

THE PIPELINE

IN MEMORY OF WARREN PAI

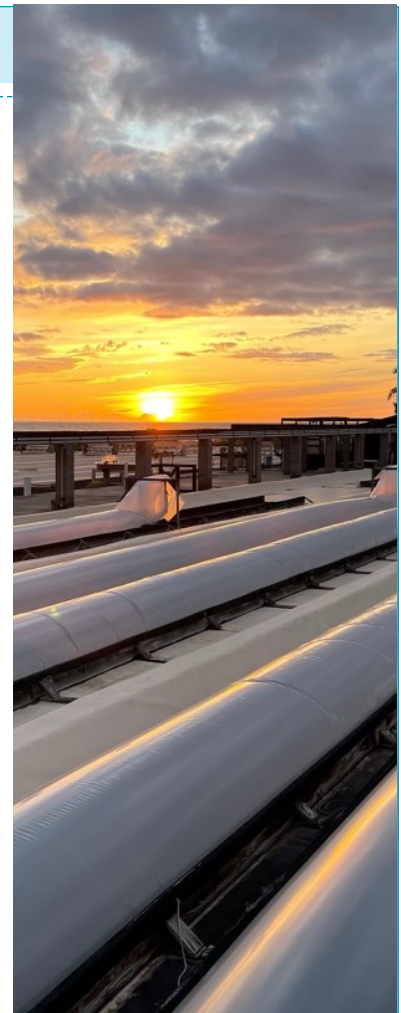
NELHA and Cyanotech Corporation would like to take this opportunity to pay our respect and remember Warren Pai, who passed away last month. Warren worked for Cyanotech for 26 years cultivating and harvesting *Spirulina* and *Astaxanthin* product microalgae. He was a front-line worker who spent many hours in the grueling Hawaiian sun, caring for and harvesting the algae. His steady hard work should not go unrecognized as his career literally contributed to the growth of the microalgae industry. Warren helped create an aquaculture farm that has grown from



a few acres to a massive 90-acre production facility. For his efforts and dedication he was recognized by the Algae Biomass Organization (ABO) in 2020, and was a recipient of the Unsung Hero Award (pictured here).

Warren's family has ties to this area where he harvested algae. The land he cared for was part of an Ahupua'a system of agriculture or land extending from mountain to sea. Hawaiians were some of the first aquaculturists as they created elaborate fishponds. In a way, Warren was carrying on a family tradition of aquaculture. He not only worked on this land but also deeply cared for the Aina through his stewardship and actions. He regularly walked along the shorelines cleaning the beaches and picking up garbage, while fishing. Warren's warm spirit and unforgettable laugh will be missed, yet never forgotten.

*Warren Pai holding the ABO
Unsung Hero Award in 2020.
Photo Curtesy of Cyanotech.*



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TED Talk Links (click below)

[County of Hawaii TEDx series November 13, 2021](#)

[Elemental Excelerator Dawn Lippert Countdown Summit October 2021](#)

[Blue Revolution Hawaii TEDx series, December 11, 2021](#)

[County of Hawaii Sustainability Summit March 2021](#)

TIS THE SEASON FOR TED TALKS

There have recently been some great TED talks by Hawaii movers and shakers. These include an excellent TEDx series organized by the County of Hawaii and showcasing ten Hawaii Island residents, some of which (spoiler alert!) plan to join NELHA in 2022. This series is a follow up to the County's Sustainability Summit in March 2021.

Dawn Lippert from Elemental Excelerator makes the case that technology can only bring half the solution to climate change and clean energy challenges, more investment needs to be made into the community component in her recent TED talk.

Finally, on December 11, Blue Revolution Hawaii presented a TEDx series on ocean aquaculture which included speakers from two of NELHA's companies as well as other Hawaii thinkers.

If you have missed these, they are all available on line for free (see links in insert).



"The world always seems brighter when you've just made something that wasn't there before." Neil Gaiman.

Recognition for HATCH portfolio companies

Talking about women in aquaculture, many of the HATCH companies are led by woman who have been recognized recently:

Alexia Akbay, CEO of Sym-brosia has been included in the [2022 Forbes 30 under 30](#).

Liris Madunintyas, cofounder of Jala Tech was included in the [2021 Forbes 30 under 30](#).

Heidi Kuehnle, CEO of KAS won the [Seafood Innovation Award at NASF 2021](#) as well as the [Island Innovation Pitch competition](#) this November.

Congratulations to these amazing ladies!

