ASSOCIATE CHAIR OF THE DEPT: Dr. Alison Crowe

Welcome to 2019! As the Undergraduate Program Chair for Biology, I would like to welcome you to winter quarter and take this opportunity to briefly introduce myself. A molecular biologist by training, I have enjoyed teaching molecular and cell biology courses in the department since 2000. About 10 years ago, my research interests shifted and I joined forces with colleagues to form the Biology Education Research Group (BERG) here in our department. My research now focuses on developing inclusive teaching strategies and using programmatic tools to guide curricular reform. Our department has pioneered the use of evidence-based teaching strategies in the classroom and BERG members continue to research new ways to increase student engagement and learning - you may even have agreed to take part in an education research study in one of your classes!

From our own research and the work of many others, we know your experience, both in and out of the classroom, has a major influence on what career you decide to pursue. Therefore, as the Undergraduate Program Chair, one of my goals this year is to learn more about YOUR experience as an undergraduate in this department. Why did you choose this major? What challenges are you facing as you navigate through the major? Are there unique challenges that you have encountered as a transfer student? Which courses are you most excited about? Are there skills you would like to learn to help you in your future career? In addition to the biology exit survey we encourage you to take when you are finishing the program, we are working on developing new ways for you to share your experiences and ideas. I’m looking forward to hearing your thoughts and working with you to create a welcoming and supportive environment that serves all of our students.

I also wanted to take this time to comment on one of the most noticeable changes to our department this year, the opening of the new Life Sciences Building (LSB). It has been very exciting for me to see how students are using the beautiful light-filled spaces on the 1st floor of LSB, whether it is stopping in for a coffee at the Evolutionary Grounds Café, working with a study group at the whiteboards in the active learning classroom or engaging in scientific research in one of the teaching labs. Our hope is that this new space will promote an increased sense of belonging and community for our biology undergraduates by serving as a communal place for students, staff and faculty to all come together.

If you are looking for fun things to do in the area to explore the natural world around you, check out the orchids and bromeliads at the Volunteer Park Conservatory which has free admission through February, or book a free pass to the Woodland Park Zoo or the Seattle Aquarium through the Seattle Public Libraries https://www.spl.org/programs-and-services/arts-and-culture/museum-pass. Also, don’t forget to stop in to talk with a biology advisor in the Academic Services Office, HCK 318, to help plan your spring classes!

Enjoy your quarter,
Alison Crowe, Associate Chair for Undergraduate Programs
It was a routine day going over my UW incoming emails about a year ago when I ran into an email detailing an information session for a Summer Study Abroad Program.

What spiked my curiosity about this email were THREE highlighted aspects that resonated in my head for the following days.

Kangaroo selfie at the Koala Sanctuary
FIRST, the invitation to participate was extended to a wide array of academic backgrounds, from science majors to art students, yet the program was engineering focused.

The SECOND checkmark on my list of interests was that the course was offered in the summer, or early fall session as it is officially classified. The program takes place between August and September and does not interfere with the fall session. This allowed me to experience another culture while continuing with my academic plan without interruption.

Finally, the THIRD and most decisive piece of information was the location for the program: Australia. I have always wanted to go to Australia. The Study Abroad Program was a great opportunity to travel to one of my dreamed destinations while obtaining academic credits to support the completion of my degree.

DUE TO THESE THREE REASONS, I attended the information session for the Exploration Seminar Aeronautics & Astronautics Australia: Design of novel materials and structures: a fusion of art, mathematics, and science. Little did I know that I was going to be among the score of students who were selected to conduct research “down under” in the summer of 2018.

After been selected for the Australia Study Abroad Program 2018 cohort, my excitement progressively increased until the date of departure. Upon arrival to Sidney, I visited the Olympic Village for the 2000 Olympic games and watched a Rugby match between the Australian Wallabies and the New Zealand All-Blacks. The following day, I joined the rest of the Study Abroad cohort. We visited the Rocks and the Opera House.

