



Guess the Mystery Flower!

STUDENT NEWSLETTER FOR THE DEPARTMENT OF **BIOLOGY** UNIVERSITY OF WASHINGTON

Winter Quarter 20134

Version 18

Important Dates for Winter Quarter

Jan 6	Instruction Begins
Jan 8	Charles R. Wallace's Birthday
Jan 12	LAST DAY to drop a class without a fee thru MyUW
Jan 13	All courses require entry codes to add beginning
Jan 14	Teach for America Night 5:30-8:30 pm HCK 132
Jan 16	Diversity Career Fair 5:30-8:30 pm @ HUB
Jan 19	LAST DAY to drop a class without the use of the ANNUAL DROP
Jan 20	Martin Luther King Day Holiday - no classes
Jan 22	Employer Panel: Job insite 4:30-6:30 pm HUB
Jan 25	Friday Harbor Labs Spr Qtr Application deadline
Jan 26	LAST DAY to add a class through MyUW
Jan 30	Science Job & Internship Fair 2:00-5:00 pm @ MGH
Feb 5	Biology Apparel Day
Feb 12	UW Internship Fair 2:00-6:00 HUB
Feb 13	Biology Networking Night 5:30-7:00 HCK 132
Feb 13	Darwin's Birthday
Feb 11	RESUMEFEST 8:30-4:30 pm @ MGH
Feb 17	Presidents' Day Holiday
Feb14-Mar2	Spring Reg Period I
Feb 26	UW Environmental Career Fair 11:00-3:00 MGH
Feb 28	Mystery Flower contest ends
Mar 5	Biology Apparel Day
Mar3-30	Spring Reg Period II
Mar 14	LAST DAY to Withdraw (from all classes)
Mar 14	Last Day of Instruction
Mar 17	St Patrick's Day
Mar17-21	Final Examination Week
Mar24-38	Spring Break

Dr Joe Ammirati Associate Chair

Welcome to the New Year and Winter quarter!



*Joseph F. Ammirati,
Professor and Associate Chair,
Biology Undergraduate Program*

Once again, we encourage you to take full advantage of the opportunities and activities that the Department of Biology has to offer. As you become fully engaged in your classes and coursework be sure to get to know your instructors and your classmates. Form study groups and become involved in Tri-Beta and other undergrad activities. If you have not already done so, seek out undergraduate research opportunities, scholarships, internships, peer teaching, and other experiences that will enhance your learning and help you build a stronger and more extensive professional portfolio. Contact faculty and talk to our Biology advisors about how to pursue these opportunities in the biological sciences and related areas of study.

It's also not too early to begin planning for spring and even summer quarter. Look at the spring and summer programs and courses offered in Biology, at Friday Harbor Marine Laboratories and other units on campus. Look for courses that take you off campus, find research opportunities in experimental laboratories and in the field, gain additional valuable experience in biology!

This link, <http://www.biology.washington.edu/Academics/Undergraduate/Degrees>, will allow you to access information and opportunities in Biology. In addition, watch for e-mails from Biology and stop by the Biology Office, HCK 318, for additional assistance.

Have an enjoyable quarter,

Joe Ammirati

Associate Chair, Biology Undergraduate Program



Leriomyces ceras, a mushroom known as Redlead Roundhead

Atrium Plant *Crassula ovata*



Located on the fourth floor overlooking the atrium, is *Crassula ovata*, commonly known as Jade plant, Friendship tree, Lucky plant, or Money tree. It has small pink or white flowers and is part of the stone crop family, which has many hardy species. It is native to South Africa, and is usually kept as a house plant. In fact it can live in your home for dozens of years if well cared for.

The jade plant is a succulent with thick, shiny, rounded dark green leaves arranged opposite each other on thick stems which, with age, become woody looking.

The jade plant is also known for its ease of propagation, which can be spurred by clippings or even stray leaves which fall from the plant.

My name is Michael Tassia, I am majoring in Biology (General) and minoring in Marine Biology.

I have always been fascinated by the living world. From the smallest execution of discrete instructions in each cell, to the metamorphosis of tunicate tadpole larvae into their very different adult form, biology contains many facets of which questions still need answering. However, nothing compares to the diversity found within the oceans.

Feeding my favorite Harbor Seal, Popeye!
Photo taken at Friday Harbor, Summer 2013.



Pteraster, a species of sea star producing copious amounts of slime in response to many marine biology students poking at it! Picture taken at the UW Friday Harbor Labs, Summer 2013.



Collecting animals at Eagle Cove on San Juan Island. From left to right: Kevin Turner, Rhi LaVine, Nadia Pierrehumbert, Michael Tassia, Rachel Folz, Matt Galaska

The ocean is a big place, a very big place; in fact, a little over 70% of the global coverage is comprised of the oceans. Representatives from every animal phylum, except for the velvet worms (phylum Onychophora), can be found somewhere within the oceans. This high level of biodiversity is a big part of why I am so drawn to the field of marine biology. Marine organisms, regardless of whether you are looking at an acorn worm or an abalone, have adapted to their environment in many unique ways. These adaptations make the marine environment a very “different” place from the terrestrial environment we are so accustomed to. For me, all the oddities and complexities make marine biology the fascinating subject that it is.

My interest in marine biology stems from a childhood spent by the Mediterranean Sea. Recently, this interest took a new level when I visited the UW Friday Harbor Labs for the Marine Invertebrate Zoology course in Summer 2013. Not only did I learn about the high levels of biodiversity, both locally and globally, but I met many other people passionate about the field and proud of their work.

Early morning at the beautiful Friday Harbor Labs before another day of looking at marine invertebrates!

Left, Michael Tassia; Right, Matt Galaska



Currently, I am a research undergraduate in the Friedman Lab and the Swalla Lab. In the Friedman lab, I am working on isolating and identifying a phage associated with Withering Syndrome in abalone endemic to the California coastline. In the Swalla Lab, I am helping with the identification of early developmental genes potentially being reactivated in the process of regeneration in Hemichordates. These two examples of the research I am a part of do not even scratch the surface of what is out there.

