Guess the Mystery Flower!

STUDENT NEWSLETTER FOR THE DEPARTMENT OF

BIOLOGY

UNIVERSITY OF WASHINGTON

Autumn Quarter 2014 *Issue 20*

Important Dates for Autumn Quarter

Sept 24	First Day of Instruction
Sept 30	LAST DAY to drop a class without a fee thru MyUW
Sept 30	LAST DAY to withdraw at the Reg. office w/o owing tuition
Oct 1	Biology Apparel Day
Oct 1	All courses require entry codes to add, beginning
Oct 7	LAST DAY to drop a class without the use of the ANNUAL DROP
Oct 14	LAST DAY to add a class through MyUW
Oct 17	UW Marine Bio & FHL Information Session OCN Hall Room 425
Oct 29	Graduating Senior Priority last day to submitt
Nov 2	Deadline Aut Dept Awards Sunday @11:59 pm
Nov 4	Biology Networking Night
Nov 5	Biology Apparel Day
Nov7-Nov23	Winter Registation Period 1
Nov 11	Veteran's Day: no classes
Nov24--Jan4	Winter Reg Period 2
Nov 26	Mystery Flower contest ends
Nov 27	Thanksgiving Day: no classes
Nov 28	Day After T-Day: no classes
Dec 3	Biology Apparel Day
Dec 5	LAST DAY to Withdraw (from all Autumn Qtr classes)
Dec 5	Last day of instruction
Dec 8-12	Final Examination week
Dec 15-31	Winter Break

Chair of Dept — Dr. H.D. 'Toby' Bradshaw

Welcome Back to UW Biology!

Dr. Toby Bradshaw with his Harris's hawks.

I hope that many of you were able to spend the summer taking courses at Friday Harbor Labs, or doing research in the field or lab.

Biology's popularity continues to grow on campus, with more than 1146 students enrolled in BIOL 180 this quarter! Almost half of all freshmen entering the UW will take the BIOL 180-200-220 Introductory Biology series. Our department has worked very hard to increase student access to our Intro courses, and to provide the best possible learning experience. Our newest faculty member, Senior Lecturer Jennifer Doherty, will partner with Principal Lecturer Mary Pat Wenderoth to bring active learning to BIOL 220 this year.

Please drop by the Biology Advising Office (HCK 318) to plan your academic year.

In case you didn't know, the Department of Biology awards more than $35,000 in fellowships and scholarships annually to undergraduates. You will find the announcement of the Au14 call for proposals elsewhere in this newsletter. These fellowships and scholarships are made possible by the generosity of alumni, faculty, staff, and friends of Biology, with the goal of supporting you in your pursuit of a world-class education in biology. Please take advantage of all of the resources that are available to you while you are here!

Bests wishes for a successful 2014-15! Toby

Doug Ewing — Leaving October 22, 2014

After 31 years as manager of the New Botany Greenhouse, Doug Ewing is planning to retire at the end of 2014, although his last official day on campus will be October 22.

So, before October 22, be sure to say goodbye to Doug and thank him for his years of service. Doug with his great staff, made the Greenhouse a wonderful place to work, visit and learn. Doug shares his love of plants and quiet humor with everyone who came in contact with him.

Thank you Doug, we will miss you.

Spend a Quarter at Friday Harbor

Marine Biology Minor

Garrett Knoll and the Lionfish. Lionfish are predators native to the Indo-Pacific. Two of the nine species of Pterois, the red lion fish (P. volitans) and the common lion fish (P. Miles) have established themselves as signifcant invasive species off the East coast of United States and in the Caribbean. Lionfish are known for their venomous fin rays, an uncommon feature among marine fish in the Eastcoast coral reefs. The potency of their venom makes them excellent predators and poisonous to fishermaen and divers.

Growing up on Whidbey Island and exploring the tidepools and beaches around Puget Sound have given me the curiosity and desire to learn as much as I can about marine organisms and the environment that they live in. I chose to attend the University of Washington because of its amazing marine biology program. When I entered the university as a Freshman I knew that I wanted to study marine life so I declared my major in Aquatic and Fishery Sciences and my minor in Marine Biology.

In my four years as an undergrad I was able to meet some of the top professors in the field of marine sciences and experience some of the most exciting events of my life.

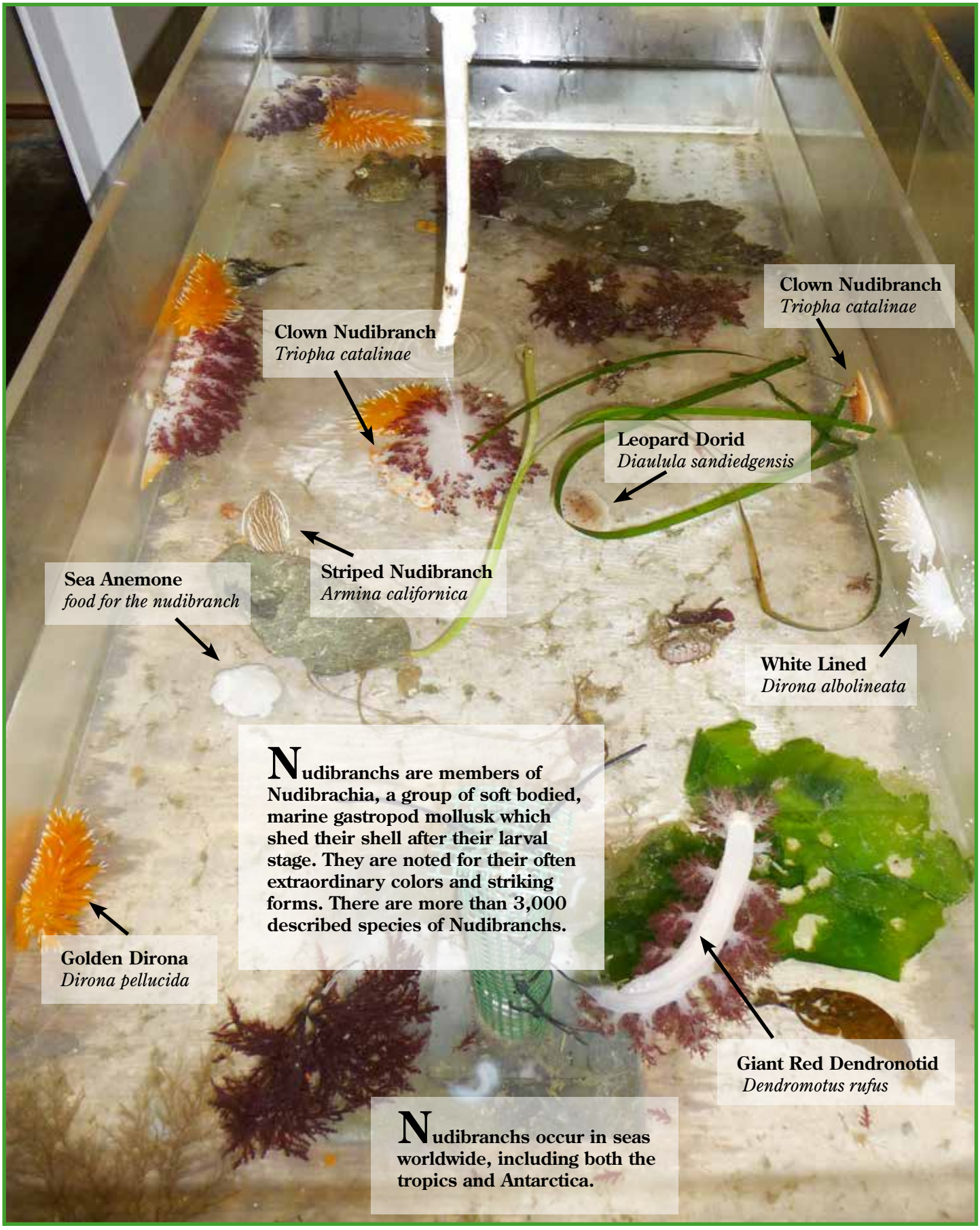
From spending a quarter in the San Juan Islands at the University of Washington's Friday Harbor Marine Labs, studying abroad in the Caribbean, making scientific documentaries about penguins, and learning how echolocation works in toothed whales, I absolutely loved every class that I took.

