – Retired Hawaiian Electric**

**Topic: "Zoom Basics"**

**Sam Gillie** presented his Zoom cheat sheet for Zoom meeting providing screen shots for doing the following: Scheduling & Joining a Meeting; Testing Speakers & Mic – before joining meeting; Joining with Phone or Computer Audio; Selecting Front or Back Camera; Changing your Name; Host – admitting participants; Testing Speakers & Mic during meeting; Main Settings Menu; Virtual Backgrounds – Green Screens – Download; Video Filters – Fun; Sending Meeting Invite while in Meeting; Sharing Screens; Using White Board with Participants; Recording Meetings; Change Host during Meeting; Change Host when Leaving Meeting. The cheat sheet will be available at the [eahawaii.org](http://eahawaii.org).

**ALOHAnet,  
continued from Page 1**

o PACNET started as the first packet-broadcasting satellite network linking sites in Alaska, Australia, California, Hawaii, and Japan.  
o PACNET utilized the ALOHA protocol.

Inspired by ALOHAnet "ARPA initiated the PRNET project in 1973, funding both theoretical and experimental research. Its goals were outlined by Bob Kahn, namely, to investigate the feasibility of using packet-switched, store-and-forward radio communications in a mobile environment." PRNET goal was to address a significantly harder set of problems not addressed by ALOHAnet; specifically, multi-hop communications between mobile vehicles without a central station.

As a researcher, Dr. Abramson obtained ALOHAnet FY67 funding through Project Themis a Department of Defense (DoD) program that was established to fund "have-not" research universities. DoD only funded research efforts at top tier universities at that time. Project THEMIS provided the largest amount of research project funds that the University of Hawaii had ever received to fund the ALOHA System in September 1968.

In addition to its research goals, the purpose of ALOHAnet was to solve a significant issue that required a significant amount of funding — leased, dedicated telephone lines connecting the University of Hawaii main campus mainframe computer on Oahu to the terminals and remote sites on the other islands.

The University of Hawaii system consists of: a main campus on the island of Oahu; a four-year campus on the island of Hawaii; five two-year community colleges on the islands of Oahu,

Kauai, Maui, and Hawaii; and a number of research institutes with operating units distributed throughout the state. All of the University of Hawaii facilities while residing on different islands, are within a radius of 200 miles from the main campus located on the island of Oahu. The goal of the ALOHAnet (aka ALOHA System) was to connect these geographically separated facilities with relatively low-cost commercially available radio equipment

"The attitude that we had was that the existing telephone network, which was used by people in those days, was the wrong approach," Abramson says. "The telephone network was something that was set in place at the end of the 19th century, and we were at the end of the 20th century. We thought that radio communications might be a good way to start on it."

Today, with the exception of Wi-Fi (it utilizes single channel communications), ALOHA channels are utilized in all major mobile networks and in almost all two-way satellite data networks to establish the initial communications link.



**This user is operating the ALOHAnet hub machine, which uses a random access protocol to transmit packets over a shared channel.**

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