Marine biology is an incredible field with many questions being asked, and I am proud to be a part of it and to answer what I can.

To learn more or declare the minor, please contact Marine Biology Adviser, Christen Foehring. marbiol@uw.edu



Spaghetti worm (Terebellidae) collected from the San Juan Island intertidal at Eagle Cove.

The UW Career Center (MGH 134) is your campus connection for career exploration. They offer services from resume workshops, to one on one appointments and even practice in mock interviews or graduate school application support. The talented and knowledgeable career center staff can help you learn how to apply your specific major to a job or career path you are currently interested in. They also host several workshops and career fairs throughout the year. Visit them in MGH or careers.washington.edu

Here are some of the events in Winter 2014 you may be interested in:

DIVERSITY CAREER FAIR • THURSDAY, JANUARY 16 • 5:30 – 8:30 PM - HUB

The annual Diversity Career Fair, sponsored by the National Society of Black Engineers, is open to all students and will bring up to 100 employers from business & industry, government and non-profit settings. Employers will be looking for interns as well as full-time employees.

EMPLOYER CONVERSATIONS: JOBS FOR BACHELORS CANDIDATES IN THE SCIENCES WEDNESDAY, JANUARY 22 • 4:30 – 6:30 PM HUB

This Employer Conversation will host a panel of 4-5 employers sharing insights for Bachelor's-level candidates on how to pursue a job or internship search in the sciences. Panel will be moderated by a member of the Career Center counseling team. More details to come!

SCIENCE JOB & INTERNSHIP FAIR • THURSDAY, JANUARY 30 • 2:00 – 5:00 PM - MGH

Are you a undergraduate science student at the UW - physical sciences, biological sciences, ChemE or BioE?
Then don't miss the first-ever Science Job & Internship Fair!

This unique mini-career fair will give you the opportunity to connect directly with recruiters from local and/or national companies who are looking to hire UW science students for job or internship opportunities. See you there!

RESUME FEST • TUESDAY, FEBRUARY 11 • 8:30 AM – 4:30 PM MGH

ResumeFest is for currently enrolled degree-seeking students on the UW-Seattle campus only.

Come get your resume reviewed by one of our career center experts so you can upload it to HuskyJobs, prepare for the Internship Fair, submit internship applications, and much more.

During ResumeFest, brief 15-minute resume reviews will be available from 8:30am-4:30pm, on a first come-first serve basis. Sign-ups begin in the Career Center at 8 am on February 11th. Students are limited to one ResumeFest slot. Please print your resume and bring it with you (but resumes saved on flashdrives and laptops are also acceptable if you are not able to bring a hard copy).

UW INTERNSHIP FAIR • WEDNESDAY, FEBRUARY 12 • 2:00 – 6:00 PM HUB

Are you looking to gain an internship opportunity? Search no more! The Career Center's Internship Fair is a great opportunity for students of all majors and class levels from all three UW Campuses to connect with over 90 corporate, small business, non-profit and government employers who are all looking for Huskies, like YOU, to fill their internship needs. Don't miss out on this perfect opportunity!

UW ENVIRONMENTAL CAREER FAIR • WEDNESDAY, FEBRUARY 26 • 11:00 AM – 3:00 PM MGH

Open to all UW students, the UW Environmental Career Fair is an opportunity to explore careers in environmental and natural resources fields. The Environmental Career Fair features employers from the nonprofit, government, and private sectors with career-level positions and internships.

GLOBAL HEALTH CAREER FAIR • WEDNESDAY, MARCH 5 • 10:00 AM – 2:00 PM HUB

This career fair is geared towards UW undergraduate, graduate and professional students who are interested in future employment in global health. The objective of this career fair is to expose a diverse population of UW students to a broad range of opportunities available in the field of global health as well as the specific hiring processes and desired skills that organizations seek in potential employees.

• *Please note that this is not necessarily a job fair, but an event for students to gain an understanding of the skills they need and the types of employment opportunities available to them post-graduation. Not all attending organizations will have positions currently available.*

DEPENDABLE STRENGTHS FOR GRAD STUDENTS • FRIDAY, MARCH 21 • 8 AM – 5 PM MGH

Are you a current graduate student, post-doctoral fellow, or graduate-level alum? Do you want to learn more about the unique strengths you can offer an employer? If you want to assess your strengths and talents and learn how to leverage them, then this seminar is for you.

The Dependable Strengths seminar provides a safe place for graduate level students, alumni, and post-doctoral fellows to consider career possibilities inside and outside academia. Participants explore good experiences to discover their unique patterns of strengths; identify which strengths they want to use in a career; write a report that articulates their strengths and reflects their potential; learn to use knowledge of their strengths to enhance their network, application materials and interviews.

\$100 Current UW Students • \$160 Alumni & Postdocs (UWAA Members) • \$200 Alumni & Postdocs (Non-UWAA Members)

To register for the Dependable Strengths seminar, please complete the form at careers.uw.edu.... After this form, you will be asked for payment.

Friday Harbor Laboratories (FHL) is a UW campus and a world-renowned marine science research center sited on a 484-acre biological preserve on San Juan Island, 75 miles northwest of Seattle. The island is accessible by ferry and scheduled commuter aircraft. Students live in dorms on the FHL campus and eat in the FHL Dining Hall alongside researchers from around the world.

FHL offers UW coursework in marine biology and oceanography for undergrads, post-bacs and grad students. The varied terrestrial, freshwater and seawater habitats around San Juan Island, relatively free from pollution, offer diverse flora and fauna for classes and researchers. Classes are small (7-20 students) and we consistently receive effusive comments from students such as:

"Simply a wonderful experience - the most rewarding of my academic career!"

"FHL is an awesome, beautiful place with great people. First time here, I already want to come back again and I am definitely recommending this place to others."

