

# BIOLOGY DEPARTMENT ANNUAL NEWSLETTER 2020



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*Picture credit : Benjamin Miner*

## WWU Biology Students Jump into Work at Northwest Laboratory's COVID-19 Testing Facility

"With almost 300 confirmed cases of COVID-19 in Whatcom County, the need for greater testing capacity has grown in order to find and then treat those who have contracted the virus. Northwest Laboratory in Bellingham has stepped up to fill that need – along with a team of student workers from Western." Read the full Western Front article, [here](#).



*Western graduate students Madelyn Voelker and Ian Taylor get instruction from Northwest Labs lead molecular biologist Ryan Fortna, right. (WWU photo/ Hannah Gordon-Kirk)*

# Reflections from the Department Chair

Dear WWU Biology Alumni and Friends,

Greetings from Bellingham - I hope that you are all faring well despite the challenging times. As I write this, my four-year term as Department Chair is quickly coming to a close and I find myself reflecting on the past few years and thinking about how our department can help address the challenges facing our society. In late June, Ben Miner will be starting a term as Department Chair and we have been working closely together to ensure a smooth transition.

Given the social upheaval gripping our country, I am grateful to be in a department that is a recognized campus leader in promoting equity, inclusion, and diversity. In pushing for such change, we have regularly led and taken part in professional development opportunities, organized inclusivity-focused seminars, and engaged in conversations with student leaders to expand awareness and create more inclusive spaces and policies. It is my earnest hope that we continue to challenge ourselves to do better in shaping a future in which everyone has the opportunity to thrive.

Toward that end, this coming Fall we will launch a new policy for admission to the major, moving away from a decades-old policy that relied strictly on GPA. The policy will give us a much-needed way to manage enrollment and it will be substantially more inclusive in that it enables us to take into consideration the motivations, experiences, and challenges that are unique to each student.

In response to the global pandemic, our faculty, staff, and graduate TAs went to extraordinary lengths prior to the start of Spring Quarter to quickly revamp how we teach our courses and advise students in light of the University's sudden decision to move all courses and non-essential operations online.

A particular challenge that required nimble, imaginative rethinking was creating virtual experiences for our lab courses. I am immensely proud of how well we have adapted and it is clear that the experiences we gained in the process have positioned us for delivering outstanding online courses and advising this coming Summer and Fall.

Looking ahead, I am pleased to report that groundbreaking work has begun on a new Interdisciplinary Science Building that will be connected to the Biology Building via a skybridge. The new building will provide much-needed teaching lab space for courses in Biology, Chemistry, Environmental Science, and a new interdisciplinary major in Marine and Coastal Sciences. To see renditions of the building and a lengthier description of the project, see this site: <https://fdcb.wwu.edu/PW733-interdisciplinary-science-building>

Thank you very much for your continued interest in the Biology Department's growth and success. Please feel free to contact us if you have any questions or stop by when you next visit campus – we are always happy to hear from our alumni and friends!

With my best wishes to each of you,



A handwritten signature in black ink, appearing to read 'Merrill Peterson'.

Merrill Peterson,  
Professor and Chair

# Faculty Spotlight

## Lina Dahlberg

This past year, Lina Dahlberg received the Fulbright Scholarship and the American-Scandinavian Foundation grant.

Read on about Lina's plans for her research in Denmark below.



"The Fulbright Scholarship and the American-Scandinavian Foundation grant will support my research at the University of Copenhagen. I will be working in the laboratory of Dr. Lars Ellgaard to learn about the interaction between two types of enzymes that target misfolded proteins for destruction. Unfolded proteins do not function properly, or at all, and are a hazard for cells because they can aggregate and cause cellular dysfunction or death. I am particularly interested in how these enzymes function at the endoplasmic reticulum, where proteins that reside in cellular membranes are synthesized.