Then, with the guidance of Dr. Cathryne Jordan, Dr. Mike Engh, and Ms. Jacqueline Hernandez, we continued our journey to Brisbane where we attended the Queensland University of Technology (QUT), located in the Central Business District (CBD). We received instruction from Dr. Jinkyu Yang and T.A. Rajes Chaunsali on composite materials and structures. I will cherish the life lessons learned from these brilliant minds for the rest of my life. Under their instruction, we experienced how the extensive resources provided by QUT greatly enhance the learning process by allowing the students to conduct practical experiments at the LaunchPad, a high-capacity load frame. Upon our return, Dr. Yang, inspired by this framework, proposed a similar initiative at UW to enhance the husky students' learning experience.

Also, to understand how academia translates into the real world, we visited Boeing Australia, where we learned the manufacturing process of some of their composites and the everyday operations of one of the biggest companies in the world.

In addition to QUT, we attended many non-academic events, including cultural demonstrations, entertainment, sports, and even a night market. We learned about the history of the aboriginals and heroic stories of mysticism and knowledge that trace Earth’s origins to the Dreamtime.

We also visited Gold Coast, the Australia Zoo, the Koala Sanctuary, the Brisbane Lookout, Planetarium, and even snorkeled near a secluded island in the Great Barrier Reef!

I will remember this experience for the rest of my life. The friends and professional connections I made will flourish forever in my heart. This experience has broadened my view of the world and will be a great asset in my personal and professional tool kits.

Marco Hernandez, MCD student, University of Washington
INTRO SERIES BIOL180 FIELD TRIPS: The Department of Biology’s Best Kept Secret!

Bio180 is the first class in the Biology Intro Series covering: Mendelian genetics, evolution, biodiversity of life forms, ecology, and conservation biology. A field trip is a requirement for every Bio180 student.

John Parks, the Bio180 Lab Coordinator said, "the field trips are the Department of Biology’s Best Kept Secret!"

The following comments originated from Autumn Quarter 2018 when Bio180 had a student enrollment of 1150. Christine Savolainen (Bio180 Asst Coord. & Field Trips) coordinated over 100+ field trips over the course of two months with approximately 1200 student field trip slots available to various locations around WA.

TIDEPOLLING BY MOONLIGHT: ALKI BEACH PARK, Field Leaders: Shawn Behling, Mischa Redenbaugh

This field trip typically runs from 8:30pm-11:30pm. In November, the average temperature was between 36-40F and windy when the field trip group was out. Brrrr! However as the old Finnish saying goes, “There is no such thing as bad weather, only bad clothing.”

TRIP DESCRIPTION: On a cold dark winter’s night, see what emerges from the deep, err... inter tidal zone of the Puget Sound! Get your shoes wet, investigating the diversity of sea life exposed by this rare low-low tide. We will make our way to the water’s edge and discover the varied life that must contend with the harsh extremes between high and low tide at the intersection of sea and land, an area of great biodiversity.

WHY IS THE “TIDEPOOLING BY MOONLIGHT” FIELD TRIP PARTICULARLY IMPORTANT?

Field Trip Leader Shawn Behling: “It’s easy to dismiss urban parks and beaches in the winter as lifeless, but the beach is a diverse invertebrate wonderland at night - shrimp sparkle, anemones fluoresce, and crabs roam fearlessly. Anything explored by flashlight is instantly more exciting and mysterious. Sharing the bizarre habits of sea creatures with students at just the right beach and at just the right time feels like I’m letting them in on a secret very few people know about.”

Student Comments:
“I loved being on the tides, even when it was cold and dark. The trip leaders were extremely knowledgeable and encouraged exploration. I feel like within everyday modern life, students aren’t able to explore other types of animals on their own time, so this experience was a trip to remember. Thanks!”

“I loved how excited the TAs were to show us everything!! My favorite was probably looking under the pier and seeing all the spider crabs, all the anemone and barnacles on the posts. It was really cool to see all the different organisms that you really have to look for to notice, like all the hidden giant anemones and starfish, and the weird worms and slugs!! I noticed a lot more biodiversity and was more aware of my surroundings being on this trip compared to just taking a trip to the beach by myself.”

