



PLU

Department of Geosciences!

2019 Newsletter

CONGRATULATIONS TO OUR SENIORS! LEARN MORE ON PAGE 8!

IN THIS ISSUE

Hello PLU Geosciences fans! 2019 almost slipped by without a newsletter from us! Phew! We've been thinking about our wide-ranging community out there – we've just been too busy to drop you a line. Well, here you go! A full 2019 update – it has been a busy year.

In **January 2019**, Dr. Alex Lechler led his first ever J-term study away trip to National Parks in the American Southwest! See more on page 3!

In **March**, Peter and Alex led a group of fearless Geosciences students on our sometimes-annual spring field trip! Photos and a testimonial on pages 5-6!

In **April**, we threw a big party for our two retiring faculty – Dr. Duncan Foley and Dr. Jill Whitman. See photos on page 4!

We also graduated yet another impressive group of Geosciences seniors in **May** – featured in the photo above! See page 8 for more photos and a list of their senior capstone projects!

While some may assume that faculty sit around with their feet up in the summer time – we don't! See page 2 for insight into our **summer activities**!

Fall semester brought plenty of excitement and change including GEOCLUB activities, and GSA! We also welcomed two new faculty to campus – learn more about our fall excitement on page 5!

Thanks for your patience with this just-in-time installment of our trying-to-be-annual newsletter. The newsletter editor promises to be more on top of it in 2020!

In the meantime – considering getting more involved in PLU Geosciences!

Interested in supporting our program? We welcome a donation to the Brian Lowes Endowed Field Geology Fund! See page 9 for more info.

Stay in touch! Follow us on Twitter for news, opportunities, and updates: [@PLUGeosciences](https://twitter.com/PLUGeosciences)

Join the PLU Geosciences and Earth Sciences Alumni Facebook group to keep in touch with faculty and alums from the department:
<https://www.facebook.com/groups/60839492180/>



Congrats Duncan and Jill!

We had a wonderful career celebration for Drs. Whitman and Foley – thanks to all who attended!

Page 4



Field Trip to Moab!

Twenty-six students completed a department tradition – GEOS 401!

Pages 5- 6

FACULTY UPDATES – SUMMER 2019!

What's in a faculty summer?

Dr. Peter Davis



Peter is still department chair (Thanks, Peter!) and still the proud father of Oliver! In addition to all of Peter's usual exciting engagements (see pages 5 and 6), he spends his summers keeping up with chair responsibilities, and has a long list of home improvement tasks which sometimes involve building a new wing for his house! Peter is excited to mentor undergraduate researchers again in summer 2020 – stay tuned for updates! This fall you could find Peter teaching geological mapping, and our capstone seminar course!

Dr. Rose McKenney



Most summers Rose stays busy preparing to teach her fall semester classes (this fall - Geomorphology!), and growing some fabulous tomatoes and other garden produce – for which her colleagues are grateful. She also maintains a home jewelry studio and takes jewelry-making classes! Check in with Rose to find out when her next trunk show is! This fall, Rose taught a course for Environmental Studies, in addition to Geomorphology!

Dr. Claire Todd



Claire feels incredibly lucky to spend most summers on Mount Rainier studying the diverse and dynamic glacial environments in our backyard! Summer 2019 was no different – she worked with four Geosciences majors, and looks forward to continuing her research in 2020, funded in part by a newly awarded NASA grant!

Dr. Alex Lechler



This past summer Alex focused his time and attention on putting together and submitting his tenure package! He also spent a few days working in the IsoLab at UW continuing to collect paleo-temperature data for research projects in the Palouse and a new study region in Summer Lake, OR. Both of these projects have been the focus of recent PLU Summer Undergraduate Researchers (Sam Couch - class of '19, Orion Schomber - class of '20). Alex also sets aside time for hiking, camping, and general exploration of the mountains of the Pacific Northwest! This fall, you could find Dr. Lechler teaching Oceanography and our gateway course, GEOS 201 Geologic Principles!

Special Update from Dr. Jill Whitman!