My research will allow us to design new models of protein degradation using the neurons of the microscopic worm, *C. elegans*. I will also be testing how cone snail toxins affect the neural function of *C. elegans* as a way to identify individual molecular targets for the huge variety of neurotoxins produced different species of cone snails. I will teach courses in cell biology as part of my Fulbright scholarship, and hope to collaborate with the University's Science Education department on an international Course-based Undergraduate Research Experience (CURE). An international CURE could introduce WWU students to Danish undergraduate researchers, and vice versa. I am also excited to bring my family to Denmark so that my kids can learn Danish and get to know their cousins better!"

*-Professor Dahlberg*

Image source: WWU Window Magazine:  
<http://window.wvu.edu/article/112165>

# New Professors



## Jim Cooper

Jim Cooper is a native of the Florida Gulf-Coast whose family originally moved to that area in the late 1700's upon receiving a land grant from the Spanish Crown. He received BS and MS degrees in Biology in 1991 and 2000 from the Florida State University. During the intervening years he performed science education outreach at FSU's Turkey Point Marine Lab. Dr. Cooper did his doctoral work at the University of Chicago and the Field Museum with Dr. Mark Westneat and received his Ph.D. in 2006.

As part of those studies he participated in multiple research and collecting expeditions to the Philippines, Australia, Palau and the Cape Verde Islands.

From 2007-2011 Prof. Cooper pursued post-doctoral research at Syracuse University studying the evolution, development and genetics of fishes with Dr. Craig Albertson. He began work as an assistant professor in biology at Washington State. Prof. Cooper is an evolutionary-developmental biologist whose research program integrates studies of fish feeding biomechanics with investigations of fish skull development. His broader research goal is to understand the factors that direct evolution down particular paths as organismal lineages diversify into different ecological niches. He is very excited to join both the biology department and Western's new Marine and Coastal Science program where he will pursue Evo-Devo studies of local fish species in the Salish Sea. His wife Dr. Geeta Sawh and their daughter Satya are as thrilled as he is be moving to Bellingham. Jim is an avid hiker, sea kayaker, mushroom forager and all around naturalist.

## John McDonald

John H. McDonald was appointed a Resarch Associate in the Biology Department in November 2019. He earned a B.S. in biological oceanography from the University of Washington, an M.S. in biological oceanography from Oregon State University, and a Ph.D. in ecology and evolution from Stony Brook University. He was a professor at the University of Delaware for 27 years before retiring and moving to Bellingham. While at Delaware, Dr. McDonald was chair of the biology department's graduate committee for nearly 20 years, and he is eager to use that experience to help Western students who are considering grad school in biological research. Students can email him for advice on whether to attend grad school and help for those preparing their grad school applications.



Continued on the next page →

Dr. McDonald is continuing his research on evolutionary genetics, with current projects on temperature-associated geographic variation at the gene for glucose-6-phosphate isomerase in multiple crustacean species, and simulations to compare statistical methods for using geographic variation to detect genes affected by selection. He is the author of the Handbook of Biological Statistics, a free, online textbook, and Myths of Human Genetics, and online resource that debunks most of the human characteristics (tongue rolling, attached earlobes, etc.) that are often used to teach genetics. When he is not doing science, Dr. McDonald enjoys bicycling and hiking. Having lived in Spokane Valley and Richland until he was 10 years old, he is very glad to be back in Washington.



## George Wilkinson

George Wilkinson joined the Department of Biology in 2019 as an NTT faculty member. A native of the Washington, DC suburbs, George attended the University of Maryland and received a BS in Biochemistry with an honors citation in Art History. George did his doctoral and postdoctoral work at UC San Francisco and in Germany, respectively, studying cellular aspects of nervous system development. George's current interests center around communicating science, especially to non-scientists.

Outside of Western, George enjoys distance running, hiking in the North Cascades, photography and travel.

