

Tom Escher, Chairman, Red & White Fleet. "Making Zero Pollution Maritime a Reality"

Tom Escher will explore how ships can go to zero pollution.

*Tom Escher is the owner and Chairman of San Francisco's Red and White Fleet, a San Francisco Legacy Business and a San Francisco Certified Green Business. A lifelong advocate of community involvement and sustainable tourism, Tom is active on a number of boards and organization such as the Fisherman's Wharf Community Business District, Fisherman's and Seaman's Memorial Chapel, and San Francisco Maritime National Park Association. He has also served as a member of boards appointed by the San Francisco Port Commission –The Maritime Commerce Advisory Committee and the Fisherman's Wharf Advisory Committee.*

*With a lifelong concern for the maritime environment, Tom has committed to exclusively operating zero pollution vessels (hydrogen fuel cells or electric) by 2025.*

Colleen Flanigan, Living Sea Sculpture/ UCSC. "Art and Science for Coral Reef Restoration"

Colleen will share about her transdisciplinary, collaborative work in coral reef restoration uniting art, science, education, and technology in Cozumel, Mexico, and her investigation at UCSC to determine how we can provide aesthetic and functional habitat to help revive our dying coral reef ecosystems, stimulate biodiversity, and protect our shores. "Art as Ecology" - art created with and for nature - as a means to drive transformation from our destructive economies towards those that create a world for coral reefs to flourish. She'll show how this project in Mexico has reached many new audiences outside of traditional science communities and serves as a catalyst for change and growth.

*Colleen Flanigan is a socio-ecological artist with degrees in Design and Metals. Through visual, performing, and biological arts, she investigates contemporary issues of species endangerment and ecosystem regeneration, specifically working to restore degraded coral reefs and marine biodiversity. For the past 15 years she been exploring ways to bridge the gap between quantitative scientific approaches to environmental issues and hands-on, life-saving actions by evolving the concepts of "art as ecology" and interactivism. Bringing together multiple disciplines in collaboration, she stands for inviting the artistic method - a combination of sensory vision, playful imagination, and maker intelligence - into global solutions.*

*She has initiated sculptural coral habitats in Bali and Mexico, including a DNA helical form for an underwater museum in Cozumel. Presently she is working at the UCSC Marine labs on R&D for new reef and shore protection projects with support from the Scintilla Foundation.*

Chad King, MBNMS. "Octopus Garden and a Whale Fall: Recent Discoveries in Monterey Bay National Marine Sanctuary"

At the end of a long remotely-operated vehicle (ROV) dive in 2018, in a spot more than two miles deep near an extinct volcano in Monterey Bay National Marine Sanctuary, scientists stumbled upon the incredible discovery of aggregations of more than 1,000 female octopuses that were actively taking care of their eggs, all continuously bathed in warm seawater seeping from fissures and cracks in the seafloor. Both of these phenomena had never been observed anywhere within MBNMS and was only the second

large grouping of brooding mothers discovered in the world. Subsequent trips made by Chad in the Alvin submersible and additional ROV dives in 2019 found an additional population of brooding octopuses miles away, collected numerous geological, biological and chemical samples, and serendipitously discovered a fresh "whale fall," which itself has greatly contributed to the understanding of these unique localized ecosystems.

*Chad King has been a marine biologist with Monterey Bay National Marine Sanctuary (MBNMS) since 2002, and is the lead for offshore and deep-sea research. Epipelagic expeditions collect data on microplastics and marine mammal and seabird observations relative to krill and mesopelagic fish densities and oceanography. He is also responsible for the collection, analyses, and dissemination of spatial data for the Sanctuary Integrated Monitoring Network (SIMoN) and MBNMS. He is also a NOAA Divemaster and an active participant in subtidal research, including kelp forest and invasive species monitoring and underwater photography and videography.*

#### Steve Mandel, Executive Director, Oceans 360. "Using Virtual Reality for Ocean Conservation Education"

Steve Mandel will talk about the theory, process and practical applications of using virtual reality for underwater conservation education. Participants will see what the process is to gather video for VR, learn what camera options are available, and also hear about his experiences using the video in classrooms and at various events.

He will bring the virtual reality underwater camera system he designed that shoots 3D underwater images down to 200' so participants can see what the hardware actually looks like. And, at the Oceans 360 exhibit, he will have VR headsets that participants can use to view some of the 15+ videos taken all over the globe in high resolution, 3D!

