

IMPORTANT DATES
FOR AUTUMN QUARTER

Sept 27	First Day of Instruction
Oct 3	Last day to drop a class without a fee thru MyUW
Oct 3	All courses require entry codes to add and fee
Oct 6	Last Day to apply to Biology major in Autumn
Oct 10	Last Day to drop a class without the use of Current Qtr Drop & \$20 fee
Oct 17	Last Day to add a class through MyUW
Oct 29	Dr Millie Russell Day
Nov 1	Last Day to Apply for Grad Reg Priority GSP for Winter
Nov 6th	FHL Spring '24 applications open
Nov 3-19	Win Reg Priority Period 1
Nov 10	Veterans Day Holiday
Nov20-Jan2	Winter Reg Period 2
Nov 23	Thanksgiving
Nov 24	Native Amer. Heritage Day
Dec 8	Last Day to Withdrawl (from all Aut Qtr classes)
Dec 8	Last Day to use Late Course Drop Period
Dec 11-15	Final Examination week
Dec 15	Last Day to convert to S/NS
Dec 20	Grades officially posted
Dec16-Jan2	Winter Break
Jan 3	Winter Quarter Starts

A MESSAGE FROM THE CHAIR OF THE DEPARTMENT



David Perkel, Chair of Biology

Dear UW Biology Undergraduates and Graduates,
Welcome back to campus and to a new academic year!

Hopefully your summer was fulfilling in all the ways you had hoped. We are thrilled to have you join us and the campus community. As we begin the quarter, I am sensing excitement in the air. Campus is busier and it's great to hear the buzz in the air of exciting ideas and projects. It is a joy to see our community back in our classrooms and research labs, and I am sure all of us are enjoying it.

While COVID appears to be showing a bit of resurgence, you as Biology majors understand the science behind and the ways in which vaccines, masking and other important public health measures can improve and save lives all around us.

We in Biology are thrilled to have four new faculty members amidst our ranks, and 3 more arriving in the coming months. Already in the classroom are Drs. Janet Bester-Meredith, Jacob Cooper, Jeffrey Laney and Camila Lopez-Anido. They are all experienced instructors, and three of them are new to UW Seattle. Their contributions will expand and enrich our course offerings and we very much hope that you take advantage of the expanded options. With all our courses, we know that you will do best if you engage with your peers and TAs and take advantage of office hours. It is these one-on-one or small group interactions that can truly help you have a much more direct and personalized learning experience, despite the large size of UW.

As the days get colder and darker, you may find that you would like to bathe in nature; if so, our UW Biology Greenhouse beckons you. It is open to the public Thursday afternoons 12-4PM and two Saturdays a month (except when there is a home football game). More information on the Biology web page.

Exciting research continues in the department and many of our Biology majors take part. Horacio de la Iglesia's important research on the physiological and behavioral impact of sleep in humans continues to be referenced in news pieces every time we change our clocks at the start and end of daylight savings time. Earlier this year, the Rasmussen Lab published research on the touch system in zebrafish as a new model to study Merkel cell development, which will serve as a foundation for future analyses of the touch sensory system and be of interest to biologists studying cell regeneration and aging. If you are interested in getting involved in learning new things about the natural world, I encourage you to visit the Biology website, contact a professor or TA, and get immersed in a research project!

And Biology members continue to receive well-earned honors. Among some of these recognitions: Elli Theobald won the UW Distinguished Teaching Award, Briana Abrahms won a prestigious Packard Fellowship, Adam Summers was awarded a Meritorious Teaching Award in Ichthyology, and Janet Germeraad and Jason Patterson in our undergraduate advising office were recognized as the July 2023 APAC Advisers of the Month. Congratulations to these Biology members and others for these accolades. These, and many other news pieces from our department, are featured on our Biology website.

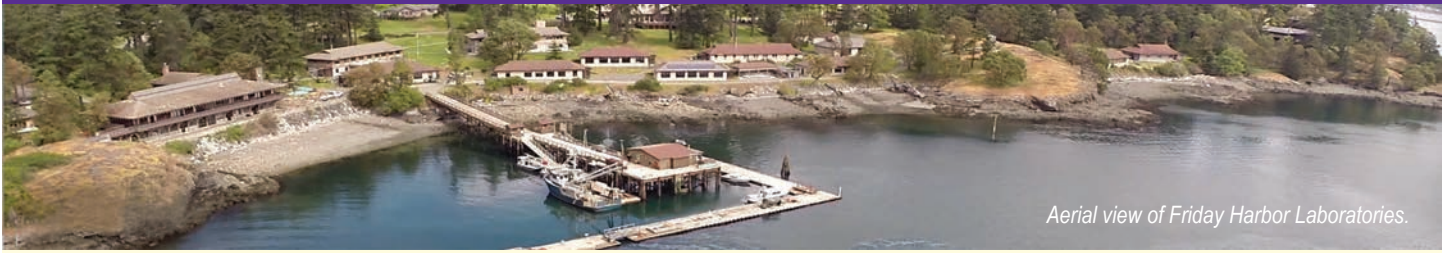
I encourage you to explore the recent news sections and see the exciting things our community is doing in the classroom, in the lab, and out in the field. We are truly surrounded by an outstanding and talented community here in the department.

We continue to remain focused on our core missions as a large public university: pushing forward our understanding of how life on Earth works; sharing that knowledge through our courses, mentoring and research opportunities for students; helping the next generation of biologists gain professional skills; and outreach with the community about the living systems around us all, ranging in size from whole ecosystems down to the level of molecules and even atoms. The UW Biology community impresses me every day, and I am thrilled to be able to share some highlights with you. I hope the new academic year is off to a great start for all of us.

Best wishes, David Perkel, *Professor and Chair, Department of Biology*



FRIDAY HARBOR LABORATORIES ON SAN JUAN ISLAND University of Washington



Aerial view of Friday Harbor Laboratories.

LOCATION

The Friday Harbor Laboratories (FHL) are located on San Juan Island in the San Juan Archipelago. The laboratories are on the eastern shore of San Juan Island, one of the largest of some 172+ islands that make up the archipelago. This archipelago, surround by the waters of Salish Sea is located in the NW section of the State of Washington bordering Vancouver Island.

GETTING TO FHL

FHL is approximately 100 miles northwest of Seattle, Washington. You can reach the island by airplane or ferry to the Town of Friday Harbor. Ferry departs from Anacortes with limited sailings each day. To get to FHL from the ferry landing (1.5 miles) you can drive, taxi or walk. It is not possible to commute between Seattle and Friday Harbor on a daily basis, although it may be feasible to go to the mainland for the occasional weekend.

UNIVERSITY OF WASHINGTON PRESERVES IN THE SAN JUAN ISLANDS

The University of Washington owns and maintains a series of biological preserves totaling over 1,600 acres in the San Juan Islands. Almost one third of that acreage comprises the Friday Harbor Laboratories Biological Preserve, on which the FHL campus is situated. The other UW preserves are 1) Cedar Rock Preserve (Shaw Island), 2) Fred and Marilyn Ellis Biological Preserves (Shaw Island), 3) False Bay Biological Preserve (San Juan Island), and 4) Argyle Lagoon Biological Preserve (San Juan Island).

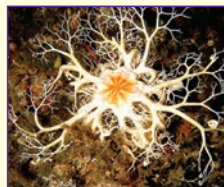


★ Location of Friday Harbor Labs on San Juan Island in the San Juan Archipelago

FRIDAY HARBOR LABORATORIES BIOLOGICAL PRESERVE

This is a 490-acre property, a former U.S. Military Reserve that was transferred to the University of Washington in 1921 by the federal government for the purpose of a biological station and for general university research purpose.

