Chair’s Corner

The biology program of study has the most majors in the College of Arts and Sciences. Understandably, this may sometimes make you feel less connected with your classmates. The biology department therefore, is doing what we can to encourage comradery and a sense of shared experience. The biology newsletter: The Beaker, is one such effort to keep you informed about opportunities and experiences that you can engage in to develop friendships and make connections to UP that can impact you for a lifetime.

In this issue of The Beaker, we describe multiple student experiences such as being a TA or working on course projects in Evolution, our Capstone course. We also highlight a couple of our faculty with a fun baby photo contest and a professor spotlight. We share an alum’s reflections on her research experiences as an undergraduate and how it directed her, and prepared her, for the Ph.D. she is currently pursuing. We are also using this issue to congratulate and feature some of our current student research collaborators for their participation in the MJ Murdock Charitable Trust Undergraduate Research Conference held this past November.

You should know that we have a welcoming faculty and helpful support staff that are here for you every step of the way. Regardless of your future career plans, you will find you have a home here in the biology department.

-Dr. Ahern-Rindell

Professor in the Spotlight

Dr. Engesser Cesar (Dr. EC) grew up in Huntington Beach, California, where she dreamed of becoming an orthopedic surgeon because of her love of exercise and interest in the way the body worked and moved. It wasn’t until she was halfway through her undergraduate career at the University of Oregon, earning a degree in Exercise and Movement Science and Psychology, while running track, that she realized teaching was her calling. After graduating from the University of Oregon, she attended the University of California, Irvine, and earned a teaching credential, and later earned her doctorate degree in Biology. Dr. EC has taught a variety of age groups, including middle school and high school. Before coming to the University of Portland, she taught for a couple of years in the Biology Department at Chapman University, and three years in the Chapman University Physical Therapy Department. It was at Chapman that Dr. EC realized she loved to work with the type of students that small universities attracted—ones that were generally excited and eager to learn and apply themselves, and that was ultimately one of the things that drew her to the University of Portland.

In her third-year at UP, Dr. EC has taught a variety of classes, from the Introductory
Biology course for nurses, to Anatomy and Physiology and their respective lab courses. In her classroom, Dr. EC likes to encourage interactive learning and small group discussions. She uses clicker questions and case studies, and hopes that her learning environment encourages better understanding of the material and long term retention. Above all, Dr. EC hopes that her courses teach students how to learn and what studying strategies work best for them, so that they can be successful in their future upper division courses and their career paths.

Guess That Baby Professor

Can you guess the Biology faculty who is shown in this photo? To record your guess, scan the QR code below, or visit https://up.campuslabs.com/engage/organization/bio. A prize winner will be chosen at random from those who guess correctly. You can also find the photo in person in the glass display case located in the stairway of Swindell’s Hall main entrance.
Evolution Course
By: Shannon Leffler

As some of you many know, the Evolution course (Bio 453) serves as the Capstone experience for biology majors. Every department must have a Capstone class that graduating seniors complete. The course is a way to track whether students are meeting various learning outcomes and whether they can demonstrate their knowledge and various skills on assignments and projects. The Evolution course also serves as the writing intensive upper division course that is required by the University. In the past, there have been multiple biology capstone projects and classes, from Evolution and Ecology, to 400-level internships and the senior thesis. But the Evolution course students complete today is a way of providing a shared, common experience for all biology majors. It gives them a chance to integrate and reflect on all that they have learned. It also provides a sense of comradery and continuity before graduates go their separate ways.

Throughout the course, students will engage in small group discussions, take a trip to the zoo, make videos about Darwin’s life and work, make PowerPoint presentations explaining adaptations driven by natural selection and sexual selection, look at variations among skulls from different species, and do PowerPoint presentations based on human evolution using the current primary literature. The course is designed to be rigorous and challenging giving students a chance to think through and apply their knowledge. Throughout the course, the aim is to help students with interests in different biological subdisciplines connect their past learning with an evolutionary lens. That may include students interested in: microbiology and the evolution of antibiotic resistance, ecology and how organisms are well adapted to their environment, or in anatomy recognizing comparable structures and descent from common ancestors. Besides being a course that encompasses many of the biology program’s learning outcomes, the course is also a perfect endpoint to biology student’s degrees and time at UP, as Theodosius Dobzhansky once stated, “Nothing in biology makes sense except in the light of evolution.”

Evolution Final Project Photos:
Fall 2018

By: Michael Gallagher, Ingrid Abel, and Maggie Conry

By: Erica Freitas, Zena Demapan, and Ellen Bonner
Murdock Conference Photos

Every year, UP students attend the Murdock Conference to present their research findings. Take a look at the photos below to see some fellow classmates!

