



CONGRATULATIONS TO OUR CLASS OF 2020 – WHO DELIVERED THEIR CAPSTONE PRESENTATIONS VIRTUALLY LAST SPRING! LEARN MORE ON PAGE 8!

PLU Department of Geosciences! 2020 Newsletter

IN THIS ISSUE

Happy Holidays from PLU Geosciences!!

You would be justified in wondering if we were even going to get a newsletter out this year – but here we are! With the help of our fantastic students and faculty, we have managed to pull something together to share with you – our broader PLU Geosciences community! There's a lot of news packed in this newsletter!

Wondering what student life is like during a pandemic? Check out on- and near-campus reports on pages 3 and 4, and get a report from Geochemistry on page 8! Also, the department purchased GSA memberships for all majors this semester so they could attend the virtual GSA conference for free! Read one student's perspective on page 8!

Eager to hear from alumni? Check out our alumni profile on page 3 and hear from the class of 2020 on page 5!

Summer Research updates are on pages 6 and 7!

Faculty updates are on page 2, including our newest faculty member **Dr. Michael Turzewski!**

Also, our very own Dr. Rose McKenney penned some **Geology-themed holiday carols** for you. Check out page 9 and sing along! Happy GEOLIDAYS to you!

Thanks to our readers! We appreciate your interest! Stay in touch! Follow us on Facebook for news, opportunities, and updates: [@PLUGeosciences](https://www.facebook.com/PLUGeosciences)

Join the [PLU Geosciences and Earth Sciences Alumni Facebook group](#) to keep in touch with faculty and alums from the department.

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



Updates and Capstone Projects from Class of 2020!

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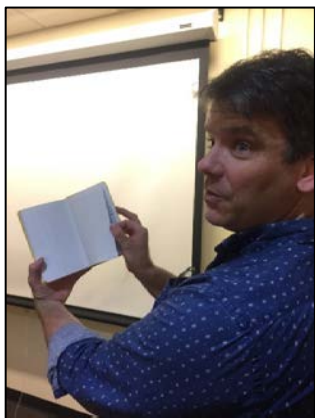
Life on and Near Campus!

Dorm room view of Rainier courtesy of Emily Vignolo ('22)

Pages 3-4

FACULTY PROFILES

Dr. Peter Davis!



Peter is department chair and the proud father of Oliver! This fall, Peter taught the department's gateway to a great major GEOS 201, and our seminar course GEOS 498! Check out page 6 for a report from his research last summer!

Dr. Claire Todd!



Claire had a blast teaching Glacial Geology this semester, even virtually, because she had such a fantastic group of PLU GEOS students – no surprise there! ☺ She continues her work on Mount Rainier, with several new projects in the works!

Dr. Rose McKenney!



Rose taught first-year students this semester in an environmentally-themed Writing 101 course, and contributes to PLU's acclaimed Peace Corps Prep program, drawing on her own Peace Corps experience! See page 9 for Rose's geology-themed carols!

News from Dr. Alex Lechler!



It's been quite the year! 2020 started with the return to teaching Sed/Strat to a group of 30 eager students, filled with the traditional piles of sedimentary rocks and thin-sections strewn across tables in the Rieke 113 and 109 classrooms. That traditional approach was rapidly replaced with Zoom classes and digital labs by the end of March as COVID-19 forced us into Distance Learning Mode. So, no field trips to Manchester State Park and no Jacob's Staff strat column measurements, but the morale of the group remained high, and I can't commend the students enough for their resilience and great attitudes in the face of beyond challenging circumstances.

The hope for a 'return to normalcy' for Fall 2020 classes was dashed by mid-Summer as regional and national case numbers started to rise, so it's been a resumption of Zoom class sessions and digital labs for my GEOS 103 and Geochemistry classes this Fall semester. Once again, I am indebted to the resilient attitudes of PLU students for making this as successful of a semester as it can be, given the circumstances. We have used a crowdsourcing approach to Geochem data collection this semester, with students responsible for collecting 5 water samples of their choosing across the PLU/Puget Sound region for isotopic analysis at the UW IsoLab. This crowdsourcing approach has yielded more than 50(!) new waters to the regional water isotopic database built through prior Geochem classes.