After 31 years at PLU, my 2019 summer was a bit different! Once I finished grading final exams and writing end of the year reports, I emptied my office and began phased retirement. It is a bittersweet time for me... I have loved my time at PLU, but it is time to move on and I am looking forward to spending time with my family, traveling, and enjoying a slightly slower pace of life!

It has been a privilege to be a part of PLU and the Geosciences Department – to be at a place where we have the opportunity to get to know our students individually, and to follow your lives after you graduate. You have shaped me in more ways than you will ever know – by inspiring, challenging, supporting, entertaining, caring about, and teaching me. You have provided me with a lifetime of education. One of the things I will miss the most in my retirement from teaching is the daily interaction with students – it has been an important thread throughout the past 31 years – in classes, advising, program activities, field trips, casual interactions, and so much more. Thank you!!

Please stay in touch – with PLU, with the department, and with me! I would love to get updates about your lives after PLU. I am on Facebook, and I will continue to use my PLU email address. As for my summers, I spend them at our family cottage on an island in Maine, feet up on the porch railing, enjoying the view, and relaxing! If you are connected to me on Facebook, you will know when that happens by my annual posting!

First Year Experience Program - in the National Parks!

By Dr. Alex Lechler

During J-Term 2019, I led a new PLU domestic study-away offering that was a spin on our long-standing FYEP 190 Geology of the National Parks class. This study-away course took the concepts and goals of the standard, on-campus National Parks course out into the field where students had the chance to experience these majestic Park lands firsthand. The trip started and ended with flights to/from Las Vegas, Nevada. In Vegas, myself, invaluable Program Assistant Aileen Bacon (PLU Advancement), and 10 eager PLU first-years piled into two Chevy Suburbans and embarked on a 10-day road trip through the Desert Southwest. The first visit was paid to Zion National Park in southwest Utah where students investigated and asked questions about Navajo Sandstone cross-bedding and took in spectacular views of Zion Canyon from the lower (safer!) portions of the Angel's Landing trail. A 1-day delay due to a case of food poisoning I got from a veggie burger(!) didn't dampen spirits too much, but a January snowstorm as we arrived at the Grand Canyon did place some limitations on where we were able to adventure in the National Park (NOTE: it DOES snow in parts of Arizona in January!).

The group escaped into some sought after sunshine (and temperatures in the 70's!) as we drove from the Grand Canyon to Joshua Tree National Park. Once there, the class took in a beautiful desert sunrise (Figure 1) and enjoyed a few hours of rock hopping around and through some of the infamous Joshua Tree granite boulders before taking a hike up the Ryan Mountain trail to survey the landscape and come to the realization we were standing in the magma chamber of an ancient subduction zone volcano. A couple days rest and exploration at the quaint and quirky Desert Studies Center in Zzyzx, CA (that is NOT a misspelling!) got the group fully into the desert mindset before we wrapped our trip in Death Valley National Park. The class explored playas 282 feet below sea level before wrapping the day with a jaunt through Mesquite Flat sand dunes and a group photo at Zabriskie Point (Figure 2). We returned to Las Vegas for our flight back to SeaTac and wrapped the class up with student group projects that brought a fabulous J-Term course experience to a close.

All in all, the class was a success and one I look forward to offering to new batches of PLU first-years in the years to come! As I and the students came to appreciate through this study away experience, there is no better way to study how our earth works than seeing, feeling, and sweating through the real-world environments themselves. Plus, an escape from January weather of the Pacific Northwest is not a bad way to spend a J-Term!



Figure 1 – Joshua Tree at sunrise (Photo: Lechler!)



Figure 2 – PLU Group at Zabriskie Point! (Photo: Lechler!)

Career Celebration for Dr. Jill Whitman & Dr. Duncan Foley!!



Steve Benham, Duncan Foley, Jim Matthias ('94), Annette Cornelius ('98), Emily Inkpen ('95), Danielle Lester Lund ('96), Jill Whitman, Mark Vinciguerra ('95), Lonna Frans-Bachman ('95), Andy Glandon ('97) (Image credit: John Froschauer)



Savannah Luna ('17) shares her memories of Jill and Duncan (photo John Froschauer)



Dr. Whitman with 2015 and 2016 grads! (photo courtesy of an alum – thank you!)



