UW FRIDAY HARBOR LABORATORIES

Intertidal Tidings

AUTUMN 2023 volume 44

IMAGING COLOMBIAN FISH

by Jose Tavera

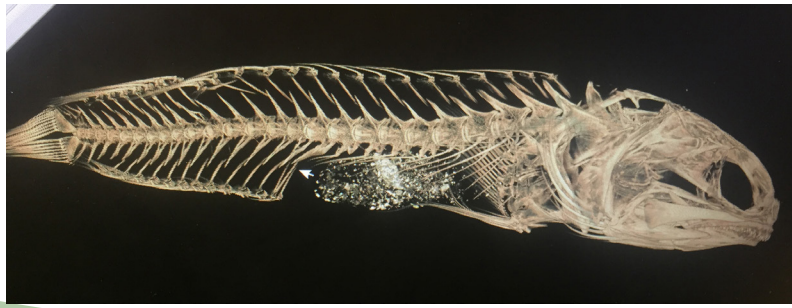
I have been a professor for 10 years in the Biology Department at the Universidad del Valle in Cali, Colombia, a city nested deep in a narrow valley. My main research interest lies in the natural history and evolutionary biology of fishes, with special emphasis on the relationship between form and function. This focus brought me to Adam Summers' Lab at FHL.

My time at FHL along with my 8-year-old daughter Celeste began unknowingly almost 20 years ago in the city of La Paz, Baja California Sur. Adam was one of a team of professors there teaching young trainees various aspects of the biology of cartilaginous fishes. Adam's lectures on biomechanics and functional morphology captured my scientific attention. This fascination ultimately led me to come to FHL 16 years later for a workshop that Adam organized on 3D imaging and morphological analyses. I was accepted for a two-week, full-time training on software developed to study 3D morphometrics. That "Slicermorph" workshop was the seed for my 2023 research stay, which was possible thanks to a Fullbright fellowship and a donor-created FHL fund that enabled us to live for 9 months on San Juan Island. This was enough time to deepen my understanding of fish Computed Tomography (CT) processing, and also for my daughter to attend a full year at Friday Harbor Elementary School and thus not fall behind in school.

During our time at FHL, my daughter learned English; before coming to the U.S., she knew only a few words, most of them animal names. Together we were able to experience fish development from a clutch of eggs that Celeste found drying during an extreme low tide. She brought the eggs to Adam's lab where we kept them in a tank, and daily we watched their development. We also took many hikes along the FHL shore and trails, seeing for the first time bald eagles, red foxes, and orcas. But better than anything, we had wonderful father-daughter time.

My purpose at the Labs was to make 3D computer images of about 180 species of Colombian fishes. Colombia is a geographically complex country touching both Pacific and Caribbean waters, and with an enormous diversity of habitats and species. It is crossed from south to north by the Andes mountains, with valleys in between and with three separate hydrographic basins. Between marine and freshwater species, in Colombia it is possible to find about 12.2% (3900 species) of all the world's fishes. My research aim was to showcase this great diversity by using CT scans to generate 3D models of the bone structures, which will be freely available on the web for researchers and educators to use. Scans are an especially powerful tool for studying the anatomical quirks of organisms, particularly if there are only a few known specimens in museums. These models should also promote research on museum specimens that are hard to find in the wild. Working at FHL allowed me to access specialized equipment that is unavailable and unaffordable in Colombia.

(continued on p. 8)



Above: *Visiting Fullbright researcher Jose Tavera at FHL.*

Right: *CT scan of* Opistognathus panamensis. *Total length 120mm. Malpelo Island, Colombia.*

FHL Adopt-a-Student Program

by Flo McAlary, FHL Advancement Board Chair and Sponsor

Since its inception in 2005, the FHL Adopt-A-Student Program has supported hundreds of students, contributing along with various FHL Endowments to the Labs' renowned academic programs. This support for students ensures that the brightest and best can explore cutting-edge science firsthand over a broad range of topics, and this summer was no exception.

Photo: Rachel Anderson

In-person introductions between sponsors and their adopted students have been a highlight of the program throughout the years. As we navigated COVID-19 safely, these in-person gatherings became less frequent but we learned that small Zoom gatherings were also rewarding. This summer, we held two in-person introductions as well as several via Zoom, thus opening the door to Adopt-a-Student sponsors participating from France to Hawaii and many places in between.