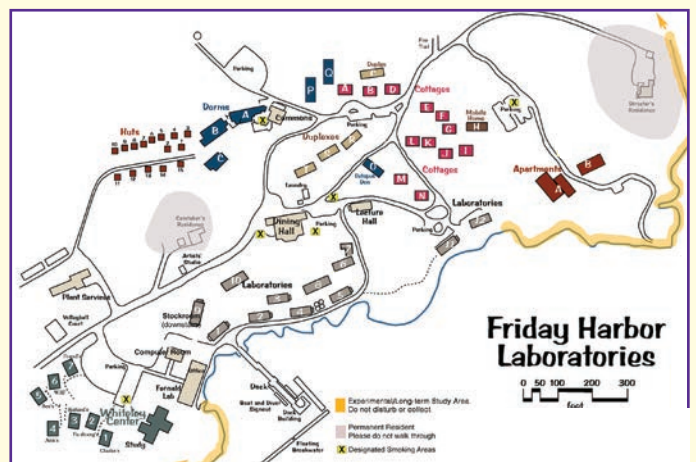
The southern portion is developed as a residential teaching and research campus, including 12 separate laboratory buildings, 2 lecture halls, the Whiteley study center, a library, computer lab, administrative offices, stockroom, dining hall, dormitories and other housing units. The waters along the shoreline of the FHL Preserve are designated a Marine Protected Area, the Friday Harbor MPA, by Washington Dept of Fish and Wildlife.



Basket Star, *Gorgonocephalus eucnemis*.

ORGANIZATION

The Friday Harbor Laboratories are administered by the College of the Environment of the University of Washington. Faculty at the Laboratories have positions from various departments of the University (Department of Biology, School of Aquatic and Fishery Sciences, The School of Oceanography) and visiting professors from other institutions. The Friday Harbor Laboratories Director is Dr Megan N. Dethier.



Land and Waters Acknowledgement Statement

We acknowledge that we work and live on the traditional homelands of the Coast Salish peoples. The University of Washington's Friday Harbor Laboratories acknowledge the Coast Salish peoples of this land where we teach, research, and learn- the land which touches the shared waters of all tribes within the Lhaq'temish (Lummi), Lekwungen (Songhees), Swinomish, Semiahmoo, Samish, T'sou-ke, WSÁNEĆ, and Jamestown S'Klallam, and we pledge support for Coast Salish peoples of our community and seek meaningful connections to protect our shared environment.

FACILITIES, RESEARCH & EXCEPTIONAL MARINE FLORA AND FAUNA

MARINE ENVIRONMENT

Within a relatively short distance from the laboratories are marine waters varying from oceanic to those highly diluted by streams, with depths to 1,000 feet, bottoms varying from mud to rock and water movements ranging from those of quiet bays and lagoons to those of swift tideways.

The waters about the San Juan Archipelago have exceptionally abundant and varied marine flora and fauna. They are rich in both phytoplankton and zooplankton. Brown, green, blue-green, and red algae are present in quantity.

Representatives of all major and most minor phyla of invertebrates can be collected within a reasonable distance from the laboratories. Shore collecting and dredging in the diverse local habitats provide an abundance of organisms for ecological, experimental, morphological, and systematic work.

RESIDENT SCIENTISTS AND VISITING RESEARCHERS

Over 20 FHL resident scientists conduct research at FHL year round and approximately 100 visiting researchers come to FHL each year. In addition to the important science that happens here, an equally important reason why people come to FHL year after year is the camaraderie that is fostered amongst fellow faculty, students and researchers.

RESEARCH AND TEACHING LABORATORIES

The research and teaching laboratories at FHL include ten one-story buildings of about 1,500 square feet each and three larger, two-story buildings. A system of running seawater supplies most of these: the water is delivered to plexiglass aquaria and water tables through polyethylene or PVC pipes and fittings, and is free of metallic contamination. Walk-in cold rooms, a microtechnique room, and a shop are available. One lab building comprises the Ocean Acidification Environmental Laboratory (OAEL), dedicated to research on the effects of ocean acidification. Another houses the The Karel F. Liem Bioimaging Facility, which includes a CT scanner and other imaging tools.

FHL Stockroom

A stockroom of nearly 2,000 square feet holds essential lab ware and research tools. Visiting researchers and course students may borrow collecting equipment, shovels, plankton nets, glassware, microscopes, microscope peripherals, centrifuges, cameras, video equipment, and various small lab appliances such as pumps, shakers, and pipetters. The stockroom inventory also includes chemical reagents and consumables available for purchase. The facility is managed on a self-service, honor system.

Major Equipment

On the website (<https://fhl.uw.edu/facilities-resources/other-research-facilities-resources/>) is the list of equipment may be available for use by visiting researchers who receive advance permission and go through a checkout/training from the contact person. This list contains a CT Scanner, Scanning Electron Microscope, Flumes, Spectrophotometer and more.

Boating and Diving

The FHL docks are home to the 42' research vessel, "Kittiwake," available for hire with captain. Four smaller motorboats, commonly used for SCUBA diving, are also available (at an hourly rate) as are several rowboats (free of charge). For AAUS divers, FHL offers SCUBA diving facilities that include a compressor, dive cylinders, and dive storage lockers.

FHL Library

The FHL library provides a core collection of books and journals dealing with marine biology and zoology. The FHL library also provides access to the full UW Libraries collection of e-journals and databases.



Emily Carrington: *Mytilus sp.*
Ecomechanics of wave-swept organisms, especially the byssal threads of the mussel.



Megan Dethier: *Fucus distichus* or rockweed is a species of brown alga. It forms a short canopy that protects algae and invertebrates from wave action and desiccation during low tide.



Ken Sebens: *Zoanthid*. a relative of corals and sea anemones, is a common species in the Salish Sea, on subtidal rock surfaces.



Adam Summers: *Narcine entemedor*, the Cortez Electric Ray, is from the eastern Pacific Ocean.



Billie Swalla: *Pleurobrachia bachei*, a member of the phylum Ctenophora that can be found up in the waters of Friday Harbor.

OUR BIOLOGY FACULTY WHO ARE ALSO RESIDENT SCIENTISTS AT FHL



MEGAN DETHIER

**Director, FHL
Research Professor
– UW Dept of Biology**

Dethier Lab Website
<https://megandethier.wordpress.com>

Teaching:
FHL 430/BIOL 430,
FHL 440/BIOL 445, FHL 470
Zoology Botany Program

What do you research?

My research broadly involves shoreline ecology - I work in all kinds of shoreline habitats, from exposed rocky shores to quiet salt marshes. I am especially interested in plant-herbivore interactions, and in how the physical environment determines the communities that are found there.

What does your job entail as a resident scientist at Friday Harbor Labs?

I write grant proposals for funding for my research, which focuses on the ecology of shorelines in the Salish Sea.

Then I spend a lot of time in the field, back in the lab identifying samples and working up data, and writing papers on reports on my findings.

How does being a resident scientist at FHL enhance your own research?

Some of my field work is done at sites very nearby, which is wonderful! In addition, there is always a great pool of students who have been here taking courses if I need to hire a field or lab assistant.

What is your favorite part of having your lab at Friday Harbor Labs?

It's one of the loveliest places in the state; the island is a peaceful and safe place to live; and the intellectual atmosphere at the Labs is vibrant and upbeat!

Do you have advice to give a student wanting to do a minor in Marine Biology thru Biology or a Marine Biology major thru the College of the Environment?

Be aware that "marine biology" is way more than whales - there is a whole wet world of fascinating critters and seaweeds out there, and you can learn about them and their habitats.



KEN SEBENS

**Professor
– UW Dept of Biology
– School of Aquatic &
Fishery Sciences**

Sebens Lab Website
<http://faculty.washington.edu/sebens/>

Teaching:
BIO 434 Invert Zoology
BIO 423 Marine Ecol. Proc.

What do you research?

My research involves ecological studies of marine subtidal communities, including rocky shores and coral reefs. We use scientific diving techniques and instruments to study the factors structuring and changing animal and plant communities in shallow waters of the Salish Sea and other coastal regions.

What does your job entail as a resident scientist at Friday Harbor Labs?