During my Fall quarter at Friday Harbor, I took three classes: Ichthyology, Marine Biology, and Ocean Circulation. The best part about taking these classes at Friday Harbor, as opposed to taking them on campus, is that you get a lot more hands on experience by going out into the field and collecting organisms. My friend and I collected as many species of nudibranch as we could and created an aquarium in one of the labs. We also had the unique experience of seeing a river otter walking down the path outside of the lecture hall while in class. It was a time I will never forget and I strongly recommend spending at least one quarter there taking classes or doing one of the research apprenticeships. The classes that I took on campus for the Marine Biology minor were outstanding as well and my favorite classes included: Arctic Marine Ecology, Biology of Shellfishes, Video Storytelling, Marine Mammalogy, and the Marine Biology Seminar.

The Marine Biology minor at the University of Washington gave me the opportunity to study my favorite marine organisms and learn about many more that I had never heard of. I now have the skills and knowledge to pursue a career as a marine biologist and someday pass on what I have learned to the next generation of scientists.

Here is a link to my final video that I made for BIOL 305 Science Communication: Video Storytelling in Biology, about the ecology of kelp forests and coral reefs. All the footage used in this video I shot myself and some of it is from my adventures in the Caribbean while studying abroad: https://www.youtube.com/watch?v=R9UlFGOOp18

Aerial view of Friday Harbor Laboratories.



My friend and I collected as many species of nudibranch as we could and created an aquarium in one of the labs.

Friday Harbor Labs — Check out our FHL Information Session!

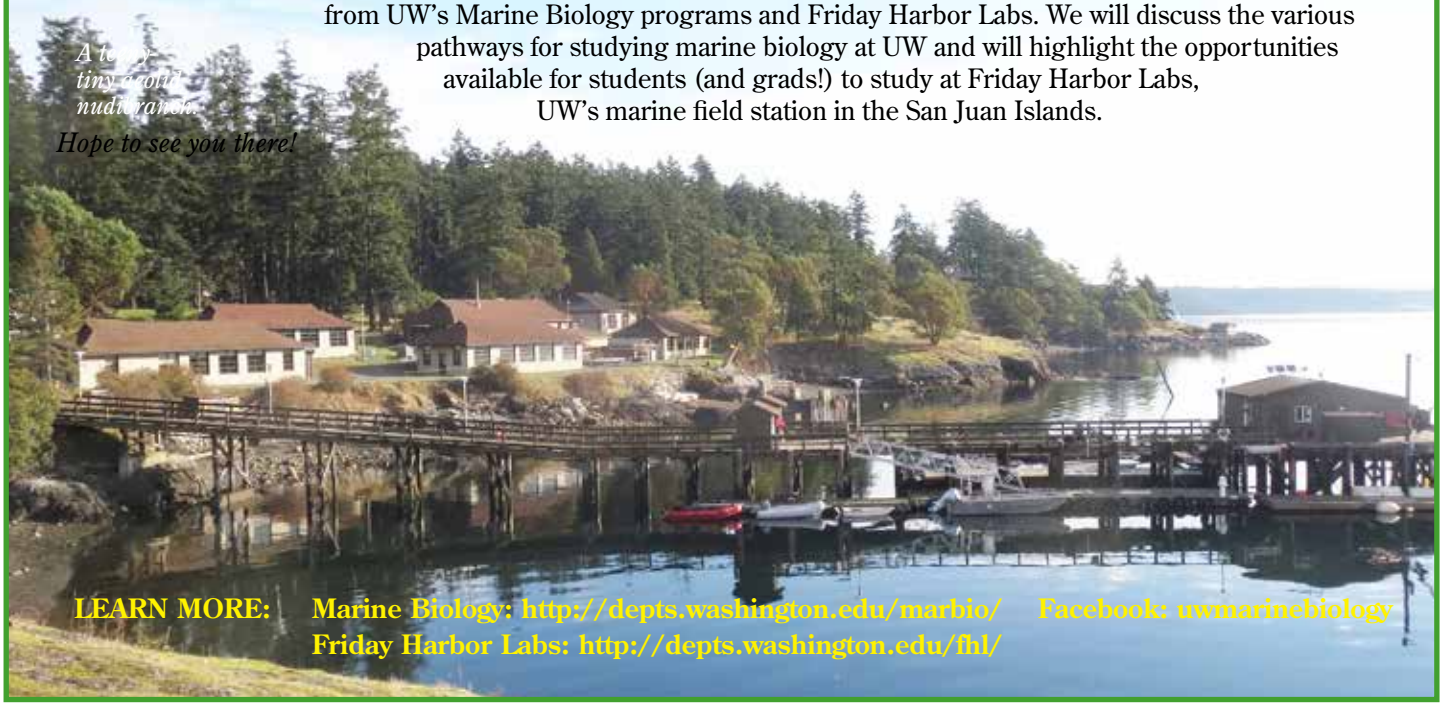
UW Marine Biology & Friday Harbor Labs Information Session

Friday, October 17 from 10:30 am - Noon
Ocean Sciences Building (OCN), Room 425

Students (and alumni!), you are invited to join us for an informational meeting with advisers, faculty, and alumni from UW's Marine Biology programs and Friday Harbor Labs. We will discuss the various pathways for studying marine biology at UW and will highlight the opportunities available for students (and grads!) to study at Friday Harbor Labs, UW's marine field station in the San Juan Islands.