I hosted numerous introductions and found the energy and enthusiasm to be magical. In the future we will continue with both in-person introductions for local sponsors and expand our Zoom gatherings to encourage and accommodate distant sponsors. One busy sponsor and his adoptee carried out their 2023 introduction via email! It was a win-win option. The student was taking the FHL Fish Swimming course, the same course for which his sponsor had been a TA years ago with the same professors!

I'm hopeful that among our Newsletter readers, the option for connecting with one of FHL's young scientists with an in-person or Zoom introduction is appealing. The students are incredibly appreciative of sponsor support, which makes their life-changing FHL experience possible. Your gift can help to make that FHL opportunity a reality! ■

From Mary Guard, Sponsor

I am honored to sponsor students, meet them in person and learn first-hand about their particular projects. I also enjoy attending their final presentations at the end of each quarter.

From Gene Helfman, Sponsor

What a great program. I've been retired for fifteen years and the only thing I truly miss is getting to know and interact with students. I'm not sure if I've adopted a student or the student has been kind enough to adopt me, but it's really rewarding. I'm so grateful.

From Véronique Robigou, Advancement Board Member & Sponsor

My recent life circumstances have offered me the chance to spend months in my native country of France, usually at the time of year during which the Adopt-a-Student meet-ups between students and sponsors occur. So, what a thrill to stay involved in the program from thousands of miles away, across a continent and a wide ocean! Our virtual sessions are now allowing me to still see the twinkle in the students' eyes as they describe their research projects, and to hear the high energy and self confidence that they've acquired from doing research and living at FHL. Their unbounded optimism for solving environmental issues that many of them will be investigating during their marine science careers gives me great hope that we can better care for our oceans and planet.

You can help us support future students by giving to the Adopt-a-Student Program or its Endowment at fhl.uw.edu/about/community/

Fostering Cultural Interactions

With the help of UW Indigenous staff and faculty including Sherri Berdine (UW Director of Tribal Relations), Josh Reid (instructor of Indigenous History of the Salish Sea at FHL), and Marco Hatch at FHL last summer, we have created some wonderful new links with local Tribes. These three efforts stand out.

BLUE HERON CANOE FAMILY JOURNEY

In July, we had the honor of hosting a visit of an inter-tribal canoe family at FHL for part of a day. Mike Evans, Snohomish Tribal Chairman, organized the Blue Heron Canoe Family's visit. When they arrived at the FHL breakwater, UW dignitaries including President Cauce, Dean Tolstoy, and Sherri Berdine were on hand to greet them, as well as an enthusiastic group of FHL students and staff. We were able to provide refreshments to the tired paddlers, and a tour of FHL. They left feeling very welcomed!

SHAW ISLAND CANOE JOURNEY

Another Canoe Journey-FHL interaction took place in July. The Coast Salish Youth Stewardship Corps, led by Sam Barr, spent a night camping on the UW-FHL property on Shaw Island as part of an inter-tribal "mini Canoe Journey" organized by The Madrona Institute. This program reconnects Coast Salish natural heritage learning traditions with their place of origin. Their visit was made comfortable and welcoming by our Shaw caretakers, Shirley and Gary Lange. The youth group may return in future summers to help with land stewardship there.

THE TOTEM POLE

In Fall 2022 we got an email from Dr. Eugene Nester, UW Emeritus Professor of Microbiology and long-term member of the Whiteley Administrative Committee. He offered to donate a totem pole to FHL. As far as he knew, the pole was carved by Wilson Williams, a noted Nuu-chah-nulth (formerly referred to as Nootka) carver who lived on the west coast of Vancouver Island. Wilson had carved poles for Ye Olde Curiosity Shop on the waterfront in Seattle. The carving and its artist do not represent the Native culture of the San Juan Islands, so before accepting this gift we checked with the cultural officers of several Tribes on whose ancestral lands FHL sits, to see if displaying art from another Tribe would raise any concerns. Thankfully, it did not! So after a lot of back-and-forth about the complex logistics of transporting an old, large and precious item from Seattle to FHL, it arrived here and our Maintenance crew had safely ensconced it in the entryway of the Fernald Building, with a plaque about its origin mounted on the wall.

