FALL 2024 EDITION

UNIVERSITY OF HAWAI`I AT HILO
TROPICAL CONSERVATION BIOLOGY & ENVIRONMENTAL SCIENCE

FALL SEMESTER!

TCBES Semesterly Newsletter

2024 TCBES COHORT

Standing (from left to right): Chloe Winter, Heidi Franz, Kaʻiʻinipuʻuwai Keliʻihoʻomalu-Holz, Mackenzie Mason, Corryn Haynes, Skyler Chong, Hunter Marion, Marcia Blyth, Jadyn Funkhouser, Lilly Thomey, Sofia Su'esu'e, Eric Sanford, Margaret McKLamb, and Makoa Pascoe
Sitting (from left to right): Meeya O'Dell, Mya Manzo, Elizabeth Allen, Cleo Dolde, Maria Angst, Grace Tredinnick, Allison Kelton, Bree Andrade, and Ed Cho
Not in picture: Frederick Smith, Jr.

INSIDE THIS ISSUE:

Congratulations, 2024 Graduates!

Sofia Ferreira Colman
2022 Cohort

Christian Colo
2022 Cohort

Anna Ezzy
2022 Cohort

Ihilani Kamau
2022 Cohort

Christopher Zdenek Kluzak
2016 Cohort

Brianna Ninomoto
2022 Cohort

Science Spotlight

LOHE Bioacoustics Lab Uses AI to track Forest Birds

The Listening Observatory for Hawaiian Ecosystems (LOHE) Bioacoustics Lab, managed by Professor and Chair of Biology, Patrick Hart, was recently featured in The Conversation, a Hawai'i Public Radio (HPR) show. The segment focused on the LOHE lab's work on the use of AI to track Hawaiian forest bird trends through birdsong analysis. Traditional techniques for tracking bird populations are challenging in that multiple individuals must physically traverse the forest and count birds by sight. By recording forest soundscapes with microphones stationed in the forest, and then analyzing months of data using AI, computers can detect every bird's song and thus track daily and even seasonal trends. This technique is now being implemented across the Hawaiian Islands with partners such as Haleakalā National Park. Recorders have been set up at Hakalau Forest National Wildlife Refuge for almost 10 years. This technology could eventually be used to track any animal that makes sounds — coqui frogs, bats, and even fish. Dr. Hart also offers a popular regular segment on HPR called the Manu Minute, which is all about Hawaiian birds.

Assistant Professor of Marine Science, Dr. Steve Doo, co-authored two recently published research articles, "Macroalgal presence decreases coral calcification rates more than ocean acidification" and "Unraveling the influence of environmental variability and cryptic benthic assemblages on reef-scale primary production and calcification," respectively, in the journal *Coral Reefs*. Collaborators included researchers from Saudi Arabia, California, Switzerland, Germany, and Italy.

Associate Professor of Marine Science, Dr. Jason Turner, co-authored the recently published research article, "Habitat use and movements of parrotfishes in a Hawaiian coral reef seascape" in the journal *Frontiers in Fish Science* with his former student and TCBES alumna, Senifa Annandale, and colleagues from Texas A&M University and Louisiana State University.

Professor of Geography and Environmental Science, Dr. Ryan Perroy, presented at the Coconut Rhinoceros Beetle (CRB) Science Symposium last September. His presentation, "Find the Notch! Developing an AI Detector for CRB Damage Using Drone Imagery," can be found listed at the Day 1, Session 1, 3:00 PM timeslot.

Assistant Professor of Biology, Dr. Natalie Graham, awarded $2M grant from Department of Defense's Strategic Environmental Research and Development Program (SERDP) to develop methods for mitigating the impact of invasive species through early detection using DNA and predictive modeling. The project is a collaboration with the Construction Engineering Research Laboratory (CERL) in Champaign, IL.

Dr. Ryan Perroy awarded $1.15M grant from National Park Service to develop a Cultural Resources Strike Team utilizing advanced documentation methods to collect data for the development of adaptation planning and treatment strategies for use in climate response.

Dr. Jonathan Price, Dr. Natalie Graham, and Dr. Ryan Perroy awarded a NSF Grant for their project, "Collaborative Research: Biodiversity Dynamics: Linking Broad Scale Remote Sensing with Arthropod Metabarcoding Across a Geological Age Gradient in the Hawaiian Islands."

Forest Service Graduate Fellows and TCBES grad students, Tuimalata Puletiuatoa and River Thomas, attended the annual conveying of the Pacific Islands Forestry Committee (PIFC) Executive Committee in Majuro, Republic of the Marshall Islands.

TCBES alumna Naiʻa Odachi presented at the Western International Forest Disease Work Conference in New Mexico on the use of high-resolution satellite imagery, aerial surveys, and deep learning techniques to monitor and track the spread of Rapid ʻŌhiʻa Death (ROD) in Hawaiʻi's forests.