**Also joining us as an instructor this spring quarter was Andrew Weitz who taught BIOL 400, Infectious Disease Dynamics.**

# Promotions



## Marion Brodhagen

Marion Brodhagen was promoted to Full Professor in the fall of 2019. Currently, Marion teaches Methods in Molecular Biology, Fundamentals of Microbiology, Microbiology Laboratory, and Host-Microbe Interactions. Her teaching won her a Foundational Annual Scholarship (2016) and the Academy Award from the Teaching-Learning Academy (2015). Marion has mentored numerous undergraduate researchers, master's students, graduate and undergraduate TAs, and interns.

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Her research focuses on problems of agriculture and food production; two main topics are: i) contamination of food crops with the fungal toxin aflatoxin, and natural plant products that can inhibit aflatoxin production; ii) the interaction of microorganisms with biodegradable plastics as they break down in soils. When she's not in the classroom or laboratory, she can be found hiking, dancing tango, paddling a sea kayak, reading, or floating above Samish Overlook beneath her paragliding wing



## Lina Dahlberg

Lina Dahlberg joined the Biology Department faculty at Western in 2014, and was promoted to Associate Professor in the Fall of 2019. Her research interests include Cell biology, Neurobiology, and Biochemistry. She has mentored and worked with two grad students, and numerous undergrad students during her time at WWU. Her mentoring, teaching and research has won her various awards, including the Peter J Elich Excellence in Teaching Award (2019) and the Diversity Achievement Award, which was shared with Drs. Regina Barber DeGraaff and Robin Kodner (2018).

Lina is the inaugural CSE Faculty Ambassador for the Biology Department, helping students, faculty, and staff, to engage in issues around advocacy, equity, and diversity in STEM. Lina teaches various introductory and advanced Cell and Molecular courses, along with the intensive laboratory research course Cell Biology Laboratory and a seminar in Molecular Mechanisms of Neurodevelopment. Starting January 2021, Dr. Dahlberg spend a year conducting research at the University of Copenhagen, working in the laboratory of Dr. Lars Ellgaard

## Lynn Pillitteri

Lynn Pillitteri joined the Biology Department in 2009 and was promoted to Full Professor in 2019. Her teaching focus is in Cell and Molecular Biology at the introductory and upper division. She also teaches a course in her specialty area of Plant Development, which focuses on digging into the current research being done to understand the amazing diversity of plants. Lynn has been active in trying to develop and implement student-centered teaching practices and earn ways to provide students with an equitable and open classroom climate.

Lynn's main research program focuses on specific structures on the epidermis of all land plants called stomata. These small structures play an important role in regulating water loss while allowing adequate gas exchange for photosynthesis. Students in her lab learn basic and advanced molecular approaches to identify new genes and pathways involved in the production of stomata as well as other plant structures. Her students have been authors on publications and present their work at local and national meetings.



## Dietmar Schwarz



Dietmar Schwarz joined the Biology Department in 2008 and was promoted to Full Professor in 2019. Dietmar teaches upper division courses in Genetics, Ecology, and Evolution. He has developed a new upper-division lab course, Sequence Analysis, that empowers students to conduct independent bioinformatic and evolutionary analyses. Using publicly available sequence data students experience the full research process from developing their question to synthesizing and presenting their results.

Dietmar's research combines a variety of approaches to answer basic questions in ecology and evolution that are relevant for solving applied problems in agriculture, fisheries, and conservation in the Pacific Northwest. One research focus is the potential of apple maggot flies, a non-native apple pest, to become a better invader of the arid interior Pacific Northwest by hybridizing with drought adapted native snowberry maggots. A second research focus is a collaboration with Alejandro Acevedo on exploring the foraging ecology of harbor seals using molecular tools. Recent advances in non-invasive sequencing technology using seal scat are allowing the Schwarz and Acevedo labs to describe how different harbor seal sexes and individuals impact culturally and economically important salmon in different ways.

## New Family Additions!

*Congratulations to the Wang and van Hees Families!*



The Wang Family welcomed baby Rosalind in January.



The van Hees Family welcomed baby Casper in May.

