Chair’s Corner

As another academic year comes to a close, we want to recognize some of the accomplishments of the biology graduating seniors. UP’s graduating class for 2018 consists of 1061 students, the largest class in our institution’s history, 15% of these students are graduating with biology degrees. Although Biology is but one department amongst 15 in the College of Arts and Sciences, we will be graduating the largest number of majors, second only to the School of Nursing (21%), who we also serve with many of the biology courses we offer. In this issue of the Beaker, you will see some of the contributions the biology majors made to our Founder’s Day of celebration with over 30 students participating in oral and poster presentations throughout the day. Our majors were also honored at the beginning of the day during the Senior Awards Breakfast with some of the top institutional and college accolades as well as Biology’s Outstanding Achievement Awards that the Faculty bestow on our seniors. We also highlight in this issue, what our department feels is one of the most important experiences we offer our majors, the occasions in which they engage in collaborative research with our faculty. It is through these experiential learning opportunities that our students become biologists and participate fully in the scientific process. During these shared efforts faculty and students form life-changing and often permanent bonds that best prepare them for their future career paths. We not only honor these students who make the additional effort to benefit from these occasions but, we wish to acknowledge the work of our faculty who make these meaningful and relevant experiences possible. Congratulations to the Biology class of 2018, we are very proud of you and inspired by you. We know that you will go on to make important contributions by helping to solve biological issues facing our world as scientists, and that you will also go on to serve your fellow human beings as educated, caring global citizens and lifetime learners.

Juggling Athletics and Academics: Highlighting Student Athlete Allegra VanderWilde by Halle Brady

As many STEM majors already know, they have a very time consuming major. In addition to preparing for classes, attending classes, and doing assigned work, STEM majors must prepare for and attend labs, do analyses, and attend outside lab hours. Many students also participate in research with faculty members during the school year and over the summer. If that doesn’t seem like a busy schedule, there are still a few students that play sports on top of this! Allegra VanderWilde is a student-athlete who somehow juggles it all.

Allegra is a sophomore Biology major with Spanish and Chemistry minors and is also on the pre-med track. In addition to her heavy class load, Allegra is also a part of the cross country and track teams. During the cross country season she runs the 5K and 6K, and during the track season she participates in the 1500m race. Student-athletes are limited to 20 hours of practice a week due to NCAA rules; however, these 20 hours do not account for warm ups, stretching, and other exercises athletes may do outside of the allotted team practice time. Allegra practices approximately three hours a day, six days a week. Despite Allegra’s busy schedule, she is still on time to graduate, and currently at junior status. Many athletes here at UP work very hard to keep on top of their academics, but few partake in research. Allegra has been accepted into the Provost’s Initiative Research Project. Only one other student-
athlete has accomplished this, and that happens to be Allegra’s older sister, Calli VanderWilde.

The Provost’s Initiative Research Project, as described by Allegra, is “A program that reaches out to younger students who don’t have much research experience.” This program was inaugurated in 2015 with the goal to provide more opportunities to undergraduates to obtain experiential learning. Only a select few are chosen every year to receive this grant. Allegra is currently working with Dr. Dyer, the University’s new developmental biologist, and two other students, Cole Malibrain and Kate Carpenter. She currently works on this research project on Mondays and Fridays and will continue her research over the summer. Their project involves looking at the effects of shear stress on coronary arteries and studying fetal alcoholism, using chicken embryos as their model organism. Students interested in all opportunities like this must be willing to commit a lot of time for an extended period. Allegra encourages students to take initiative and approach their professors about getting involved. Research projects like these are very time consuming and test the time management skills of students. However, these projects allow a student to apply all that they have learned. There is a learning curve in the lab, as one is using various techniques that are not necessarily taught in the classroom, and failure is a large part of conducting research. But understanding that is the case is one of the most important things about getting involved in research. Allegra stresses the importance of reaching out, not just for research but also in classes and office hours: “The hardest step is making that initial effort to reach out to a professor.”

Allegra hopes to continue this project until she graduates, and then go to medical school. Before graduation, she hopes to get this research published and present her findings at conferences. She loves to be in the lab and learn as much as possible. Being exposed to the heart constantly, Allegra has become very interested and amazed by it. Currently, she hopes to specialize in cardiology or pediatrics. Whether you see Allegra running around campus or in the lab, she will be looking forward to the next opportunity to learn more.

For more information about the Provost’s Initiative Research Project and application process follow this link here: https://www.up.edu/undergraduateresearch/provosts-initiative/index.html
Dr. Kenton has been a member of the University of Portland community for six years. Before coming to UP, he received his B.S from the University of Illinois and his Ph.D. from the University of Iowa—both in Microbiology. Following his Ph.D., he completed his Postdoctoral work at OHSU. Dr. Kenton came to UP as an adjunct and was hired as a tenure-track Assistant Professor three years later after a competitive national search. As an adjunct at UP, he taught Microbiology as well as Bio 203, Form and Function—a bio class for non-biology majors. Recently, Dr. Kenton received a M.J. Murdock Charitable Trust Grant.

The M.J. Murdock Charitable Trust gives grants to Science, Technology, Engineering, and Mathematics faculty all around the Pacific Northwest. The grant is to be used as a stepping stone, as two years of research must be completed before one is expected to apply for a national grant and subsequently receives the remaining money from Murdock for the third year of research. This grant has allowed Dr. Kenton to purchase some amazing materials and equipment for his research that otherwise would not be possible—including two specialized antibodies synthesized from his design. His research takes place predominantly over the summer with the help of several students. Their research involves looking at Vibrio vulnificus and the system that allows it to carry iron into the cell while fighting an infection. If this research were to be expanded in the future, their findings could contribute to the identification of a target site for drugs used to fight off infections.