A tube of tiny, colorful nudibranchs

Hope to see you there!



LEARN MORE: **Marine Biology: http://depts.washington.edu/marbio/** **Facebook: uwmarinebiology**
Friday Harbor Labs: http://depts.washington.edu/fhl/

Instructional Support Office — Hitchcock Room 302

In addition to the Biology Study Area on the second floor, Hitchcock 302 offers you an area to study with several tables and whiteboards for your use.

We host TA office hours throughout the week. Come by and check out the calendar outside our office to see if /when your TA(s) office hours are here.

This is the place to pick up your Exams from Spring & Summer terms.
Please note: on October 24 all Spring and Summer Exams will be shredded and are being sent to the neutral zone.

This is also the place to drop off your 180, 200 and 220 Regrades. *Just follow the signs!*

Biology Networking Night — Save the date Tues Nov 4 @ 5:30

Want to know what people have done since they earned a degree in Biology?

Then come to Networking Night with former alumni from our department. Students will get a chance to hear people speak about a variety of professions, all with one thing in common: a degree from UW Biology (or Botany or Zoology from pre-merger years).

Mercy Laurino *'98, BS in BIOL: CM, former Genetic Counselor, DPH in progress*
Bob Bergstrom, *'77, BS Biology/ BA Russian, Patent Attorney at Olympic Patent Works*
Garrett Turner, *'10, BS BIOL:Gen, Assoc.Scientist ERM (Environmental Resources Management)*

This event will be a small panel in a Q&A format of alumni where they share their career building experiences since graduation, talk about their respective career paths, what experiences influenced their decision to pursue a certain profession, and successes and regrets along the way. After the event, you might have the opportunity to talk or get contact info from the participants.

New Graduate students — Welcome to the department!

UW Biology PhDs have earned a reputation for excellence and innovation. We value a diversity of people and approaches to solve the most important problems in biology. Accordingly, our students and faculty study a wide range of topics—at spatial scales ranging from molecules to the entire planet, and time scales ranging from nanoseconds to millennia. Many work at the intersections of fields, developing cutting-edge technologies and forging interdisciplinary collaborations.

Meredith Bache-Wiig..... *in the lab of David Parichy*
Nassima Bouzid.....*in the lab of Lauren Buckley*
Alexandria Brnnick.....*in the lab of Greg Wilson*
Christina Carnevale..... *in the lab of David Parichy*
Gideon Dunster ..... *in the lab of Horacio de la Iglesia*
Coooper French .....*in the lab of John Klicka*
Hyeon Jeong Kim..... *in the lab of Sam Wasser*
Tang-wei 'William' King ..... *in the lab of Ken Sebens*
Victor Lewis..... *in the lab of David Parichy*
Ethan Linck.....*in the lab of John Klicka*
Emily 'Molly' Roberts .... *in the lab of Emily Carrington*
Kathryn Stanchak .....*in the lab of Sharlene Santana*
Christopher Wells..... *in the lab of Ken Sebens*
Megan Whitney .....*in the lab of Christian Sidor*

Biology Departmental Awards — Deadline Nov 2 at 11:59pm

Thanks to the support of our amazing alumni, faculty, staff, and community members, the Department of Biology awards thousands of dollars annually to students to support their research endeavors. This quarter, three undergraduate awards are available. **Deadline Sunday November 2 at 11:59pm.**

- **CASEY AWARD (up to $700).**
Supports Department of Biology undergraduates with costs associated with travel to present at scientific meetings, including conference registration fees, transportation, and/or room and board costs. The fund may also provide support for student research projects if expenses are beyond the ability of faculty mentors to cover.

- **FRYE-HOTSON-RIGG AWARD (up to $2,500).**
Supports Department of Biology undergraduates with costs associated with fieldwork, research supplies, research-related travel, and/or travel to present at scientific meetings. Awards may only go to students using a plant, algae, or fungi system to work in the areas of botany, ecology, evolution, taxonomy, environmental science, or biodiversity.

- **SARGENT AWARD (up to $1,300).**
Supports Department of Biology undergraduates with costs associated with their research, including travel costs.

To be eligible for departmental awards, you must be a declared Biology major. For more information, including how to apply, visit the Scholarships website at http://www.biology.washington.edu/academics/undergraduate/scholarships.

A call for proposals is announced twice annually – once during Autumn Quarter, and once during Winter quarter. Different awards are given each quarter, so be sure to check in January for a listing of the awards that will be distributed!

Biology Apparel Day — The first wednesday of each month

Biology Apparel Day happens the first Wednesday of every month.

If you are wearing Biology Apparel on a first Wednesday of the month throughout the year, you can come to Hitchcock, Room 318 (Advising) to receive a sweet treat AND an opportunity to submit your name for a chance at a grand prize.

The Tribeta Biological Honor Society started up T-shirt contests as another way for Biology Students, Staff and Faculty to support Tribeta and Biology club efforts and of course, show our UW Biology pride! Your T-shirt purchase supports Tribeta and events put on for Biology Club members, like tutoring for the introductory biology courses, the annual Halloween party and their Spring BBQ.

T-shirts are 15 dollars, cash or check. You can purchase them on T-shirt day in the atrium of Hitchcock Hall. You can contact tribeta@u.washington.edu with any questions!
Biology Apparel Wednesdays in Autumn Quarter are Oct 1st, Nov 5th and Dec 3th.

Graduate & Postdoctoral Programs — Dr. Carl Bergstrom

Dr Carl T. Bergstom
Associate Chair of Graduate and Postdoctoral Programs

Welcome to the UW Biology Department!

I hope that you had an enjoyable and relaxing summer. In addition to serving 1800 undergraduates, the biology department is home to more than a hundred graduate students pursuing PhD degrees in the biological sciences. Our graduate students join us from premier institutions all over the world, and are valuable contributors to our department. In addition to serving as Teaching Assistants, they assist with faculty research and conduct original research for their dissertations.