# Research News

The Pollard Lab attended the online Allied Genetics Conference (TGAC) organized by the Genetics Society of America from April 22nd-25th via Zoom. The TGAC Workshop Series was held May 7th - July 13th.



1st Row: Amy Williams (UG), Dan Pollard (PI), Tanner Thuet-Davenport (G),  
2nd Row: Garrett Strawn (UG), Benjamin Haagen (G), Krista Miller (UG),  
3rd Row: Gaea Turman (UG), Becca Yarbrough (UG), Sam Herr (UG).  
4th Row: Anastacia Wienecke (G), Erik Ehlers (UG)

"Attendees could join any of the available talks (8+ hrs/day for 5 days) via online Zoom links and attend live Q&A's the following week for any of hundreds of posters, each grouped into a variety of categories from model-organism-specific research to population genetics/genomics to keynote and annual award talks.

Recordings of each talk were available for several weeks afterwards for those who could not attend talks live. In-depth discussions during and after these talks were facilitated using the online tool Slack, also used for networking throughout the conference. Following the conference there were 10+ sponsored workshops. Some of these were for developing early-career skills such as grant writing, some were to facilitate subject knowledge and discussion, and several were for scientific communication and education development and networking."

*-Benjamin Haagen,  
Biology Grad Student*



Grad student, **Tanner Thuet** presented his research on "Mapping Genetic Variants Associated with Protein Abundance in Haploid Yeast" at the virtual Scholars Week in Spring Quarter 2020.

Find more in the abstract below.

"Understanding how genetic variation contributes to differences in protein expression is a central goal of cellular biology. Prior research in the Pollard Lab has identified a set of pheromone response genes that are differentially expressed between two closely related strains of yeast. The goal of the Pollard Lab was to find the DNA variation responsible for observed differences in protein abundance between two strains of yeast. As a first step toward identifying causal polymorphisms, we first characterise expression variation as cis-acting (allele-specific; typically located within the *GOI* locus) or trans-acting (strain-background-specific; typically located outside the *GOI* locus).

Using chimeric *GOI* fluorescent reporter cassettes and systematic allele swaps we find evidence of cis-acting protein level variation for the *Tos6* gene. Trans-acting genetic variants however require an additional experimental process prior to fine-mapping called Bulk Segregant Analysis (BSA) to detect locations elsewhere in the genome associated with variable protein abundance. Initial iterations of BSA experiments have identified 25 unique genomic loci associated with *FIG1* protein abundance at an FDR of 5%. We also find evidence of distinct QTLs acting at specific timepoints after pheromone exposure which illustrates the dynamic and complex nature of gene expression."

# Arellano Lab Cruise



This past March, the Arellano Lab—Assistant Professor Shawn Arellano, research associate Ahna Van Gaest, and a crew of 5 WWU undergraduates and 2 graduate students—boarded the R/V Atlantis, a 270-ft, 7 deck, research vessel out of the Woods Hole Oceanographic Institution. Our mission: a 4-week long exploration of deep-sea, methane-seeps in the Gulf of Mexico (GOM) and the Western Atlantic Margin (WAM), using the Human Occupied Vehicle Alvin. Methane seeps are naturally occurring areas where methane seeps up through the seafloor, providing energy to symbiotic animals like mussels and tubeworms—in other words, the animals essentially feed on methane gas! The overall project aims to understand how the drifting larvae of these animals connect deep-sea, methane-seep communities in both the GOM and WAM.

During the first two weeks of the research cruise, Biology majors Esmeralda Farias (Sr),

Laura Anthony (Sr), and Hailey Dearing (So), and Environmental Science majors Glenna Dyson (Sr) and Dexter Davis (Jr) participated in a cold-seep ecology course in the GOM. We held regular ship-board lectures about the history of oceanography, ecology of cold-seeps, deep-sea habitat modeling, writing for the public, and more. They also got to pursue their own research interests—including studying carnivorous snails, mussel larvae settling preferences, and wriggly snout worm movement—and gain firsthand experience with collection and care of seep animals, deploying research equipment on the seafloor, sorting collections of critters from the mysterious deep, and compiling dive highlight videos. Two undergrads (Laura and Hailey) even won the highly-coveted position diving inside Alvin, exploring depths from 500-2900 meters!



