FALL 2021 FRANCIS RHODES MONTGOMERY DESIGN COMPETITION RESULTS

The Fall 2021 ASME Hawaii Francis Rhodes Montgomery Design Competition (FRMDC) was held on Friday, December 10, 2021 via Zoom video conference. The annual event is in its 34th year and is cosponsored by the University of Hawaii at Manoa, Department of Mechanical Engineering, and the ASME Hawaii Francis R. Montgomery Foundation.

This Fall, under the guidance of Dr. Zachary Trimble, the design competition consisted of 4 project teams from the ME 481/482 design course. Teams performed a timed presentation detailing their project goals, challenges, application of engineering principles, and design results. The teams also were able to host timed poster presentations where judges were able to ask more detailed questions about each project. The teams utilized pre-recorded videos to demonstrate their projects. Due to the complexity and size of these projects, the videos were significant to demonstrate each of the projects functionality and successes.

Student projects included the University of Hawaii Drone Technologies (UHDT), an unmanned surface vessel for Autonomous Marine Robotics Research (Kanaloa), a telecommunication underground utility scanner (WeCDI), and improvements to Diamond Bakery Manufacturing processes (DBMI).

Despite the challenges of the pandemic, these students adapted extremely well especially when projects required integration with functioning businesses. All teams did a fantastic job planning, designing, problem solving and converting their design concepts into reality. Following the ASME/FRMDC scoring rubric and guidelines, the judges ranked the first and second place teams as follows: First place and $500 went to Team UHDT: University of Hawaii Drone Technologies. Second Place Team: Team Kanaloa: Unmanned marine surface vessel

The Team goal was to design and fabricate an autonomous drone capable of completing a waypoint flight path, while avoiding obstacles and delivery of a specified payload to a pre-designated location. Previous drones entered into the Student Unmanned Aerial System Competition were fixed wing vehicles that are fast in flight, but its speed increased its difficulty navigating waypoints accurately delivering the payload. The customized rotary wing drone resolved many issues and provided a balanced approach to achieve a higher competition score.

Acknowledgements:
ASME Hawaii would like to thank Professor Zachary Trimble along with the UHM DME for leading and conducting the Fall 2021 Francis Rhodes Montgomery Design Competition. Thanks to all the Senior Design Course participants who worked extremely hard to develop and present their mechanical engineering projects. Finally, thanks to the judges Douglas Dye, Richard Leclerc, and Brianne Yamada who scored the projects. All judges are mechanical engineering volunteers from Hawaiian Electric Company where Francis R. Montgomery worked.

Team Project Descriptions:
First Place Team: Team UHDT: University of Hawaii Drone Technologies
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Second Place Team: Team Kanaloa: Unmanned marine surface vessel
Team Kanaloa’s objective was to reconfigure an unmanned surface vessel for the purpose of future autonomous marine robotics research. The vessel’s re-design features manual differential control and additional sway motion. The team’s newly developed electrical system is housed entirely with the twin hulls. Its on-board computer system publishes and records localization sensor data via wireless transmission with a fixed ground station computer.

Team DBMI: Diamond Bakery Manufacturing Innovations
Diamond Bakery needed assistance to optimize their cracker packaging and cookie cooling lines. To improve the cracker line efficiencies, a new chute transition was designed and implemented to reduce breakage and interruptions in the cracker wrapping process. The cookie cooling conveyor was improved with new ramps and enclosed chutes to maintain consistent cookie orientation, which is a prerequisite for future chicaning installation.

Team We Con-du-It
Hawaiian Telcom sponsored the design and development of a working prototype device capable of ultrasonically detecting underground conduits and cables. The device was designed to be portable and with continued development should have the potential to detect and differentiate between cable types.
EAH hosted the below meetings in February.
Friday February 18th Speaker: Hans K Van Tilburg, PhD, Maritime Heritage Coordinator Pacific Islands Region, NOAA Office of National Marine Sanctuaries. Topic: “Falls of Clyde and the history of Scottish Shipbuilding”

This year EAH is hosting past meetings on Oleo Channel 53. The 30 Minute Programs premiers on the 2nd Wednesday of the month at 6:00 pm and will replay on Sunday’s at 1:00pm until the new premier on the following month. Visit the EAH Website for Oleo’s On-line Links to these Programs: Restoring Lehua Island; China Clipper Inaugural Passenger Flight 1936; Haiku Stairs History; Subterranean Robot Challenge; 52 Years of Architecture – Geoffrey Paterson; Dan Eckert Photographer-Topic Hyperlapse; Ala Wai Ahupua’a – 5 Step Solution; A Heritage of Ruins – Dr. William Chapman; Save Historic Haiku Stairs.