“The most exciting thing I learned on this trip was simply the vast amount of biodiversity on our Pacific Northwest coast. Seeing all the different species that were in that one circle. You can identify what type of lifestyle, including food and predators that occupy a particular region just by observing a couple organisms.”

“THE FIELD TRIP LEADER WAS AWESOME!! I had an amazing time. At first I wasn’t looking forward to it because it was cold, dark, and late at night. But once we pulled out our flashlights and started scanning Cormorant Cove, I was absolutely AMAZED!”

“The most exciting thing that I learned on this trip was the amount of biodiversity in marine life that exists in the city of Seattle. We only drove about twenty minutes from campus and were able to see sea stars, sea anemones, and barnacles. The fact that such diversity within and between species exists so close to an urban center surprised and excited me. I also loved learning about the luminescent features of some animals (ie the anemone). I never truly understood the scope of marine diversity and uniqueness until this trip.”

“I learned that the shores of the Puget Sound on low tide are far more diverse than I could have ever imagined. Not only are there innumerable different species of organisms on the shores, but they all lead unique and diverse lives and play important roles in the ecosystem.”

Some of the places include: Friday Harbor Labs in the San Juan Islands (overnight), Nisqually National Wildlife Refuge, Center for Sustainable Forestry at Pack Forest (overnight), Seattle Aquarium, Woodland Park Zoo, Union Bay Natural Area, Carkeek Park, Warren G Magnuson Park, Cedar River & Landsburg Dam, and the UW Campus.

Here are student evaluation comments as well as comments from field trip leaders about why they chose to lead field trips. The field trips take students to another level of awareness. You can read the following and judge for yourself what they get out of the trips.

The field trips are the Department of Biology’s Best Kept Secret!
WOODLAND PARK ZOO, Field Leaders: Shawn Behling, Olivia Kosterlitz, Abe Shouse, Jeffery Smith

Field Trip Leader Shawn Behling: “I want to be a scientist so I can spend more time thinking about relationships between organisms, the patterns of those relationships, and spend more time outdoors. I won’t ever lose my passion for science, but that passion certainly wanes when you’re working on that fifth revision of a manuscript. Field trips are my anti-apathy treatment to keep me in love with science. Not only do I get to remind myself what fascinates me about these environments as I plan my curriculum, but I get to experiment with curriculum as a crucible for the field courses I hope to teach in the future. My students’ discoveries and questions fuel us both; I am richer as an educator and reinvigorated as a researcher after every trip. My heart bursts when those same students a year or three later get back in touch as they pursue ecological research, apply for graduate school, or, in one particularly heartwarming exchange, to mention our field trip redirected their life plan.”

Student Comments:
“This field trip was very educational and allowed me to better envision some of the concepts covered in class such as metapopulations, genetic drift, inbreeding, gene flow, and others. It also highlighted to me the importance of conservation biology and why biodiversity is actually very crucial to keeping the world running, because when species on any level of the trophic pyramid begin to disappear then it causes the populations above it and below it to experience rapid change in size and disrupts the entire ecosystem. This field trip showed me the importance of even tiny behaviors and how they can, and frequently do, add up.”

“This field trip was really awesome and really helped me better understand some of the evolution topics we have discussed in class! It was helpful seeing various traits of animals and being able to discuss them with my partner, zoo staff, and the field trip group. I feel like I learned how to analyze traits on my own, and now think it will be so cool next time I go to the zoo because I can point out males versus females due to sexual dimorphism, talk about what kind of foods birds probably eat due to beak shape, or why some traits may be adaptive. The field trip was so much fun and so helpful all at the same time. My field trip guide was also so enthusiastic and had so much knowledge to share with us.”

“I personally felt that a field trip is a very impactful way to learn and apply biology ideas. Labs are somewhat useful but actually going out and exploring felt very impactful personally for me. I’ve gone to the zoo before but never viewed exhibits with the viewpoint I have now so it was an entertaining morning for me. I think we should continue to offer field trips to future bio courses because it gives students another method to learning biology.”