Thanks to all the alums who showed – we had a packed house! (photo John Froschauer)



Jill and Duncan with Jill's son David! (photo John Froschauer)



Scott Foss '91 who is now a senior paleontologist with the Bureau of Land Management (photo John Froschauer)



Maria Parenti ('10) chatting with Jill! (photo John Froschauer)

Life as our Geosciences Tutor!

By Orion Schomber, '20

2018-19 was my first year being the geoscience tutor for academic assistance. Throughout the year, I had the opportunity to work with students to help them in geoscience classes. Beyond standard tutoring hours, I was also able to create and hold various workshops on campus that focused on effective studying methods, especially in the sciences. I think that my favorite part of tutoring is getting to know the students. I was able to witness many changes in students' confidence through the semester, which was wonderful to be a part of. Obviously, I learned a lot during my first year. I know more about my teaching style, including where it needs improvement (time to study up on certain subjects again), and I am looking forward to further working with PLU faculty and students to create new and better ways to help students succeed. I am definitely excited to continue working on these relationships so that tutoring can become even more accessible for the students this year.

Field Trip: Perspective from our Chair!

By Dr. Peter Davis!

Our celebrated Spring Break field trip took 26 students and two instructors to the Moab region of the desert southwest for several days of observing and mapping structures in the field. Fun was had by all when vans became trapped in sandy washes. Mind you trapped while being driven by the instructors. Spirits remained high as destinations and pathways changed accordingly, and as they do when you do fieldwork. Students were the center of the show as they worked collectively to more or less run the camp and self-organize the grand tourism day within Arches National Monument. I'd like to ask you to focus on the picture below that was taken in the morning that we started the long trek back to campus. As the viewer and most likely a former member of this department, you may see in their faces evidence of the big step forward that our spring break field trip provides for students along the process to becoming a geologist. This is why we exist as a department. Alternately, the look on their faces may also be due to bright sunlight. Overall, I declare this year to be a success!



BRIEF UPDATES

Geoclub!



Geoclub is back in action, led by club President Orion Schomber! Geoclub has been increasing their presence around campus through tabling, stickers, and through a new Facebook page.

Find us by searching for PLU Geoclub!

PLU @ GSA!



Peter was lucky enough to run into Geosciences alums Riley Swanson ('15) and Aaron Steelquist ('14) at GSA in Phoenix, AZ this past September! Riley is a Master's student at Northern Arizona University, and Aaron is a PhD student at Stanford University!

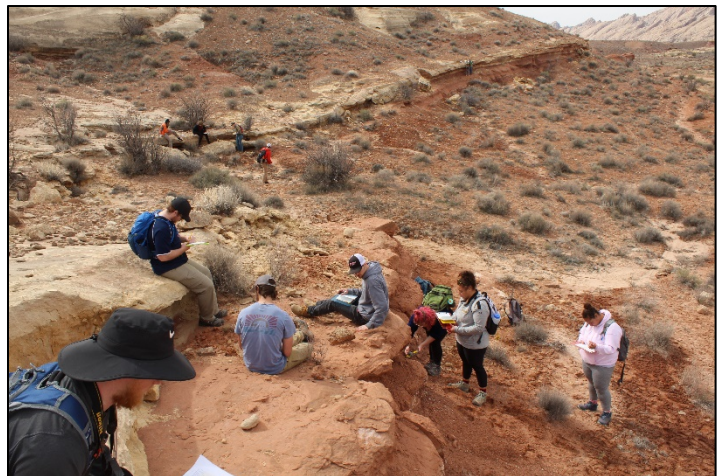
Congrats Aaron and Riley!
Are you planning to head to GSA in Montreal in 2020? Let us know!

GEOS 401 - Field Trip - The Student Perspective!