*Steve Mandel is the Executive Director of the Lions of Gir Foundation and its Oceans 360 project. The Foundation is focused on ocean conservation education, using 3D virtual reality video taken by marine biologists and professional filmmakers around the globe to provide engaging conservation videos that are viewed in virtual reality headsets. The videos are shown in schools, at conservation conferences, in the MBNMS NOAA Exploration Center, and are now being used in medical environments to reduce patient anxiety and provide pain distraction. For the Oceans 360 project, Steve designed an underwater 3D virtual reality camera system. The system is also used by National Geographic, and professional wildlife filmmakers for virtual reality projects.*

#### Paul Michel, Superintendent of the Monterey Bay National Marine Sanctuary, "An update on the latest developments concerning the Sanctuary"

Paul Michel addresses the latest issues and activities at the Monterey Bay National Marine Sanctuary.

*Paul Michel is a nationally-recognized leader in wetlands, coast, and ocean management and protection. As Superintendent of the Monterey Bay National Marine Sanctuary, he is responsible for all of the science, education, and resource protection programs involved with managing and protecting the nation's second largest marine sanctuary at over 6,000 square miles.*

Wallace J. Nichols, PH.D., Author of *Blue Mind*. "Whales are Medicine"

Marine mammals have well-documented economic, ecology and education value. But they are also important to emotional health. In a world of increasing anxiety, distraction and disconnect whales and dolphins are therapy for those who need them most, and everyone else. A full accounting of ocean, water and wildlife's cognitive, emotional, psychological, social, physical and spiritual benefits can build a bigger, wider and more diverse blue mind movement and help fix what's broken in nature and ourselves.

*Author of the New York Times bestseller "Blue Mind", J. is changing the way the world engages with water and rethinking all the ways people spend time near, in, on or under it. He is a driving force in creating common knowledge about how water is medicine for those who need it most and sharing Blue Mind science and ethos across many sectors in contemporary culture.*

*J. is currently Chief Evangelist for Water (CEH2O) at Bouy Labs, a Senior Fellow at the Middlebury Institute for International Studies' Center for the Blue Economy, a Research Associate at California Academy of Sciences and co-founder of Ocean Revolution, an international network of young ocean advocates, SEE the WILD, a conservation travel network, Grupo Tortuguero, an international sea turtle conservation network, and Blue Mind a global "movement of movements" sharing the new story of water.*

Julie Packard, Executive Director, Monterey Bay Aquarium. "If we're talking about saving the planet, we're talking about saving the ocean.": A conversation with Julie Packard

KAZU reporter Erika Mahoney will talk with Monterey Bay Aquarium Executive Director Julie Packard about the aquarium's origins and its ongoing work to address critical ocean issues like climate change, plastic pollution, sustainable seafood and protection of key species and ecosystems. They will cover the aquarium's inspiring exhibits, free education programs, rigorous science and policy advocacy – all of which have helped turn Monterey Bay into a global center of excellence in ocean science and management.

*Julie Packard is executive director of the acclaimed Monterey Bay Aquarium, an international leader in the field of ocean conservation, and a leading voice for science-based policy reform in support of a healthy ocean.*

*Julie helped found the Monterey Bay Aquarium in the late 1970s. Under her leadership, the Aquarium has pioneered innovative exhibits such as the kelp forest, one of the tallest aquarium exhibits in the world. The organization has been in the forefront in developing education initiatives to shape new generations of leaders in ocean conservation.*

*Julie has led the Aquarium to evolve into one of the nation's leading ocean conservation organizations through its Conservation and Science Programs. The respected Seafood Watch program empowers and educates consumers and businesses to make sustainable seafood choices for healthy oceans. The Ocean Conservation Policy team works to advance policies that address global threats and protect important marine life. In addition, field research is illuminating the conservation challenges facing sea otters, great white sharks and Pacific bluefin tuna in the wild.*

*Julie is also a leader in ocean conservation worldwide, and brings a lifelong passion for the natural world to her service with many organizations dedicated to conservation activities.*

*Erika Mahoney is Interim News Director of 90.3 KAZU, NPR for the Monterey Bay area. She covers a wide range of topics, including the Monterey Bay National Marine Sanctuary. Erika was a fellow at the National Press Foundation's "Understanding Fishing and Conservation Challenges" program in March 2019, which covered topics such as ocean acidification, illegal fishing and aquaculture. In the fall of 2019, her story on purple sea urchins devouring California's kelp forest aired nationally on NPR's All Things Considered.*

Brian Southall, Ph.D., Southall Environmental Associates. "Listening to California's Whales: Acoustic Science to Inform Conservation and Inspire the Next Generation"

This talk will feature California's whale voices, what we've learned about them using advanced sensor technologies, and how this science is helping us learn how to better protect them. These acoustic beings specialize in listening to the ocean to live and we have learned much by listening to them. It will highlight recent advances in our understanding from tag sensors and passive listening methods and will illustrate the power of collaboration and partnerships in technology and research. Finally, it will highlight the critical importance of using these studies and technologies to directly inform regulatory decisions and inspire and empower the next generation of whale lovers and ocean conservationists through immersive, experiential learning.