SPRING 2014 at FHL

Apply by Jan. 25 (applications accepted later on a space-available basis). Students should submit a web-based FHL application form plus an electronic copy of transcripts. UW-FHL courses cost the same as UW courses in Seattle and UW financial aid may be applied to FHL costs. Financial support from FHL and the Mary Gates Endowment may also be possible (based on academic merit).





Michael Dorrity
PhD candidate - second year

Imagine some organisms: a migrating goose, bacteria lining your gut, or a towering pine tree. Different as they are, they're all subject to the stresses of living on Earth, and they've all figured out

how to persist. Managing environmental shifts is a hallmark of our own species, but our strategies aren't quite the same as that goose's, and even further from the tree's. The best way for that tree, and most other plants, to deal with the environment is to just...grow. Plants develop constantly, and I was curious how development was adjusted when confronted with an environmental stress.

I pursued this question in the lab of Dr. Keiko Torii, whose lab focuses on the development of stomata; the small, mouth-like pores on the surface of leaves that allow exchange of carbon dioxide and oxygen to drive photosynthesis. The charismatic little structures are arranged in beautiful patterns on the surface of the leaf, and their mouths open and close as the day moves along.

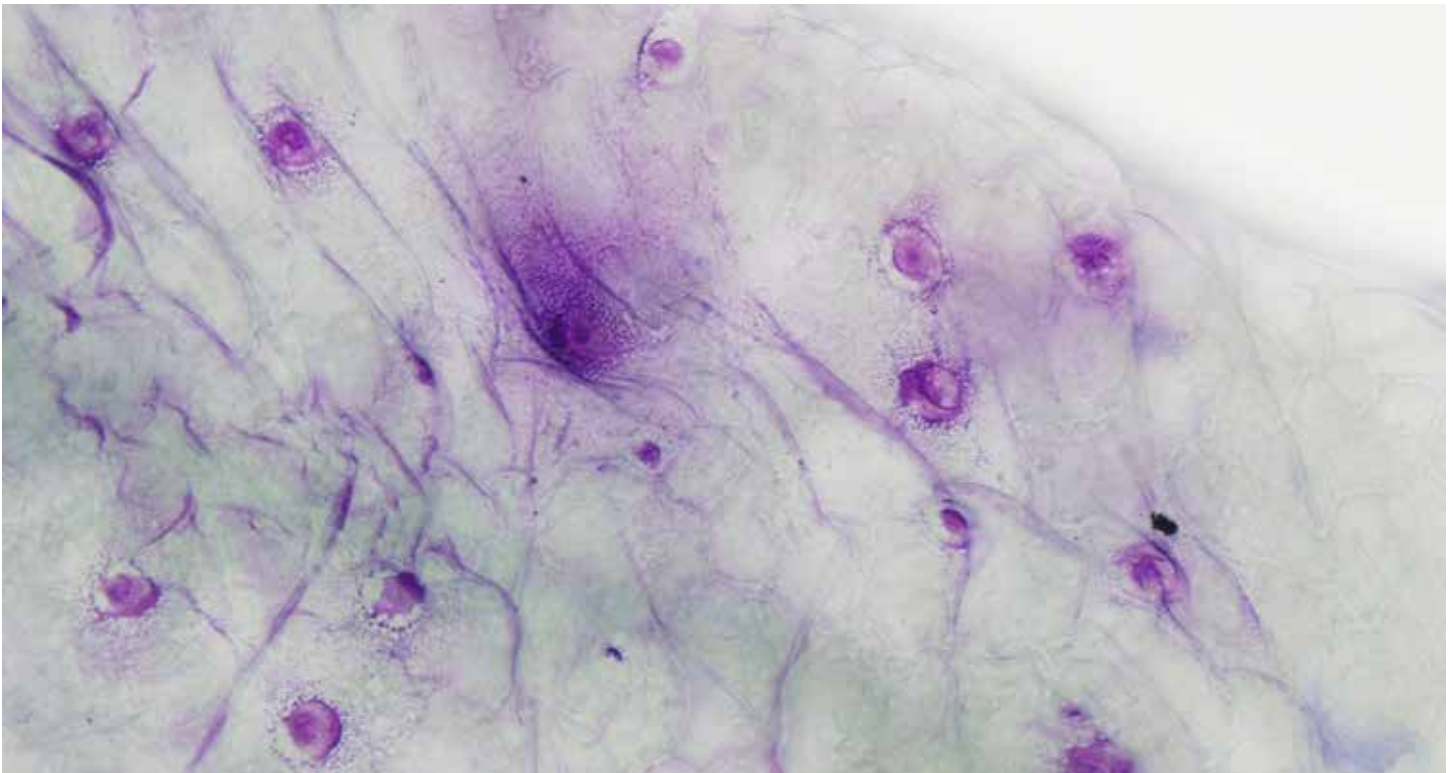
The distribution of stomata on a leaf is crucial for managing nutrient resources. More stomata might mean more photosynthesis, but it also means the plant loses water more quickly in most environments. So, newly developing leaves are equipped with just-the-right-amount of stomata. This also

means that varying the number of stomata on the leaf is a prime way for the plant to respond to environmental shifts. The Torii lab studies stomatal development in the queen of plant model organisms, *Arabidopsis thaliana*, but my work included a pair of its sisters, *Thellungiella halophila* and *Thellungiella parvula*. I chose this pair of species because, unlike *Arabidopsis*, they have tolerance to salt stress, certainly gained through persistence in their native environments (saltwater floodplains in China and the Rocky Mountains, respectively). I wanted to know if their ability to withstand this stress had any connection to stomatal development.



