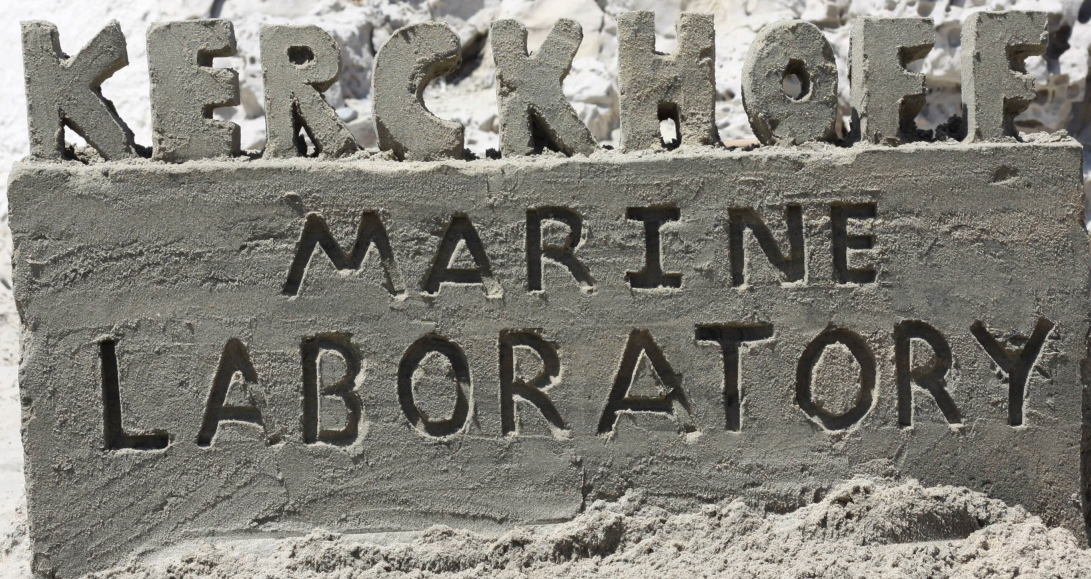


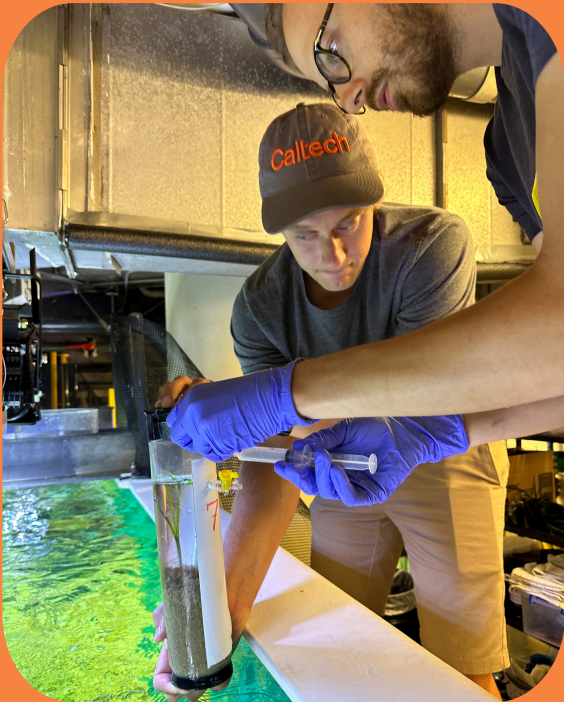
Kerckhoff Marine Lab Newsletter



Fall 2023



KML Collaborations



Upper Left: Caltech graduate student, James Mullahoo (top of frame) and KML Manager, Stephen Ranson (middle of frame) obtaining samples from methane flux chamber.