SEATTLE AQUARIUM, Field Leaders: Lindsay Alma, Avie Ha, Eylyssa Kerr, Ashley Moccorro Powell, Mo Turner

Student Comments:
“I really liked that this was a hands-on learning experience and it was on topics in Biology that we would otherwise not study in depth. It has motivated me to study on a deeper level and look for connections in our world between ecosystems, animals, and environments because everything is connected in some way. I also am motivated to do my part in taking care of our ocean because it is such an important and amazing ecosystem!”

“Although I’ve been to the Seattle Aquarium many times before, I never really paid attention to how many invertebrates there are. I usually just see the fish, and don’t look closely enough to see the wide variety of sea anemones, starfish, tube worms, sea urchins, etc. This field trip opened my eyes to an entirely new world of sea creatures that are incredibly diverse as well as colorful and interesting.”

MICROWORLDS: LIFE ON THE SMALL STAGE, Field Leaders: Avie Ha, Connor King

Student Comments:
“I previously thought I had no interest in organisms that were not large and multicellular due to an impression of simplicity and lack of variety, but this trip showed me microorganisms are a fascinating topic to study, and show a wide variety of forms and complexity.”

“It was interesting to me to see and learn about microorganisms and their impact on medicine. I never gave much thought to what was present in pond or lake water before this trip.”

“The field trip was pretty cool because I got to see why you should not swim in [Drumheller] the fountain.”

MIGRATION DEMYSTIFIED: HOW & WHY BIRDS MOVE AROUND THE WORLD, Field Leader: Kym Foley

Field Trip Leader Kym Foley: “Nearly all of my participants selected my field trips because they fit best with their schedules, and had varying degrees of interest in the topics at hand (evolution of migratory birds; ecological restoration). That said, by the end of each field trip, every student enthusiastically expressed some degree of “wow I’ve never thought of that before” and were quick to link our observations in the field with concepts they were exploring in class. I think this field trip program is so special and I was honored to be a part of it. It is inspiring to work with young students who are thinking about the world around them in new and critical ways.”
TriBeta
Biological Honor Society:

2018-2019 Executive Board

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“To keep up to date with TriBeta, visit our website and subscribe to our emails or follow us on Facebook! http://tribetauw.weebly.com/

“What is TriBeta?” Beta Beta Beta is a national honor society dedicated to improving the understanding and appreciation of biological studies. It is a platform for students to earn recognition for their efforts and accomplishments while networking with other students and UW Biology staff with the same interests. In short: a really great organization.

TUTORING
TriBeta offers free tutoring for the Intro Biology series (180/200/220) starting the third week of class. Tutors are available for drop-in tutoring in the Hitchcock 4th floor lounge Monday–Thursday 3:30 pm–6:30 pm.

MONTHLY MEMBER MEETING
Our first Monthly Member Meeting was Thursday, January 17 at 5:00 in the Life Sciences Building second floor conference room. This month we made rock gardens. All are welcome to our events and not just open to members.

UPCOMING EVENTS
Jan 17th – Monthly Meeting: Rock Gardens
Jan 31st – Quarterly Event: Teaching Interest Panel
Feb 6th – Biology Apparel Day T-shirt Sales
Feb 14th – Monthly Meeting
Feb 28th – Quarterly Seminar
Mar 6th – Biology Apparel Day T-shirt Sales
Mar 7th – Quarterly Event #2: Letter of Recommendation Panel
Mar 14th – Quarterly Seminar

HOW TO JOIN
Full Membership is eligible to any student who has completed two Intro Biology courses (180/200) and one additional biology course with a minimum 3.0 GPA or higher. Details on other levels of membership and a short application can be found on our website.
FREE TRIBETA TUTORING: UW Intro Biology Series 180, 200 & 220

The secret to excelling in Biology 180, 200, and 220 is discussing course content with others and asking questions to make sure that you fully understand new concepts. This is where TriBeta can help! TriBeta Tutors are students who have taken the full 180-220 series, been successful, and enjoy teaching. They can help you with course material & concepts, study habits, and test preparation! The study lounge also provides FREE snacks during tutoring hours.