Every year, students get to attend Murdock conferences to give oral or poster presentations on their research and observe all the other great research being done with the funding from the M.J. Murdock Charitable Trust. Dr. Kenton is very grateful and happy to have received this grant, as it allows him to expand his research efforts, involve students, and will help with his goal of receiving tenure in the future.

“This grant has advanced my research in ways that otherwise would not be possible.” —Dr. Kenton
Effects of Differentiation on Migratory Properties of Glial Progenitors  
Presenter: Rochelle Shih  
Faculty Sponsor: Dr. Susan Murray

Impact of Human Cadaver Dissection on the Undergraduate Study of Human Anatomy  
Presenters: George Apreotesi, Alina Bogachuk, Yen Bui, Erin Faloon, Natalie Fulton, Anthony Guiterrez, Nora Hendricks, Sarah Huang, Thomas McLaughlin, Goshina Meman, Alcia Romero, Madison Taitano, and Dylan White  
Faculty Sponsor: Dr. John White

Activation of the Non-canonical NF-κB Pathway by TNF Receptors in Human T Cell Subsets  
Presenter: Claire Kearney  
Faculty Sponsor: Dr. Susan Murray
Understanding the Functional Importance of Two Unknown Genes Within the TonB2 System of V. vulnificus
Presenters: Michael Berry and Haley Pfeifer
Faculty Sponsor: Dr. Ryan Kenton

Hostility Attitude & Prevalent Diabetes Among Black Adults: The Jackson Heart Study
Presenter: Tsikata Apenyo
Faculty Sponsor: Dr. Kyle Flann

Effects of Eutrophication in Estuarine Tidal Wetlands in Yaquina Bay, OR
Presenters: Madeline Henningsen, Grace Brennan, and Victoria Avalos
Faculty Sponsor: Dr. Christine Weilhoefer

Science and Ethics of Immunotherapy Clinical Research with Adults and Children
Presenters: Erin Faloon and Michael Gallagher
Faculty Sponsor: Dr. Susan Murray

Columbia River Fire’s Downstream Effects on Young Creek
Presenter: Elijah Ballantyne
Faculty Sponsor: Dr. Christine Weilhoefer
Biomolecular Target Identification of a Nerve Specific Fluorophore Using Novel Proteomics Methods for Nerve Sparing Radical Prostatectomy
Presenter: Broderick House
Faculty Sponsor: Dr. Susan Murray

Effects of Habitat Quality on Stress and Immunity in Wildfire
Presenter: Dru Martinez
Faculty Sponsor: Dr. Laurie Dizney

The Effects of Ecological Restoration on Biodiversity at Multiple Trophic Levels
Presenter: Rachael Aber
Faculty Sponsor: Dr. Laurie Dizney

Nematode Diversity and Soil Composition in Varying Habitat Types
Presenter: Elijah Waxman
Faculty Sponsor: Dr. Laurie Dizney
Design and Validation of a CRISPR Gene Editing Strategy in a Sheep Model Variant of GM1 Gangliosidosis
Presenter: Halle Brady
Faculty Sponsors: Dr. David Wynne and Dr. Amelia Ahern-Rindell

Ethical Issues Surrounding the Use of Human Remains in Research
Presenter: Raluca Gosman
Faculty Sponsor: Dr. Amelia Ahern-Rindell

Excavated Human Remains Give Insight into Geographical Origins
Presenter: Raluca Gosman
Faculty Sponsor: Dr. Amelia Ahern-Rindell

Senior Biology Award Winners

CAS Valedictorian of the 2018 graduating class, recipient of the first Outstanding Graduating Senior Undergraduate Research Award, and Blondel Carleton Award for Overall Highest Achievement in Biology
Rochelle Shih

The College of Arts and Sciences Dean’s Award and Marlene Moore Award for Academic Achievement in Biology
Raluca Gosman
Becky Houck Award for Exemplary Teaching, Mentoring, and Service in Biology
Haley Sizelove

Michael Snow Award for Research Excellence in Biology
Summer Henricksen

Seniors After Graduation
Many of our graduating seniors were accepted into very prestigious programs. Seniors after graduation will be continuing their schooling in public health, and various fields in medicine such as becoming a physician or physician’s assistant, or into dentistry, pharmacy, physical therapy, or optometry. Other seniors may be adding to their work experience in teaching out of the country, working in clinics and hospitals, or partaking in research internships. Here are just some plans a few of our graduating seniors shared with us:

- Summer Research Internship at the University of Washington’s Joint Institute for the Study of the Atmosphere and Ocean (JISAO)
- Master’s Degree programs in Public Health at OHSU, San Jose State, and the University of Texas
- Fulbright Scholarship to teach English in Malaysia for 2 years
- Assistantship from the Cultural Services of the French Government to teach English in France
- Research Assistantship and Scholarships to WSU-Vancouver for a Master’s Degree in Environmental Science
- Masters of Public Health/MBA dual degree program at University of Texas
- National Institutes of Health Post Baccalaureate Fellowship for research at an NIH Laboratory as part of an Intramural Research Training Award
- Physical Therapy programs at the University of Washington and George Fox
- OHSU’s Summer Internship Program at the Oregon Institute of Occupational Health Sciences
- Medical School programs at the University of Texas San Antonio and Duke