Salt Sisters in the Greenhouse

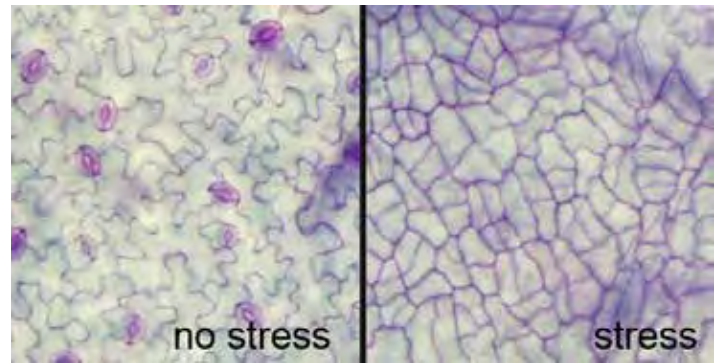
I designed a simple test, where I grew up the three species on varying concentrations of salt and mannitol (a very big sugar molecule that stresses cells out because they try, try and try to take it up by changing solute concentrations, but it never works out), and looked at developmental changes. Stomata are *very* photogenic; I simply stain leaves with



Cool Stomata

a dye that makes the stomata stand out and look under a microscope. Afterwards, I count up the number of fully-developed stomata and stomatal precursors. Precursors are stem cells that are on the developmental road to becoming a full-fledged stoma, and they indicate that the plant is sending signals to increase the density of stomata on the leaf.

Surprisingly, it turns out that these species respond to the same stress in very different ways! Sure, I expect a goose and a tree to deal with stress differently, but these plants are practically next door neighbors in the *Brassicaceae* family. As expected, *Arabidopsis*'s stomatal development takes a turn for the worse when confronted with osmotic stress; the density of stomata goes down, and they trade in their beautiful, repeating patterns for leaf-epidermal chaos. There are still stomata present, but it looks like Picasso designed the leaf. Some anomalies include: gargantuan stomata, mirror-image stomata, stomata and lasagna-looking stacks of epidermal cells. Interestingly, the salt-tolerant *T. halophila* responds much in the same way; patterning is disrupted,



Arabidopsis: no stress & stress

epidermis.

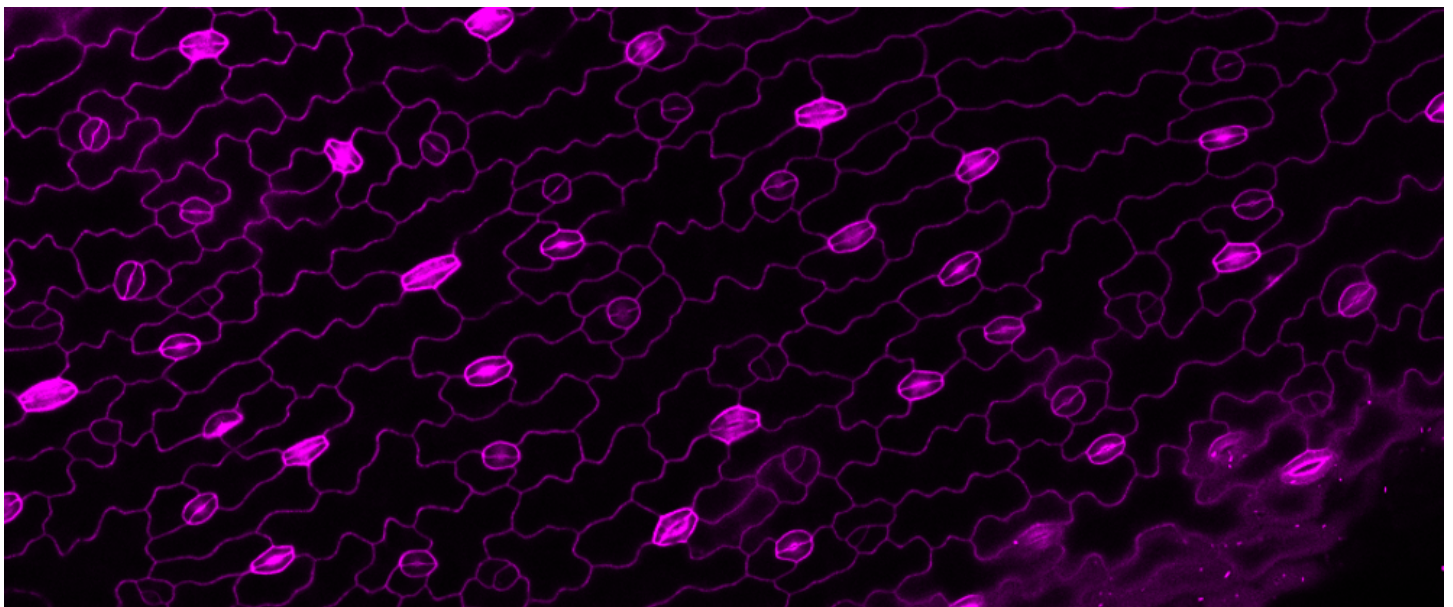
This work showed how diverse the response to environmental stress can be, even amongst relatively-closely related species. Furthermore, even when species have the ability to survive a particular stress, the cellular-level response can take very different evolutionary routes, as seen in the salt-tolerant *T. halophila* and *T. parvula*. This work was just a small step toward understanding this process, and there are many, many more experiments to be done. Get in touch if you'd like to get involved!

I chose to pursue a PhD in Biology because I'm fascinated by the subject; I thoroughly enjoy being overwhelmed by the complexity of the natural world. Furthermore, being involved in research sciences and teaching allows me to merge my passion with a career. I honestly enjoy what I do, and am constantly learning in UW Biology. The wide scope of research happening in our department is ideal for me, as the diverse topics are united by a drive to answer fundamental evolutionary questions. And lastly, good science requires good communication, which means I get to tell lots of people about what I do. My job is my dream job.