Take advantage of this opportunity by dropping by the Study Lounge on the 4th Floor in Hitchcock.

We are here to help you Monday – Thursday from 3:30-6:30 p.m., no appointment necessary.

You can work with other Intro Biology students, or receive individualized help from our tutors who are always eager to help you understand. The lounge is located right above the HCK 3rd floor entrance.

If you have any questions, or have completed the series and are interested in tutoring, please contact Jess Hall at tribetatutoring@gmail.com.

BIO BOOK CLUB: The Thing with Feathers by Noah Strycker

Get Ready for Bio Book Club! Date and time TBD: look for posters with date.

We will choose a fiction or non-fiction book each quarter with a scientific thread, but also examines social, cultural, and environmental topics. Please feel free to send book recommendations to Sheryl Medrano at smedrano@uw.edu.

This winter we will read: The Thing with Feathers by Noah Strycker

The Thing with Feathers explores the astonishing homing abilities of pigeons, the good deeds of fairy-wrens, the influential flocking abilities of starlings, the deft artistry of bowerbirds, the extraordinary memories of nutcrackers, the lifelong loves of albatrosses, and other mysteries—revealing why birds do what they do, and offering a glimpse into our own nature.

Future book: Saving Tarboo Creek: One Family’s Quest to Heal the Land by Scott Freeman & Susan Leopold Freeman

UW FARM: Farming is Demanding but Rewarding. See Winter Quarter Schedule.

All are welcome to stop by and visit the Farm or volunteer during any of our volunteer hours but if you’ve never been to the UW Farm before, please begin by signing up to be a volunteer. This helps us track volunteers and insures you in case of injury.

REGULAR SCHEDULE FOR WINTER QTR: JAN 26-MAR 15

Shifts are three and four hours. Please arrive promptly for each shift. contacting the Farm manager is not required before arriving:

Tuesdays 12:30-3:30  Mercer Court  (Farm Team)
Wednesdays 12:30-3:30  CUH  (Farm Team)
Thursdays 12:30-3:30  Mercer Court  (Farm Team)
Saturdays 10am - 2pm  CUH  (Farm Team)

Our work day revolves around the seasons, planting and harvests for most of the year. Farm Team volunteer work involves weeding, transplanting, pruning, direct seeding and other tasks related to maintaining the farm’s produce production and management of perennial plants. For more information go to:
https://botanicgardens.uw.edu/center-for-urban-horticulture/gardens/uw-farm/volunteer/
LIJING MEI, LAB HELPER

What are your favorite parts of your job as lab helper? *Filling pipette tips is my favorite part because I can sit there and have inner peace.*

What major are you thinking about declaring? *I'm majoring in Environmental and Occupational Health right now.*

What is your all time favorite Biology subject? *Genetics, Mendel and his peas :)*

Other than Biology what academic subject would you like to study? *Material Science*

If you could take a vacation anywhere, where would you go? *Koh Samui (love the sunshine and food)*

CARLY BUSCH, TEACHING ASSOCIATE

What is the one piece of advice you would give students in your class? *One of my hopes for my students is that they can see themselves as scientists and start making connections to content outside of class.*

What is your favorite part of teaching? *Getting to know students, seeing them make connections, and have "lightbulb moments" are my favorite parts of teaching.*

What is your research background? *My first lab experience came in my Biology undergrad classes, and then spent some time in the Caribbean doing research on lemon sharks. I have also worked in a Genomics lab in Australia studying a pollination system between moths and a native plant in order to map their phylogenies and explore the co-evolution that has occurred in the system.*

What is your all time favorite Biology subject? *I LOVE marine ecology and learning about different symbiotic relationships.*

If you could take a vacation anywhere? *I would love to go to Thailand or Fiji.*

Is there a book/video that you would recommend to student outside of what there is in class. *Biology-related, The Immortal Life of Henrietta Lacks, and non-bio I would recommend Educated by Tara Westover.*