Our graduate students study everything from the evolutionary history of extinct species, to the dynamics of changing ecosystems around the world, to molecular biology of neural function in fruitflies. The diversity of interests in our department inspires creative and collaborative research, and distinguishes our students work. Our graduate students go on to do great things, including working as faculty at institutions around the world, serving in a range of government positions, or even staying close to home by working at the Gates Foundation.

I would strongly encourage our undergraduates to seek out opportunities to interact with the graduate students in our department. Our graduate students not only serve as curriculum guides in your discussion sections - they can help you gain insight into the intriguing world of research, and perhaps even play the role of mentor as you find a path to research for yourself!

Best wishes for a happy and enlightening year. *Carl*

Grad Emily Bain in the Parichy Lab — Zebra fish Research

Emily Bain

I am currently interested in the molecular mechanisms underlying differential morphology among closely related Danio species.....

In other words, why does a zebrafish have stripes, but another member of the same genus have spots? What about the one with no stripes? Stripes and spots?? By using both manipulative and discovery based approaches, I am working to uncover the different genes, pathways, and evolutionary effects acting on a zebrafish that cause changes in pigment pattern. Specifically, comparing the the patterns of Danio rerio (the zebrafish) and Danio albolineatus, which is a closely related species with intermingled pigment cells and no apparent stripes.

Pigment pattern is a defining characteristic of many animals that is more than just beautiful to look at: stripes, spots, and bright colors function in many behaviors such as warning coloration, mate recognition, and camouflage. Even among closely related species, pigment patterns can be stunningly diverse.

In the Parichy lab, we use the pigment pattern of the adult zebrafish, Danio rerio, to study molecular and cellular mechanisms of pattern formation and how these processes evolve between species.

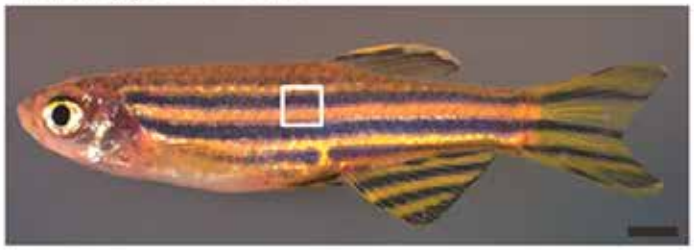
The stripes on a zebrafish are composed of four to five dark stripes made of black melanophores that are separated by lighter interstripes made of yellow xanthophores and iridescent iridophores. We know from previous work that interactions between pigment cells are crucial for stripe formation, but cues from the environment tell the pigment cells when and where to differentiate. In this paper, we discuss the role of thyroid hormone in the development of different pigment cell lineages and metamorphosis using genetic mutants as well as a new transgenic technique to ablate the thyroid follicles in living fish.

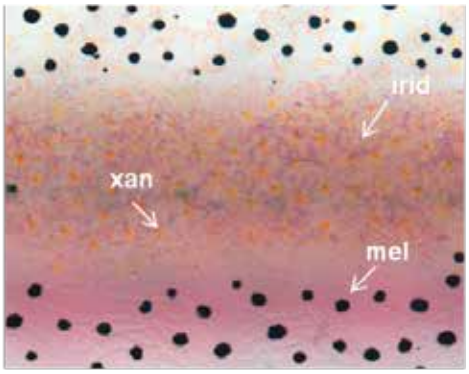
A zebrafish has two different body pigment patterns over its lifetime: 1) a simple pattern during embryonic and larval stages that is conserved between closely related species, and 2) the evolutionary derived complex stripe pattern that develops during metamorphosis. Historically, the black melanophores have been the most well studied pigment cell type during this transition and little is known about xanthophores and iridophores. Through cell-fate analysis, we demonstrate that many of the yellow xanthophores that are present in the early pattern lose their pigment, proliferate, and re-differentiate to populate the adult stripes. This reappearance of xanthophores during metamorphosis is dependent on thyroid hormone, an endocrine factor that governs the larval to adult transition in many species of amphibians and reptiles. When the thyroid follicles in a zebrafish are ablated, the early appearing xanthophores fail to regain their pigment resulting in an adult zebrafish with no yellow cells. In these hypothyroid fish, there is a compensatory increase in the number of black melanophores and a host of other developmental delays. On the other hand, too much thyroid hormone in the opallus mutant yields many more xanthophores, fewer melanophores, and other heterochronies in developmental milestones.

Interestingly, the pigment pattern and anatomical features of the opallus mutant resemble D. albolineatus, a species that is closely related to D. rerio suggesting that the thyroid hormone pathway is involved in the divergence of these danios. By ablating the thyroid follicles in the other species, we learn that D. albolineatus have evolved a distinct xanthophore population that is independent of thyroid hormone while other functions of the hormone remain conserved.

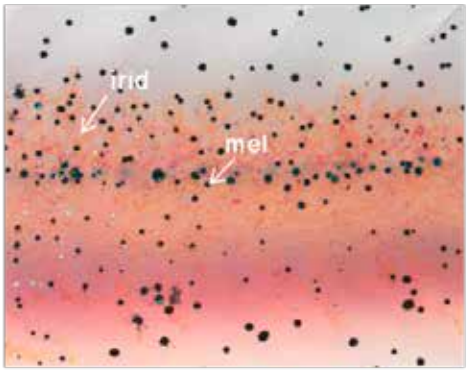
Working with zebrafish pigment pattern has shown me that being a molecular biologist is more than abstract DNA molecules and cells in a dish. I can take the principles that scientists have learned from in vitro studies and generate testable hypotheses in a tissue level context. Plus, because pigment cells are visible to the naked eye, I can readily observe cell-cell interactions and pattern formation that would otherwise be invisible – the pictures are pretty cool too.