After we posted a picture of this remarkable gift on our social media, we got a call from Rick Williams. Himself a carver (**https://williamsfamilycarvers.com/**), he recognized the pole as the work of his grand-uncle and to our amazement and delight, he asked if he could come restore it! Rick and his son EagleSon spent two weekends at FHL this spring restoring the totem pole; this happened when Josh was teaching his Indigenous History course here, creating wonderful connections. Students and other FHL residents got the opportunity to learn, watch, and even help! Josh Reid did an interview with Rick and EagleSon, and soon we will be adding to the plaque some of their stories about the different figures on the pole. It is a remarkable addition to our welcoming entryway! ■

Top left: Blue Heron canoe preparing to dock at FHL. Photo: Kristy Kull.
Mid left: Mike Evans, Dr. Cauce and Eric Day, senator from Swinomish. Photo: Sherri Berdine.
Bottom left: Canoes at Shaw Island. Photo: Shirley Lange. **Bottom right:** Before (left) and after (right) Rick Williams and family restored the totem pole. Photos: Mason Wiley.

In Memoriam

The FHL community lost three very dear members in the last year, each important to us in different ways.

Photo: Kathleen Ballard

TOMMY PIEPLES

Tommy Pieples was a member of the FHL Maintenance crew for over 22 years. Students and scientists who encountered him over the course of his time here all agree that he was remarkable for his ready smile, quirky sense of humor, and unflagging "yes I can help you with that" attitude. His institutional knowledge of the ins and outs of campus infrastructure was irreplaceable. He was also beloved around San Juan Island as a coach of soccer, baseball, and basketball, dad to three wonderful children, grill man at the County Fair, and friend to countless islanders. Tommy was a walking rolodex of SJI who-what-where, jack of all trades, fun poker player, and unrelentingly kind-hearted human. He passed away unexpectedly of heart failure in June. His beloved wife Diana remains at FHL as our invaluable fiscal specialist. ■

DR. ALAN KOHN

Alan Kohn was an invertebrate zoologist who spent most of his career at the University of Washington associated both with the Zoology/Biology Department and the Burke Museum. He frequently taught courses at FHL, especially in the summer, and mentored many past and current FHL scientists as graduate students. In addition, many FHL students have benefited from the scholarships and research fellowships set up in his name. Those of us lucky enough to interact with him in detail over the years remember him as a lovely, gentle soul with an encyclopedic memory and one of the fastest people with a pun you could ever hope to meet. As a colleague at the Burke Museum wrote, "His legacy will live on in the collection that he curated, in the knowledge that he generated, and in the people whose careers and lives he touched." ■

DR. GEORGE MACKIE

George and Gillian Mackie were regular spring and summer visitors to FHL from 1960 well into the 2000s. For a number of years he drove to FHL in late spring with students from the University of Edmonton. After 1968 when he took a position at the University of Victoria, he could migrate just a few miles east to study various aspects of marine invertebrate physiology at FHL: especially how nerves, muscles and excitable epithelia interact to produce behavior. He collaborated with many other visiting and resident FHL scientists, studying primarily the nervous systems of jellyfish and siphonophores, but also ciliary control in mollusc larvae and pelagic tunicates, aspects of communication in colonial animals, and eventually collaborated to demonstrate that hexactinellid sponges conduct electrical impulses. The tiny and rare jellyfish *Geomackiea zephyrolata* Mills 1985, found in Friday Harbor and Saanich Inlet, B.C., was named in honor of his scientific contributions. George played chamber music during his many FHL visits with a wide variety of musically-inclined FHL residents, each year bringing along a pile of sheet music from his home near Sidney. ■

K-12 Program

by Adam Rogowski, who shares his experience with us as he begins his third year as program assistant to FHL Science Outreach Program Director Michelle Herko

"I'm excited to jump back into bringing hands-on science experience to local students." One example of the wide range of programming we bring is the 7th grade Gray Whale Project, where we partner with The Whale Museum in Friday Harbor to rebuild the skeleton of a young gray whale. This ties into the students' unit on the human body, allowing them to compare and contrast the skeletons of humans and whales. Another is the 4th grade beach seine, which brings students and parents together with fish experts and FHL scientists to identify the contents of a net towed across the eelgrass beds at Jackson Beach. We spend an exciting day counting and measuring hundreds of fish pulled from the net, hunting for the enigmatically named Spiny Lumpsucker. Instead, this year we mostly found shiner perch to add to our 20-year dataset. The high school biology students' attention to detail gets tested working on their Invasive Mussel Project, extracting DNA and performing PCR on local mussels to determine whether the Salish Sea is accumulating invasive species. This biotech unit is supported by the Fred Hutch Science Education Partnership. Thanks also to The Dean Witter Foundation for their continued support of the program.

We've been able to make much-needed improvements to our equipment. For example, I was able to build several quadrats for the 6th grade intertidal surveys and several new kicknets for our benthic marine invertebrate project with Spring Street International School. This year, we have our eyes set upon a new microscope/camera setup.