# Arellano Lab Cruise

At the end of the first leg, WWU grad students Tessa Beaver and Michelle McCarthy were ferried offshore to swap places with Arellano, Van Gaest, and WWU undergraduate team. The next two weeks would focus on exploration of WAM seeps off the coast of the eastern US. Once in the Atlantic, the team was almost immediately confronted with hurricane force winds and 18-foot waves that had most of the science crew at a standstill (and seasick!). Once the storm passed, the pressure was on to make up the lost time, but ultimately, they were able to accomplish all of our research goals.

A major aim of the research cruise was to collect broodstock of deep-sea animals to work with back at WWU's Shannon Point Marine Center. When we returned from the cruise, we expected to quickly build a self-contained seawater system to maintain these precious animals; to keep these mussels alive in an aquarium, they have to remain very cold and you don't add phytoplankton, you bubble pure methane into their water.

However, the end of the cruise coincided with the arrival of the pandemic, and the coolers full of mussels and snails returned to a very different working environment (and Bellingham!) from what we expected. It was impossible to quickly get the necessary supplies for the aquarium system, so we found ourselves with critically important mussels and no easy way to maintain them. Luckily, SPMC recently built a mobile, outdoor chilled aquarium system that was donated by the Kozloff Family Foundation (in honor of former SPMC visiting researcher and renowned invertebrate biologist Dr. Eugene Kozloff) and the Skagit Community foundation. We were able to re-purpose this system, which is meant for outreach events, to hold our mussels! Our animals are now happily feeding on methane at SPMC, as we all await the next steps in our research.

The project was funded by NSF grant OCE-1851286 and was part of a collaboration with researcher from University of Oregon and North Carolina State University.

*-Michelle McCarthy, Tessa Beaver,  
Glenna Dyson-Roberts & Shawn Arellano*



# Biology Scholarship/Award Recipients

## Scholarships

*Biology Alumni Fund*  
Grace Freeman

*Biology Department Tuition  
Waiver Scholars*  
Lucy Williams  
Alex Files  
Allison Yarbrough

*Biology Faculty Fellowship Fund*  
Hannah Fisher  
Laura Murray

*Declan Barron Memorial  
Scholarship*  
Darmon Ghanbari  
Annalisa Stewart

*Frances and Alfred Baker  
Memorial Scholarship*  
Alex Files  
Evangeline Schmitt

*Hodgson Family Scholarships*  
Zoe Gustafson  
Gabe Santana  
Nina Scruton

*Rathmann Family Foundation  
Scholarships*  
Allison Yarbrough

*Robert L. Hamilton Family  
Graduate Fellowship in Science*  
Grace Freeman  
Benjamin Haggren

*Ross Undergraduate  
Scholarship*  
Jeremy Johnson

## Awards

*Graduate School Outstanding  
Graduate Award*  
Jake Lawlor

*Outstanding Graduating  
Senior Award*  
Alik Valdes

*Biology Undergraduate  
Research Award*  
Darby Finnegan

*Biology Outstanding Graduate  
Student Research Award*  
Jake Lawlor

*Biology Outstanding Graduate  
Teaching Assistant Award*  
Tanner Thuet-Davenport  
Anastacia Wienecke  
Hannah Fisher  
Laura Murray

# Department Graduates



## Graduate Students

### Summer 2019

Katie Mills-Orcutt - Biology MESP  
Christina Turner - Biology

### Fall 2019

Jake Lawlor - Biology MESP

### Winter 2020

Holly Flann - Biology  
Lilja Strang - Biology

### Spring 2020

Lillian Kuehl - Biology MESP  
Samantha Neff - Biology  
Micaela Pribic - Biology