**EAH 2021 Officers**

**President**

Phili Blackman 282-7948
1st V. P. Canaan Shon 845-3900
Secretary Aaron Erickson 591-2726
Treasurer Martin McMorrow 256-4713
Director George Coates 234-5659
Director Howard Wieg 587-3811
Director Joe Feind
Director Dave Martin 543-4504

EAH is restarting in Person Meetings at our old 301 meeting room in the Topa Tower starting at our February 4th Meeting. Please email eaHawaii@gmail.com if you plan on attending so we can get a head count. Lunch will be Free! Validated Parking $2

Regular meetings are held 2 times per month on Fridays. Meetings start at NOON and have ended PROMPTLY at 1:00pm for over 110 Years. Members, guests, and the Public are welcome to join EAH meetings. Email eaehawaii@gmail.com to get the Zoom meeting links.

**March Programs**

See EAH Website eaehawaii.org

**Friday March 4th - Speaker: TBA**

**Friday March 18th - Speaker: TBA**

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**EAH sponsored events in February 2022: 30 Minute Programs**

**February 2nd – Speaker: Bob Sigall – Rear View Mirror – Star Advertiser, Eminent Speaker, Historian and Man For All Seasons. Topic: “The World As Seen From The Rearview Mirror”**

**February 16th – Speaker: Hans K Van Tilburg, PhD, Maritime Heritage Coordinator Pacific Islands Region, NOAA Office of National Marine Sanctuaries. Topic: “Falls of Clyde and the history of Scottish Shipbuilding”**

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ASME-HI 2021-2022 Officers
Chairperson Derek Sato
derek.sato@hawaiianelectric.com
Vice-Chair vacant
Secretary Raymond Liu
treasure@seaoh.org
Treasurer Kevin Dang
dangk001@hawaii.rr.com

ASME-HAWAII GENERAL MEMBERSHIP MEETING
Date: March 2022 (Date not set.)
Agenda: TBA
Time: 5:00 pm
As usual, all members, students and guests are invited and encouraged to attend our Zoom Conference Call meetings. Please contact Derek Sato for the link.

GENERAL MEMBERSHIP MEETING
February 18, 2022
Notes of this meeting will appear in the April Wiliki issue.

NOMINATIONS FOR ASME-HAWAII 2022-2023 OFFICERS
ASME Hawaii Section is seeking ASME members who would like to start a new future promoting mechanical engineering as part of the ASME-HI team. All leadership positions are open including Chairperson, Vice-chair, Treasurer, Secretary, and three Member positions. It has been a tradition where an interested ASME member starts as a Member and climbs his or her way to Chairperson with the assistance of fellow officers. The term for all positions run from July 1 to June 30 each year.

2022 MATHCOUNTS COMPETITIONS UPDATE
Hawaii MATHCOUNTS Coordinator, Nhu Pham, announced that the Oahu Chapter Competition was scheduled for February 17, 2022, and hosted online through the Art of Problem Solving (AoPS) Contest Platform, as last year. Pham went further saying that he was looking at staging the Hawaii State Competition in-person at the Ke'ehi Lagoon Memorial. This would take place Saturday, March 26, 2022. The logistics involved considering COVID-19 is still around will require much additional efforts arranging for PA system, projection equipment, and so forth. Volunteer scorers and proctors are needed for the March 26 competition. If you can help or need more information, you can contact Nhu Pham of Bowers & Kubota Consulting at 808-836-7787.

PREVIOUS BOD MEETING
February 02, 2022
General Membership Meetings/Technical Seminars/Events
For all events see seaoh.org or look for email flyer for registration.

SEAOH Scholarship Golf Tournament
SEAOH held the 2021 golf tournament on Friday, 11 February at Hoakalei Country Club. 26 teams participated in the event with wonderful food and drink options on the course as well as raffle prizes. First place was a tie between Team Sean Sadaoka, Shane Lawrence, Sze Quek, and Matthew Kato and Team James Kawaihalau, Shari Ishikawa, Joel Venegas, and Caleb Fauti with a net score of 49. Congratulations! The 2022 tournament is tentatively scheduled for October.

Education Committee
We are currently looking for an individual to serve as Education Committee Chair. If interested, please contact a current board member for more information.

Membership Applications
Applications were received from:
• Colin Sakamoto, Associate Member
• Christian Jones, Associate Member
Please contact any SEAOH Board Member by April 4, 2022, to file comments regarding any of the applicants.

Next Meeting on Wednesday, March 2, 2022.
For information, contact SEAOH President Craig Meierhoffer at cmeierhoffer@baseengr.com

Deadline for Wiliki is March 15th

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2021-2022 ASCE Hawaii Section Officers
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email: clum@ascehawaii.org
Pres.-Elect: Reyn Hashiro, P.E.
email: rhashiro@ascehawaii.org
Vice Pres.: Eric Tomishima, P.E.
email: etomishima@ascehawaii.org
Treasurer: Sheila Uyeoka, P.E.
email: suyeoka@ascehawaii.org
Secretary: Steven Doo, P.E.
email: sdo@ascehawaii.org
Past Pres.: Dayna Nemoto-Shima, P.E.
email: dnemoto@ascehawaii.org
YMF Pres.: Claire Fukuoka, P.E.
email: president.ascehawaiiymf@gmail.com

EXECUTIVE COMMITTEE MEETING
Last held: February 8, 2022
Next meeting: March 8, 2022

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. Zoom meetings will be scheduled in lieu of in-person meetings, date and time TBD. We will keep you informed via e-blasts and/or notices posted on our website at 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.