Halophila

and there are fewer stomata. However, the second salt-tolerant sister species, *T. parvula* shows no change in leaf stomatal density in response to stress, and is practically indistinguishable from its control. So, while *T. halophila* and *T. parvula* both survive the stress more readily than *A. thaliana*, they do so in very different ways. *T. parvula* has a clear adaptation; it does not sacrifice the integrity of its stomatal organization when challenging with osmotic stress. As a follow-up experiment, I grew transgenic *Arabidopsis* with fluorescing cell walls under a confocal microscope to get a time-lapse series. Using the images, I made movies that show the rapid decline of cellular organization on the leaf



Parvula, master of stress management

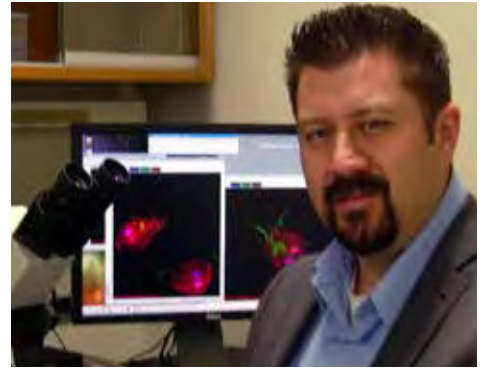
New Course Biology 402 - Functional Genomics 4 credits

Since joining the Department in autumn 2012, Assistant Professor Alex Paredez has been crafting a lab course using *Giardia lamblia* where students will get the chance to perform authentic experiments. The Paredez lab has identified a large list of proteins through their genomic and proteomic analysis of *Giardia*; students will focus on epitope tagging these proteins with the goal of facilitating protein localization. Although sub-cellular localization does not indicate function, this data has the potential to provide the first clues about what processes these proteins might participate in. Ultimately, the students' results will be uploaded to EupathDB, a public database that hosts *Giardia*'s genomic data, thereby sharing student's findings with the larger cell biology community.

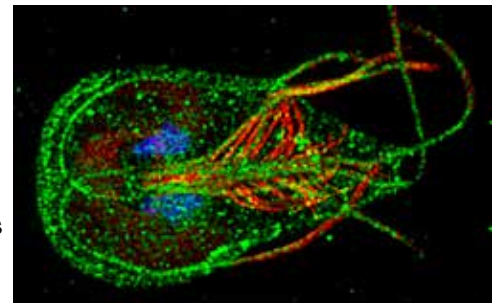
Biology 402, Spring Quarter (M 1:30-2:30 W,F 1:30-4:20).

More about *Giardia* and Dr. Paredez's research aims

Giardia lamblia is a protozoan parasite that infects over 100 million people in the world each year, primarily in impoverished countries. This divergent parasite belongs to a lineage of cells that were thought to have split off from the rest of eukaryotes in the deepest part of the tree of life, placing this event somewhere between .8-1.5 billion years ago. As Dr. Paredez was wrapping up his thesis work at Stanford University, the genome of *Giardia* was sequenced; surprisingly, *Giardia* was found to lack the canonical cytoskeletal regulators found in all other eukaryotes (plants, animals, fungi, and protists). This observation fascinated Paredez, prompting him to take a Postdoc position at UC Berkeley where he began his work on *Giardia*.



Alex Paredez
Assistant Professor, Department of Biology



Giardia lamblia

The cytoskeleton is responsible for many cellular functions, including bringing nutrients into the cell, moving cargo within the cell, and physically dividing cells after mitosis. Paredez aims to find out how *Giardia* is able to perform the same cellular functions without the conserved cytoskeletal proteins found in all model organisms from plants to man. Perhaps *Giardia* contains an archaic set of cytoskeletal regulators that have been superseded by later emerging proteins. Alternatively, *Giardia* may have developed a novel set of regulators and gradually lost the canonical set. Either way, there is much to be discovered. In the case that *Giardia* contains ancient yet undiscovered cytoskeletal regulators, we can use *Giardia* as a window into evolutionarily deep cellular mechanisms, and in the case that *Giardia* developed novel proteins to regulate essential cytoskeletal processes, these proteins have the potential to be targets for therapeutic treatment of giardiasis.

If you are *highly motivated* and interested in an authentic research experience this course is for you. The course is limited to 24 students and admission is by instructor approval. Minimum gpa of 2.0 in Bio 355 is a prerequisite; however, we are reserving a few slots for sophomores and juniors who are committed to finding undergraduate research opportunities. Please contact Jason Patterson (patterj@u.washington.edu) for an add code.

December 2, 2013 – The Genetics Society of America (GSA) and the Drosophila research community are pleased to announce the winners of the Victoria Finnerty Undergraduate Travel Awards. The awards will be used by the students to attend the 55th Annual Drosophila Research Conference in San Diego, March 26–30, 2014. These 11 recipients are college juniors, seniors, or post-baccalaureates conducting academic research using the fruit fly *Drosophila melanogaster* as a model organism.

2014 Victoria Finnerty Undergraduate Travel Award Winners:

Marvin Nayan, *post-baccalaureate, University of Washington*

Poster Title: "MicroRNA Processing by Dicer-1 Regulates Drosophila Sensory Neuron Morphology"

Description: Investigate the molecular and cellular mechanisms that regulate dendrite morphogenesis.

Authors: Marvin Nayan, Jay Z. Parrish Principal Investigator: Jay Z. Parrish, PhD

Trung T. Phan, *senior, University of Washington*

Poster Title: "Analyzing the Critical Role of Pskl, a Sperm Membrane Protein, in Drosophila Fertilization"

Description: Our research focuses the identification and characterization of sperm proteins that are required for successful fertilization in Drosophila.