Wild type *D. rerio*

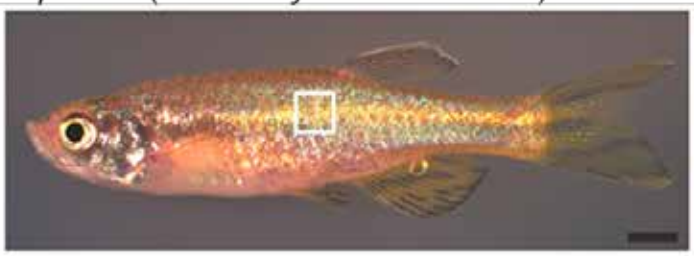


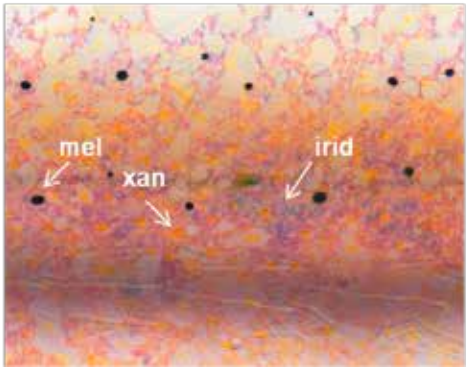


Thyroid ablated *D. rerio*

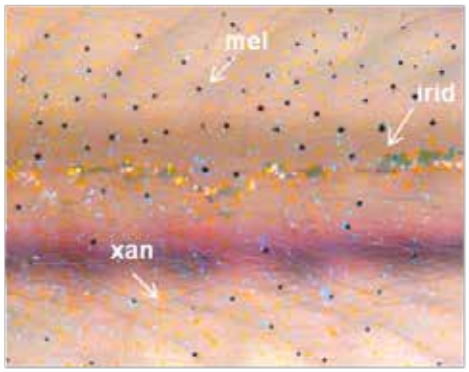


opallus (extra thyroid hormone) *D. rerio*

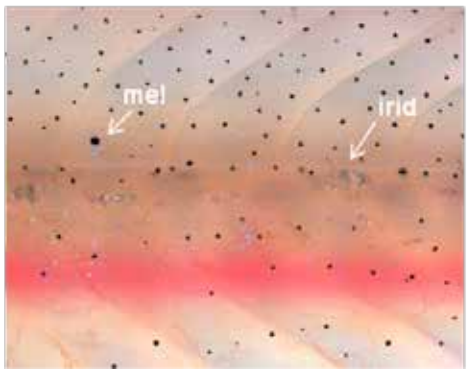




Wild type *D. albolineatus*



Thyroid ablated *D. albolineatus*



Urban Pollination Project

The project: The **URBAN POLLINATION PROJECT** (UPP) is a non-profit UW Biology citizen science initiative working to research and conserve native pollinators and to improve crop yield in urban gardens across Seattle. Our core components are research and educational outreach. We study pollination, a process that is necessary for about one out of every three bites of food that we eat, and critical for many of the native plants in our area. Specifically, we ask whether pollination by bumble bees varies spatially across Seattle, and if so, whether such variation a) affects production of tomatoes in community gardens, and b) can be predicted by landscape features affecting nest site availability.

The experiment: Citizen volunteers and UW students both participate in carrying out an experiment to answer these questions. Specifically, we have gardeners in city P-Patches grow cherry tomatoes (in the Northwest, tomatoes can be cross-pollinated only by bumble bees; honey bees and other bees cannot pollinate tomato flowers). We compare cherry tomato production under three experimental treatments across different neighborhoods in Seattle. Our hypothesis is that tomato plants growing in neighborhoods with less bumble bee nesting habitat (i.e. more pavement and lawn, both un-nestable for bumble bees) will receive fewer visits from bumble bees and therefore yield fewer or smaller tomatoes. The ultimate goal of the project is to determine what factors limit bee activity in certain parts of the city, and to focus habitat restoration and conservation efforts in those areas.

Outreach: Our education arm focuses on creating a dialogue with the public on the importance of pollinators to our food supply, on teaching the public about the natural history of local bees, and on encouraging citizens and students to better understand the nature of scientific inquiry by directly collecting experimental data.

UPP field interns learn to identify all species of locally occurring bumble bees, and collect bumble bee visitation data at UPP tomato plants in community gardens. In addition, they maintain experimental treatments on plants, perform hand pollinations, collect data on crop production, and facilitate communication with gardener participants to help ensure data quality and good relationships with our citizen scientists. In 2014 we had 105 citizen scientist gardeners at 17 P-Patches and 15 UW student interns; next year we hope to continue increasing these numbers. We anticipate taking on 15-20 field interns for 2015.

The program is always looking for more people to participate, volunteer, and possibly intern. Our collective currently comes from a diverse array of background and experiences, with one thing in common, passion about pollination and its ramifications. If you have interest, please contact: Marie Clifford, cliffmar@u.washington.edu or Susan Waters, smwaters@uw.edu.

To read more about our organization, our mission, and our outreach, go here: http://nwpollination.org/

Getting to Point B — Keep your options open.

Getting from Point A to Point B: Defining Your Husky Undergraduate/Graduate Experience

Point A is not hard to find it is usually marked in some way as "Start Here"; point B is harder to pinpoint and define. Navigating your way is not a certain path and for most people the goal of point B repeatedly changes. During your time as an Undergraduate or Graduate Student at UW the elusive point B might simply be known to you as "Graduation" but in the moments after that degree is earned and conferred you are at a new point A and point B is moving, elusive, and less certain once again. You are not the only one and this is a place you will find yourself at many points in life.

Students at the UW are encouraged to think about their time here in terms of their overall experience. The base being the degree requirements that you will complete to earn that sought after diploma. Students are challenged to think about their Identity, Networks, Trajectory, and Choice in all aspects of their Husky Experience because skills in these areas compliment the content you learn in your degree requirements. The combination of content knowledge, knowing your own potential, and navigating goals will add up to overall success at UW and in getting to points C, D, E, F, G……. Programing throughout the academic year will focus on these themes for both Graduate and Undergraduate students.

Botany Club — For Undergrads & Graduates

Are you interested in furthering your botanical interests in a stress-free and fun environment?

We invite you to join us at The Botany Club for an opportunity to learn about the wonders of Our Green Earth, and to explore methods of sustenance and success, from a plant's perspective.

Future events in the works include seed bombs, tutorials on indoor gardening, and an introduction to CARNIVOROUS PLANTS.

No prior knowledge is necessary and all are welcome.

Like us on Facebook (https://www.facebook.com/pages/The-Botany-Club-at-UW/198908630127686) and email us at clubbot@uw.edu to join our mailing list - also, keep a lookout for our flyers around campus!

Hope to see you here! *The Botany Club at UW*

Pitcher plant species.

Competitive Major — Biology Dept Admissions ARE Changing

Biology is NOW a Competitive Major! Beginning Summer 2014 admission to the BA and BS Degrees offered by the Department of Biology became a competitive application process. This process is designed not to limit access to the major but to assist students in careful planning and preparation for success in the Biology Major. Students are encouraged to visit Biology Advising early in their academic career or prior to transfer to begin planning for the major.