Undeniably, the best part is seeing how students respond so positively to the programs. We have countless stories from teachers, telling us that our labs and field trips were the first time they saw a student actively engage in science. Students from different classes approach us and eagerly ask what exciting activity they will be doing with us this year. It seems evident to Michelle and I that we are helping develop passion for marine science among the students of all grades.

Photo: Kathleen Ballard

It's evident to us that we are helping develop passion for marine science among the students of all grades. This program operates entirely on funding from individual donors, family foundations, and the Community Foundation fundraising at the San Juan County Fair. To learn more about our work or to make a gift, visit **https://fhl.uw.edu/about/outreach/** ■

2024 COURSES

Spring Quarter (March 25 - June 1)

The ZOO-BOT PROGRAM
Students participate in all 3:

1. Marine Invertebrate Zoology
2. Marine Botany
3. Research in Marine Biology

SPRING MARINE STUDIES
Students select a combo of courses for a minimum of 12 credits:

1. Marine Mammals of the Salish Sea
2. Ecology of the Salish Sea
3. Introductory Biology
4. Research in Novel Marine Ecosystems
5. Marine Sciences Seminar

Blinks – NSF Research Internship Program for Undergraduates
(mid June - early Aug)

Summer Session A (June 10 - July 12)

- Evolutionary Development of Marine Invertebrates
- Ecological Biomechanics
- Conservation Ecology

Summer Session B (July 15 - August 16)

- Fish Morphology
- Marine Invertebrate Zoology
- Subtidal Ecology

Early Autumn (2-3 weeks in Sept)

- Marine Biology in the Field

Autumn Quarter (Sept 25 - Dec 7)

AUTUMN MARINE STUDIES
Courses TBD

RESEARCH APPRENTICESHIP

- Pelagic Ecosystem Function in the San Juan Archipelago

Please check for updated listings at *fhl.uw.edu/courses/course-descriptions/* ■

THE Whiteley Center

The Whiteley Center was busy again this year, although we are always on the lookout for scholars who like to spend time in the lovely cottages and study areas from October to May. This year we gave fellowships to six scholars to help defray housing costs during their stays. Below are those recipients and their projects.

2023 Whiteley Fellowship Recipients

Janee Baugher, Writer. A Suicide's Memoir: The Year I Saved My Life.

Mary Bruno, Author. The Under Waters: An exploration of aquifers and inner lives.

Elizabeth Gross, Teaching Artist and Adjunct. Writing a libretto about the southern resident orcas and the people who interact with and care for them; J35, a chamber opera.

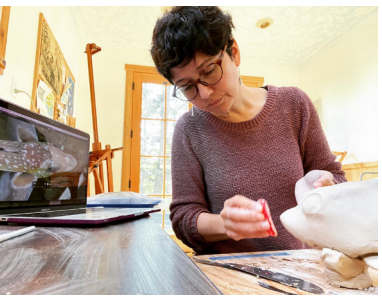
Jourdan Keith, Founder and Director of Urban Wilderness Project. "Tugging at the Web," an environmental memoir in essays forthcoming from UW Press.

Richard Watts, UW Associate Professor of French. Reclaimed Waters: Literary History, Translation, and Resource Decolonization in the Francophone Post/colonial World.

Dana Wier, Teaching Artist with Swan School, Clement Course. Expressing the Interconnections Between Biological and Cultural Systems through Encaustic Art.

For the first time in years, in Autumn 2023 we have an FHL Artist in Residence, thanks to the Macfarlane Artist Award and the lovely Art Studio. These awards are for visual artists to work on projects at FHL that have a notable connection to marine sciences and/or the environment, and to be part of the community of marine science students and researchers on campus. Resident Fellows are asked to contribute to the local community in some manner: offering drawing lessons to students, creating art that FHL can use in marketing efforts, giving lecture demonstrations about their work and process, or other creative ideas.

This fall's Artist is Dr. Fernanda Oyarzun, who earned her PhD from UW with Richard Strathmann and now combines her artistic talent and scientific training. She is a Chilean visual artist (**www.fernandaoyarzun.com**) who explores the world through process and place-based interdisciplinary practices. She says: "The Macfarlane Artist Fellowship is granting me the opportunity to spend this Fall conducting art-science research in the very same place where I took a comparative embryology class exactly 20 years ago — an experience that changed my life! My activities range from working on clay sculptures and sketching live adult organisms and their larvae, to utilizing methods like SEM, CT scanning, and 3D printing. I couple this blend of artistic and scientific tools with rich and diverse conversations with scientists and members of the community." ■



To learn more about the Whiteley Center and the Macfarlane Art Studio please visit **fhl.uw.edu/whiteley-center/**

Research Funding

Carrington, Emily, PI; Co-PI: Matthew George, Washington Sea Grant. A collaborative partnership to address mass mortalities in oyster aquaculture through improved field monitoring, husbandry practices, and workforce development. 2023-2025.