Authors: Trung Phan, Harry Hunter, Barbara Wakimoto

Principal Investigator: Barbara Wakimoto, PhD

Biology Departmental Awards For Undergrads & Graduates

Congratulations to the Autumn 2013 Departmental Award recipients:

GRADUATES:

Matthew George, Carrington Lab: **Edmondson Award**
Elisha Harris, Stromberg Lab: **Sargent Award**
Peter Conlin, Kerr Lab: **Sargent Award**
Kelsey Byers, Bradshaw & Riffell Labs: **Denton Writing Fellowship**
Carolina Gomez Posada, Groom Lab: **Frye-Hotson-Rigg Writing Fellowship**
Stephanie Crofts, Summers Lab: **Kathryn C. Hahn Writing Fellowship**
Meng Chen, Wilson Lab: **Tunncliffe Writing Fellowship**
Frazer Meacham, Bergstrom Lab: **WRF Hall Fellowship**
Tracy Larson, Brenowitz Lab: **WRF Hall Fellowship**
Jennifer Day, Wasser Lab: **WRF Hall Fellowship**
Jessica Lundin, Wasser Lab: **WRF Hall Award**

UNDERGRADS:

Kathleen Voss, Hill Lab: **Casey Award**
Jennifer Gile, de la Iglesia Lab: **Sargent Award**
Nivretta Thatra, Brenowitz Lab: **Sargent Award**
Wolfgang Rahfeldt, Olmstead Lab: **Frye-Hotson-Rigg Award**
Jens Johnson, Di Stilio Lab: **Frye-Hotson-Rigg Award**



Don't forget
our Spring Awards are
right around the corner!

Applications due 11:59
Sunday March 9, 2014

More Info at <http://www.biology.washington.edu/academics/undergraduate/scholarships>

Blooming Darwin's Orchid in Room 5 of the Botany Greenhouse

In Room 5, Tropical Plants, you find blooming The Madagascar Star Orchid or "Darwin's Orchid" (*Angraecum sesquipedale*).

Darwin suggested that this species and its hawk-moth pollinator provide one of the most striking examples of how plants and their pollinators can influence each others' evolution (called coevolution). In this case, the orchid evolved an incredibly long "nectar spur", a long tubular extension of the flower that holds the nectar. If the spur is long, it forces the moths to rub their faces in the pollen as they reach for the nectar, and the flower is successfully pollinated. In response to the difficulty of reach-



ing the nectar, their major food source, the moths evolved longer and longer tongues over time. But if the moth has a long tongue it can reach the nectar without touching the pollen, so the orchid has to evolve longer and longer spurs to force the moth to pollinate it, and so on and so on. This coevolutionary process of orchid and moth influencing each other reciprocally has been taken to the extreme in the Madagascar Star Orchid: its nectar spurs can be as long as 11 inches!

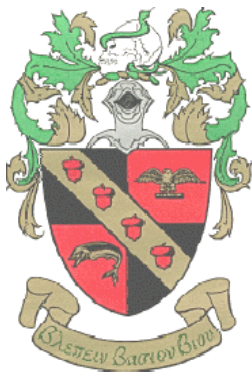
When Darwin proposed this scenario, only the orchid had been discovered. He thought such an impressive spur must have evolved through coevolution with a pollinator, and therefore there must exist a moth in Madagascar having an equally impressive long tongue. Everyone thought he must be crazy until a full 40 years later, when the hawk-moth *Xanthopan morgani praedicta* (so named because of Darwin's prediction) was discovered in Madagascar – with a tongue that averages a full 10 inches.

The Darwin orchid blooms only once a year, and it's started blooming the first week of January in Room 5 of the Botany Greenhouse. If you want a chance to see this world-famous orchid in the flesh, check it out before the flowers wilt – you have about a week. The greenhouse is open weekdays from around 9:00 am to 4:00 pm.

Biology Networking Night February 12th - Save this date!

A Networking Opportunity Featuring a Panel of Biology Alumni in Hitchcock 132. Look for postings.

Learn about a variety of professions, get advice about making the most of your time at the UW, and find out what it takes to get a job in different fields. Undergraduates, graduate students, and recent graduates are welcome to attend and network with alumni for their career development. Visit www.biology.washington.edu/showcase/net/net.html



Tribeta Officers 2013-2014

President

**Minkyung
'Monica' Shin**

VP of Meetings & Events

Jenna Lebedev

VP of Mentorship

Jacob Mouser

VP of Membership

Taylor Wilkins

Secretary

Jessica Latimer

VP of Advertising

Nikki Barber

Treasurer

Heather Shen

VP of Tutoring

Julia Riel

VP of Community Events

Aseel Alsamarraie

Webmaster

Courtney Chai



*Terrariums Night:
come make your own!*

Hello Biology students!

Welcome back to another school year! I hope you are looking forward to another year filled with biology, from dorsal root ganglia to Mendelian genetics to phototropism! (If any of these words sound exciting to you, you are in the right place!) UW Biology is a pretty amazing, albeit big, department, so I encourage all of you to work towards creating a community by getting involved in all the programs UW Biology offers. To help get started, take a look at all the events and services offered by your very own Beta Beta Beta Biological Honor Society!

HONORS SOCIETY: Now seeking new members! While Tribeta's events and services are for everyone in the biology department, we also encourage you to consider being part of the Tribeta Biological Honor Society! Anyone can become an Associate Member, while only those that have met the curriculum and GPA requirements may become a Full Member. You can also join the Biology Club, which is open to everyone. Check out our website, <http://students.washington.edu/tribeta/join.html> for the application. **Applications are due at the end of this quarter!** Email officer Taylor with any questions. wilkit51@uw.edu

TUTORING: Come to Tribeta Biology Tutoring, either for help with Biology 180, 200, 220, or as a tutor yourself! Our tutors have excelled in the intro series and other Biology courses, so let them help you to do well as well and understand the material. Lounge tutoring hours run Monday-Thursday, 3:30-5:30 PM, in the HCK 4th floor student lounge with snacks provided. The one-on-one tutoring can be found on the Tribeta website. Email officer Julia to get involved. juliar4@uw.edu

MENTORSHIP: Join our mentorship program to connect with an upperclassman that can show you the ropes. We'll set you up with a mentor and will follow up to make sure your questions are answered, whether they are about UW, the Biology major, research, etc. To become a mentor or mentee, email officer Jacob. mouserj@uw.edu