TCBES alumna Jodie Rosam co-published an article with Dr. Rebecca Ostertag, "Light quality and spatial variability influences on seedling regeneration in Hawaiian lowland wet forests" in the *Journal of Applied Ecology*.

Program Updates

Suburban Now Available for Rent

The 4WD Suburban for UH Hilo's Kohala research and applied learning efforts has arrived, and is available to rent!

This vehicle will provide UH Hilo 4WD capability to engage students in research and learning with a priority on the Kohala area. This will be the first 4WD vehicle available for transport of UH Hilo students into our island's outdoor classroom. Previously we have had to rely on personal 4WD vehicles, partner 4WD vehicles (that are not intended for transporting students), or project-specific 4WD vehicles.

Kohala collaborative research by UH Hilo faculty and students will be a priority use of this vehicle. Other research and applied educational efforts related to island restoration and resiliency are a second priority. The vehicle will be managed by UH Hilo's Tropical Conservation Biology and Environmental Science (TCBES) graduate program, currently led by Drs. Jon Price and Ryan Perroy, and will be based out of the College of Natural and Health Sciences, under Simon Kattenhorn's leadership.

We greatly appreciate your support of these research efforts in Kohala and across the island. Attached is a photo of the vehicle and one with TCBES's 2024-2026 cohort of 24 students.

Kaiameaola Club

During the Fall semester, the Kaiameaola Club (consisting of Lauren Moe, River Thomas, Nathaniel Breindel, Mina Jensen, Ariel Patterson, Kelli Elliott, Nikki Henry, and Christine Tominioka) beautified the TCBES Workroom, adding string lights, posters, plants, and all sorts of cozy décor.

For the Spring semester, the club is hosting three upcoming events: the **Women in STEM** conference on Friday, February 28 (please **register** by Thursday, February 21); the **TCBES Symposium** on Thursday, April 11, and Friday, April 12; and the **Lā Honua Conservation Career Fair** on Thursday, April 17.

New Tenures & Promotions

Dr. Christopher Knudson (College of Arts and Sciences) and **Dr. Sukhwa Hong** (College of Business and Economics) received tenure last semester.

Additionally, **Dr. Joseph Genz** (College of Arts and Sciences), **Julie Mowrer** (Academic Affairs), and **Dr. Li Tao** (College of Natural and Health Sciences) received promotions.





In Memory

Nancy Chaney
(1959–2024)
2007 Cohort

Nancy Lou Chaney, 64, of Volcano, Hawai'i, and recently, Sisters, Oregon, passed away surrounded by family and friends on October 17, 2024. She was a beloved wife, mother of cherished daughter Whitney, sister, and very dear friend to many. Nancy was also a dedicated scientist, devoted animal lover, travel and outdoors enthusiast, accomplished photographer, and quilter.

Nancy was born in Long Beach, California to Rudolph and Betty Chaney. Along with her four siblings, she attended her mother's K-thru-8 private school and graduated from Cornelia Connelly High School in Anaheim, California. She excelled academically, particularly in math and science, and was very athletic, playing on tennis, volleyball, and soccer teams. Nancy's youth included several summers at a camp in the mountains of Colorado where her love of nature blossomed. She started college at the University of California at San Diego but transferred to Salt Lake City's Westminster College to study biology and better pursue her interests in skiing and hiking. Following graduation, she married Edmundo Reyes and had a daughter, Whitney Renee. After divorce in 1995, Nancy and Whitney moved from Utah to Corvallis, Oregon. While in Corvallis, Nancy met Robert (Bob) Peck, and in 2002 they moved to the village of Volcano, on the Big Island of Hawai'i, and married a year later. They lived on the Big Island for over twenty years, but moved to Sisters, Oregon in the spring of 2024.

Nancy had a remarkable career in biological research that spanned more than thirty years. Soon after graduation from college, she worked at Native Plants, Inc, the Howard Hughes Medical Institute, and Ceres Inc, all in Salt Lake City, where she developed expertise in molecular genetics. After moving to Corvallis, Nancy conducted research for several years at the USDA Agricultural Research Service (ARS) in plant pathology and the study of biological methods for controlling plant diseases. She then worked at USDA-ARS in Hilo, Hawai'i on research for management of fruit flies that are agricultural pests.

In 2005-2006 Nancy successfully battled ovarian cancer. Undeterred, she then pivoted her career by pursuing her life-long interest in marine biology, enrolling in the University of Hawai'i at Hilo's Tropical Conservation Biology and Environmental Science graduate program. In graduate school she investigated the population structure of Hawaiian near-shore gastropods (marine snails) using molecular techniques. Nancy greatly enjoyed the outdoor field work this project entailed and earned her Master of Science degree in 2010. Following graduate school, she worked at the USDA Forest Service's Institute of Pacific Islands Forestry, based in Hawai'i Volcanoes National Park. There, she helped evaluate a variety of insects for biological control of invasive plants. In all her professional endeavors, Nancy was known for her superb technical abilities, field work skills and stamina, scientific knowledge, and perhaps most importantly, her ability to build research teams through her integrity, encouragement, mentoring, and by making the job fun for her colleagues.

