CENTER FOR
TROPICAL AND SUBTROPICAL
AQUACULTURE

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Letter from the Director

Aloha and Happy Holidays,

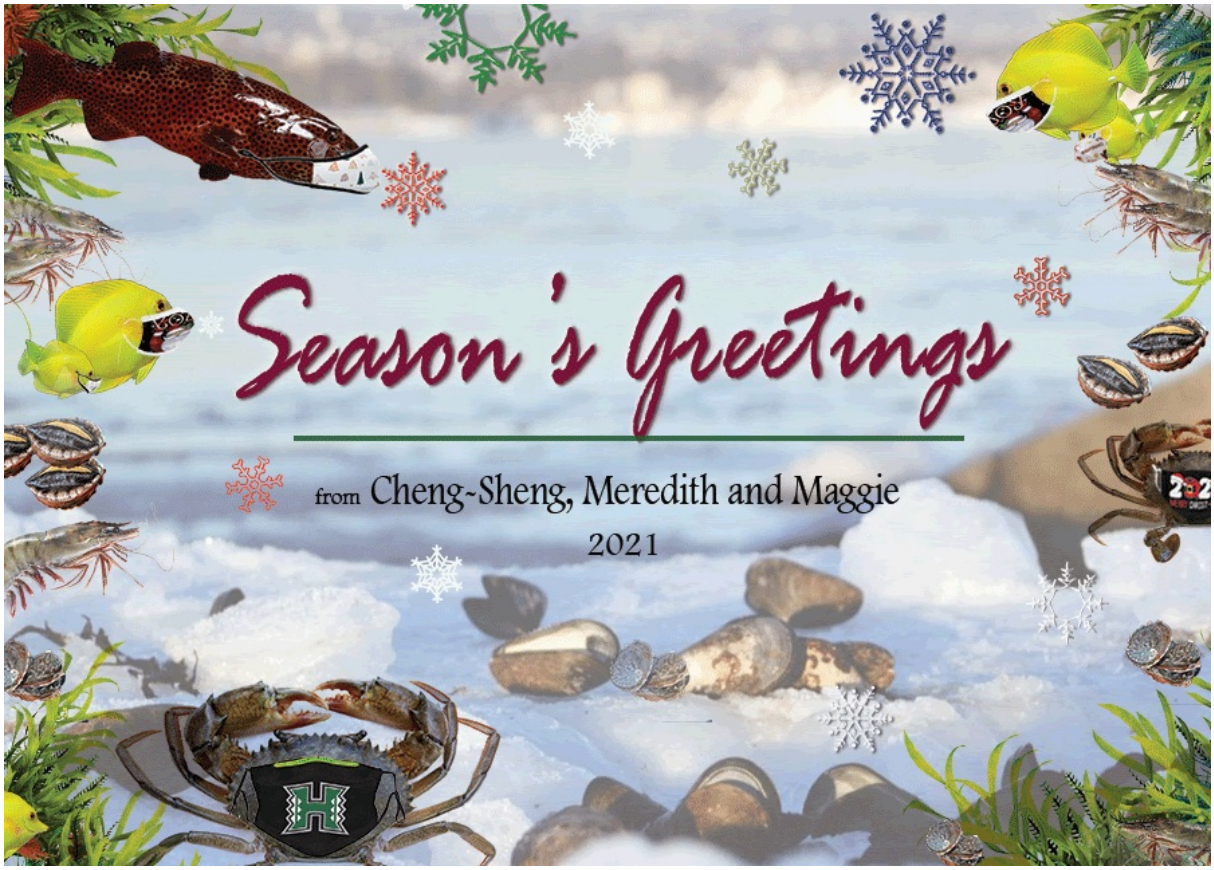
As our CTSA team prepares to enter a new year, we have been reflecting on this year of great change. Sadly, 2021 brought the loss of some people close to our program, including our recently departed colleague Warren Dominy. I will miss my friend Warren, as well as his dedication to aquaculture development in our region and around the world through his feed research. I share my heartfelt condolences for his wife Suzi, his children, and the rest of their ohana. Please take a few moments to read Warren's obituary in this issue of e-Notes.

2021 also brought new partnerships worth highlighting. One of our brightest outputs this year is our education program, which is growing under an ongoing Sea Grant project. As we progress with our professional training and in-class activities, we are finding more and more teachers and education professionals who are willing and desiring to teach students about sustainable seafood and aquaculture. As we all know, education is essential to the future of our industry; it is important for the next generation to 'take the torch and run with it,' so to speak, and I am very pleased to see the enthusiasm among the teachers and students participating in our ongoing project.

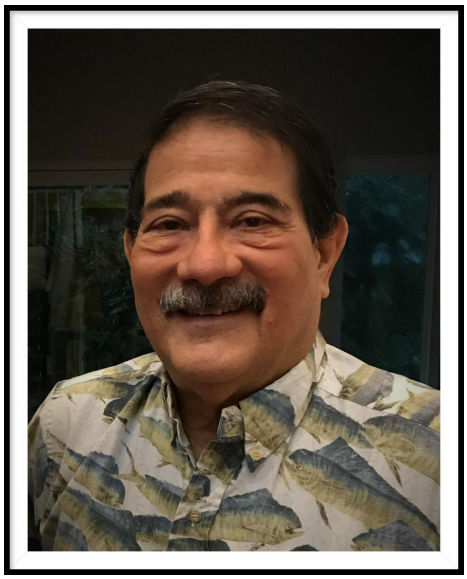
While losing cherished aquaculture colleagues is difficult to bear, it is encouraging that we have opportunities to help inspire the next generation to carry on the work they dedicated their lives to.