## Undergraduate Students

### Summer 2019

#### BA Biology

Amanda Fabrizi

#### BS General Biology

Sawyer Paeth

#### Ecology, Evolution and Organismal Biology

Lily Raymond

#### BS Marine Biology

Kailee Hickey

#### BS Molecular and Cell

Ariel Garcia Jazmyne McQualter  
Brandon Henderson Jade Stair  
Bailey McCurdy Diane Vu

#### BA Biology/Anthropology

Shawn Luke

#### BS Biology/Anthropology

Melanie Mortensen  
Corianne Rarrick  
Rosalee Schnitzer

### Fall 2019

#### BA Biology

Lauren Carson  
Brooke Hernandez  
Erin Dahlman-Oeth  
Hayden Willis

#### BS General Biology

Delaney Anderson  
Dillon Brownell  
Davin Hoover  
Kevin Moralda  
Samuel Rice  
Andrew Stevens

#### Ecology, Evolution and Organismal Biology

Jacob Irwin  
Tracy Melville

#### BS Marine Biology

Kyle Bailey Amanda Kunz  
Zachary Gregory Talia Lawrence  
Jiho Kim Samantha Stuefen

#### BS Molecular and Cell

Nicolas Carter Melissa Oueldescheikh  
Hannah Halstead Abigail Poston  
John Milodragovich Elena Smith  
Brook Moore Gaea Turman

#### BA Biology/Anthropology

Miranda Li

#### BS Secondary Teaching

Rachel Kearney

#### BS Biology/Math

Lindsay Heimerl  
Chrisn Horton

#### BS Biology/Anthropology

Daton Cabrera Kasey Hiblar  
Kristin Connolly William Lewis  
Jamie Crawford Kelley Maccoy  
Emily Edwards



# Department Graduates

## Winter 2020

### BA Biology

Noora Monghate  
Tessa O'Doherty  
Elizabeth Wolcott

### BS General Biology

Tiffany Anderson Nina-Tuyen Tran  
Maraya Dieguez Maddelyn Wade  
Margot Posey

### Ecology, Evolution and Organismal Biology

Jay Owens  
Jazmen Yoder

### BS Marine Biology

Kaitlin Caylor

### BS Molecular and Cell

Kenric Aalund-Nelson Megan Kelly  
Palena Datskiy Kerry Roberts-Nygren  
Lauren Fountain Alexa Suyama  
Autumn Harding Falena Walker  
Sydney Jarvis Zoe Zywiak

### BS Biology/Anthropology

Blake Nixon  
Eveleen Reddy

### BS Secondary Teaching

Heino Hulsey-Vincent

### BS Biology/Math

Levi Heuberger-Yearian

## Spring 2020

### BA Biology

Brooklyn Bartelson  
Emily Bottemiller  
Willis Jackson  
Jennifer Kwong  
Alexandra Ritter  
Shae Simpson

### BS General Biology

Ian Barrie Genisis Kommavongsa  
Petra Dubekova Jacqueline Kremer  
Sierra Fries Lara Lehnhoff  
Hailey Heller Isabella Miller  
Aaron Helms Kellie Roscoe  
Camille Ibsen  
Ashley Klaszky

### Ecology, Evolution and Organismal Biology

Dakota Adams Lydia Johnson  
Carlos Becerra-Guillen Ellis Kenady  
Barbara Bevacqua Aundrea Koger  
Mariana Brandt Samantha Loo  
Benjamin Hayes Riley Marcus  
Angela Heggen Madeline Mikles  
Paige Jacobsen Ryssa Parks  
Jeffrey Jasper Grace Peyerwold

### BS Marine Biology

Hannah Adams Darby Finnegan  
Laura Anthony Rain Freeman  
Jacob Barton Jakob Hindman  
Emily Bjornsgard Graham Humphries  
Katrina Bray Maren Stratton  
Esmeralda Farias Molly Sutton