January 2021 starts my first sabbatical at PLU! Sabbatical plans remain in flux due to COVID, but there is post-vaccine hope for some international travel with my partner (Dr. Alison Duvall at UW who will also be on sabbatical in the coming year) and plenty of time spent in the UW IsoLab to finalize some of the geochem datasets built by PLU student researchers over the past 5 or so years!

Introducing our newest faculty!
Dr. Michael Turzewski!

Welcome, Mike!!!

Hi everyone! I call myself a geomorphologist, but I have a broad background in the Earth Sciences with training in both Geology and Statistics. I have a strange passion for applying statistics to solve problems and answer questions in the Earth Sciences. My research interests are focused on understanding the impact of historical and ancient floods on Earth. I do this with a variety of tools including fieldwork, remote sensing, statistics, numerical modeling, geochronology, and more. Although I love research, my true passion is teaching the Earth Sciences!

I am originally from Michigan and I completed my undergraduate degree at the University of Michigan in Ann Arbor. I moved to Seattle and completed my PhD at the University of Washington in 2019. I've lived in Seattle for almost 10 years now and I have fallen in love with the Pacific Northwest. I am finishing my first semester as a visiting professor teaching Conservation of Natural Resources (GEOS/ENVT 104) here at PLU. In the J-term I will be teaching the Geology of National Parks (GEOS 106). In the Spring, I will teach Conservation of Natural Resources again along with Hydrogeology (GEOS 334).

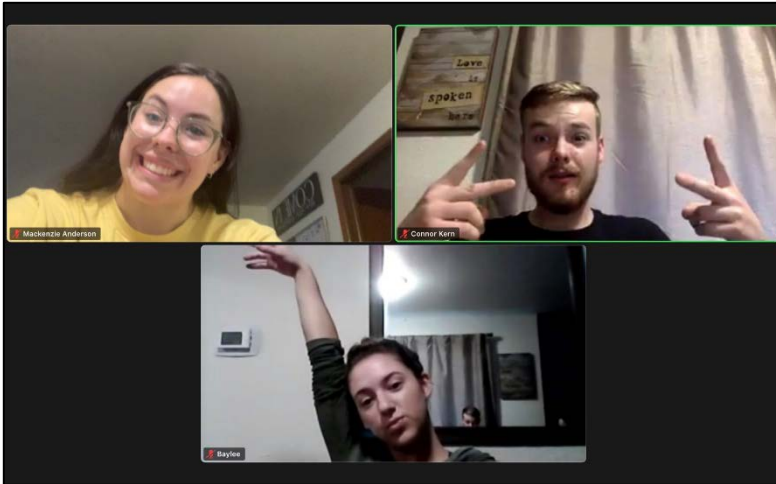
Outside of teaching and research in the Earth Sciences, I like to spend time hiking and camping outdoors near water. I also have an enormous collection of Lego (tens of thousands of pieces) that I have worked on for over 20 years. This collection fights for space in my home with another massive collection of rocks and minerals from all over the world.

News from Geoscience House – our Parkland-based PLU GEOS think tank!!

By Mackenzie Anderson, Baylee Fontana, and Connor Kern ('21)

Editor's Note: Three of our majors ended up in the same house this semester – enjoying pandemic life including virtual geosciences work from the comfort of their own shared home. We asked them what off-campus life and learning is like!

Before the pandemic, classes with roommates have always been driving or walking to Rieke together after snagging some caffeinated beverage from a coffee stand, sitting next to each other in the back of Room 109 while Peter goes on about stereonets or gnomes, goofing off during labs in the ArcGIS room, and doing some mapping homework together at 11pm after work.



Now, things are different.

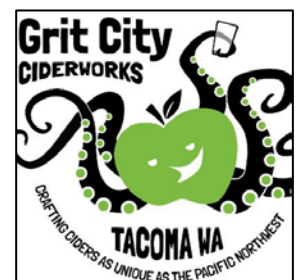
Glacial Geology, Geochemistry, and various capstones are just a few of the many classes echoing from laptops from all corners of our house...and right next to each other when we have a class together- sorry friends! Whether it's rolling out of bed at 7:56 am and heading downstairs to the dining room table for the 8 o'clock Glacial Geology meeting, or sitting on the couches for Capstone on Wednesdays, we are usually together. Along with Bean & Bongo and Pancake the hamster of course! It's not easy to be a student during these times, but we are so grateful to be surrounded by others in the same situation- it makes everything seem like so much less of a mess!