Upper Right: AoP staff member, Heidi Johnson, deploying chamber into seagrass display tank

Lower Right: James Mullahoo collecting seagrass and sediment samples

Researchers at KML have recently begun working with the Aquarium of the Pacific (AoP) on their re-imagined Southern California Gallery, and specifically their unique seagrass exhibit. They are beginning to track how the new seagrass (*Zostera marina*) establishes itself in the aquarium exhibit by measuring the diversity of the microbes in the sand and on the plant roots. Like in other ecosystems, the microbiome of seagrass can have important impacts on the wellbeing of the plant and the environment as a whole by cycling nutrients, creating or removing toxic chemicals, and neutralizing pathogens. However, exactly how the microbiome forms and develops over time is not well understood, often relying on lab experiments that struggle to accurately recreate natural environmental conditions, or field studies that use already established seagrass meadows.

By working with AoP, there is a chance to monitor this microbiome in real time in a more complex environment and has implications for the success of restoration efforts and cultivation of seagrass in aquariums like AoP. Researchers are also collecting water, sand, and plant samples to look for different chemical signals of microbial and plant activity, and visualize the communities that form on the roots that are most likely to determine plant health.

Outreach

Over the summer KML hosted weekly tours for both the Ocean Adventure Program and the Holbrook Oceanography Club, local outreach summer camps for children that incorporate field and laboratory activities around marine science locally in Orange County. Students came to learn about the current research efforts at the marine lab and what its like to be a marine scientist. They also got to interact with touch tank displays featuring local marine life and some hands-on activities including water quality testing.

It is our continued goal to be a location for education and outreach around marine science and protecting our oceans. We encourage you to contact us if you would like to incorporate education opportunities at KML to your organization!



Top: Holbrook Oceanography Club campers posing on the KML stairs.

Lower Left: Campers learning about water quality testing from KML volunteer Joshua Sheldon.

Lower Right: Ocean Adventure Program campers gathered around a sheep crab carapace with KML manager Stephen Ranson.



Science and Sunsets



Upper Left: KML at sunset, Catalina Island in the background.

Upper Right: Attendees listening to KML director Victoria Orphan's presentation.

Bottom: KML at our first "Science and Sunsets" event.



We kicked off a new speaker series this summer called "Science and Sunsets" at KML. This event offers an opportunity for the public to visit the facility and discover more about the exciting research going on at KML, Caltech, and other local institutions. In addition to a featured speaker, attendees are given an opportunity to tour the lab and learn more about the history of KML.

We plan to offer more of these events in 2024 and continue to build relationships with our local community and provide opportunities to showcase KML research and education efforts to the public here in Orange County.

Dive Deep, Build High



This summer, KML partnered with local Rotary Clubs (NEOC Rotary Leadership Club and Newport-Balboa Rotary Club) for its first outreach event. Attendees of all ages were able to showcase their artistic skills by decorating styrofoam cups and mannequin heads. These unique artifacts embarked on a research expedition exploring deep sea methane vents led by Dr. Victoria Orphan, Caltech professor and the director of KML, and Shana Goffredi of Occidental College (two of the four female scientists leading this expedition). Aboard the Alvin submersible, these items tagged along on the research voyage and were compressed under the pressure of the ocean depths. The “shrinky-dinks” were given back to decorators as souvenirs commemorating the research efforts.

Sandcastle building competitions brought out the creative side of participants and were judged by Chris Crosson (@sandcastlekit), expert sandcastle and sculpture builder of Balboa Island. To add to the excitement, raffle prizes were offered to winners. All funds raised by the event were donated to KML, and we thank our Rotary partners and sponsors for their generous contributions. This event served as a stepping stone for young minds to develop a deep appreciation for our oceans and the importance of their preservation. KML hopes to continue its efforts towards marine education and outreach locally and be a resource for the local community.

Upper Left: Sandcastle competition underway.

Upper Right: Group decorating cups on the beach.

Middle: Decorated cups after submersible voyage.

Bottom: NEOC Rotary member (Stefanie Huynh) speaking to attendees to start event.