HATCH 2021 INNOVATION STUDIOS

HATCH delivered four innovation studios in 2021 to assist with the growth of early stage aquaculture projects and develop a pipeline of projects for the accelerator program. Each had a different focus: Ireland, Singapore, Hawaii and Women in Aquaculture. HATCH received quite a bit of interest in the Hawaii workshop. 50% of the attendees were already based in Hawaii and all were looking to develop new aquaculture projects in Hawaii.

HATCH also just completed a "Women in Aquaculture" innovation studio in partnership with Conservation International. The event was successful attracting over 200 registrations from women led aquaculture businesses and industry from around the globe.



CONSIDER SUPPORTING NELHA BUSINESSES THIS HOLIDAY SEASON

Each year, we like to remind everyone that businesses at NELHA can help you with making gift giving easy. They will appreciate your support now more than ever, as businesses recover from the pandemic economic hardships.

You may consider purchasing foods produced right here at NELHA for your holiday meals or as gifts. You can purchase direct from businesses such as [Cyanotech](#), [Big Island Abalone](#), [Kona Sea Salts](#) or from [Kona Cold Lobsters](#), which distributes a large variety of NELHA seafoods.

Also, unique experiences at HOST Park make great gifts: the [Keahole Center for Sustainability](#) has started tours again, as have [Ocean Rider](#) and [Kanaloa Octopus Farm](#). In addition, [Kona Sea Salts](#) started offering popular farm tours this year.



HOLIDAY WISHES FROM NELHA EXECUTIVE DIRECTOR

We would like to take this opportunity to say thank you for the business and support you have given us throughout the year. We have all had many challenges this year during the pandemic and we know that there are better times ahead for us all! May this holiday season be a time of rest and eating as much of the wonderful seafood and sea greens produced here at HOST Park. From the fantastic NELHA team, warm wishes to you, your family, and your loved ones throughout the holiday season.

Greg Barbour

INNOVATION VILLAGE

Initial planning and design for the new HOST Park Innovation Village consisting of additional buildings, lab and open space to support innovative ocean projects is now complete. The next step, which is the permitting process, has commenced. The village will be located on 7 acres approximately 1,000 ft south of the existing research campus which is currently 90% full. The goal is to complete construction by end of 2024.

A pavilion is also planned for the beach park to serve as a central visitor center.



Renderings of Visitor Center (lower) and Innovation Village (upper) courtesy of WRNS Studio.

Are you enjoying this newsletter?

Previous issues of The Pipeline are available on our website:

- [Summer 2019](#)
- [Winter 2019/2020](#)
- [Summer 2020](#)
- [Winter 2020/2021](#)
- [Summer 2021](#)

Mats 4 Project Breaks Ground

A blessing for the Mats 4 convenience store and refueling station project took place on November 4th. Construction is expected to be completed by mid 2022. You will soon be able to grab coffee and pick up lunch made from NELHA products as you enter HOST park! EV refueling will also be available.



Auntie Lindsey leads the blessing with Burke Matsuyama and sons.

SBDC News

The West Hawai'i SBDC, with offices in the Hale Iako building, assists West Hawai'i's business to form, grow and thrive. 2021 was a very strong year for impacts. The Center saw 270 new clients last year and already assisted clients in securing almost \$7 million in funding and in achieving over \$2.5 million in sales increases. It also assisted clients in starting 14 new businesses and in creating 106 new jobs.

The SBDC does not charge for its services and is open to all local businesses for a range of business advising and financing services. Feel free to contact Dennis Boyd or Marty Kennedy at 808.333.5000 to inquire or register online at hisbdc.org.

HOST PARK MICROGRID STUDY COMPLETED

UH Hawaii Natural Energy Institute (HNEI) has completed a HOST Park microgrid analysis study. This State funded project through the Hawaii State Energy Office identified power system requirements, technical and regulatory opportunities and barriers, and developed microgrid power system conceptual design options for a 10-year roadmap.

HNEI identified several areas where the merging of geographical proximate load centers would be economically advantageous to NELHA, particularly at the research campus/farm compound area and the 55" pumps station. Adding renewables will further increase savings. The next step will be to solidify plans and secure funding.



Chronological Planning for NELHA to realize microgrid improvements.

STAFF UPDATES



Congratulations to Jerrae Miranda for 10 years of excellent service at NELHA! Jerrae is our Business Manager and keeps our office running smoothly. Words cannot describe how appreciative we all are of her service, her wonderful smile, generosity and warm Aloha for the entire NELHA Ohana. We are so lucky to have her as part of our team!

Left: NELHA Board Chairman William Mielcke presents Jerrae Miranda with her award as Executive Director, Greg Barbour looks on.

We would also like to congratulate Celestino "Cilly" Gibo who will be retiring January 1, 2022. Cilly joined the NELHA operations crew in 2004. You have almost certainly seen him expertly maneuvering our heavy equipment and/or working on the sea water distribution systems. We are very sorry to see him leave but happy for him to enjoy his well deserved retirement!