ALUMNI PROFILE – and NEW BUSINESS!



David Horne ('10) and his wife Kelsey celebrated their daughters' one year birthday this summer. David works as an environmental consultant for Burns & McDonnell when he isn't volunteering with Metro Parks, volunteering on the Planning Commission for the City of Tacoma or working at his new small business that opened earlier this year. David and Kelsey opened up Grit City Ciderworks this summer up in the Hilltop neighborhood of Tacoma. They produce hard cider, with a tasting room and growlers and bottles to go--get some for the holidays! Kelsey works as the communications specialist for the Koreans Women's Association, a local non-profit, and their daughter works on chasing the cat and chickens.



Life on Campus in 2020!

By Emily Vignolo ('22)

This year I have had the ability to live on PLU's campus during the craziest time of my life. I can easily say that while I would rather not have a pandemic during my college education, PLU has made it the best it can for those of us who chose to live on campus. While campus is significantly emptier, it still has the same caring community as it always has. Campus is full of signs to stay physically distant and people trying to stay as far away on pathways as possible while still wearing masks. Buildings are quiet, but you know people are still there, you will just never see them. Labs for classes have gone online or turned into go find a rock outside or map the field rather than being in a classroom. Classes may be mostly



The author enjoying a peaceful fall day!

online, however campus is still a community thriving together. This period has provided many new challenges of troubleshooting the internet, working online with others, and feeling like you are not always able to do what you want. However, PLU is a community that is still there for each other, still involved despite not being able to be in the same rooms physically and having to use the internet to communicate with others both on and off campus. At the end of the day these are skills that will be helpful to have in the future. Overall, despite not going to classes in person, the community on PLU's campus is much the same as it was before.

By Greta Schwartz ('22)

Staying safe and healthy this year means that students on campus have had to go to extremes, from covid testing to limiting interactions with others. This year has been, (like we've heard one hundred times), unlike any other. I'm lucky, I have a four person apartment in South Hall. I have people I can spend time with without risking a covid exposure. Life in the apartment can get pretty stagnant between not going anywhere and studying, so every once in a while we feel the need to mix things up. Following that logic, we created Megabed.

Megabed was three mattresses stuffed into the living room so that we could have a sleepover. The table and couch were shoved to the side and blankets were everywhere. Megabed was a good way to keep life fun and interesting in a year where those things seem to be in short supply. During the summer, I learned that I need to mix things up in order to break up the monotony of quarantine. That same principle applies to life on campus during online learning. Whether it's movie night or Megabed, keeping things interesting is a necessity.



Geosciences Student Rosey Ireson ('22) enjoying the Megabed!

Where is the class of 2020 now?

Orion Schomber ('20)

I have officially completed my first semester of graduate school at the University of South Florida's College of Marine Science. Graduate school is definitely interesting due to COVID, but I am incredibly fortunate to be doing what I love. Currently, I am researching various topics that revolve around sea level change in the Gulf of Mexico since the Last Glacial Maximum.

Natalie Johansen ('20)

This summer I was a part of Juneau's COVID-19 Conservation Corps which consisted of building and maintaining mountain bike, ski, and hiking trails at Eaglecrest Ski Area. I operated heavy machinery and power tools such as excavators and chainsaws and had a blast doing it in the record-breaking wettest summer Juneau has ever seen! I have since stayed employed with Eaglecrest as an essential part of mountain and base operations and am currently looking for a job where I can be outside as much as possible and use my Geoscience degree!



Max-Henry Nelson ('20)

I moved to Butte Montana with Nadia and the dogs in November and will start classes for my masters in January. I'm getting my masters in hydrology with a certification in restoration at Montana Tech. My advisor, Dr. Glenn Shaw, and I are proposing doing a hydrologic study with a focus on restoration efforts on the upper Ruby river channel in southwestern Montana. I'm excited for the new opportunities and the new life that I have here. Just living the dream!