*Dr. Brandon Southall is an ocean bioacoustician with over 25 years of experience studying how marine mammals use sound, how they can be harmed by human noise, and what we can do to reduce noise impacts. He served as the head of NOAA's Ocean Acoustics Program in Washington DC during a formative time and then co-founded Southall Environmental Associates, a small research business in Monterey Bay, CA. He has published over 100 scientific papers and given hundreds of presentations and testimony on ocean acoustics to technical, governmental, industry, and general audiences around the world, including the U.S. Congress and Supreme Court. He recently helped start and supports a new non-profit called California Ocean Alliance dedicated to hands-on education, conservation, and research partnerships to inspire and enable the next generation of scientists and conservationists.*

Peggy Stap, Mariene Life Studies: "Whale Disentanglement by the General Public: Good Intentions, Bad Decisions and Updates of The Whale Entanglement Team (WET)"

Disentangling a whale and knowing what to do when one is spotted requires a huge community of scientists, disentanglement teams, whale watchers, captains, fishermen, policy makers and members of the public. Each have their own role but only trained and permitted members of the disentanglement network, such as members of the Whale Entanglement Team (WET)<sup>®</sup>, should remove gear from entangled whales. Learn about how WET's new project helps mitigate and prevent future entanglements.

*Peggy Stap, a Michigan native, saw her first whales on a whale watch in Maui, Hawaii, which was a life-changing experience. In 2006, she founded Marine Life Studies dedicated to research, education, and whale rescue in Moss Landing, California. Peggy, a volunteer herself, has served as Executive Director ever since. She is Co-founder of the Whale Entanglement Team (WET)<sup>®</sup>, co-investigator Level 3*

*Responder under NOAA MMHSRP permit for whale rescue, and the principle investigator under NOAA NMFS permit to conduct research on whales and dolphins in the Monterey Bay National Marine Sanctuary.*

Rear Admiral (ret.) Jon White, Consortium for Ocean Leadership. "Ocean Security: Breaching Challenges Through The Power Of Partnerships"

We can solve the problems our ocean faces, ensuring a healthy, productive, sustainable ocean and planet for our future. Through effective and exemplary partnerships across sectors and stakeholders, we can make great strides in ensuring the vision of the late Admiral James D. Watkins, where our "oceans, coasts, and Great Lakes are clean, safe, prospering, and sustainably managed." A healthy ocean is critical to safeguarding our national, homeland, energy, food, water, and economic securities, as well as our public health and safety—a concept I refer to as ocean security.

*Jon White was instated as president and CEO of the Consortium for Ocean Leadership in January 2016 which represents over 95 member organizations from academia, industry, and the nonprofit sector, advancing ocean science and technology through discovery, understanding, and action. Prior to this, White had a distinguished 32-year career as an oceanography and meteorology officer in the U.S. Navy and retired at the rank of Rear Admiral, culminating as the Oceanographer and Navigator of the Navy from 2012 to 2015. This position included leadership of the Navy's Task Force Climate Change and appointment as the Navy Deputy to the National Oceanic and Atmospheric Administration.*

William Oestreich, Shirel Rachel Kahane-Rapport, James Andrew Fahlbusch, and Will Taylor Gough-- Students from Hopkins Marine Station at Stanford University. "The Formative Stages of Becoming a Whale Researcher"

*Understanding the whales that inhabit Monterey Bay National Marine Sanctuary is an important job, essential to protecting these magnificent species. Have you ever wondered about how people become whale researchers, what they study, or the technologies involved? Here you can learn about this firsthand from a brilliant group of graduate students on their way to careers in marine mammal research. William Oestreich, Shirel Rachel Kahane-Rapport, James Andrew Fahlbusch, and Will Taylor Gough are students in Jeremy Goldbogen's lab at Stanford / Hopkins Marine Station. Each has taken a different path to find their way into the exciting field of whale research. In this presentation you'll hear each of their stories and have opportunities to ask them questions.*