EVENTS: In order to promote community building within our department, Tribeta will be hosting events like terrarium night, movie night, and a Theo's Chocolate Tour this quarter! Everyone is welcome to come and meet others who love biology while doing something that might not be biology-related at all. Contact officer Assel or Nikki with any event ideas or questions. alsamarraiea@yahoo.com or barbernikole@gmail.com

MEETINGS: Every quarter, we host engaging lecturers to discuss the innovating research they are doing! This quarter, we will be hosting Dr. Sam Wasser, who will speak about Conservation Canines. Pizza is always provided. Email officer Jenna with any questions or suggestions. lebedj@uw.edu

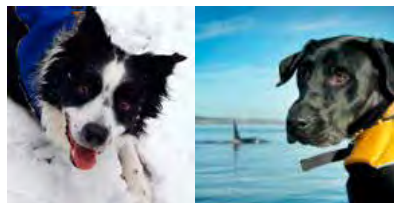
T-SHIRTS: Everyone wants these geeky, stylish UW Biology shirts! These shirts can only be found here, with Tribeta, for \$15. Shirts are sold every first Wednesday of the month, so come buy one and wear it to be entered for a prize in the Biology Advising office! Sweatshirt pre-orders are also available. All proceeds go towards funding Tribeta events for the Biology department. Email officer Heather or Jessica with any questions. hzshen@uw.edu or jessica.m.latimer@gmail.com

If you have any questions or want to get involved, feel free to contact me or any of the officers. I hope to see all of you at our events and meetings!

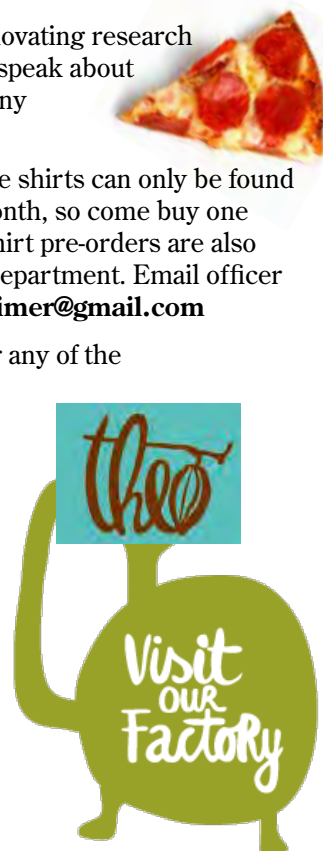
On behalf of the Tribeta Officers, we hope you have an amazing winter quarter!

"Monica" Minkyung Shin

UW Tribeta President 2013-2014
minkshin@uw.edu



**Conservation Canines
Lecture with Dr Sam Wasser**



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.

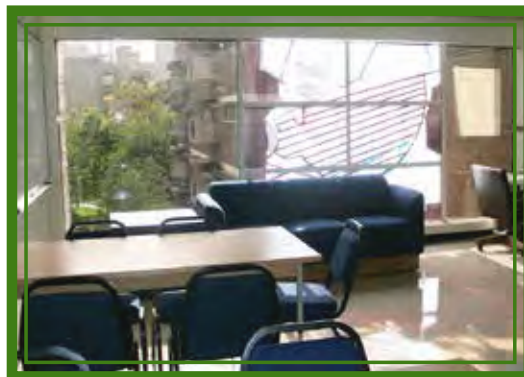
There are two ways to take advantage:

- 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 Winter quarter feel free to e-mail me! juliara4@uw.edu

Julia Riel Tribeta, Tutor Coordinator All questions are welcome.



Tutoring area in the fourth floor lounge in Hitchcock Hall.

Eat Dirt!

A Glimpse into the UW Student Farm



Happy New Year from the UW Farm!

This past quarter has ushered in a new group of student Farm leaders. From photographer, to perennial guru or Mercer Court leader, these students are from a wide range of disciplines and bring their unique perspective and enthusiasm to the Farm. With these new leaders we hope to increase student involvement, provide new programs for students and host more events.

The Farm is growing not only in student involvement but also in the amount of space in production. The Farm sells produce to HFS, through Cultivate and the District Market and at the UW Medical Center. Since June 2013, the Farm has sold over \$3,500 in produce to these buyers. The Farm has also donated over 500 lbs. to the University District Food Bank. The Farm had our first farm stand at the Center for Horticulture at the end of fall quarter. We plan to have more farm stands in the coming spring and summer, focusing on selling food to students. We also hope to start a small CSA starting in the spring, stay tuned for details.

Despite the season there is still a ton of things happening on the Farm!

Weekly FarmEd seminars taught by Biology professor Jennifer Ruesink, start at 8:30 am on Mondays at the Botany Greenhouse, work hours follow. These interactive hour long seminars explore topics like compost construction, season extension and soil fertility. Check our website for a complete list of farm work hours at all three locations.

There are many exciting projects in the coming months include looking at seed catalogs, growing microgreens in Mercer Courts, implementing worm composting systems in the Mercer dorms and organizing canning and fermenting workshops with the UW Student Food Co-op.

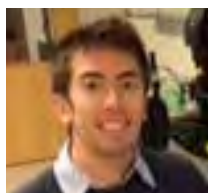
In rain clouds and worms, UW Farm Team



Jennifer Ruesink teaching a seminar at 8:30 am on Mondays at the Botany Greenhouse

Have questions? Want more information? Visit our website: <http://blogs.uw.edu/uwfarms/>
Like us on Facebook: <https://www.facebook.com/UWFarm> Email us directly: atthewfarm@gmail.com

The Levinson Emerging Scholars Program supports talented and highly motivated UW juniors and seniors who want to pursue creative and advanced research in biology, biochemistry, bioengineering, bioinformatics, chemistry, genetics, neuroscience, and related fields. Levinson Emerging Scholars, selected outstanding UW undergraduates, will receive funding to support their research in these disciplines, including funding to present their findings at a professional conference. By funding ten scholars each year, the Levinson Emerging Scholars Program nurtures a growing cadre of high caliber academic researchers who, in turn, will further innovation in biotechnology-related fields and enrich the future of academe.