By Isabel LaRue ('20)

This spring break, I had the pleasure of accompanying a bunch of wild geoscience majors on a cross country adventure to Utah. We spent way too much time together in tiny vans, hiked through the desert in the heat of the day, pretended we were asleep when we were in fact freezing all night, rescued BOTH Peter and Alex when they got the vans stuck, and most importantly, made incredible friendships founded upon geeking out about some rocks (and complaining about all those other things that happened...). Coming from a relatively small town where I knew far too much about the people I graduated with, it was a strange experience being at PLU where I barely knew the names of the people next to me in some of my classes. The geosciences department really solved that problem for me by taking me on a camping trip with all my classmates, and I am honestly so grateful for it. I am one of the few people I know who can say they are genuinely excited for capstone, if nothing else than because I get to hang out with all the cool people who I went to Utah with (well, half of them).

Aside from having an incredible time with the people on this trip, I also got to see some insane geology and actually learn a thing or two. I had this moment in Arches national park, where one of the professors was explaining something to me that I swear Peter had been talking about in class all semester, and for the first time in months it made sense to me. Seeing it in person really made all the difference, and I suddenly felt that all the hours in vans might have been worth it. That feeling went away quickly when we got back in the vans to drive home, I must admit, but at least it was there! Actually, all the days that we were actually doing stuff in Utah were really insane. The geology there was so clear and easy to see, I felt that I might actually be able to understand and appreciate my major, which is a huge deal for an indecisive person who kept changing their major. The parks and field mapping experience were really valuable, as well as being fun! I am happy to have found the geosciences department and have traversed across the country with all my fellow geologists



All photos courtesy of Isabel LaRue! ('20)

New Visiting Faculty – Dr. Sarah Harbert!



I'm a tectonic geomorphologist, and my research interests relate to how landscapes respond to tectonics at scales from individual river channels to entire mountain ranges. I went to college at the University of Oregon and just finished my PhD at the University of Washington, where my research focused on the influence of strike-slip and oblique faults on the landscape. In one project, I used a numerical landscape evolution model to simulate the effects that a strike-slip fault has on the rivers that it intersects. As the fault slips, it drags, offsets and lengthens the rivers, but the rivers "fight back" through the process of stream capture, or diversion of drainage direction. My research found that faults and rivers are often locked in a stalemate in which rivers can be offset approximately as far as the distance to their neighbor, but longer offsets are quite rare. Much of my PhD research has used a technique called low-temperature thermochronology, a dating technique that reveals histories of erosion and rock

uplift. I've used this technique to study the Marlborough Fault System on the south island of New Zealand. This strike-slip fault system has complex origins - some have had a past history as Miocene thrust faults, while others developed later to accommodate changing plate motions.

I'm also very interested in tectonic geomorphology through quantitative landscape analysis, looking at things like patterns of stream channel steepness to back out tectonic information. I'm currently working on a project to learn about tectonic uplift of the southern Oregon coast range through the stream channels there. This is a subject I love teaching, because it combines fluvial and hillslope geomorphology over greater time and space. It's also a great way to extend GIS/geospatial skills and thinking. I also like teaching anything related to the geology of the Pacific Northwest or Western North America in general, helping students understand the geology in their own backyard.

Visiting Assistant Professor – Dr. Franklin Graham!



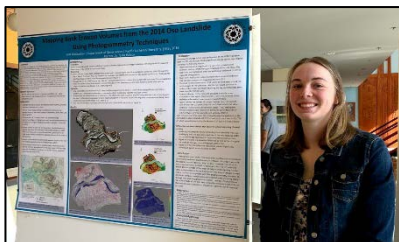
I am an American geographer who has conducted extensive development and ethnographic work with pastoral groups across Africa for over eight years. These origins date back to 1997, when I was a volunteer case worker with African refugees at the DC Refugee Center, Washington, USA. I joined Peace Corps Mauritania, serving in the northern Adrar Region from 1999 to 2001. I worked in the domain of small enterprise development, health and agro-forestry assisting displaced and sedentarized herders. It was during this experience that I became fluent in French and Arabic, languages that assisted my doctorate studies later. During my Ph.D. candidacy at West Virginia University, Morgantown, USA, I worked with Dr. Brent McCusker and earned a National Science Foundation grant to study food security among pastoralists in northern Mali and Niger, 2006 - 2009.