Pictured: Jessica Karr and Sophia Boyd

Pictured: Adria Bowles and Dr. Wynne

Pictured: Cole Malibiran

Pictured: Allegra VanderWilde and Cole Malibiran
Teaching Assistant Recognition: McKenzie Hopfer
Immunology, Anatomy and Physiology
By: Shannon Leffler

McKenzie Hopfer, a senior biology major from Portland, Oregon, has been a TA for Anatomy, Physiology, and Immunology. McKenzie enjoys being a TA because she likes to work with students and instill confidence in them regarding their knowledge and abilities. McKenzie tries to let students think about and work through a question before answering it for them. She finds it rewarding for both herself and the students when they are able to answer their own questions. McKenzie particularly enjoys being a TA for Anatomy and Physiology, as she likes teaching students fun memorization tools and pneumonic devices. She likes to be a means of support for other students, as they sometimes feel more comfortable asking other students questions before asking a professor. Being a TA is a very interactive and hands-on job, which McKenzie really enjoys. In addition, she loves to be able to review material multiple times, as she feels she is learning new facts or things she didn’t know. After graduation, McKenzie hopes to either participate in the Fulbright Program where she would help teach English in Malaysia, or take a couple of years off to gain clinical and research experience before applying to medical school.

Biology Alumni: Where Are They Now?

On February 21st, from 6:30-8pm, the College of Arts and Science is hosting an Alumni/Student Mixer in the Bauccio Boardroom. This is a great opportunity for current students to meet and connect with successful UP Alumni. Alex Quackenbush (2015), is one Alumni that will be attending the event. Read about her journey at UP below, and make sure to RSVP https://up.campuslabs.com/engage/event/3178398

By: Alex Quackenbush

My name is Alex Quackenbush and I received a B.S. in biology and mathematics from UP in 2015. I am currently in my 4th year of my PhD studies at OHSU in the Molecular and Cell Biology program with a focus in Cancer Biology. I decided to pursue a PhD because I wanted to do research, continue to learn, and be in a position to have flexibility in career options (a PhD is required to teach biology in a tenure-track position at a university).

As a biology major, I took upper division courses in immunology and cancer biology. These two courses captivated my interest and I was left wanting to know more about the disciplines. This is a lesson that I would have liked to learn earlier: take note of what truly, actually interests you, whether it is in the classroom or elsewhere. This interest will be important in identifying
While at UP I had the opportunity to engage in undergraduate research with Dr. Ahern-Rindell in Biology and Dr. Highlander in Mathematics. I also had a summer internship at OHSU to perform full-time research. These research experiences were instrumental in my decision to pursue a PhD. I felt a strong affinity for research, and couldn’t imagine doing something different.

My relationships with mentors Dr. Ahern-Rindell and Dr. Highlander are likely the most important part of my undergraduate education. They are strong female role models for women in the STEM fields, which is especially encouraging in fields that are often male-dominated in the faculty ranks. Furthermore, the training and personal mentorship I received from my mentors helped me develop a foundation in the practice of science: methodology, ethics, and communication, which are invaluable in any career path but especially research. The opportunities presented by my mentors to travel to present my research at regional conferences was extremely rewarding. Although presenting to new people can cause a bit of anxiety, I absolutely recommend it if you have the opportunity. You are able to develop communication skills, meet peers from other schools, begin to build a network, and learn more about your interests. Looking back at my time at UP, I am so thankful for my mentors and the opportunities they provided me to do research, teach and tutor, and learn about academic institutions.

My advice for current students is to find a way to engage in undergraduate research, either at UP or externally at a research institution such as OHSU. A research experience will be valuable regardless of whether one intends to pursue research after graduation or not. At the very least, you will learn whether you like it or not and hopefully pick up some critical thinking skills along the way. At the best, you might stumble upon a lifelong career.

### Freshman Class Logo Contest

The Biology Department is hosting a logo contest for the class of 2022. All designs must:

- Be original artwork
- Include “University of Portland Biology Department”
- Only have three colors or less
- Be no larger than 8.5” x 11” in size
- Contain biology related material
- Have no inappropriate wording or images

To submit a design or ask further questions, contact Sarah Schmits at schmits@up.edu. The deadline is March 15th!

### Upcoming Events

- **Presentation by Dr. Joseph Quinn on “Translational Research in Parkinson’s and Alzheimer’s”, February 20th at 7:00pm in Shiley 319**
- **CAS Connect Alumni/ Student Mixer, February 21st from 6:30-8pm in the Bucio Boardroom**
- **Applications for Tri Beta, the National Biological Honor Society, are due Friday, March 1st**