Isabel LaRue ('20)

This summer I worked at an outdoor education day camp in Anchorage taking kids biking, kayaking, and hiking around Anchorage. Highlights from the summer include learning to outdoor rock climb and raft! This fall / winter I have been working part time at the Alaska Rock Gym teaching kids to rock gym (see I am using my degree to talk about rocks!) and at a used outdoor gear shop. Winter highlights include learning to skijor (attaching a dog to you while on Nordic skis and then zooming!) and watching lots of boss ross videos to improve my painting skills!



2020 CAPSTONE PROJECTS!

Logan Black *Exploring the topography of Mount Rainier and its impact on the transport of debris to the supraglacial system*

Lex Carter *Mesoproterozoic Rock Analysis in the Northern Tusas Mountain Range, NM*

Natalie Johansen *The Timing of Deglaciation in Alaska since the Last Glacial Maximum*

Corina Jones *The Impact of Urbanization on Streamflow in the Puget Lowland Region*

Ea Kirkland-Woodward *Geologically Controlled Contaminant Flow at the Hanford Nuclear Site*

Haley Kling *Coseismic Landslide Risk Assessment of the Carbon River Valley near Orting, WA*

Isabel LaRue *Addressing Potential Marine Iron Fertilization from Pacific Volcanic Systems*

Benjamin Lungberg *Comparing Supraglacial and Proglacial Debris on Emmons Glacier, Mount Rainier*

Max-Henry Nelson *Carbonate Rock with Encapsulated Petrified Wood in Channel of Skate Creek, WA*

Brian Schermerhorn *Analyzing Biogenic and Abiogenic Carbonate Dissolution in Ocean-Floor Sediments*

Orion Schomber *Comparison of Intrabasinal and Extrabasinal Turbidites in Glacial Lake Systems*

Danielle Skibieli *Analysis of Surface Water Quality and Surface Geology Relationship in the Chambers-Clover Creek Watershed*

Summer Research with Peter Davis!

By Emma Mickelson '21

Last summer I had the opportunity to participate in the Natural Sciences Summer Undergraduate Research Program (NSSURP) at PLU. I worked with Dr. Peter Davis and another student researcher. We were looking at igneous and metamorphic rocks near Cle Elum, WA expanding on Dr. Davis previous research. My research project specifically focused on investigating a tectonic complex near Cle Elum, WA. I was interested in if the rock sequence there was an ophiolite, a more structured stratigraphic sequence including marine rocks and rocks from the mantle or a melange which is a chaotic mixing of all different kinds of rocks. Ultimately, in the end, there was not a strong conclusion that was determined.



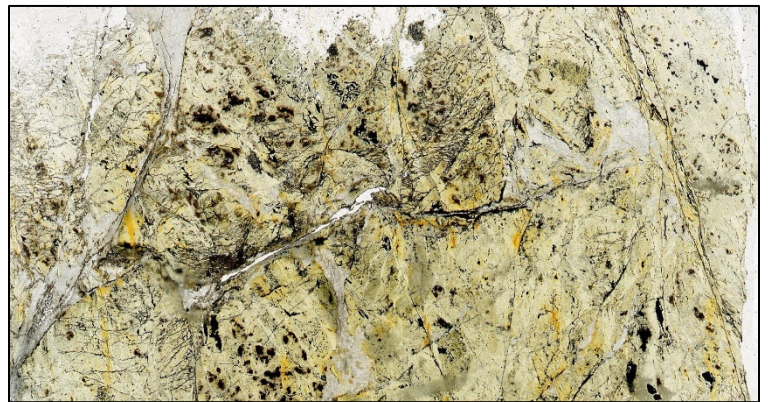
One of Emma's field sites in Cle Elum, WA!

I wanted to apply for summer research at PLU because when I studied away at Victoria University of Wellington in New Zealand there were research projects all around campus and professors sharing some of their research in class which sparked my curiosity about what the research process entailed. When I applied for summer research at PLU, I was excited to learn something new and had no idea what to expect or even what I wanted to study.

It turns out that summer research was definitely an invaluable experience. Over the summer, research consisted of reading a lot of literature about research that was already out there about Cle Elum, WA, learning and filling in holes where I did not have background knowledge, coming up with a research question, field work, preparing samples brought back from the field site, analyzing samples, drawing potential conclusions, and learning how to present our research. The variety of different tasks within research was something that I really liked. I could use a bunch of different skills, be creative, and learn a ton. All of these tasks contributed to the project.

