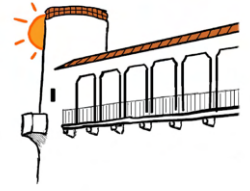




Division of Biology and
Biological Engineering



Kerckhoff Marine Lab Newsletter



Fall 2024



Construction Update



We have nearly wrapped our exterior renovation project here at KML! Much of the scaffolding has come down to reveal the freshly repaired and painted concrete facade. Contractors rebuilt columns, balconies, walls, and archways that had seen significant deterioration over the years. This was the first major exterior repair effort on the building in its near 100-year history and ensures further protection of the historic architecture for decades to come!



Top Photos: KML main entryway columns removed and rebuilt.

Middle: Current photo of KML construction as scaffolding comes down.

Lower Photos: Significant deterioration and repair of KML pier doorway.



KML Beach Cleanup



Above: KML during the beach cleanup.

Lower Left: SCUBA divers handing off garbage to participants.

Upper Right: Accumulating garbage on the beach.

Lower Right: Octopus removed from garbage and returned to the water.

We had our first official beach cleanup at KML on National Coastal Cleanup Day in September! With over 50 participants we sifted through the sand at China Cove Beach while SCUBA divers searched the depths for garbage that often accumulates in the cove. We partnered with the Newport-Balboa Rotary Club and Newport Beach Fire Department who both provided food and assistance while Scuba.com provided raffle prizes for participants. We collected over 100lbs of garbage in the span of a few hours! We even had some octopus hitchhikers make an appearance on some of the garbage pulled from the water.



Western Flyer

We visited Moss Landing in September to tour the Western Flyer! This was the original vessel chartered by the renowned marine biologist Ed Ricketts and author John Steinbeck in 1940 on their expedition to the Gulf of California, which inspired Steinbeck's *The Log of the Sea of Cortez*. After many years operating as a fishing boat and then later sank in both 2012 and 2013, the vessel was purchased and restored to the original design of the 1940 expedition it was famous for.

Today, the Western Flyer Foundation uses the boat for marine research and education and will embark on an 80th anniversary trip back to the Sea of Cortez! KML shares some history with marine biologist Ed Ricketts, who used to visit KML during the lab's early years for species identification. As KML continues to evolve we look forward to partnering with the Western Flyer Foundation in our shared vision of marine research, education, and history!



Above: The Western Flyer docked in Moss Landing.

Left: The helm of the Western Flyer.

Right: The galley and main dining space aboard the Western Flyer.



KML History

Linus Pauling (1901-1994)

Among the Caltech scientists to work at Kerckhoff Marine Lab in its early years was Linus Pauling. Pauling was a graduate student in chemistry at Caltech from 1922-1925 and then a faculty member from 1927-1964. He was Chair of the Division of Chemistry and Chemical Engineering from 1937-1958.

Caltech purchased KML in 1930, and in the summer of 1935, Pauling spent time collecting keyhole limpets (see photo below) and isolating hemocyanin from them. Hemocyanin, the oxygen-carrying protein in mollusks, is a copper protein and makes their blood blue. Pauling used the hemocyanin collected from limpets near KML to develop the methods he would soon use to measure the magnetic properties of hemoglobin, the oxygen-carrying protein in humans and other mammals. For more information on this important breakthrough in our understanding of cellular respiration, based in part on work at KML, see Bren, Eisenberg, and Gray, PNAS, 2015, 112, 13123.

In the early 1930s, Pauling was becoming more and more interested in biology, and he invited Alfred Mirsky, a noted biologist at the Rockefeller Institute in New York City, to come to Caltech for a few months. Mirsky came in the summer of 1935 (and again in 1936), and he spent most of his time at Caltech at KML in Corona del Mar. He and Pauling spent much time there together, brainstorming and performing experiments that led to a paper in PNAS in July, 1936, titled "On the structure of native, denatured, and coagulated proteins (Mirsky and Pauling, PNAS, 1936, 22, 439). This work, a landmark in understanding chemical bonding in protein structure, was a direct result of conversations and experiments at the Kerckhoff Marine Lab.

Pauling was recognized for "for his research into the nature of the chemical bond and its application to the elucidation of the structure of complex substances" with the Nobel Prize in Chemistry in 1954. In 1962, he was awarded the Nobel Peace Prize "for his fight against the nuclear arms race between East and West."



Left: Linus Pauling at China Cove Beach in front of KML (1940).



Right: Keyhole limpet from Corona del Mar (2022).

KML Social Media



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Kerckhoff Marine Lab - Caltech



Instagram:

kerckhoff_marine_lab



YouTube:

Kerckhoff Marine Laboratory



LinkedIn:

Kerckhoff Marine Laboratory



TikTok:

kerckhoffmarinelab

Linktree to Accounts:



We've recently updated our social media accounts! Follow us on all the platforms for the latest updates and news!

Upcoming Events!



Upper Left: Holiday boat parade event at KML in 2023.

Upper Right: KML at our first "Science and Sunsets" event in 2023.

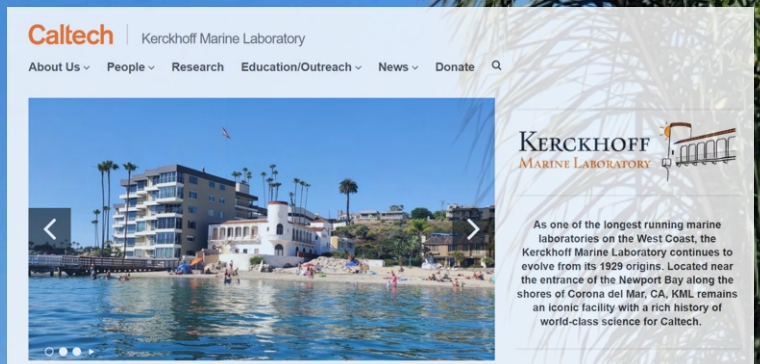
Bottom: "Science and Sunsets" attendees enjoying the sunset prior to speaker.

As our exterior construction wraps up we are excited to bring the public back to celebrate the updates and future of KML! We will be hosting another "Science and Sunsets" on November 9th. We will also be continuing last year's successful holiday event during the Newport Beach Christmas Boat Parade On December 21st. Make sure to save the dates and stay tuned for updates on both of these events!



For More Info

Check out our Website:
<https://kml.caltech.edu>



Join our Mailing List:
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Support KML:



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