### BS Molecular and Cell

John Adams-Oldfather Zakary Landers  
Neriah Alvinez Tyson Letham  
Laura Balbiani Mikaela Mankowski  
Lindsey Barnes Cassandra McHugh  
Chloe Bristow Megan Morris  
Alexandria Brown Elena Munroe  
Juliet Carson Liam O'Rourke  
Meleri Cummins Mckenzie Oliver  
Victoria Dinh Danielle Packard  
Glen Drake Jaykish Patel  
Liam Field Joshua Priest  
Wesley Gomersall Julianna Rose  
Alexis Habib Jesika Smith  
Riley Haner Sydnie Thompson  
Alaida Hentzel Brandy Tuesley  
Alexander Hoag Cameron Unks  
Ryan Kelly Alik Valdes  
Madison King Faith Verburg  
Sam Klassen Elizabeth Walsh

### BA Biology/Anthropology

Hannah Armantrout  
Porter McMichael  
Preetpaul Raj  
Emma Richards

### BS Secondary Teaching

Amy Frank  
Dane Hannum  
Emma Kentch

### BS Biology/Anthropology

Elizabeth Barber Shearyna Labasan  
Coby Flagg Maverick Larkin  
Trajan Gering Jenna Melton  
Antonia Goldman Mikaela Miller  
Tristen Hansen Livia Santos  
Ankat Kaur Jessica Warner  
Dylan Kripal

### BS Biology/Math

Ingrid Jennings  
Tess Thackray  
Daven Tjoa



# CONGRATS CLASS OF 2020!

# Alumni Spotlight

## Jade Stair

Research Technition, Brian Kraemer Lab

### Getting Started

I graduated WWU with my degree in Biology (Cellular and Molecular Emphasis) in Summer 2019. After graduation, I immediately started searching for research/lab tech jobs in the Seattle area. For several months I wasn't having much success, but earlier this year my former professor/PI Dr. Lina Dahlberg notified me of an opening for a research technician in the Brian Kraemer lab in Seattle. Their research was somewhat similar to Lina's and I really enjoyed my time in her lab, so I decided to apply and was absolutely thrilled when I was offered the position.



### The Kraemer Lab

The Kraemer lab studies molecular mechanisms underlying neurodegenerative diseases such as Alzheimer's Disease and Amyotrophic Lateral Sclerosis (ALS). We mostly work with the model organisms *C. elegans* and mice, but some of us also work with cells or brain tissue samples. The majority of our research centers around the proteins Tau and TDP-43, which have been known to contribute to neurodegenerative disease progression.

### Jade's Experience

I mostly assist other lab members with their projects (which usually includes maintaining *C. elegans* strains, PCR, and western blotting), but I've also been able to work on some smaller projects on my own. I've only been working in the Kraemer lab for about three months now, but I've already learned so much about their research and have gotten to perform experiments I've never done before. I was hired just as the Coronavirus was making its way towards Seattle, so everyone's work schedules (including mine) have been anything but normal. Thankfully, everyone in the lab has been so friendly and helpful and we're all doing our best to keep things running smoothly.

I feel very lucky to not only be able to keep working during the pandemic, but also for having the opportunity to be doing exciting scientific research with such wonderful people! I'm so grateful for Lina's continued help and support as well. I'm not sure if I'd have this job without her assistance! For me, this is an ideal first job straight out of college. Not only will I be able to help contribute to important scientific research, but it's also a great way to gain valuable research experience before heading to graduate school.

# Biology Endowments

Of particular note this year is the establishment of two new endowments: the Ron Heimark Biology Scholarship and the Greenberg-Harwood Professorship in Biology.

## Greenberg-Harwood Professorship in Biology

Dr. Peter Greenberg and Dr. Caroline Harwood made a bequest commitment to establish an endowment for The Greenberg-Harwood Professorship in Biology, which will provide program and research support as well as conference and travel funds to an outstanding professor in Biology.