Carrington, Emily, PI; Co-PIs: Matt Reidenbach, Mike Nishizaki, NSF, Biological Oceanography. Collaborative Research: Microscale interactions of foundation species with their fluid environment: biological feedbacks alter ecological interactions of mussels. 2021-2025.

Carrington, Emily, PI; Co-PI: Matthew George, 2021 PSMFC/NOAA Marine Aquaculture Pilot Competition. Development of genomic markers for environmental resilience in mussels. 2021-2024.

Cramer, Allison, NSF. Understanding Substrate Mobility as a Disturbance in Hard Rock Marine Communities. 2021-2023.

Dethier, Megan, WA State. Proviso: Puget Sound Kelp Conservation and Recovery. 2023-2025.

Dethier, Megan, PI; Co-Pis: Adam Summers, Billie Swalla, NSF FSML. Genomics at the Shoreline. 2022-2024.

Dethier, Megan, Washington State Legislature. Kelp Conservation. 2021-2023.

Dethier, Megan, PI; Co-PIs: Jason Toft, Andrea Ogston, Estuary and Salmon Recovery Program. Quantifying a Scale Bar of Beach Functions at Target Sites identified by the Beach Strategies Project. 2021-2023.

Eisaman, Matthew, PI; Co-PIs: Chinmayee Subban, Emily Carrington, Sohail Nawaz, DOE FECM. Optimizing the integration of aquaculture and ocean alkalinity enhancement for low-cost carbon removal and maximum ecosystem benefit. 2023-2024.

Foe, Victoria, The Seaver Institute. FHLTEM. 2022-2024.

Harris, Lyda, PI; Co-PI: Emily Carrington, Seattle Aquarium TOM FORD Plastic Innovation Prize. Degradation of plastic and plastic alternatives in temperate ecosystems. 2022-2023.

Harvell, Drew, PI; Co-PIs: Maya Groner, Colleen Burge, Eileen Hofmann, NSF, EEID. Transmission Pathways of Seagrass Wasting Disease in Coastal Meadows. 2022-2025.

Harvell, Drew, The Nature Conservancy. Pycnopodia Epidemiology. 2021-2025.

Hodin, Jason, NSF EDGE program. Tools to advance genomic studies in sea urchins. 2019-2024.

Hodin, Jason, Nature Conservancy. Captive star rearing. 2021-2024.

Mumford, Tom, PI; Co-PI: Megan Dethier, UW. UNrealized Critical Lanthanide Extraction via Sea Algae Mining (UNCLE-SAM). ARPA-E and Battelle PNNL. 2021-2023.

Summers, Adam, NSF. Research Experience for Undergraduates. 2022-2024.

Summers, Adam, University of Oslo. Fossil Temporal Dynamics of Phenotypic Selection & Life History Evolution. 2022-2024.

Summers, Adam, Co-PI, NSF. oVert: Open exploration of vertebrate diversity in 3D. 2017-2023.

Summers, Adam, NSF. 3D Morphology. 2018-2023.

Swalla, Billie, Evolution and Development of Marine Invertebrates. Funds Swalla Lab Research. 2022-2025.

Swalla, Billie, Seeley Fund. Funds hemichordate research done on Tetiaroa, Tahiti on whole body regeneration. 2014–2023.

Truman, Jim, PI; Co-PI: Lynn Riddiford, Howard Hughes Medical Institute. Crustacean Neurobiology. 2016-2025.

Wyllie-Echeverria, Sandy, Paul Andersson Co-PIs, Habitat Strategic Initiative Lead (HSIL). Eelgrass Restoration Through Large Scale Seeding. 2023-2026.