Applications for the undergraduate degree programs in Biology will be accepted quarterly. A completed electronic application will be due the second Friday of Autumn, Winter, Spring, & Summer quarters by 11:59pm. Applications received by the system after the quarterly cut off will be considered for the subsequent quarter. The first on-line Application will be available Autumn 2014 and will have a flexible deadline for Autumn 2014 only. Check the Biology Web Page for information updates.

To apply for a Biology Major beginning Autumn 2014, students must meet these minimum Application Requirements:

1. *Be a matriculated student at the UW Seattle Campus and in good academic standing.*
2. *Complete the Introductory Biology series (UW BIOL 180, 200, 220) or equivalent courses and have a minimum grade of 2.0 in EACH course.*
3. *Have a minimum 2.5 Cumulative GPA for any supporting course work in Chemistry, Physics, Math, Biology or other courses intended for use in the Biology major that are complete at the time of application.*

Meeting these minimum requirements will not guarantee admission to the Biology major. Other factors in admission include review of personal statement, space availability in the major, and time to degree set by UW Satisfactory Progress Policy. Students who do not meet the minimum requirements to apply to Biology or have academic issues to explain that are larger than a single course or quarter, are encouraged to see a Dept. of Biology Academic Advisor to address these issues prior to application. Walk-In Advising is Available M-F 9am-12pm and 1-4pm (Thursday afternoons are busy with Transfer Students and Advising Hours start at 1:30). Students may make an individual appointment by contacting one of the Biology Advisors directly.

Calling all UW Biology students!

Ready to make the most of a new school year? If you would like to make the University of Washington feel more like home by finding your niche, look no further. At TriBeta Biological Honor Society and Biology Club, we are proud to be part of UW's largest major, offering the most plentiful resources and opportunities to its students, but knowing how to get involved can be intimidating. If you're looking to make the most out of your time at UW, then join our TriBeta community of experienced Biology students and expert Biology faculty - we're ready to work with you in academics, volunteerism, and all-around fun via the services listed below!

TUTORING: Tutors, who have previously excelled in BIOL 180, 200, and 220, are available to help with current students by offering free one-on-one appointments (scheduled at **https://students.washington.edu/tribeta/tutoring.html**) or free Monday-Thursday 3:30-6:30 PM drop-in tutoring at the HCK 4th floor lounge (snacks provided!). To become one of our prestigious tutors, email officers Chris (**cjkapera@uw.edu**) or Kaylie (**kel93@uw.edu**).

MENTORSHIP: Connect to a Biology upperclassman who will take the time to know you personally and show you how to make the most of your time as an undergraduate in the biology department. We set you up with your mentor and follow-up to make sure all of your questions are answered. Ask questions about UW, the Biology major, research, etc. To become a mentee or even mentor, email officer Rajvir (**rajvir@uw.edu**).

EVENTS: Quarterly, TriBeta puts on a finals week Study Night in Hitchcock and an event chosen by TriBeta/Biology Club members - like pumpkin carving, Theo's Chocolate Factory touring, and the popular Terrarium Night. Snacks and the support of tutors/officers are provided at all events. TriBeta aims to promote community within the department, but also throughout the campus and city via volunteering, like parks clean-up on MLK Day. Email officer Sarah (**sbheater@uw.edu**) with event ideas or questions.

MEETINGS: Also quarterly, an elite and engaging lecturer is invited to discuss his/her innovating research. Past talks have been on neuroprosthetics, morphological diversity of bats, and more. Come and learn about a topic you've never before delved into in this informal seminar. Meetings are always held on a Thursday at 4 PM in Hitchcock and pizza is provided. Email officer Sruthi (**sruthihp@uw.edu**) with any questions or suggestions for such talks, panels, and meet-and-greets.

T-SHIRTS:. You can show off that you belong to the greatest department on campus by sporting a UW Biology T-shirt! Sold every first Wednesday of the month in the Hitchcock 3rd floor lounge, T-shirts are $15 with long-sleeves, crew-necks, zip-ups, and sweat-shirts also available in a myriad of sizes, colors, and designs created and voted on by TriBeta members. Proceeds are the sole source of funding for TriBeta events, meetings, and programs put on for Biology students. Wear your Biology apparel to the Biology Advising Office on sale days for complimentary candies and to be entered for Biology prizes! Pre-orders are possible. Email officer Keenan (**keemilo9@uw.edu**) with questions.

HONORS SOCIETY: While TriBeta's events and services are for everyone in the Biology department and the Biology Club is open to all, we encourage everyone to strive to join the TriBeta Honors Biological Society. Every quarter, we try to offer one special event that is only for Tribeta members. Tribeta membership also allows you to be a part of a nationally-recognized honor society, which is a recognition that future employers and graduate schools will love to see. Anyone can become an Associate Member, but only those meeting the curriculum and GPA requirements may become Full Members. Full members have taken the entire intro series (180-220) and have an average GPA of 3.0 or higher in these classes. If you do not meet these qualifications, you can join now as an Associate member, and obtain Full membership status when you meet them. You can email our advisor, Dr. Linda Martin-Morris (**lmorris@uw.edu**) with an unoffical copy of your transcript and a picture of yourself (so she can identify you) to apply. Email officer Felicia (**fknguyen@uw.edu**) with further inquiry into the benefits of joining the Honors Biological Society.

Who doesn't love a school year full of carving pumpkins, making study buddies, and eating free pizza? And now…

For every BBB event or meeting attended, earn points towards prize Biology swag, like free BBB T-shirts!

On behalf of the Tribeta officers, we wish you the very best in this new school year and hope to see you soon!

Aseel "Cici" Alsamarraie *TriBeta Co-President 2014-2015* **alsamarr@uw.edu**

Taylor Wilkins *TriBeta Co-President 2014-2015* **wilkit51@uw.edu**

Tribeta Officers 2014-2015

Co-Presidents
Taylor Wilkins
CiCi Alsamarraie

VP of Meetings & Events
Sruthi Hariprasad

VP of Mentorship
Rajvir Singh

VP of Membership
Felicia Nguyen

Secretary
Jordan Krull

VP of Advertising
Fylie Robles

Treasurer
Keenan Milosovich

VPs of Tutoring
Kaylie Lungberg
Chris Kaperak

VP of Community Events
Sarah Heater

Pumpkin Carving Event

Free TriBeta Tutoring

UW Intro Biology Series 180, 200 & 220

UW Introductory Biology students: The secret to excelling in Biology 180, 200, and 220 is discussing those new concepts and information with other students or asking your instructors questions to know if you fully and correctly understand the concept.