I defended and completed my dissertation entitled « Contests Over Pastoralism in the southern Sahara and northern Sahel, graduating in May 2011. Since receiving my doctorate I have interviewed clandestine migrants at the Harmondsworth Detention Centre in the United Kingdom, some of whom were African and facing difficulties in either separating from their families or alienation in Europe. In 2012, I joined an ethno-medicine research team sponsored by Doctors without Borders in the Rajasthan Province, India. Here, I was a co-investigator conducting ethnographical fieldwork with traditional healers and apothecary owners to understand their use of local plants. With the financial support of a private consulting firm, Double Gemini Consulting, I was the principal investigator of dual-faceted research project looking at socio-economic changes and ethno-botanical uses of local plants among pastoral groups in the Western Sahara (Morocco) and Mauritania in 2013. Since my doctorate studies to present, I publish in peer-reviewed journals, including Human Geography and the Review of African Political Economy. I gravitate to work and research that creates both a greater awareness of Africa and empowers Africans through voice, action, and securing their rights to the natural resources present around them. I worked with Malagasy farmers to create 'forest corridors' in proximity to national parks in Madagascar last winter (2018-2019).

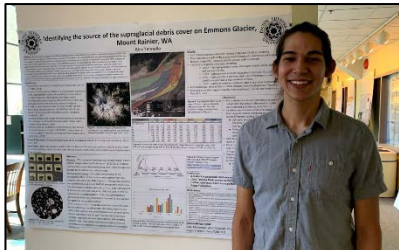
STUDENT CAPSTONE PRESENTATIONS

MAY 11TH, 2019!

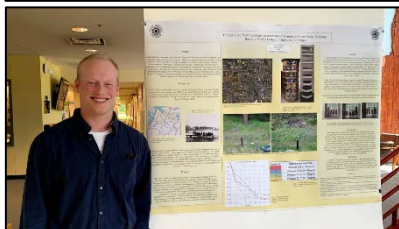
We held our final poster session on Saturday, May 11th, in the lobby of Rieke Science Center. It was a wonderful celebration of our seniors' research!

**Britt McCracken**

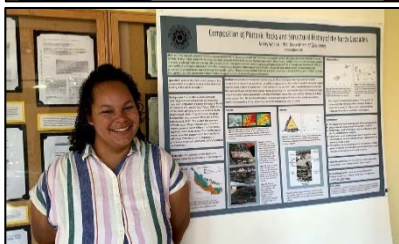
*Mapping Bank Erosion
Volume from the 2014
Oso Landslide*

**Alex Yannello**

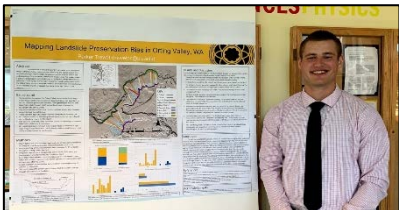
*Supraglacial Debris
Cover on Emmons
Glacier, Mount Rainier*

**Cooper Murphy**

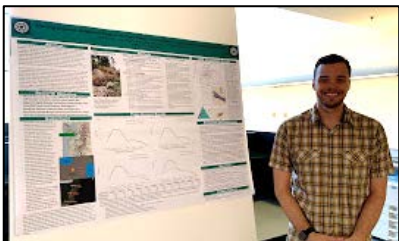
*Hydrogeologic
Assessment of
Chambers-Clover
Drainage Basin*

**Ashley Whitley**

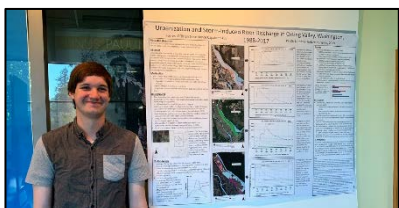
*Composition of Plutonic
Rocks and Structural
History of the North
Cascades*