Our lab group conducts research on subtidal marine communities in the San Juan Islands, and elsewhere. We use SCUBA diving, underwater photography, and deployed instruments to measure the abundance and diversity of benthic marine species, and to describe environmental conditions, which have been changing over the past century. In the lab, we analyze photographic and instrument data from our subtidal surveys. We also conduct short-term experiments on species interactions

and environmental effects on physiology, growth and feeding.

How does being a resident scientist at FHL enhance your own research?

Many of our research sites are located near FHL, needing only short boat rides to access them. FHL maintains an active diving program, with facilities and equipment for underwater research. The flowing seawater system at FHL is also excellent for maintaining animals and plants in the laboratory for short term experimentation. Many graduate students, and undergraduates, have taken part in this research over the past two decades. Another plus is the constant stream on visiting scientists from other universities who come to do their own research and/or teach at FHL.

What is your favorite part of having your lab at Friday Harbor Labs?

My favorite part is having excellent research sites nearby, with a diverse fauna and flora, and very good water quality. This is important for our research, and for teaching courses at FHL, which provide hands-on field and lab experiences for our students working directly with marine organisms.

Do you have advice to give a student wanting to do a minor in Marine Biology thru Biology or a Marine Biology major thru the College of the Environment?

My advice would be to go for it! The UW is one of the best universities in the world in which to pursue marine science of all types, and we offer a broad range of courses in marine biology. Also, plan your program so you can spend at least one quarter at FHL, because it is a very unique experience and a chance to get to know both researchers, and marine creatures, at close range. Many of the researchers come from other universities, and from other countries.

SEE WHAT KINDS OF GREAT RESEARCH THEY ARE DOING AT FRIDAY HARBOR LABS



EMILY CARRINGTON
Professor
– UW Dept of Biology

Carrington Lab Website
<https://sites.uw.edu/ecarring/>

Teaching:
BIO 423 Marine Ecology
Process
BIO 427 Biomechanics

What do you research?

I lead a research group in the field ecological biomechanics and physiology. Including all of our collaborators and student interns, we were a group of 20 this summer! We work on projects relating to how marine organisms, especially bivalves, kelp and snails, interact with dynamic coastal environments.

What does your job entail as a resident scientist at Friday Harbor Labs?

I also teach an undergraduate course each spring (Marine Ecology of the Salish Sea) and will teach an advanced graduate course next summer (Biomechanics). Finally, I manage/co-

manage several research facilities at FHL, including the weather station, ocean observatory (FHLOO), flume lab and environmental lab (OAEI).

How does being a resident scientist at FHL enhance your own research?

The success of our research relies on FHL's greatest strengths: ready access to study organisms in a diversity of natural habitats and flowing seawater to support laboratory investigations.

What is your favorite part of having your lab at Friday Harbor Labs?

Living on San Juan Island, of course! Also working with the staff who work year-round to keep the placing humming.

Do you have advice to give a student wanting to do a minor in Marine Biology through the Dept of Biology or a Marine Biology major thru the College of the Environment?

Go for it! Either choice is a great one for anyone interested in the advanced study of how marine organisms work.



BILLIE SWALLA
Professor Emerita
– UW Dept of Biology

Swalla Lab Website
<https://faculty.washington.edu/bjswalla/>

Teaching:
BIO 415 Evolution & Devel
BIO 536 Evolutionary Devel
of Marine Invertebrates

What do you research?

I'm interested in the evolution and development of marine invertebrates, so I spend a lot of time reading about other embryonic systems, cloning the candidate genes, and looking at gene expression.

What does your job entail as a resident scientist at Friday Harbor Labs?

I frequently have students working with me in Lab 10 at FHL, and students fertilize eggs, look at development and gene expression. I have over 100 published papers, looking at the broad question of the evolution and development of the chordates, but also on nautilus, ctenophores, hemichordates and ascidians.

How does being a resident scientist at FHL enhance your own research?

I have spent the entire 40 years of my scientific career at marine labs. I moved to the University of Washington in 1999, specifically to work at Friday Harbor Labs. Ascidians, hemichordates, and ctenophores can be spawned easily at marine labs, but they do not do well in artificial seawater on campus.

What is your favorite part of having your lab at Friday Harbor Labs?

The view! :) It is the running sea water, which is not filtered, so marine invertebrates can filter feed efficiently and then they have healthy gonads. I love being able to go down to the dock, collect animals, spawn them and watch them develop in a single day. It is critical to my research to have healthy animals and embryos. Working at FHL is much more efficient for my lab than working on UW campus, especially with the loss of our Kincaid Seawater Room.

Do you have advice to give a student wanting to do a minor in Marine Biology thru Biology or a Marine Biology major thru the College of the Environment?

If you are excited about Marine Biology, study it!

As Director of Friday Harbor Labs, I was instrumental in establishing the Marine Biology major, so it is near and dear to my heart! I think that it is a very flexible major that will let you concentrate in Biology, Oceanography, or Fisheries Biology, depending on your interests. Be sure to spend at least one quarter, maybe two quarters, at Friday Harbor Laboratories. It will be a wonderful opportunity to do marine research and meet the many interesting researchers at FHL.

SEE WHAT KINDS OF GREAT RESEARCH THEY ARE DOING AT FRIDAY HARBOR LABS



ADAM SUMMERS

Professor

– UW Dept of Biology
– School of Aquatic & Fishery Sciences

Comparative Biomechanics
Lab Website

<https://www.adamsummers.org>

Teaching:

Intensive graduate course in the Biomechanics of Fishes at FHL every other summer.

Adam is offsite with very limited contact available so the research info below is from his website.

Cartilage

I am interested in the relationship between the biochemical constituents of cartilage and the material properties. There is a great deal of variation in cartilage composition, and this variation is underappreciated because of the research bias towards mammalian models. We are looking at the components that make up elasmobranch cartilage such as collagen, proteoglycan, and mineral. We hope this research will lead us to a better understanding of the relationship between biomolecules and material properties.

Hard prey

In spite of having a skeleton composed entirely of cartilage the chondrichthian fishes evolved durophagy (eating hard prey) four times. These four lineages include the outgroup to all elasmobranchs, the holocephalans, the horn sharks (Heterodontids), one species of hammerhead shark (*Sphyrna tiburo*), and most of the members of the myliobatid stingray clade. Adaptations for eating hard prey include molariform, or even pavement-like, dentition, large jaw adductors and specialized jaw cartilage.

Big fish

The largest fishes in the sea have cartilaginous skeletons. There are a number of hypotheses as to why this might be true, though none explain the diversity and number of very large cartilaginous fishes. Patricia Hernandez and I have proposed a functional limitation on size that may be a general explanation for the skewed size distribution. As a fish grows, its weight and the negative buoyancy of its skeleton grows as the third power of length. At the same time the thrust and lift generated by the fins grow with the square of length. Eventually, there will be insufficient lift to counter the sinking force of the skeleton at a certain length.

Fast fish

Both marlins (Istiophorids) and mako sharks (Lamnids), two very large, pelagic fishes, can burst swim at very high speed. Swimming quickly requires a stiff body to minimize the wasteful pushing of water to the sides. We have looked into the differences between marlins and makos to see how these skeletons affect the swimming speed and mechanics of fish.

#ScanAllFish

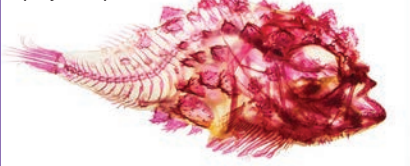
I am on a mission to scan all the ray-finned fishes in the world. And it's not just me! I am working with collaborators from around the world to create detailed CT scans of fish from museum specimens. One of the very, very useful things is to understand exactly what the skeleton looks like. It is shockingly complex. For comparison, your skull is just a few bones, but fish skulls are dozens and dozens of bones. In the first three months of the project, we were able to scan more than 500 species!

An important part of this project is getting all our results up on the web for anyone to access for any purpose. To allow the general public and every scientist out there to just download these data is fabulous. It also eliminates the needs for multiple teams to scan the same species of fish and using valuable resources for overlapping work.

These scans & data are available to anyone who wants to use them, for research or otherwise.