KML History

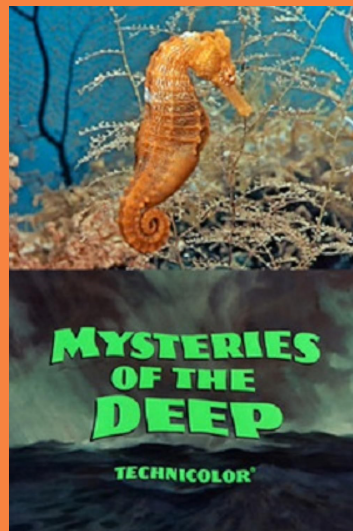
Nettie MacGinitie (1899-1993)

Nettie MacGinitie was a marine biologist that specialized in malacology (focus on molluscs). She and her husband, George MacGinitie, led the Kerckhoff Marine Lab from its early years in the 1930s until the late 1950s. Nettie was the sole director from 1957-1959. She helped describe numerous species of molluscs, several from her time spent working with the Navy in Point Barrow, Alaska and Point Mugu, California performing surveys of marine invertebrates on the ocean floor. She and her husband coauthored the renowned *The Natural History of Marine Animals* in 1949.

*In addition to her written works, Nettie also assisted with the production of multiple films including *Secrets of Life* (1956) and Disney's *Mysteries of the Deep* (1959). Nettie was one of the early female pioneers in marine science and her efforts while at KML led to her being one of the most knowledgeable in Californian estuaries and coastal wetlands from the 1930s to 1960s.*



Above: Nettie MacGinitie (1949).



Left: Cover art for Disney's *Mysteries of the Deep* which Nettie assisted on production photography.

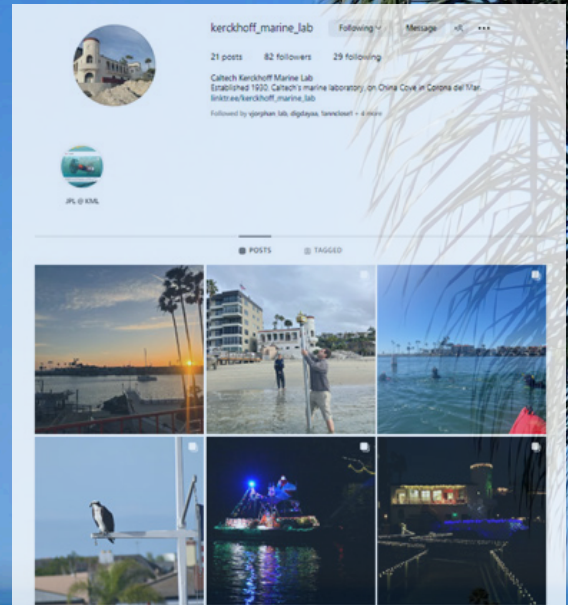
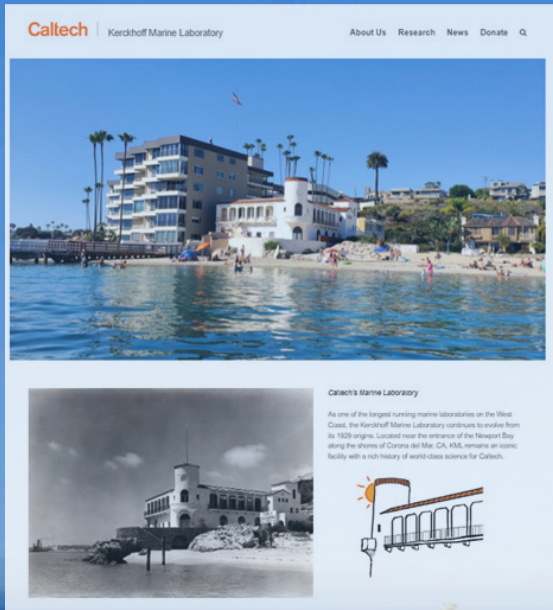


Stay Tuned for Holiday Event!



Join us for the 115th annual Newport Beach boat parade! We will be hosting a viewing event here at KML for this parade of lights (December 13-17), details and date to be announced soon.

For More Info



Visit our website at:
<https://kml.caltech.edu>

Follow us on Instagram!
[@kerckhoff_marine_lab](https://www.instagram.com/kerckhoff_marine_lab)

Join Our Mailing List!

Email kml-info@caltech.edu to join. For inquiries about how to access or support KML please contact: Stephen Ranson (sranson@caltech.edu) or call us at 949-675-2159.

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