This is where TriBeta can help! TriBeta Tutors are students who have taken the full 180-220 series, done well, and enjoy teaching. They can help you with material, concepts, study habits and many studying tips!.

The study lounge also provides snacks FOR FREE.

Tutoring area in the fourth floor lounge in Hitchcock Hall.

There are two ways to take advantage:

1) Come to our study lounge on the 4th floor lounge in Hitchcock Monday - Thursday from 3:30-6:30 pm. The lounge is located right above the HCK 3rd floor entrance.

2) Sign up for 1 on 1 tutoring at the following link http://students.washington.edu/tribeta/tutoring.html.

If you want to do well in the intro series, try us out!

If you have any questions or you would like to apply to be a Tribeta tutor for Spring quarter feel free to e-mail Kaylie Lungberg, kel93@uw.edu and Chris Kaperak, chriskaperak@yahoo.com.

Eat Dirt!

Farm stand thru October from the UW Student Farm

With a warm and sunny summer almost behind us, the UW student farmers have high spirits coming into the end of the season. One of the major highlights for the summer staff was starting the CSA (Community Supported Agriculture) program, connecting with faculty, staff, and students over a love of delicious and beautiful vegetables. The interns and volunteers have worked tirelessly to make sure this season ends and the next begins with a happy, healthy farm!

Tomatoes, tomatos, tomatoes.

Continuing through the end of October there will be a FARM STAND on the Burke-Gilman trail, near the Husky Grind and Mercer Court apartments, every Friday afternoon. Our vegetables are gorgeous and we love seeing the UW community benefit from our days of hard work. Stop by and pick up some mouthwatering heirloom tomatoes—they come in all kinds of shapes and colors! Or perhaps some greens would better suit you? Folks would kale for our variety of salad and cooking greens, and nothing beets the autumn blues better than our celery and leeks for a delicious fall soup! We'll be around between 4:00 pm and 6:00 pm.

Farm Stand through October on the Burke-Gilman Trail near Husky Grind and the Mercer Court apartments between 4:00 and 6:00 pm.

UFarm crops by the Mercer Court Apartments.

The beginning of the academic year will see a few exciting farm events!

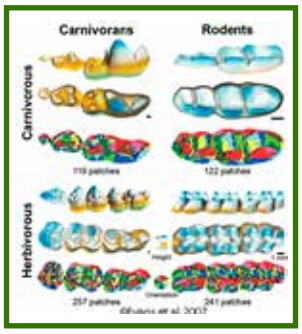
Visit our website food.washington.edu/farm or our Facebook page The UW Farm for more information about volunteer hours and events! Happy fall days are upon us!

— *In sunshine and dirt,* UW Farm Team

Arctognathus curvimola
Christian Sidor Lab

Silica phytolith (cystolith) from mulberry tree, Morus.
Caroline Strömberg Lab

Nautilus pompilus.
Studying modern cephalopods.
Peter Ward Lab



Digital elevation models and orientation patch maps of representative carnivorans and rodents tooth shapes.
Greg Wilson Lab

Interested in an interdisciplinary minor that combines the methods and findings of the natural science biology with the methods and findings of the earth science paleontology?

Then you want to look into a Paleobiology minor.

UW is in a unique position for having one of the largest concentrations of faculty on the West coast within this discipline. Check some of them out below:

Roger Buick, *Professor in ESS and Astrobiology*
Research on life and environments on the early Earth as a analogue to other possible habitable planets, including early Mars.

Patricia Kramer, *Associate Professor of Anthropology.*
Research on locomotion from the perspective of mechancal engineering. Understanding the entire suite of locomoto behaviors in both modern humans and in our hominin ancestors.

Estella B. Leopold, *Professor Emeritus in Biology*
Research with fossil pollen and spores, currently trying to use late tertiary (pre Ice-Age) floras of Eastern and Western WA to detemine when the Cascade Range of WA became elevated.

Liz Nesbitt, *Curator of Invertebrate Paleontology & Marine Micropalenotology in the Burke Museum and Associate Professor in ESS*
Research interests focus on the fauna and geologic settings of fossil hydrocarbon seeps; paleoecology of the Enozoic Extinction events recorded on the Pacific Rim and investigating the health of Puget Sound waters using microbiota as environmental and pollution indicators.

Christian Sidor, *Associate Professor of Biology, Adjunct Associate Professor in ESS, Curator of Vertebrate Paleontology at the Burke Museum*
Research: 1) Evolutionary morpohology, including quantifying large scale evolutionary trends and patterns of morphological diversification, particularly in non-mammalian synapsids
2) Evolution of the Permo-Triassic vertebrate faunas.

Caroline Strömberg, *Assistant Professor in Biology, Adjunct in ESS, and Curator of Paleobotany at the Burke Museum*
Research to understand the cause and consequences of the evolution of grass and the spread of grassland ecosystems during the Late Cretaceous and Cenozoic. This research uses mainly plant silica (photoliths) and encompasses fieldwork, lab work, microscopy, and greenhouse experiments.

Peter Ward, *Professor in Biology and ESS, Adjunct Professor Astronomy and Adjunct Curator of Invertebrate Paleontology at the Burke Museum.* On going research into the biology of living nautilus, the cause of mass extinctions, past climate change, invertebrate taxonomy and phylogeny and Upper Cretaceous stratigraphy of the globe.

Greg Wilson, *Assistant Professor in Biology, Adjunct Assistant Professor in ESS, and Adjunct Curator of Vertebrate Paleontology at the Burke Museum*
Research examines evolution and ecology of early mammals in the context of major events in earth history through fieldwork, systematics, and quantitative functional analysis of modern and extinct species. Current research projects focus on: 1) Mammalian change across the Cretaceous-Tertiary boundary. 2) Mammal tooth shape and diet. 3) Biogeography of Cretaceous mammals.

Paleobiology uses biological field research of current biota and of fossils millions of years old to answer questions about the molecular evolution and the evolutionary history of life in deep time.

Coursework for this minor includes classes in the Department of Biology, the Department of Anthropology, and the Department of Earth & Space Sciences. Participating undergraduates are required to pursue independent research and fieldwork with one of the associated faculty helping to create a dynamic applied learning experience.

Get Connected in Biology — Where to look today!