A bit about the donors, from the endowment description:

*"Professor Greenberg received a BA in Biology from Western in 1970. After subsequent graduate and postdoctoral work he went on to a long career as a microbiology professor at Cornell University, the University of Iowa, and the University of Washington. His research career centered on bacterial communication and he is known as the founding father of the fields of quorum sensing and sociomicrobiology. His work was recognized by election as a Fellow of the National Academy of Science and the American Academy of Arts and Sciences. He is the 2015 Shaw Prize in Life Sciences Laureate. He attributes his success to the foundation in general biology he was given at Western and to his instructors and mentors. Professors Harwood and Greenberg met in graduate school and were married in 1974. Professor Harwood is also an elected Fellow of the National Academy of Sciences. This gift acknowledges her appreciation of Western 'sending' Dr. Greenberg her way."*

## Ron Heimark Biology Scholarship

Dr. Ronald Lee Heimark established the Ronald Heimark Biology Scholarship, which will provide scholarships to Biology students with outstanding academic merit and research achievement.

A bit about the donor, from the endowment description:

*"Ronald Heimark is professor of Surgery and Cancer Biology at the College of Medicine at the University of Arizona and is also the Vice Chair for Surgical Research. His research laboratory has made several fundamental discoveries in understanding the mechanisms of metastasis in prostate and pancreatic cancer. After graduation from Western, Ron went to University of California at Davis and received his PhD in Biochemistry. He returned to Washington to gain experience as a Postdoctoral fellow at the University of Washington in the departments of Biochemistry and Pathology. Ron was a member of the group of initial researchers along with senior leadership to establish the biotechnology company ICOS Corporation in Bothell Washington. This group went on to develop Cialis® as their major product, and had a number of other discoveries in the pipeline. Over his 25 years at the University of Arizona, he has been a faculty member of three interdepartmental graduate programs: The Cancer Biology Program; Physiological Sciences Program and the Biomedical Engineering Program. During this time, Ron has been involved in the training of numerous undergraduate, graduate and medical students, residents and postdoctoral fellows, who are now clinicians and researchers across the US. He has published nearly 70 manuscripts and book chapters. In addition, he holds one patent on glaucoma therapeutics and is working on a second one for detection of lethal prostate cancer. He was encouraged by a WWU Biology Department faculty member to apply to graduate school. This is part of his motivation to support STEM education at Western Washington University."*

Many of our efforts to offer a first-rate educational experience require financial backing from the state, from private foundations, and from individual donors. We are extremely grateful to the many people who have contributed donations this past year. Such donations have provided many valuable experiences and opportunities for our students, including:

- Materials, supplies, and instrumentation for undergraduate and graduate research
- Funds to help undergraduate and graduate students attend scientific meetings
- A new server to support bioinformatics and computational biology in teaching and research
- Support for the Biology Seminar Program to bring in top-notch speakers
- Undergraduate and Graduate Scholarships and Awards

Click here to donate to  
WWU Biology

The faculty in the College of Science and Engineering has established a fund to provide support for Black students in science, technology, engineering, and mathematics (STEM). Black people face unique and systemic barriers to succeeding in STEM, contributing to historical and ongoing underrepresentation in undergraduate and graduate STEM programs, and in STEM careers. The impetus for the fund is the 2020 protests in support of the Black Lives Matter movement. Through this scholarship we can, together, make an impact on the educational goals of Black students at WWU for generations to come.

Our initial goal is to raise \$25,000 to establish an endowment fund that will support the scholastic and research aspirations of Black undergraduate and graduate students. Please join us in making a lasting impact for our students. Together we can make a difference.

The donation page can be found [here](#)

If you are interested in learning more about ways to continue to support the mission of Biology or Western, see <http://www.foundation.wvu.edu>.

#### Credits:

Designer - Hailey Rieman  
Editor - Merrill Peterson