**Parker Trewet**

*Mapping Landslide
Preservation Bias in
Orting Valley, WA*

**Sam Couch**

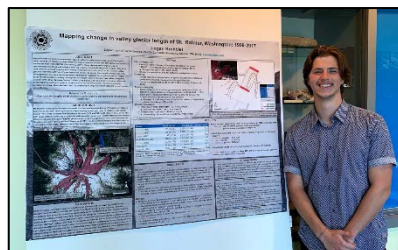
*Oligocene Welded Tuff
Clasts in the Puget
Sound*

**Forrest O'Brien**

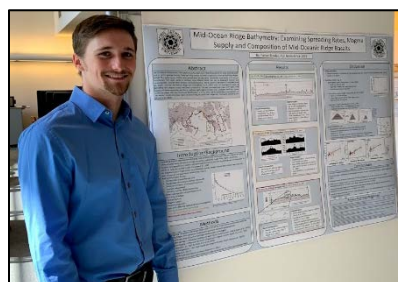
*Urbanization and
Storm-Induced River
Discharge in Orting
Valley, WA*

**Sierra Sirmans**

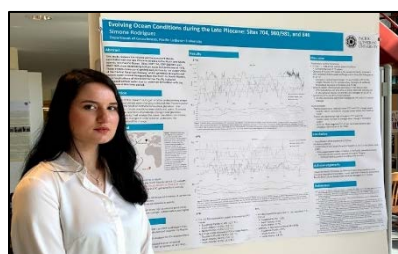
*Shoreline Change in
Pacific County, WA,
1990-2016*

**Logan Krehbiel**

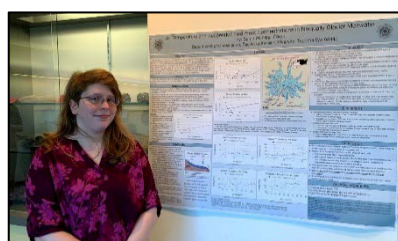
*Mapping change in
valley glacier length of
Mount Rainier, WA*

**Parker Bowles**

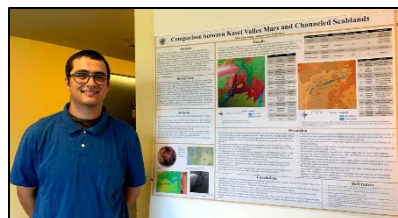
*Mid-Ocean Ridge
Bathymetry:
Examining Spreading
Rates, Magma
Supply, and
Composition*

**Simone Rodriguez**

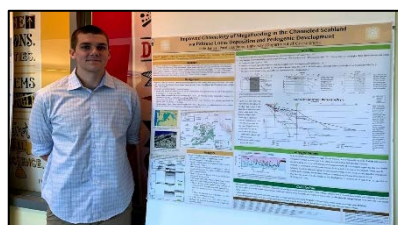
*Evolving Ocean
Conditions during the
Late Pliocene*

**Sarah Webster-Olson**

*Suspended Sediments
Concentrations in
Nisqually Glacier
Meltwater*

**Max Cummings**

*Comparison between
Kasei Valles Mars and
Channeled Scablands*

**Kyle James**

*Chronology of
Mega-flooding in the
Channeled Scabland*

Give to the Brian Lowes Endowed Field Geology Fund!

Geosciences Department founder Dr. Brian Lowes retired in May 2009 after 41 years on the faculty. The Brian Lowes Endowed Field Geology Fund has been established to recognize his long career and countless contributions to our program. Brian was devoted to getting his students out into the field to experience geology first hand. We continue to honor Dr. Lowes, and retired Geosciences faculty Dr. Steve Benham, Dr. Duncan Foley, and Dr. Jill Whitman with a fund that supports student-faculty research in field-related projects. We hope you will support Geosciences students by making a donation to this fund.



PLEASE CONSIDER A GIFT

We welcome your gift to the Brian Lowes Fund

FOR MORE INFORMATION:

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2019 Newsletter

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