<https://www.adamsummers.org>

Spiny Lumpsucker



Butterfly Ray



xxxxxx



Pacific Cod



Giant Pacific Ray

Bonnethead Shark



© Adam Summers

The interdisciplinary Minor in Marine Biology is open to all UW students with an interest in exploring life in the marine environment. Coursework in the minor includes exciting hands-on learning opportunities, such as field trips, internships, research, courses at UW's marine field station, Friday Harbor Laboratories, and study abroad programs. We encourage students to declare the marine biology minor during their freshmen or sophomore years and immediately join a community of researchers and students interested in marine organisms, ecosystems, and conservation.

MARINE BIOLOGY MINOR SUMMARY

To earn a Minor in Marine Biology, students must complete a Bachelor's degree concurrently with the minor, and may not complete the minor as a standalone academic program. However, there is now a Marine Biology major if students would like to go more in depth with the subject matter.

The minor is built around 4 required introductory courses from marine biology, oceanography, biology and statistics. Advanced electives are then selected from a curated list from the School of Aquatic and Fishery Sciences, The School of Oceanography, The Department of Biology, and Friday Harbor Labs. As part of the minor, students will also complete an integrative experience capstone to gain research experience either on campus or at Friday Harbor Labs.

Students are encouraged to partake in classes and experiences at Friday Harbor Labs for a quarter which can provide rich and interactive hands-on scientific experiences in the field at a unique coastal setting. Class offerings are available in SPR, SUM and AUT quarters. For those pursuing a major in Biology, SPR quarter has the most overlap with major requirements.



Grad Jack Little (Carrington Lab) with Red Urchin, *Mesocentrotus franciscanus*.

**Information about FHL courses and costs can be found at fhl.uw.edu.
FHL has numerous scholarships to help students come take courses!**

This is a subtidal cnidarian, *Corynactis californica* in the San Juan Islands. It is a common constituent of the subtidal communities on vertical rock surfaces that the Sebens Lab is studying.

DISPROVED THE THEORY THE ATLANTIC OCEAN FLOOR WAS FLAT MUD MARIE THARP

MARIE THARP
Born 1920-2006 USA



During World War II, more women were recruited into professions like petroleum geology, normally restricted to men. Tharp attended the University of Michigan at Ann Arbor's petroleum geology program, where she completed a master's degree in 1944.

Marie Tharp broke barriers for women in the 1950s when she became an oceanographic cartographer after landing her first research assistantship at the Lamont Geological Laboratory in Columbia University. During this time, the push for ocean floor exploration began to increase as SONAR technology developed. There was widespread belief that the ocean floor was a flat expanse of mud, so Tharp and her longtime research partner, Bruce Heezen, joined a project to map the topography, or layout, of the seafloor. Unfortunately, at this time, women were not allowed to join boating expeditions. Instead, Heezen ventured out to sea and sent Tharp initial measurements collected through SONAR data.

In 1952, Tharp painstakingly aligned sounding profiles from Atlantis, acquired during 1946–1952, and one profile from the naval ship Stewart acquired in 1921. She then plotted these data points' latitude and longitude using only a pen and ruler. She created approximately six profiles stretching west to east across the North Atlantic. From these profiles, Tharp identified an aligned, v-shaped structure running continuously through the axis of the ridge and believed that it might be a rift valley formed by the oceanic surface being pulled apart. Heezen was initially unconvinced as the idea would have supported continental drift, then a controversial theory. Many scientists, including Heezen, believed that continental drift was impossible at the time. Instead, for a time, he favored the Expanding Earth hypothesis, (now infamously) dismissing her explanation as "girl talk".

Heezen hired Howard Foster to plot the location of earthquake epicenters in the oceans for a project relating large-scale turbidity currents to undersea earthquakes. The creation of this earthquake epicenter map proved to be a useful secondary dataset for examining the bathymetry of the Mid-Atlantic Ridge. When Foster's map of earthquake epicenters was overlaid with Tharp's profile of the Mid-Atlantic Ridge, it became clear that the location of these earthquakes aligned with Tharp's rift valley. After putting together these two datasets, Tharp became convinced that a rift valley existed within the crest of the Mid-Atlantic Ridge. It was only after seeing that the location of earthquake epicenters aligned with Tharp's rift valley that Heezen accepted her hypothesis and turned to the alternative theories of plate tectonics and continental drift. Although Tharp was later recognized and credited for her work on the Mid-Atlantic Ridge, it was Heezen who, at the time in 1956, put out and received credit for the discovery that was made.

Tharp's plotting turned into the first North Atlantic ocean map published in 1957, and the first full world's ocean map in 1977. Ultimately, Tharp helped disprove the theory that the ocean floor was flat, as her maps revealed 40,000 miles of an underwater ocean ridge.

MAPPING THE ENTIRE OCEAN FLOOR BY 2030 DAWN WRIGHT - DEEPSEA DAWN

DAWN WRIGHT
Born 1961 USA



Wright earned a Bachelors cum laude in Geology from Wheaton College in 1983, a Masters in Oceanography from Texas A&M University in 1986, and an Individual Interdisciplinary Ph.D. in Physical Geography and Marine Geology from UC Santa Barbara in 1994.

Wright began her career as a seagoing marine technician for the Ocean Drilling Program, sailing on ten 2-month expeditions from 1986 to 1989 aboard the JOIDES Resolution, mostly throughout the Indian and Pacific Oceans.

Wright's research interests are mapping of seafloor spreading zones and coral reefs, spatial analysis and geographic information systems as applied to the marine environment.

Dawn Wright has transformed the fields of marine geology and geography through her pioneering efforts to use Geographical Information Sciences (GIS) to map the seafloor and ocean. She has over 20 years of deep-sea expeditions under her belt, coining her the nickname "DeepSea Dawn" within the Oceanography community. She co-authored one of the first books on marine GIS,

Marine and Coastal Geographical Information Systems, and to date, has been published in more than 150 articles and 10 books. Has been a professor of Geography and Oceanography at Oregon State U since 1995. Wright has continued to shatter glass ceilings and is the current and first female Chief Science Officer of Environmental System Research Institute (ESRI). She is helping ESRI, the world's largest GIS company, towards their goal of mapping the entire ocean floor by 2030.

FIRST BLACK MARINE BIOLOGIST ERNEST EVERETT JUST

ERNEST EVERETT JUST

Born 1883- 1941 USA



Ernest Everett Just is widely regarded as the first Black marine biologist. He pioneered many areas on the physiology of development, including fertilization, experimental parthenogenesis, hydration, cell division, dehydration in living cells and ultraviolet carcinogenic radiation effects on cells.

Born in Charleston, SC in 1883, Just was raised during the emergence of Jim Crow laws and widespread disenfranchisement which created pervasive belief that minorities were second-class citizens. Yet, against these odds, Just went on to graduate from Dartmouth College with magna cum laude in Zoology in 1907, and quickly landed a job teaching English at Howard University. After a few years of teaching English, biology, and physiology, Just became head of the newly developed Department of Zoology, inspiring him to pursue a post-graduate degree in Biology at the University of Chicago and later, a research assistantship at the Marine Biological Laboratory (MBL) at Woods Hole Oceanographic Institution in Massachusetts.

Working with MBL Director Frank R. Lillie, Just dove into courses and lab work with zeal. Focusing on embryology and questions of fertilization, Just examined the egg cells of sea urchins (*Arbacia*) and marine worms (*Nereis*) and the problems of cell cleavage, which led to his first publication in 1912. Widely cited, Just's article demonstrated that the entry point of the sperm determines the first cleavage plane. It became the authoritative and fundamental work on the cell cleavage of marine eggs.

After receiving his Ph.D., Just focused his research interests to that of marine invertebrate eggs and fertilization. He became the leading authority on this topic, with his first major research study revolving around the eggs of common sand dollars and sea urchins in which he disproved a long-standing theory that fertilization could occur without the presence of sperm. In 1939, Just published two books, *Basic Methods for Experiments on Eggs of Marine Animals* and *The Biology of the Cell Surface*, both of which provided essential information for generations of scientists to come and highlighted his view that eggs and embryos should be taken seriously in their own right, not simply used as tools for research manipulation.