MARCH MEETING – Watch for an e-blast with information and a link to register for our next meeting.
Cost: (RSVP via Eventbrite)

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 track the most updated information on COVID-19 results of COVID-19 industry impact surveys, and relevant online discussions with fellow members. The page also offers several ways to track the most updated information on COVID-19.

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 Sheila Uyeoka at suyeoka@ascehawaii.org.

ASCE GOLF TOURNAMENT
Save the date for this year’s tournament, currently planned to be on Friday, Aug 5, 2022.

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, Civil Engineer V (Geotechnical), & Electrical Engineer V)
- Gray Hong Nojima & Associates, Inc. (Junior Civil Engineer)
- G70 (Civil Designer, Civil Engineer, Civil Project Manager, Construction Manager)
- HDR (Hawaii/Pacific Transportation Business Group Manager, Senior Civil Engineer, Project Manager, Civil Project Engineer)
- Hawaii Housing Finance and Development Corporation (Manager, Civil Engineer)
- Kennedy/Jenks Consultants (Project Manager, Honolulu Staff Engineer, Hawaii Staff Engineer)
- Nagamine Okawa Engineers Inc. (Structural Engineer)
- R.M Towill Corporation (Assistant Engineer I, Assistant Engineer II, Civil Design Engineer, Design Visualizer II)
- SSFM (Civil Engineer V, Structural Engineer IV)
- Stantec (Account Manager/Engineer-Water)

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

2021-2022 YMF Officers
Claire Fukuoka, President
email: president.ascehawaiiymf@gmail.com
Brandon Uepo, Vice President
email: buepo@ascehawaiiymf@gmail.com
Lance Lam, Treasurer
treasurer.ascehawaiiymf@gmail.com
Rebecca Pitts, Secretary
secretary.ascehawaiiymf@gmail.com
Carly Kaneko, Past President
pastpresident.ascehawaiiymf@gmail.com

YMF General Meeting
The next YMF general meeting will be on Wednesday, March 2, 2022 at 6:00 PM (Location TBD). Please send your RSVP to ymf.hawaii@gmail.com. Please be sure to check out our website and social media channels for the most updated information on our upcoming general meeting and 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.

ASCE YMF Job Shadow Program
The Job Shadow Program is looking for students and industry professionals that are interested in becoming a mentee/mentor. Your interest and participation through this program will provide a valuable experience that will help guide students towards a successful path beyond graduation!
If you have any question and/or to sign up*, please email the Job Shadow Program directly at ymfhawaii.jobshadow@gmail.com.

*Note: Information collected will help the Job Shadow Program pair mentor(s) and mentee(s) up based on their experience and interest.

2022 PE Exam Update
The PE Exam will be computer-based with appointments available year-round at Pearson VUE test centers beginning April 1, 2022.

Information about how to register for the exam and purchase study materials can be found on the YMF website: https://ascehawaiiymf.org/pe-exam-information

Online PE Refresher Course
The Hawaii YMF has partnered with Pathceed, an online PE Exam refresher course that covers the breadth portion of the civil engineering exam. This course features 12-hours of on-demand course materials that may be accessed for a 6-month period, and a one-time free access should you not pass the exam. Curious but want a sample of the course? There’s a free 1-hour lesson you can check-out before committing to the program!
Cost of the course is $289 and we are offering ASCE Hawaii YMF members a $40 discount when registering. If interested in signing up for this course, please contact Nicole at ymf808.pecourse@gmail.com for more information.

HAWAII CHAPTER OFFICERS
President: Robert Bigtas
Coffman Engineers
bigtas@coffman.com
Vice President: Derick Kam
NAVFAC Hawaii
Secretary: Fordi Guinto
NAVFAC Hawaii
Treasurer: Sam Dannaway
Coffman Engineers
Director: Mel Harano
Thermal Engineering Corporation
Director: Bob Lohaus

2021 Officers
President: Rouen Liu
Vice-Pres: Tyler Sugihara
Secretary: Dawn Szewczyk
Treasurer: Ryan Char

Website: hawaii.apwa.net
The Section also hosted a “Create Your Street” interactive display and provided Complete Street flyers and coloring books at Windward Mall on February 21 for the National Engineers Week display.

The ITE student chapter hosted a Virtual Resume Workshop to help UH students prepare their resumes for the College of Engineering Job Fair.

If you would like to be added to the ITE mailing list, please email Mike Motoki at michael.motoki@honolulu.gov.

In 2019-2020, the Hawaii Section Officers were as follows:

- President: Christopher Baze
- Vice President: Keoni Wasano
- Secretary: Mario Flores
- Treasurer: Jeanette Roberts

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