Wyllie-Echeverria, Sandy, Seacology. Plant Eelgrass Seeds in Shallow Bay, Sucia Island in collaboration with Coast Salish Steward Youth Corps. 2023-2024. ■

New Faces & Roles

Shannon Koller

Our new Associate Director of Advancement hails from Michigan's Upper Peninsula, where she spent her youth building forts in the woods and riding her one-speed bike down endless gravel roads, often leading to spectacular wipeouts. Shannon first experienced the magic of the San Juan Islands under the glow of Hale-Bopp Comet in 1997 and got married at SJ County Park later that same year. When she is not in, on, or around the water, you can find Shannon on her sailboat in Friday Harbor, sometimes doing a crossword puzzle in a hammock strung between the mast and the forestay.

From 2001-2013, Shannon worked at UW as an international educator, sending students to the far corners of the planet and leading study abroad programs to Brazil and Ecuador, witnessing first-hand the transformative nature of experiential learning. Over the last 10 years, Shannon has served in philanthropy, leadership, and educational programming roles in Washington nonprofits, advancing missions related to community, youth, and environment wellness. Shannon lives on San Juan Island and is thrilled to return to the UW in a role building relationships and fostering support for the remarkable teaching, learning, and research of FHL. ■

Becca Maher

Becca received her doctorate from the Department of Microbiology at Oregon State University. She is fascinated by the diversity and functions of microorganisms that live in and on larger organismal hosts, and studies how environmental stress can drive changes in the microbiomes associated with hosts like corals and zebrafish – and more recently, seagrasses in the Salish Sea! At Friday Harbor Laboratories, she will use cutting edge "-omics" technologies to help understand Eelgrass Wasting Disease, which is having significant impacts locally on the persistence of this valuable species. To fully understand the disease, she will study the eelgrass host, the protist pathogen, environmental conditions, and the microbiome associated with eelgrass. Her work will use a combination of field surveys, laboratory experiments, and genomics technologies to investigate the role of the microbiome in transmission and initiation of the disease. She is already helping establish our new Marine Genomics Center in Lab 2 (renovation update coming soon in a Tide Bite!), enabling other FHL scientists and visitors to advance their research with novel molecular and sequencing techniques.

Becca was raised on the Texas Gulf Coast and has been an avid ocean and seafood lover her entire life. She plans to spend weekends hiking, back country skiing and backpacking in the Pacific Northwest, and looks forward to exploring the San Juan Islands via sea kayak. ■

NEW ADVANCEMENT BOARD MEMBERS

RACHEL ANDERSON

Former FHL Associate Director for Advancement

MARY RUCKELSHAUS

Executive Director of The Natural Capital Project & a Senior Research Associate at Stanford University

MASON WILEY

Former FHL Academic Services Manager & current SJ County Land Use Attorney

MARCIA JOHNSON WITTER

Third generation Husky with familial, academic, professional & philanthropic connections to UW

FHL Docent Program

The FHL front office receives many calls – and even drop-ins – asking about tours of the facility, which we had not done for decades, due to limited capacity. Rita Pampanin (in red at left) is a relative newcomer to the island who used to be a Docent at the Bodega Marine Lab. She volunteered to start a docent program at FHL, and thanks to her energy and enthusiasm, we now have one! Rita leads a team of trained volunteers who give tours to small groups by request only. The tours have been a great way to build community and engage people in our mission. ■

(continued from cover story)

In conclusion, my experience could not have been better: Celeste and I had an excellent time thanks to the welcoming FHL community, and the time was very productive in terms of my research and the tools and techniques I learned. During the nine months I expanded my network of collaborators; I hope this network continues to grow with future projects. I can't wait to get back to San Juan Island in the future, especially to FHL, and visit the beautiful landscapes and the nice people we met. ■

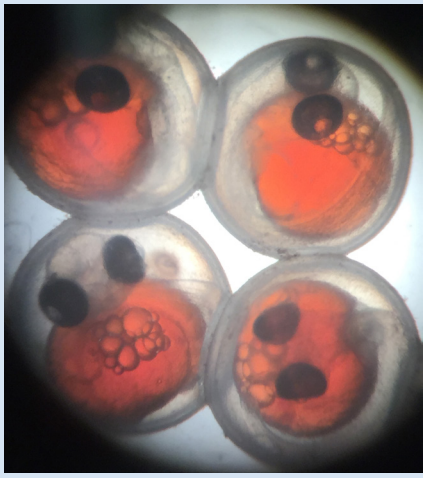


Image: *Developing fish eggs collected after an extreme low tide at FHL by Celeste Tavera.*