Just received the inaugural Spingarn Medal in 1915, awarded by the National Association for the Advancement of Colored People (NAACP). From 1920 to 1931, he was a Julius Rosenwald Fellow in Biology of the National Research Council — a position that provided him the chance to work in Europe when racial discrimination hindered his opportunities in the United States.

DEVELOPED THE FIRST METHOD/TOOLS FOR MEASURING CO₂ KATSUKO SARUHASHI

Katsuko Saruhashi

Born 1920-2007 Japan



After graduating in 1943 with her undergrad degree in Chemistry, Saruhashi joined the Geochemistry Laboratory at the Meteorological Research Institute. There, she studied not rain, but oceans, specifically carbon dioxide (CO₂) levels in seawater. Saruhashi developed the first method for measuring CO₂ using temperature, pH, and chlorinity, called Saruhashi's Table. This method became a global standard. Perhaps more importantly, she discovered that the Pacific Ocean releases more carbon dioxide than it absorbs: a concept with dire consequences today as the climate changes.

Although World War II had ended years before, the United States continued to carry out nuclear tests, particularly in the Pacific Ocean near Bikini Atoll, 2300 miles southwest of Japan. After several Japanese fishermen became mysteriously ill while out trawling downwind of the testing site in March 1954, the Japanese government asked Saruhashi and her colleagues at the Geochemical Laboratory to investigate. The amount of fallout that we are talking about is really tiny, and then we are talking about the vast ocean. Tasked with developing more sensitive measurements, Saruhashi and her team ultimately found nuclear fallout didn't travel evenly throughout the ocean. They tracked ocean circulation patterns using radionuclides, discovering that currents pushed radiation-contaminated waters clockwise, from Bikini Atoll northwest towards Japan. As a result, fallout levels were much higher in Japan than along the western U.S. Their results were stunning: the radioactive fallout released in the testing had reached Japan in just 18 months. If testing continued, the entire Pacific Ocean would be contaminated by 1969, proving that nuclear tests even conducted out in the middle of the ocean, seemingly in isolation, could have dangerous consequences. Russia & US banned above ground nuclear testing because of the research. 60+ yrs later, Bikini Atoll is still unlivable.

She devoted much of her life to advocating for equal opportunities for women in science. She established the Society of Japanese Women Scientists, and founded the Saruhashi Prize, an annual award given to a female scientist who serves as a role model to younger women scientists.

ANATOMY FOR CHANGE Awarded UW Diversity and Inclusion Seed Grant



Dr Casey Self, Associate Teaching Professor in Biology with friend & two recent undergraduates and future medical students Rohonda Osman and Abdullah Brugri.

The UW Diversity and Inclusion Seed Grants are small grants support projects for institutional transformation across the University of Washington's tri-campus community that align with the goals of the 2022-2026 UW Diversity Blueprint.

Anatomy for Change is an outreach program in UW Biology for minority pre-health students which provides hands-on workshops within a cadaver lab.

Each workshop is led by a teaching team consisting of anatomy course faculty, medical school students and past anatomy student volunteers. The goal of our workshops is to allow undergraduate students to get into the mindset of a healthcare provider as they work through medical case studies. Our goal for this program is to build a sense of belonging and community for our UW students that are interested in healthcare and graduate programs, but may have been historically excluded from those opportunities. The director of the program is Dr. Casey Self, an Associate Teaching Professor in Biology and the professor in charge of undergraduate anatomy education. The program was co-developed with two recent undergraduates, and future medical students, Rhonda Osman and Abdullah Brugri, and recently received a seed grant from the UW Office of Minority Affairs and Diversity to support the work. Anatomy for Change is a project that works towards many of the overarching goals of the UW Diversity Blueprint. By targeting a demographic that is historically underrepresented in STEM and medicine, it is contributing to an inclusive and equitable campus climate.

Dr Self's motivation: As a first generation college student and a McNair scholar, I am personally driven to remove systemic barriers to education opportunities and support diverse learners. I saw an opportunity to expand access to anatomy education outside of my small upper-division class; to bring in a wider range of students to experience the process of anatomy education. My goal is to leave those students with a sense of belonging and empowerment to move forward towards their career goals in health care. Historically marginalized groups have often been excluded from places and experiences in science. Here I want to not only make sure students can feel that they belong, but that they have power in these spaces, and they can be leaders in these spaces.

Anatomy for Change partners with organizations for underrepresented undergraduate students in order to promote equity in the pre-health space at UW.

In order for students to feel empowered and confident, our teaching and volunteer staff is composed of individuals that can speak to their identities. Our medical student and volunteer profile includes over 75% BIPOC members which allows students to have an environment where they can learn from and interact with diverse backgrounds. By seeing other BIPOC individuals who are successfully pursuing healthcare careers students we hope are better able to see themselves in those roles. As a touchpoint event for students who are considering a healthcare career path, our ultimate goal is for students to feel more confident in their identity as a minority in a pre-health profession.



Hands-on Workshop

ANATOMY FOR CHANGE Why and How They Came Up With the Concept



Rhonda Osman and friend. Rhonda graduated with Bachelors of Science in Biology (physiology) and will be attending medical school next year.



Abdullah Brugri and friend. Abdullah graduated with Bachelors of Science in Biology (general) and will be attending medical school next year.

Even as a child, I recognized that my identity as a Muslim and Arab was not the norm in my rural area. Attending college in Seattle was a big leap from my hometown, which led me to find community within the Minority Association of Pre-Medical Students (MAPS). I credit MAPS for teaching me the responsibility of physicians to provide equitable care by understanding and adapting to the disparities affecting their patient population. In order to do so, there needs to be diverse representation of healthcare providers who can advocate for their communities.

In a peer mentoring program called StemDawgs, I studied research explaining that underrepresented students face increased barriers in their pursuit of their bachelor's degree and a healthcare career. It can be difficult to feel confident in your abilities without representation of your background or culture in the field you aspire toward.

Ultimately, Anatomy for Change is the culmination of these prior experiences. While I always enjoyed taking on existing leadership positions in my activities, I merely admired those who created something meaningful from their passions. Recognizing how competitive the pre-medical space is, especially for underrepresented minorities, I wanted to transform the Department of Biology's outreach to foster a more equitable future of healthcare. Anatomy was a great space to do so, as it provides the most hands-on medical experience an undergraduate student can have within biology. We partner with medical students to increase mentorship possibilities for undergrads as well. Through this program, we hope to leave a lasting impact on how the UW supports underrepresented and minority students moving forward.

"I wonder if I can do this?" That thought swirled in my mind often during my undergraduate career. My parents with all their support weren't able to help me navigate a college experience that they never had for themselves. Throughout undergrad, as I persevered past each hurdle and worked to support my family business I tried to find my path. Although at times it was difficult to imagine myself in the role of a physician because of the lack of representation within my own community. Even in the face of all this, I remember the first time that my journey truly clicked for me. Sitting in the anatomy classroom going through a case study, my mind working to unravel the puzzle and help the "patient." The experience seemed to cement my own confidence in pursuing my career. An experience I valued so much that I continued to work and volunteer with the Anatomy lab as a graduate. In that environment, I saw the impact the course could have on students.

I wanted to create Anatomy for Change so that other students from underrepresented and diverse communities could find a place for themselves in medicine. By creating case studies around the anatomy lab we created a novel environment for them to feel confident in their abilities.

With the support of the University of Washington Biology Department and volunteers from the UWSOM we were able to create a teaching team that furthered our goal of showing the place of diverse perspectives within medicine. In creating Anatomy for Change I hope that we can provide other students the reassurance that they're on a path they can be successful in.

2023 GRAD STUDENT SEMINAR SERIES HCK 320 3:30 pm followed by Happy Hour!
Presentations of their research. Everyone is welcome to attend!