Other helpful experiences through NSSURP was meeting with other student researchers to hear what they were researching and to practice presenting my findings. Along with that, my research group got to meet with another professor doing research in the same area, present our findings to him and learn more about his research process and findings.

Summer research definitely had its challenging moments. One of the more challenging things for me was knowing there was not a clear answer to a lot of questions I had throughout the process. It was a different setting compared to school where there usually are "right answers" but not knowing added to the excitement. This helped me feel more comfortable asking questions and applying knowledge in a critical way to try and find a possible solution.



Thin section of serpentine from a sample collected in Cle Elum, WA.

Overall, NSSURP summer research and working with Dr. Davis has changed how I view the world. I find myself constantly asking questions about the world around me and wanting to just learn more. This experience also taught me that I like the process of research despite the challenges and has made me start exploring graduate school opportunities to continue to do research.

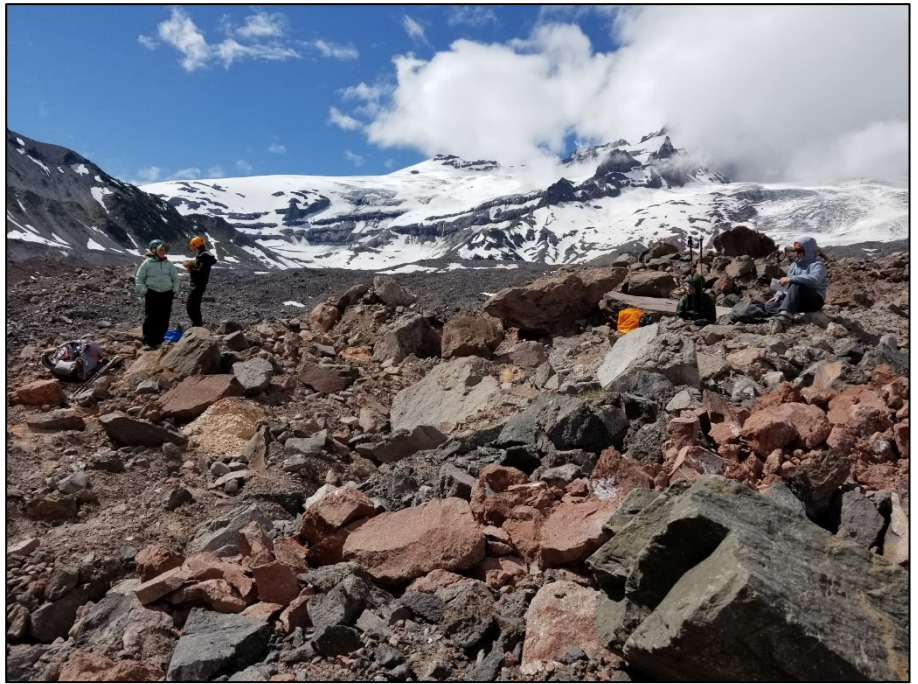
Summer Research on Mount Rainier!

By Cheyenne Lombardi '21

My participation in the Summer Undergraduate Research Program was one of my favorite experiences at Pacific Lutheran University. I got the opportunity to spend two summers on Mount Rainier studying the Emmons Glacier, with breathtaking views and rigorous hikes. The research program allowed me to work in the field and with other student researchers, which helped me develop field skills. Being able to pursue a personal research project with the assistance of my mentor, Professor Claire Todd, made me more passionate about the research and was a great practice for my senior capstone.

My project was focused on the hydrochemical analysis of Emmons Glacier's meltwater, I collected water samples in the field and analyzed them in the lab at PLU. And even though each of the researchers were working on their own projects we all corroborate and contribute to each other's projects as a team. I enjoyed this professional and social interaction with my fellow student researchers as we worked together over the summer.

The summer research program also helped me confirm that working as a geoscientist was what I wanted to continue. I began the research program the summer before my junior year. It gave me the opportunity to work as a geoscientist in a real world setting, which I absolutely enjoyed. After two summers of research, I have gained skills that I can apply to my career after my time at PLU. I have greatly appreciated my experience, especially standing on top of a glacier. I wouldn't trade it for anything. I would recommend anyone who is interested in expanding their career skills or testing out their possible career path to apply to the Summer Undergraduate Research Program.