FUNDS & ENDOWMENTS

Adopt-A-Student Program Endowed Fund
Adopt-A-Student Program Fund
Rachel Pitinga **Anderson** Endowed FHL Student Support Fund
Comparative **Biomechanics** Fund
Anne Hof **Blinks** Fellowship in Marine Biology
Bloom, Shimek, and Raymore Endowed Fellowship
Beatrice Crosby **Booth** Endowed Scholarship
Calvin Postdoc Term Fellowship
Emily **Carrington** Endowed Student Travel Support Fund
FHL **Cycles of Ocean Life** Fund
FHL **Diversity, Equity and Inclusion** Initiatives Fund
FHL **Discretionary** Fund for Excellence
Ellie **Dorsey** Memorial Fund
Patricia L. **Dudley** Endowment
Janet L. **Fahey** & Richard R. **Vance** Endowed Graduate Fellowship in Marine Ecology
Robert L. **Fernald** Endowment Fellowship
Alexander **Fodor** Graduate Student Endowed Fellowship
David and Debra **Galloway** FHL Term Scholarship
FHL Ph.D. **Graduate** Support & TA Fellowship
Graubard Ph.D. Term Fellowship
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K-12 Science Outreach Program Fund
FHL Science Outreach Program **K-12 Endowed** Fund
Alan J. **Kohn** Endowed Fellowship
Eugene N. **Kozloff** Endowed Scholarship
Charles **Lambert** Memorial Endowment
Karel F. **Liem Fish Biology** Endowment
Macfarlane Artist Fellowship
Macfarlane Art Studio Endowment
Marine Life Endowed Faculty Fellowship
Marine Life Endowment
Marine Science Fund
William & Florence **McAlary-McFarland** Family Endowment for Student Support
Larry **McEdward** Memorial Fund
Mellon Research Training Faculty Scholarship
Trish **Morse Endowed Scholarship** – Japan / U.S. Exchange
Edward Sylvester **Morse Institute**
Frederic H. and Kirstin C. **Nichols** Endowed Graduate Fellowship
Nuts and Bolts Endowed Fund
Octopus Fund
Brooks and Suzanne **Ragen** Endowed Scholarship
Christopher G. **Reed** Endowed Fund
Research Apprenticeship Program Endowment
Graduate **Research Fellowship Endowment**
Mary E. **Rice** Endowment at FHL
Riddiford/Truman Endowed Professorship
Gordon and Helen **Robilliard** Marine Field Equipment Endowment
Pamela **Roe** Graduate Student Endowed Fund
Salish Sea Solutions Fund
Seagrass Conservation Project
FHL Research Fund: **Seastar** Wasting Disease
Kenneth P. **Sebens** Endowed Student Support Fund
Richard R. and Megumi F. **Strathmann** Endowed Fellowship
Turn Point Endowed Faculty Fellowship
Stephen and Ruth **Wainwright** Endowed Fellowship
Helen Riaboff **Whiteley Center** Endowment Fund
Arthur and Helen **Whiteley Distinguished Fellow** Endowment
Arthur H. **Whiteley** Memorial Fund
Dennis **Willows** Director's Endowed Professorship ■

Please help support our efforts at
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Thank you FOR YOUR SUPPORT

We wish to acknowledge our many contributors for their kind and generous support of students and programs at FHL.

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The Willows Professorship

The purpose of the FHL Dennis Willows Director's Endowed Professorship is to enhance the University's ability to hire and retain a distinguished director who will sustain FHL's international reputation for excellence in marine science. **I am currently prioritizing this as my top fundraising effort.** A substantial endowment will help us recruit an exceptional individual who can expand FHL's research expertise, attract new researchers and graduate students, and broaden FHL's teaching capacity. Down the road when I step down as director, FHL will be seeking a resident Director whose teaching and research are entirely at FHL. We're inviting friends and supporters to help grow the Dennis Willows Director's Endowed Professorship to make it an effective tool to support FHL in this critical fashion. You can help by making a contribution to the Dennis Willows Director's Endowed Professorship online via UW Giving. ■

- Dr. Megan Dethier, Director

Director's Message...

Strategic Plan & Forward Progress

Professor
Megan Dethier,
FHL Director

Photo: Kathleen Ballard

In Autumn 2022 and Winter 2023, over 300 past and present associates of FHL provided input to a strategic planning effort. Three groups explored different facets of our mission and operations: Facilities, Research, and Education/Outreach. Each group discussed Strengths, Weaknesses, Opportunities, and Threats (SWOT) at FHL, then used these to brainstorm about achievable goals that will have us seizing opportunities while addressing current weaknesses.