OCTOBER 13

Host: Grace Leuchtenberger



BEN LLOYD
(Strömberg Lab)
*The CuticleTrace Toolkit:
An automated method for leaf
epidermal cell shape analysis*



CHRISTINE NOLAN
(Imaizumi Lab)
*Uncovering the molecular
controls of flowering in a
native seagrass*



CHRIS ANDERSON
(Brosi Lab)
*Contrasting Topological and
Quantitative Structures Drive
Stability in Mutualistic Networks*

NOVEMBER 17

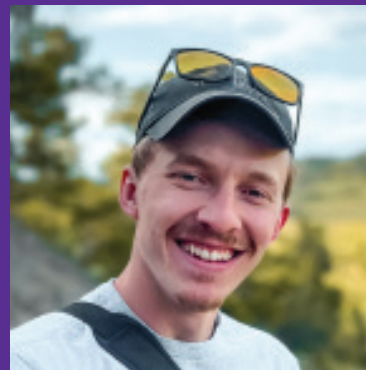
Host: Vaibhav Chhaya



ASAD BECK
(de la Iglesia Lab)
*Contextual nocturnal fear
memory reestablishes
abnormal circadian activity in
the absence of fear stimuli*



YASMEEN ERRITOUNI
(Leaché Lab)
*Identifying the genetic basis
of avian iridescence*



ELLIOT ARMOUR SMITH
(Sidor Lab)
*Inferring the paleobiology of a
Triassic stem-crocodylian from
a fossil bonebed in Arizona*

DECEMBER 8

Host: Elena Stiles



**HANNAH
MCCONNELL**
(Di Stilio Lab)
TBD



**CASSANDRA
MARANAS**
(Neumhauser Lab)
TBD



JACK LITTLE
(Carrington Lab)
TBD



MAGGIE FUQUA
(Akamatusu Lab)
*Evaluating potential actin
nucleation promoting
factors in CLIC/GEEC
endocytosis*

2023 AUTUMN INCOMING UW BIOLOGY GRADUATE COHORT Welcome to the Dept!



ANDREA BERNAL RIVERA
Universidad de Valle, Colombia



MARIA GARCIA
Bowdoin, Maine



ALLISON LI
UW, Washington



LAURA QUINCHE
Universidad Nacional de Colombia



AMANDA ROKICKY
University of Toronto, Canada



MADDY SCOTT
John Hopkins University, Maryland



BRENLEE SHIPPS
Idaho State University, Idaho



EMMET STEPHENSON
UC Davis, California



MEG VANDERBERG
UW, Washington



CHANSIE YANG
Wellesley



STEPHANIE ZHU
UW, Washington

MEET OUR FOUR NEW TEACHING FACULTY

JANET BESTER-MEREDITH Assistant Teaching Professor

What is your research or interest in?

I'm interested in how animal behavior is shaped by hormonal and neural responses to sensory cues. In the past, most of my work focused on olfaction, a neuropeptide called arginine vasopressin, and social behaviors in California mice (*Peromyscus californicus*) including paternal care, aggression, and pup recognition. Here at UW, I hope to become involved in some of the amazing biology education research that is being performed by my colleagues.

What classes will you be teaching?

I will be teaching **Comparative Endocrinology** (Biol 465) and **Survey of Physiology** (Biol 118) this year.

What is one piece of advice you would give students in your class?

Don't be afraid to ask a stupid question. If you are wondering about something, your peers probably also are wondering about the same thing. The students who show genuine intellectual curiosity and think deeply about the course material are the ones who tend to be the most successful.

What is your favorite part of the class?

I really enjoy teaching about hormone feedback pathways. It's amazing to see students learn to solve complex problems and to learn how to make predictions about hormone pathways based on clinical data.

All time favorite Biology subject?

I love behavioral neuroendocrinology because it encompasses many of the areas that I find so interesting: animal behavior, neuroscience, and endocrinology. Who wouldn't be interested in learning about sex-changing fish or the hormonal basis of parental care or the hormonal and neural control of bird song? I especially like the many types of approaches that can be used to understand different aspects of a behavior.

Other than Biology what academic subject would you like to study? It's hard to choose, but maybe anthropology. I especially like learning about human evolution and cultural differences in human behavior.

Is there a book/video that you would recommend to students outside of what there is in class?

I recently read *Period: The Real Story of Menstruation* by Kate Clancy. I thought that it was a very accessible look at human endocrinology and evolution in an area of science that is often overlooked. I would also recommend reading *Caste* by Isabel Wilkerson to gain a broader understanding of the historical factors that shape modern day American society.



JAKE COOPER Assistant Teaching Professor

What is your research or interest in?

I once studied virology, then eco-evolutionary dynamics, and now I study classroom equity with a focus on quantitative skills. For example, some published data suggests that biology has a reputation among STEM fields as "math light", and may attract undergraduates who are interested in STEM but averse to math. So one project I'm working on aims to (a) verify this putative uniqueness of biology undergraduates, (b) boost the quantitative skills taught in biology programs, and (c) ensure that math-associated inequities don't hitchhike into math-focused biology courses.

What classes will you be teaching?

I'll be joining the team that teaches **Bio220**, which is the 3rd of our 3-course intro series: Bio180 (evo eco), then Bio200 (mcb), then Bio220 (physio).

What is one piece of advice you would give students in your class?

You get to define success in this course. Success might be about discovering content you love, finding a friend group, working hard to learn high-level material, or supporting your study buddies. And a reminder: folks come to class with a huge diversity of backgrounds and responsibilities, so comparing your test scores with others is always an unfair comparison. The only worthwhile comparison is your holistic performance compared to your holistic goals.

What is your favorite part of the class?

When students send me auxiliary things relevant to class! A study they found, a drawing they made, a personal note -- any time a student shares their excitement about something we did in class, oh it warms my heart.

All time favorite Biology subject?

I'll never get over the everyday impossibilities: how good birds are at flying, how spiders walk on the ceiling, how big some trees are.

Other than Biology what academic subject would you like to study? Human geography.

Is there a book/video that you would recommend to students outside of what there is in class?

Christina Thompson's *Sea People*, about the peopling of Polynesia, is the best nonfiction I've read in several years. I just loved it.



Photographs provided by faculty

OFFICIALLY STARTED TEACHING IN AUTUMN QUARTER 2023

JEFF LANEY Teaching Professor



What is your research or interest in?

I'm a molecular biologist interested in molecular mechanisms; I'm fascinated by the 'how does the cell do that?' kind of questions. On the instructional side of things, I have become very passionate about teaching others how scientists think and solve problems, rather than merely describing all of the cool things that scientists have figured out.

What classes will you be teaching?

I'm currently teaching the Foundations course in Molecular Cell Biology (Biology 355) and will be bringing a Cellular Physiology course (Biology 404) back into the regular rotation. This quarter I am also leading the rather popular Biology of Cannabinoids seminar course (Biology 431) that is the brainchild of Linda Martin-Morris.

What is one piece of advice you would give students in your class? How's this for following directions? Here's three instead of one: be present, lean in, and actively do something. Also, find something that really jazzes you and just dive in. So, that's five.

What is your favorite part of the class?

Although this is not particular to any one class, my favorite part is the look on someone's face when they figure something out or when things make sense to them. Being part of that moment is really amazing.

All time favorite Biology subject? I would have to say the two examples that got me hooked on molecular biology and regulatory mechanisms: control of the lac operon and of the lytic/lysogenic switch in phage lambda. They're just beautiful.

Other than Biology what academic subject would you like to study? I think I would like to join the College of Built Environments, and do something like construction management or landscape architecture...all the while honing my carpentry and hole digging skills.

Is there a book/video that you would recommend to students outside of what there is in class?

When I was a university student being transformed by the experience, I remember reading two very different books that captivated my interest in really different ways. Both books certainly focus on science and specifically on molecular biology "Chance and Necessity" by Jacques Monod and "The Eighth Day of Creation" by Horace Freeland Judson.

CAMILA LOPEZ-ANIDO Acting Assistant Teaching Professor



What is your research or interest in?