MICHELLE CASAD, BIOL350 INSTRUCTOR

What is the one piece of advice you would give students in your class? *We are learning what we already know in order to apply it to new and interesting problems. Learn the pathways in class but think about how and why a system can be changed.*

What is your favorite part of teaching? *I like the arc of the quarter. Being able to say at the end of the week that I have accomplished something - my students definitely know more on Friday than they did Monday morning. I find satisfaction and joy in that tangible result.*

What is your research background? *I have studied cardiovascular biology in the context of several model organisms. My favorite is Drosophila (fruit flies) because everyone is surprised that fruit flies have hearts!*

What is your all time favorite Biology subject? *I love genetics (thus the fruit fly research) in the context of human phenotypes and diseases.*

Is there a book/video that you would recommend to student outside of what there is in class? *Food: Delicious Science is a great combination of culinary wonderfulness and molecular details. You will be hungry after your watch it.*

KATIE SIEVERMAN, BIOL119 INSTRUCTOR

What is the one piece of advice you would give students in your class? *My general advice to students is to celebrate failure as a learning opportunity rather than fearing it.*

What is your favorite part of teaching? *I love teaching because I love empowering students to better understand themselves and the world around them.*

What is your research background? *After completing my B.S. in biochemistry, I started my research career as a developmental biologist studying how the dorsal-ventral body axis is established in the fruit fly embryo. I then transitioned to yeast genetics and molecular biology, where I studied how heterochromatic regions of the genome are affected by DNA transactions like homologous recombination.*

What is your all time favorite Biology subject? *My all-time favorite biology topic is transcriptional regulation, but these days I am super excited about research uncovering all the amazing ways that microbes interact with and impact the lives of macroscopic organisms.*

If you could take a vacation anywhere? *If I could take a vacation anywhere right now, I’d either hike the Annapurna Circuit in Nepal or do a 518-mile mountain bike tour called the Idaho Hot Springs Route.*

Is there a book/video that you would recommend to student outside of what there is in class? *“Sapiens” by Yuval Noah Harari - it’s a fascinating description of human evolution and history leading up to today.*
BIOLOGY APPAREL DAY: The First Wednesday of Every Month & get a Treat!

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 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 20 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 Winter Quarter are Jan 9, Feb 6 and Mar 6.
Mystery Plant: Guess & Win an 8 card set of Flowering Plants at the Greenhouse in Redmond!

This is the Winter Quarter mystery plant and it is blooming right now in the Medicinal Garden. Submit your best guess with your name and email into our Mystery Flower Box located within the third floor Atrium of Hitchcock Hall.

A drawing for the prize of a special, limited edition set of eight Biology note cards featuring flowers blooming Winter Quarter in the Greenhouse in Redmond will be after March 18.

Cards displayed in HCK 302.

QUESTIONS:
1) Genus species for this low growing plant with red berries?
2) What method is used to harvest these berries?

Mystery flower hints:
1. About 95% of the berries commercially grown are processed and used to make juice and sauce.
2. Good berries will bounce, bad berries don’t bounce.
3. People believe the juice helps with UTIs.

BIOLOGY STUDY AREA:
All Students are Welcome in Hitchcock 220

All students are welcome — not just Biology majors!
The BSA is open Monday - Friday 8:00 am - 5:00 pm

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

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 21 computers for general use, a Dawg-Print printer and one scanner.

Philip Park, Lyudmila Polevoy and Jessica Nguyen will be staffing the Biology Study Area and programming.

Advising Available
Biology Department
Walk-in Advising
Janet Germeraad
Jason Patterson • Sheryl Medrano
318 Hitchcock Hall
Mon-Fri, 9:00 am–12:00 pm
M, Tu, W, F, 1:00 pm– 4:00 pm, with Thurs 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 staff of Room 318. Advisors are: Jason Patterson, Janet Germeraad, & Sheryl Medrano. Staff: Julie Martinez.