Several consistent themes arose in all three sessions, both in the SWOT analyses and the goal-setting efforts. Participants were often passionate about the strengths of FHL, including its egalitarian and collaborative culture, access to field sites and organisms, and facilities that enable diverse types of research. A weakness noted in all sessions was the declining condition of much of FHL's equipment and infrastructure, partly the result of insufficient staffing and funding for repair and maintenance. A consistent challenge noted was the lack of affordable year-round housing on island: an issue that plagues institutions located in tourist destinations like Friday Harbor and one that makes it difficult to recruit staff or researchers from off island.

When it came to priorities for FHL's future, one rose to the top during all discussions: increasing the number of resident faculty and research scientists. Such residents are essential for providing intellectual vibrancy, ensuring that FHL remains scientifically relevant, and attracting top students and colleagues. They also bring in modern equipment, and the funds (direct and indirect) needed to support and maintain the equipment as well as infrastructure improvements.

We have begun the detailed work of creating action plans to implement the many goals identified, and this effort will continue with a set of committees targeting particular issues. One key strategy for achieving the goal of increased year-round use of FHL facilities is to build more research and educational partnerships, e.g. with state and federal agencies, regional tribes, and research consortia; we have already begun reaching out to colleagues and funding agencies both within and outside of UW to start those conversations.

I was hugely gratified by the time and energy many people took to participate in the planning effort, and by the outpouring of positive feedback about the opportunities FHL has been providing over the decades. With all this positive energy, and the continued help of both the UW administration and our amazing donor base, we can move forward strongly! ■

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Director: Dr. Megan Dethier
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Business Manager: Alisa Schoultz
Advancement: Shannon Koller
Student Services Manager: Fiona Curliss
Visitors & Whiteley Coordinator: Morgan Johnston
Office Coordinator: TBD
Fiscal Specialist: Diana Pieples
IT Specialists: Dylan Crosby and Don Ruffner
Maintenance Supervisor: Doug Engel
Marine Operations Manager: Eric Loss
Dive Safety Officer: Pema Kitaeff
Boat Safety Officer: Kristy Kull
Stockroom Manager: Peggy Combs
Dining Hall Manager: Laurie Spaulding
Science Outreach Director: Michelle Herko
Custodial Supervisor: Lee Ann Walch ■

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UNIVERSITY of WASHINGTON
College of the Environment

620 University Road
Friday Harbor, WA 98250

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Young Investigator Prize Winners

2022

ELEANOR ROLLINS, FHHS

As the 2022 YIP winner, Eleanor Rollins worked in Dr. Emily Carrington's lab studying the ecology and physiology of habitat-forming species in the Salish Sea. She was also mentored by doctoral students Kindall Murie, Jack Litle, and Robin Fales. Each scientist studied different species such as bull kelp, mussels, and *Haminoea* bubble snails. Every day presented new opportunities for Eleanor to grow her skills. Whether it was analyzing images of kelp, classifying the developmental stage of snail larvae, tending on dives, calibrating sensors, or helping on the mussel project, her day was always full of excitement and diversity. Eleanor also helped with a booth for outreach and education about shellfish at Westcott Bay Shellfish Farm. The outreach project successfully shared information about the importance of mussels and other bivalves to our oceans. She spoke to many people at the booth, answered questions, offered information, and even had interactive opportunities for education, such as a shellfish filtering demonstration, and a wheel of questions regarding all things shellfish. Eleanor is very excited to apply all the skills she learned last summer to future experiments studying the development of organisms in varying ecosystems. ■

2023

AVA MARTIN, FHHS

As the 2023 Young Investigator Prize winner, Ava worked on a variety of projects, all in Dr. Emily Carrington's lab. The most prominent project was an ongoing public outreach program at a local shellfish farm (Westcott Bay Shellfish Co.), which Ava led for the entire summer. She visited the farm twice a week with an interactive display of fun games and infographics and talked to restaurant customers about the importance of bivalves to the environment. Over the course of the summer, Ava was able to share her shellfish knowledge with over 250 people, some from places as far as Texas and England. When not at the farm, Ava developed her field, laboratory, and analytical skills. One project she led was motivated by the extreme heat waves we have been experiencing in recent summers. How often does extreme weather coincide with extreme tides, causing damage to organisms on the shore? Ava became proficient in manipulating spreadsheets to synthesize information from very large datasets, including a 10 year record of air temperature (recorded every 15 minutes!). She was able to determine when and for how long organisms in the intertidal zone were exposed to air during periods of extreme hot or cold temperatures. She created a few graphs summarizing her findings and expertly presented the project to the lab group. ■