I hope you have a warm holiday season, and I look forward to the new collaborations and opportunities that 2022 will bring.

Mahalo,
Dr. Cheng-Sheng Lee
Executive Director, CTSA



In Remembrance of Warren Dominy, PhD (1947-2021)



The CTSA ohana is saddened by the passing of our friend and colleague, Warren Dominy. His Celebration of Life will be held in the Spring. Anyone interested in attending can contact Suzi at suzidominy@gmail.com for details when announced.

Aquafeed specialist Warren Dominy passed away December 10, 2021, at home in Kailua, Hawai'i.

Dr. Dominy was a true visionary, who laid the foundation for much of what we know today about shrimp nutrition and aquafeed processing technology. He was a research scientist, nutritionist, feed formulator and feed processing specialist at Oceanic Institute (OI), Hawai'i for 30 years, retiring as Director, Aquatic Feeds and Nutrition Department in 2013.During this period, he conducted feed, feed ingredient and feed manufacturing research trials with species of shrimp, fish, abalone, sea urchin, and even swine, poultry and cattle. His focus in the last decade was on potential feed ingredients of products and co-products from agriculture, algae and yeast, and co-products from biofuels, food processing, fisheries waste and by-catch.

It was in feed processing, however, and particularly extrusion technology, that his heart lay.He was forever grateful to Dr. Keith Behnke, Kansas State University, for encouraging and supporting him in earning a PhD in Grain Science, becoming the first person with a doctorate in aquafeed processing. His passion was to build the first pilot scale aquatic research feedmill at OI. In 1991, the industry had enthusiastically embraced it: key equipment was generously donated, and the mill designed and ready to go. Alas, in spite of several promising starts, his dream was never realized.

Warren epitomized humility; he took little credit for his work and shared his knowledge and ideas generously and enthusiastically, always happy for others to take them up and build on them. He was a sought-after consultant, helping equipment manufacturers hone their machinery for aquafeed production, and ingredient and aquafeed companies throughout the world through organizations such as the American Soybean Association, U.S. Wheat Associates, U.S. Agency for International Development. Since 2013, as the senior consultant for Aquafeed.com, he put his energy into helping under-resourced Pacific Island communities to achieve food sufficiency. His ultimate vision was to create aquafeed entirely from sustainable marine sources. Inspired by the plight of the Marshall Islands, surrounded by ocean but with scarce land, he was working towards creating multitrophic ecosystems in the vast atolls, where inventory could be controlled: "What comes from the ocean should be fed by the ocean" became his mantra. As always, he was a little too far ahead of his time.

Condolences may be left here.

AquaClip: Fish feed from captured methane can be profitable, research finds

A study from Stanford University evaluated the market potential of the capture of methane by bacteria and its transformation into protein-rich feed for farmed fish. The study found production costs involving methane captured from certain sources in the U.S. are lower than the market price for conventional fishmeal. It also highlights feasible cost reductions that could make the approach profitable using other methane sources and capable of meeting all global fishmeal demand.

"Industrial sources in the U.S. are emitting a truly staggering amount of methane, which is uneconomical to capture and use with current applications," said study lead author Sahar El Abbadi, who researched as a graduate student in civil and environmental engineering. "Our goal is to flip that paradigm, using biotechnology to create a high-value product."

A potential solution lies in methane-consuming bacteria called methanotrophs. These bacteria can be grown in a chilled, water-filled bioreactor fed pressurized methane, oxygen and nutrients, such as nitrogen, phosphorous and trace metals. The protein-rich biomass that results can be used as fishmeal in aquaculture

feed, offsetting demand for fishmeal made from small fish or plant-based feeds that require land, water and fertilizer.

“While some companies are doing this already with pipeline natural gas as feedstock, a preferable feedstock would be methane emitted at large landfills, wastewater treatment plants and oil and gas facilities,” said study co-author Craig Criddle, a professor of civil and environmental engineering in Stanford’s School of Engineering. “This would result in multiple benefits, including lower levels of potent greenhouse gas in the atmosphere, more stable ecosystems and positive financial outcomes.”

Source: Aquafeed.com // Full Article

This newsletter is written and prepared by the CTSA Information Specialist Meredith Brooks.
The Center for Tropical and Subtropical Aquaculture (CTSA) is one of five regional aquaculture centers in the United States established and funded by the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA) under active grants 2016-38500-25751, 2018-38500-28886, and 2020-38500-32559. The regional aquaculture centers integrate individual and institutional expertise and resources in support of commercial aquaculture development. CTSA was established in 1986 and is jointly administered by the University of Hawaii and the Oceanic Institute of Hawaii Pacific University.