I am a molecular, cellular, and developmental biologist with experience in animal and plant systems. I am interested in how cell lineages are coordinated, as this enables us to better understand flexible cell fate potential and opportune regenerative processes – and address the question: what are all the ways to build a functional organ, such as a heart? We have much to learn about what is possible in biological systems and how to apply these concepts to improve human health and climate change outcomes. I also have training in intersectional gender studies and science education, and I am committed to working with students, faculty, and staff to create supportive and inclusive learning communities, as well as ensure that students are prepared for the workforce beyond the classroom.

What classes will you be teaching? I teach courses with a focus on molecular, cellular, and developmental biology. This year, I am teaching **Developmental Biology** and **Cellular and Molecular Biology of Human Disease**. Over the summer, I serve as the scientific curriculum advisor for the Fred Hutchinson Cancer Center postbac program, and I also teach modules on foundational laboratory methods and ways of thinking, with the goal to support post-bacs that may not have had substantial research experience during undergrad.

What is one piece of advice you would give students in your class? Focus on concepts and competencies that will help you scaffold your learning and serve your career goals.

What is your favorite part of the class? I love working with students to construct ways of thinking and knowing – and grappling with uncertainty in science.

All time favorite Biology subject? Development! ... it integrates all my favorite subjects: biochemistry, genetics, molecular/cell biology, and physiology.

Other than Biology what academic subject would you like to study? Social sciences and Music – I am learning to play the guitar :)

Is there a book/video that you would recommend to students outside of what there is in class?

I believe we should all read broadly outside our disciplines – two poems on my mind recently are 'The Summer Day' by Mary Oliver and 'Prayer for Joy' by Stuart Kestenbaum. Books I generally recommend are 'The House of the Spirits' by Isabel Allende and 'Real Life' by Brandon Taylor, as well as anything by Roxane Gay. I also love getting recommendations from students!

TRIBETA TUTORING ONLINE & IN PERSON: Monday - Thursday

2023-2024
Executive Board



TriBeta Biological Honor Society

Co-President, DAVE YOUNG.....

Co-President, MIRA ROTH

Vice President, SOPHIA PONTENBERG

Vice President, TREVOR MARQUIS

VP of Tutoring, CHRISTOPHER LEE

VP of Tutoring, CLARISSA SOFIAN

Adviser, BRIAN BUCHWITZ.....

Our website: <https://sites.google.com/view/uwtribeta/tutoring>

Full Membership is eligible to **any** student who has completed two Intro Biology courses (180/200) and one additional biology course with a GPA of 3.0 or higher.

WHAT IS TRIBETA?

Beta Beta Beta is a national honor society dedicated to improving the understanding and appreciation of biological studies. It is a platform for students to earn recognition for their efforts and accomplishments while networking with other students and UW Biology staff with the same interests.

In short: a really great organization.

Watch for Events Coming up! Terrarium event next!

TRIBETA TUTORING ONLINE & IN PERSON: Monday - Thursday

TriBeta Tutoring will be offered Autumn Quarter in-person at the Hitchcock 4th floor study lounge and online over Zoom.

Tutoring starts during the third week of the quarter and ends the week before final exams.

Tutors will be present in person (at HCK 4th floor lounge) and over Zoom, Mon-Thurs to answer your questions about BIOL 180/200/220 and GENOME 361.

Zoom link and finalized schedule are on our website: <https://sites.google.com/view/uwtribeta/tutoring>

IN-PERSON INSTRUCTIONS: Come to HCK 4th floor study lounge, scan the QR code posted on the wall to log-in. A tutor should be present to assist you!

ONLINE INSTRUCTIONS: Click on the Zoom link on our website to join. When you join, a tutor should be present to assist you. Tutors will have a tutor designation in their Zoom name. If multiple students are present in the meeting, then the tutor might move you into a "breakout" room so that they can assist you more individually or encourage you to work with other students in your class. If no tutors are present in the meeting, then it is likely all tutors have moved into breakout rooms to assist other students. Please wait a few minutes for a tutor to become available.

WE PROVIDE FREE TUTORING FOR INTRODUCTORY BIOLOGY (BIOL 180/200/220) and GENOME 361 students at the University of Washington. Our tutors are undergraduate students at the UW who have excelled in the introductory biology classes and are eager to help other students succeed too. Website of our tutoring page: <https://sites.google.com/view/uwtribeta/coaching>

TriBeta Tutoring



Prepare for tests

Develop Strong Study Habits

Clarify difficult concepts

Join our community

FREE TUTORING for BIOL 180/200/220 students
Our tutors are students who excelled in this challenging series and are eager to help you succeed!

MILLIE RUSSELL DAY OCTOBER 29 Her story : <https://www.youtube.com/watch?v=z5Cem4oH1rU>



Millie Russell was UW Biology Lecturer and UW Office of Minority Affairs Administrator, Millie was especially dedicated to students who were the first in their family to attend college. She was a legend in Seattle's Black Community and at UW because of her outstanding work as a community leader and educator. Honoring a lifetime of service, in 2001 Seattle Mayor Schell, WA State Governor Locke & Congressional Rep McDermott named a "Dr. Millie Russell Day". In 2004, the UW honored Millie with its Outstanding Public Service Award for her devotion to education & equality. When she retired in 2007, UW created the Dr Millie Russell Endowed Scholarship in her honor to benefit low income, first generation students who are interested in health sciences.

BIOLOGY STUDY AREA (aka BSA) All students are welcome in Hitchcock 220

All students are welcome — not just Biology majors!

The BSA is open Monday - Friday 8:00 am - 5:00 pm

The Biology Study Area (BSA) is a GREAT place to study with other students, use computers, or just to read. Jessica Nguyen is staffing the BSA.

The BSA has 23 computers for general use and a Dawg-Print printer.

On three walls of the BSA are wonderful collection displays to look at and learn. The one seen in the photo to the right is the display of Butterflies of Washington. The wall opposite of this, Odonata of Washington State (commonly known as dragonflies and damselflies). And third, is a two part display of Wing Shape & Flight and Wing Coloration.

All displays courtesy of the Burke Museum.



BIOLOGY STUDENTS FOR EQUITY: Lookout for Future Events on Instagram



JOIN Biology Students for Equity, an undergraduate group at UW fostering inclusivity in the Biology Department. Established in 2017, we aim to build community, encourage leadership, and facilitate knowledge sharing.

With ongoing dialogues about inequities in STEM, our goal is a unified student voice advocating for diversity and inclusion.

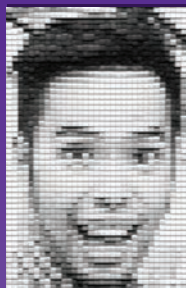
We have a mentorship program, monthly journal club meetings, and Biology Networking Nights (all of which you can be a part of!).

We are also recent recipients of the Resilience and Compassion Seed Grant, which is helping to make these activities possible.

To get involved, please email biologystudentsforequity@gmail.com.

You can also follow us on Instagram [@biologystudentsforequity](https://www.instagram.com/biologystudentsforequity) to get notified about upcoming events!

BSE



CABBAGE LOVE BY DAN CABBAGE

INTIMATE & Quite Personal ADVICE for PLANTS



This issue of Cabbage Love is brought to you by the UW Botany Greenhouse. Thank you to reader Christine Savolainen for writing in on the behalf of her Dionaea muscipula.

AM I A MONSTER?

I am a 34 year old Aristolochia grandiflora, an avid climber, and I have regular polyamorous relationships with carrion flies. My giant, cream-colored flowers are streaked with maroon and on the first day they reek of a hot trash and dead mammal slurry, which drive the carrion flies into a mad frenzy. They swarm my flowers and worm their way deep into my chambered corolla where my stigma is ripe and ready for pollen. The inside of my floral tube is lined with inward pointing bristles, which prevent the flies from leaving. Deep inside the flies mate, lay eggs, and hungrily lap at my walls. The next day my fragrance disappears, the floral tube relaxes, and the hairs wither away. Finally the flies are free to go, but only after my anthers burst open showering them with my pollen. The other flowers have been accusing me of purposefully trapping my lovers against their will and starving them. My intention is never to kill the flies, but they are conveniently stuck because of my floral morphology.