Christoffer Amdahl, Biochemistry, Neurobiology

Christoffer is currently a senior majoring in Neurobiology and Biochemistry. He began work in the de la Iglesia lab his sophomore year of college studying the Neurobiology of Circadian Rhythms. Currently, his project consists the examination of the phosphorylation state of Phosphodiesterase-5 and its role in the cGMP-mediated light induced phase advance that occurs in the Suprachiasmatic Nucleus.



Cara Comfort, Bioengineering, Neurobiology

Cara Comfort is a senior double majoring in Bioengineering and Neurobiology. Since her first year at UW, she has been actively immersed in research. As she was interested in finding a way to integrate her two majors, she joined Bill Moody's cortical development lab the summer after her sophomore year. There she enjoys the combination of creative stimulation inherent in experimental design as well as the mathematical challenges demanded by MatLab and scientific analysis. Through her senior capstone project, Cara plans to synthesize the skills developed in both her majors to help elucidate the complex mechanisms behind cortical development, an area she has grown very passionate about.



Jennifer Gile, Neurobiology

Jennifer Gile is a senior majoring in Neurobiology. She transferred from the Johns Hopkins University after her freshman year. She works in the de la Iglesia laboratory, which focuses on the pathways by which the central nervous system controls the timing of behavior and physiology. Her area of research is in circadian biology, with a current research focus on the circadian modulation of neuromotor control. The goal of this research project is to understand how the circadian system regulates the primary motor cortex programs. This will be essential for the design of BCI (brain computer interface).



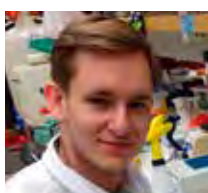
Nicolette McCary, Biology, Oceanography

Biology and the Ocean have inspired Nicolette from a very young age, as she was raised spending most summer and weekend days on the beaches of Puget Sound. She was always fascinated by the barely perceptible organisms in tide pools, wondering what they were. After being invited to join Dr. Gabrielle Rocap's Environmental Genomics Lab in the department of Oceanography her sophomore year, she was able to spend two years researching marine viruses and phytoplankton. She hopes to contribute to the limited knowledge of diatom virus seasonality, and identify Pseudo-nitzschia hosts that can be used to effectively isolate viruses in the future.



Trung Phan, Biology (Molecular, Cellular, & Developmental)

Trung's strong interest in reproductive biology and developmental genetics emerged during the summer of his freshman year when he began researching Drosophila fertilization under the guidance of Dr. Barbara Wakimoto. Confronted with an exciting and novel research question about the enigmatic proteins that regulate sperm activation, Trung was inspired to investigate the molecular events that facilitate sperm development and function. His current project focuses on the characterization of an interesting protein that plays a role in acrosome biogenesis in Drosophila and has a complex evolutionary origin.



Denis Smirnov, Biochemistry, Neurobiology

Denis Smirnov is a senior at the University of Washington majoring in Biochemistry and Neurobiology. Having grown up in Russia, he has spent the last 10 years of his life in Seattle, attending Juanita High School in Kirkland before coming to UW. He is currently working in the laboratory of John Neumaier, MD., PhD. in the Department of Psychiatry and Behavioral Sciences, on a project aimed to understand the neural circuitry underlying addiction and relapse to drugs of abuse.

Biology Undergrad Listserve

The Biology Advisers 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/>

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

At the Burke Museum

General admission *Free to UW Students*

Weekend Activities @ the Burke: Archaeology Sat. Jan. 11 to Sun. Jan. 26 11:00-3:30 pm

Every weekend at the Burke, see objects not normally on display and do hands-on activities. Also take part in guided "Best of the Burke" exhibit tours of the Life and Times and Pacific Voices galleries every Saturday at 1 pm.

Artifact ID Day Saturday January 25, 2014 1:00-3:30

Find out more about your intriguing artifacts from Native American cultures, the Pacific Islands, Southeast Asia, and the natural world. No appraisals will be given, limit three items per person due to the event's popularity.

Dino Day Saturday March 8, 2014 10:00 am -4:00 pm

Join the Burke Museum for our most popular annual event! Get an up-close view of the Burke Museum's paleontology collections. See and touch fossils, meet Burke paleontologists, try out a fossil dig pit, and more!





Jason Patterson, Julie Martinez, Janet Germeraad, Andrea Pardo, Tom Freng

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 or Neurobiology.

Open walk-in:

Monday - Friday 9:00 am to 12 pm AND 1:00 to 4:00 pm

(office closed 12 to 1) or contact one of our four advisors for an appointment by phone or email. The photo on the right (in the Greenhouse's Desert Room) includes the advisors and the office staff of Room 318. Advisors are: Jason, Janet, Andrea and Tom. Staff is Julie.

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 that explains type of wing determines the kind of flight the bird is able to do.

Mystery Plant

Guess it and win!



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

Name two countries it originates from and it's genus species, then come to Hitchcock Atrium and submit your name & email for a drawing for the prize of a special limited edition, eight Biology note cards featuring flowers blooming Winter Quarter in the Greenhouse.

Drawing to be after February 28.

The hints:

1. Very fragrant flowers that smell like grape candy
2. White flowers with reddish spotting and a purple lip
3. Inflorescence with 6 to 9 flowers

Advising Available

Biology & Neurobiology

Walk-in Advising

Janet Germeraad • Tom Freng
Jason Patterson • Andrea Pardo

Mon-Fri, 318 Hitchcock Hall

9:00 am-12:00 pm

1:00 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

The Department of Biology
Undergraduate Newsletter
is published by the University of Washington,
Department of Biology Seattle, Washington, 98195
Editor: Jeannette Takashima