Nancy's lifelong love of animals began in childhood, in a household with a variety of family pets, including dogs, guinea pigs, sheep, chickens, pigs, a cow, and even a Capuchin monkey (who was responsible for her lifelong distrust of monkeys!). Prominent among these pets was her beloved horse Susie, a gift for her 10th birthday. Kindred spirits, she and Susie were especially attentive to others, ever cognizant about whether to trot at a mindful kind pace or to freely run like the wind. Nancy's later pets included cats Sartorius and Tortilla, and dogs Sugar, Midnight (best dog ever!), Whitney's dog Sage, Callie, Lucy, and Koa. All were a continual source of joy and comfort.

Beginning her lifelong interest in travel early, Nancy toured the US and France in high school, and Peru in college. An avid explorer of nature, she loved hiking, bicycling, and skiing, but she especially enjoyed ocean swimming, snorkeling, and scuba diving. Nancy named her daughter after California's Mount Whitney, and notably solo-summited this peak (14,505 feet) in a single day in 1990. Nancy and Bob enjoyed frequent weekend scuba diving trips while living on the Big Island, but they also traveled the world to dive, including destinations in Australia, South Africa, Fiji, Palau, the Philippines, and Indonesia. They also hiked, backpacked, mountain biked, skied, and kayaked in Denali National Park, Alaska and throughout the western United States. In 2018 Nancy fulfilled a long-held personal goal when she, Bob, and an intrepid friend made a pilgrimage to Chaney Glacier (named after Nancy's great grandfather), deep within the backcountry of Glacier National Park. Nancy also lived abroad for three months, in Brisbane, Australia, while doing research in graduate school. A planner with a knack for bringing people together, Nancy organized countless hikes, and trips to bike, backpack, and ski, plus snorkeling adventures, which left her many friends with priceless memories.

Nancy was an avid photographer during several periods of her life. She first entered the hobby in high school where she was active in the photography club. She picked up the hobby again with zeal after moving to Hawai'i where she loved to photograph native plants and landscapes. At her best, Nancy combined her love of photography and scuba diving, capturing many amazing images of coral reefs and their inhabitants from around the world. Combining these interests was truly a dream come true for her.

Nancy's most recent hobby, which she sunk her heart into, was textile arts and quilting. This began as an activity of comfort following the death of her daughter in 2012 but blossomed into a joyful passion. She created dozens of quilts, many as gifts for her friends and family. Nancy's favorite color was pink, and her quilts often included nature themes and whimsical elements – and she was a great fan of, coincidentally, the fabric designer Tula Pink.

Nancy was primarily self-taught, fearlessly tackling and becoming proficient at free-motion quilting on her home machine, despite this being a notoriously difficult skill to master. Ever striving for greater skills and inspiration, Nancy regularly enrolled in art classes, both in person and online, studying design, color theory, textile art, and various quilting techniques. As in other aspects of her life, Nancy brought people together by initiating weekly online sewing sessions and annual quilting retreats among friends. From this emerged a special network of friends.

Moving from Hawai'i was difficult for Nancy as she missed her many friends and colleagues. But perhaps as much, she missed the ocean. Nancy considered herself a water baby of sorts and could never get enough of what the ocean had to offer. She also missed the trail from her office in Hawai'i Volcanoes National Park to an overlook of Kilauea Iki Crater, where in later years she was able to feel especially close to her daughter. She was so grateful for the chance to have lived in such an amazing place. But returning to Oregon was also a delight for her as she was again close to old friends she adored, and the mountains, forests, and streams that soothed her soul.

In 2022, Nancy's ovarian cancer recurred, and despite fierce determination, she died in October 2024, shortly after settling into her new home in Sisters, Oregon.

Nancy is survived by her husband Robert Peck of Sisters, OR; siblings Brian Chaney of Long Beach, CA, Susan Chaney (and Tim Bulone) of Lebec, CA, Mary Alice Chaney of St. Paul, MN, and Mary Ellen (and Susan) Kirkchaney of Sacramento, CA; nephew Nick Bulone (and Alma Riego); nephew Rudy (and Ashley) Boyd Bulone, and great-nephew Walter Boyd Bulone; cherished Australian shepherds Lucy and Koa; and numerous extended family members, friends, and colleagues. Nancy was preceded in death by her father Rudolph Chaney (1922-2001) and daughter Whitney Renee Reyes (1986-2012).

As per her wishes, Nancy's ashes will be scattered in the ocean surrounding the Big Island in a private ceremony. In lieu of flowers please consider a donation to your local animal rescue center.