2019 Summer research team working on the surface of Emmons Glacier



Terminus of Emmons Glacier!



2020 Summer Research – a socially-distant experience!

Dr. Lechler's Geochemistry class - in a pandemic!

By Allison Sheflo ('22)

Coming into this semester, I was pretty wary of my geochemistry class--I didn't really enjoy having general chemistry online last spring, so I wasn't sure what to expect with this class. Luckily though, the class has been a really good experience for me! I've enjoyed the opportunities we've had to connect with classmates in breakout rooms and small projects, even if it's on zoom! We've read and presented to our peers on scientific articles, which I've found really interesting to be reading the actual research that happens in the field. The final project that we're working on now is a research idea/proposal, which includes us getting water samples and sending them to be analyzed for stable isotopes. I'm enjoying this project a lot! It's cool to be able to collect samples myself, and I'm excited to see the data from them and be able to create a research plan based on that. Overall, I've learned a lot from the course and enjoyed it, even with the circumstances of this semester (thank you Alex)!



Collecting samples for Geochemistry!

Geosciences Students attend GSA Connects 2020!

By Rosey Ireson ('22)

Attending a GSA conference was something that had never really crossed my mind, especially before this year when it would've happened in person. It was one of those things that sounds cool, but doesn't seem possible. Until this year, when it was not only possible, but part of a class. I attended three sessions. The first two were "Searching For Evidence Of Life In The Dark: The Astrobiological Potential Of Lava Tubes" and "Modelling With Volna-op2: Towards Tsunami Threat Reduction For The Irish Coastline."

Both of them were interesting, but the third presentation I attended was the one I was the most excited about, "A Critical Feminist Approach To Transforming Workplace Climate In The Geosciences." This presentation stood out to me because it connected my two academic interests, Geosciences and Gender, Sexuality, and Race Studies, in a way I had never thought of before. Attending the presentation, it felt like something finally clicked. The way the presenter talked about using an intersectional framework, a feminist ethics of care, and research ethics to not only look at how the workplace climate had created a lack of diversity, but also to figure out how to change the climate, was fascinating. A lot of what I had learned previously in Gender, Sexuality, and Race Studies classes and what I was doing as part of my work as the Bystander Intern at the Center for Gender Equity was being connected to Geosciences. I ended up staying for the following presentation as well because I was so interested in the topic. What stood out to me the most in the following presentation was its criticism of the "leaky pipeline" idea that often shows up when people talk about the lack of diversity in STEM fields. The presenter explained that the problem with the leaky pipeline model is that there isn't one spot where people "fall out" of the pipeline. Instead, they proposed looking at one's journey in a STEM field as an obstacle course, where one's obstacles relate to the identities they hold.



The author in the on-campus soil pit!



After the presentations, my roommate Greta got to hear me excitedly ramble about what I had learned and repeatedly distract myself as I tried to make lunch because the presentation had exceeded my expectations. Because of this session I have been trying to learn more about diversity within STEM, and geosciences in particular.

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 and Dr. Duncan Foley 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. For more information, please contact [PLU's Office of Advancement](#) at 253-535-7177

GEOLIDAY CAROLS – COURTESY OF DR. MCKENNEY!

Geo Wonderland

Sung to the tune of Winter Wonderland!

**Hammers ring, are you listening?
In the rocks, quartz is glistening.
A beautiful sight
We're happy tonight
Walking in a geo wonderland**

**In the meadow we can dig a soil pit
To see if Puget lobe has been around
We'll say: Is it clear?
And you'll say: no man,
But maybe with a few more pits around?**

**Later on we'll geologize
As we sit by the fire
To face unafraid
the notes that we've made
Walking in a geo wonderland**

12th Week of the Term

Sung to the tune of 12 Days of Christmas!

**On the 12th week of the term my professor
gave to me:**

**12 earthquakes shaking,
11 hills a slumping
10 lahars a flowing
9 rivers flooding
8 storms a brewing
7 volcanoes erupting
6 glaciers melting
5 data sets
4 hand samples
3 group projects
2 thin sections
And a question for my capstone**

**From all of us at PLU Geosciences, we wish you the
happiest and healthiest of holidays, and a very very happy
2021! Please stay in touch!**