Biology Undergrad Listserve

The Biology Advisors maintain a listserve called biostudent. Anyone can request to be added to this email notification system. Notices regarding jobs, research, internship and scholarship opportunities as well as course announcements and event notices are sent out to this list. Want to be in the know? Visit this site and enter your information to request to be added to biostudent: http://mailman1.u.washington.edu/mailman/listinfo/biostudent:

Go to this site and you will see two gray boxes
1: Need to type in your email address (uw.edu address ONLY)
2: Need to type in your name (optional)
3: Need to check the box about list mail being batched
No — you will receive them separately
Yes — you will receive them all in one daily batch
4: Click the subscribe button and your part is done

UW Biology Department Website

www.biology.washington.edu

UW Biology Facebook Page

www.facebook.com/UWBiology

UW Undergrad Research Program

http://www.washington.edu/research/urp/

Botany Club

(https://www.facebook.com/pages/The-Botany-Club-at-UW/198908630127686) and email us at clubbot@uw.edu to join our mailing list.

Career Center at UW

http://careers.uw.edu/

Conservation Magazine

http://www.conservationmagazine.org
Want to learn about cutting edge science that is making for smarter conservation? Then you'll want to look at Conservation Magazine. It's a quarterly publication (produced in the UW Department of Biology) that focuses on the remarkable efforts people are making to protect species and habitats. And it features some stories you won't find anywhere else. Recently, for example, Conservation reported on an interesting little study about sharks. It turns out that sharks appear to be color-blind. That little nugget could help conservationists design better ways of keeping them out of fishing nets – and even away from beaches. That's just one example of the unusual, interesting stories you'll find in every issue of Conservation. Subscription are just $19.
Check it out at: www.conservationmagazine.org.

TriBeta Honor Society & Bio Club

http://students.washington.edu/tribeta/

Beta Beta Beta is an honor society for students, especially undergraduates, dedicated to improving the understanding and appreciation of biological study.

The Biology Club is sponsored by Tri-Beta and is open to all UW students, faculty and staff interested in biology. The purpose of the club is to reach out to the larger UW community and allow anyone interested to attend Tri-Beta's meetings and events. There is no fee, GPA requirement or need to have taken a biology course.

UW Farm

New blog: http://blogs.uw.edu/uwfarms/ and https://www.facebook.com/uwfarm

The UW Farm is now a registered student organization with over 600 members. If you would like to learn more about the farm please join our listserve and facebook page and show up for a work party, or come to our next all-farm meeting.

Burke Museum

http://www.burkemuseum.org/

General Admission FREE to Burke Members, children 4 and under, and **UW staff/faculty/students**

Free Admission—Admission is free to the public on the first Thursday of each month.

At the Burke Museum — General admission Free to UW Students

The Way We See It June 24 to Oct 26, 2014

The 2014 graduates of the UW Natural Science Illustration Certificate Program invite you to their exhibit.

As professional Natural Science Illustrators, they have a unique opportunity to translate the natural world for their audience. Unlike traditional artists, they take part in a research process that can be described by the scientific method. The Illustrators employ traditional techniques of scientific research—determining purpose, positing hypotheses, treating the act of creating art as an experiment that will lead to logical analyses and conclusions—and through careful observation they communicate science for all to understand.

Mad Campus Temporary Art Installations on UW Grounds Sept 13-Oct 25, 2014

Mad Campus is MadArt's newest public art exhibit, consisting of 12 large-scale, temporary, site-specific works to be displayed in various outdoor locations on the UW campus. Inspired by their location, the selected artists' new sculptures will be interactive, innovative, and surprising installations. Mad Campus is presented by MadArt, in association with ArtsUW.

Biology Advisors — Undergraduate Advising Hitchcock 318

Andrea Pardo, Jason Patterson, Janet Germeraad, T. Armadillo and Julie Martinez

The Undergraduate Biology Advising Department
OPEN: Monday thru Friday 8 am to 5 pm.
General Phone: 206-543-9120

We welcome UW and prospective students to contact us with any questions regarding an option in Biology.

Open walk-in:

Monday - Friday 9:00 am to 12 pm AND
M, Tu, W, F 1:00 to 4:00 pm, with Thursday 1:30 to 4:00 (office closed 12 to 1) or contact one of our three advisors for an appointment by phone or email. The photo on the right (in the office decorated for the Campus Decoration Challenge) includes the advisors and the office staff of Room 318. Advisors are: Jason, Janet & Andrea. Staff is Julie. T. Armadillo, a friend, of Dr. Karen P.

Biology Study Area — Hitchcock 220 - All students are welcome!

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

Dave Hurley manages the BSA and can even answer your biology questions. If you forgot your textbook, you can check out one from the BSA staff if they have a copy.

The BSA has 27 computers, a Dawg-Print printer, scanners and a copier.

All students are welcome — not just Biology majors!

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

Dave has three returning undergraduate computer support staff, **Nick Clawson Curtis Thompson** and **Meng Meng Zhao** who will be staffing the Biology Study Area and programming, so you may see them around as well.

The Biology Study Area has displays from the Burke Museum, including this one about butterfly biology.

Mystery Plant — Guess it and win cards!

This is the Autumn Quarter mystery plant and it is blooming right now in and around the greenhouse.

Submitt your best guess with your name and email into our Mystery Flower Box located within the third floor Atrium of Hitchcock Hall.

Questions: 1)the name of the genus species and 2)who the genus is named after.

A drawing for the prize of a special limited edition, set of eight Biology note cards featuring flowers blooming Autumn Quarter in the Greenhouse. Cards displayed in HCK 302. *Drawing to be held after Nov 30.*

The hints:

1. *Spicily fragrant that attracts the male euglossine bee*
2. *Blooms usually last 3 days*
3. *Most have inflorescensed that grow downward, so the plants must be potted in hanging baskets. They are called the upside down orchid.*

Advising Available

Biology Department

Walk-in Advising

Janet Germeraad

Jason Patterson • Andrea Pardo

318 Hitchcock Hall
Mon-Fri, 9:00 am–12:00 pm
M, Tu, W, F, 1:00 pm– 4:00 pm
Thursday 1:30 pm– 4:00 pm
Closed: 12:00 to 1:00 pm

Website URL:
http://depts.washington.edu/biology/advising.htm

Undergraduate Academic Advising and Office of Minority Affairs & Diversity

141 Mary Gates Hall

206-543-2550

Quick Question hours (*Mon–Fri)*
9:00 am-4:30 pm
or email advice@u.washington.edu
http://depts.washington.edu/uaa/advising/index.php

Biology Study Area (BSA)

220 Hitchcock Hall
Mon–Fri
8:30 am–5:00 pm

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