Right: Cilly (front and second from right) stands with ops crew members who are (from left to right) Tony, Kevin, Allon and Chad) at Cilly's recent birthday celebration event.



NELHA WINS 3RD PLACE FOR AMC NETWORK CHALLENGE

The [American -Made Challenges](#) are part of a federally funded program where innovators have a chance to win cash prizes for ideas that advance U.S. leadership in the energy industry. The program has assembled a network of **over 340 supporting organizations** consisting of national laboratories, incubators, universities and other partners that can support the challenge competitors. NELHA is part of this connector network and has, in the past, supported some winning teams such as the [Hawaii Innovation Lab](#). While most of the \$65M + prizes are for the innovators, there are also prizes for the supporting organizations. For the second year in a row, NELHA has won **3rd place** for the AMC Solar Prize ACCEerator Challenge, outcompeting hundreds of organizations with significant more resources! The associated cash prize we received will help assist other companies.



NELHA connector network team members: (from left to right) Jennifer, Alex, Laurence, Greg, Jerrae and Keith

“You miss 100 percent of the shots you don’t take.” Wayne Gretzky.

LIGHT MANUFACTURING DROPS ELEVATION FOR MORE SUN

In November, LightManufacturing Inc. (LMI) moved their solar rotational molding plant to the "North 90" zone of NELHA. The new site is just 1.2 miles northwest of the Gateway Center where LMI first set up operations, but has a sunnier micro-climate more compatible with LMI's molding process.

At the new location LMI successfully molded 950 gallon water tanks for the first time, and has been getting those into customers' hands alongside the 290 and 500 gallon tanks. The 950 gallon tank is the largest sustainably molded water tank in the world, offering customers a great value for water storage, super high tank quality,

and much reduced climate impact.

LMI has a variety of clients but also supplies aquaculture tanks to some of their NELHA neighbors, including Blue Ocean Barns. LMI is excited to support innovative aquaculture projects, and more generally to assist where they can with HATCH and other aquaculture efforts on the Big Island.

While tank molding has moved to the North 90, LMI kept the tank pick-up area at the old Gateway site for easy customer access.

More information can be found at LMI's [website](#).



New LMI manufacturing location at the North 90 (upper) and tank products (lower).

JOB OPENINGS

NELHA currently has one job opening for an electrician with a few more expected soon.

HATCH is also looking for a [Marketing Lead Executive](#).

Contact us at nelha@nelha.org if interested.

UNDERWATER CAMERA ACTION

In the Summer 2021 newsletter, you found out about the [UH Hilo underwater camera](#) livestream located off of Keahole Point.

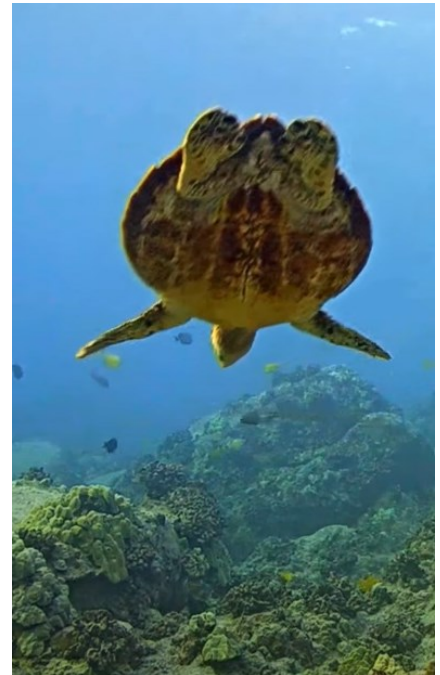
We are amazed at the critters that have been making appearances: octopus, sharks, rays, turtles, fish, and eels, to name a few. MEGA Lab has been compiling the best of each month in 10mn shorts:

[August Highlights](#)

[September Highlights](#)

[October Highlights](#)

[November Highlights](#)



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NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY (NELHA)

NELHA administers the world's premier energy and ocean technology park. This unique master-permitted park is located on 870 acres of prime coastal property in Kailua-Kona Hawaii and offers R&D support facilities for the development of renewable energy and ocean technologies through demonstration projects that utilize the unique resources found at the park. NELHA continually brings ashore high quality, pristine supplies of both warm surface and cold deep seawater 24 hours a day which allows for various tests to take place with intent to reap economic potentials from the dual temperature seawater delivery system and high solar insolation. Tenants located in HOST Park work at the pre-commercial, commercial, research and educational levels. It is the largest diversified economic development project in the State and is solely focused on developing green economic projects.