Am I an unknowing sadist? Thanks!

— Kidnapping Is Not Kind

KINK, I don't consider you a monster for having polyamorous relationships with flies or that you produce an earthy stench. I also don't believe you are a self-unaware sadist. (You would know, because their torment would bring you pleasure.) However, I do believe you are not being completely honest, so I can see why your fly parties may seem troubling to other flora.

It is clear from your reproductive rituals that you have control issues, which stem from your deep fear of inbreeding with yourself. The fleshy color and repugnant odor of your flowers falsely promise the carrion flies a hearty meal and a secure place to lay their eggs. Though you are starving the flies for one night, it is pale in comparison to 'accidentally' convincing the flies that your flowers are a place to raise their young. The fact of the matter is that the young maggots will starve to death once they hatch and this sheds light on your imprudent attitude to committing infanticide, which is NOT okay.

So for that KINK, you are a monster.

A BIG DEAL?

DAN, I am a Cobaea scandens vine that just moved to Seattle from tropical Mexico and looking for love. However, I am starting to get a feel of the 'Seattle Freeze' and it is proving hard to find someone here that is passionate. I am a big plant in every way. I have thick stems and strong claw-like tendrils that allow me to scramble 40 feet up into the rainforest canopy without any effort. Along with my big stature I have large cup-like flowers to match – for which I am lovingly dubbed 'cathedral bells'. My garlicky-scented flowers start off as a tight cream-colored bud swelling in the tropical heat and – when ready – pop open



Aristolochia grandiflora which the Greenhouse no longer has but there are other Aristolochias that have the same process and can be found in Room 1, 6, 8 & 9.

revealing long stamens and a pistil. My flowers last a couple of days, but with every passing hour they fade into a deeper and deeper purple before falling off. I've had a few bee and hummingbird encounters, but they only ever seem slightly interested in me. They slip in and out for my ample nectar, but before I know it they are long gone and not even a single brush against my anthers and stigma! This has left me frustrated and dissatisfied. I want a pollinator who will plunge headfirst into my corolla, and find my fermented fragrance and sweet nectar reward irresistible. Am I doing something wrong or is this just a local cold shoulder? — **Ready And Waiting**

RAW, I know us Seattleites can be a little reserved, but it is not out of malice. In fact, we are just too nice. Sometimes we don't make eye contact or acknowledge that you exist, because we don't want to burden strangers with unwanted interactions. It's hard to tell, so we resort to just giving everyone their space.

It sounds like you are sending out the right messages, but getting back the wrong answers. It's not your fault. Up here in the northern latitudes our pollinators are quite mild compared to the passionate pollinators you are used to back in tropical Mexico. It sounds to me that your wide-set flowers are a perfect match for nectar bats, but sadly we just don't have any brawny mammal pollinators up here. Though your flowers will go unappreciated by bats, luckily we have plenty of horticulturists up here with willing brushes.

DOOMED TO CONSUME?

DEAR DAN, Long time reader, first time writer. I am a 7 year old, single, bisexual *Dionaea muscipula*. Lately my flower stalk has only been 1 inch in height. For my species, our flower stalks are typically closer to 12 inches in height to prevent us from eating our own pollinators. Will I be able to still attract the attention of my pollinators and successfully reproduce with others of my kind? Or am I doomed to devour my pollinators and not reproduce with others? Thanks for your time, LOVE your column!

— **Venus In Seattle**

VIS, *It sounds like you are in a difficult predicament, but I think there may be a reason for your condition. Aside from a random, but perfectly natural occurrence, your shorter than average stem may be caused by the cooler temperatures and lower light levels of autumn.*

You may have begun to produce your winter traps, so compared to your more impressive summer traps your winter traps will be reduced to essentially small bud-like growths – nothing a pollinator will get ensnared in. These non-functional traps will not impede the virile ability of your shorter flowering stalk.

When summer finally shows its warm face next year, you may find that your stalks will be well endowed once again. If not, I think you're doomed to devour your pollen carrying lovers.



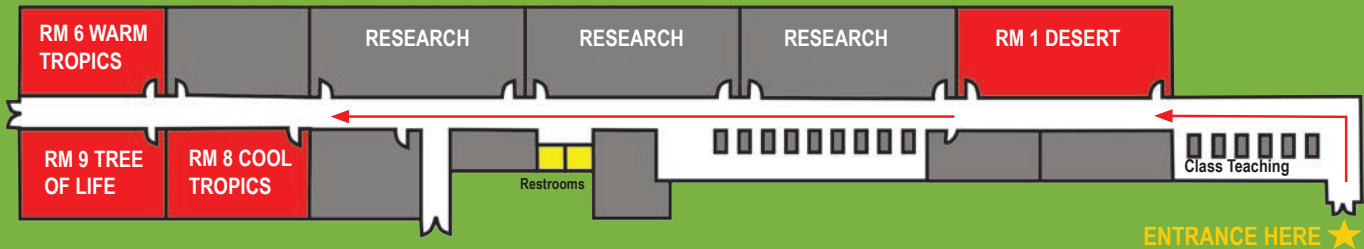
Cobaea scandens previously grown in Pollination Garden



Dionaea muscipula in Greenhouse in Room 8 in the bog table.

GREENHOUSE PUBLIC VISITING HOURS: Thurs 1:00 to 4:00 pm and 'special' Saturdays

SOMETHING IS BLOOMING, 365 DAYS OF THE YEAR.



Our Teaching Collection includes plants that are found only in world class botanic gardens. The collection is located in four rooms in the Greenhouse and shown in red above. We ask that when you enter, there may be a class in session. If so, please walk quietly through to visit the four rooms that are open to the public.

Below you will find very cool plants from each of the viewing rooms.

GH1 Desert Room:

Pilosocereus catingicola

Endemic in NE Brazil and bat-pollinated by Goldman's nectar bat.



GH8 Cool Tropic:

Begonia maculata

The 'polka dot begonia' is native to SE Brazil. It grows naturally in the Atlantic rainforest.



GH6 Warm Tropics:

Anthurium andraeanum

Common names: flamingo flower, tailflower, painter's palette, oilcloth flower and laceleaf.



GH9 The Tree of Life:

Dioon edule

Cycad native of Mexico. Cycads are among the oldest seed plants and even pre-date the dinosaurs.



ACADEMIC SERVICES FOR UNDERGRADUATE & GRADUATE

HOW DO I TALK TO AN UNDERGRADUATE ACADEMIC ADVISOR? Use Email or Zoom!

We welcome UW and prospective students to contact us with any questions regarding a Biology option. Here are the advisors, their emails and their favorite part of Friday Harbor Labs.



Janet Germeraad
Academic Services Director
Janetjg@uw.edu



Jason Patterson
Academic Counselor, Sr
patterj@uw.edu



Andrea Pardo
Graduate Program Manager
acroz@uw.edu

All of it! There is the beauty of the island, diversity of wild life above and below the water, watching the deer and seeing the orcas swimming.

Night lighting off the docks especially in spring and seeing larval and immature forms of various creatures is amazing.



The natural beauty of the location and all the cool critters!

AUTUMN QUARTER 2023 UNDERGRAD ACADEMIC ADVISING

ZOOM Drop-In Advising Hours:

Monday - Thursday 9 a.m. - 12:00 p.m. and 1:00 p.m. - 4:00 p.m.

In-Person and ZOOM Appointments (other than Drop-Ins) by appointment only. Contact Jason or Janet directly, as each schedule their own calendars.

Please consult the website first for general answers on: advising, admission, degree plans, matrix of courses, and forms at: <http://www.biology.washington.edu/programs-and-courses>

For general questions, you may reach us at: bioladv@uw.edu or at 206-543-9120

Current / prospective students, parent, and community questions not addressed by our webpage will receive an answer. Academic Services Staff will closely monitor this email account to ensure a timely response and make phone or other Zoom appointments to address concerns.

