



### CONGRATULATIONS TO OUR 2013 GRADUATES!

## Happy 2014!

Welcome to our second Department of Geosciences newsletter! We have lots of news to report from Rieke Science Center and beyond, and we're very excited to include our first alumni updates! Not included in this issue? There will be many more opportunities in the future! Through these newsletters, our Facebook group, our website, and the e-mails and letters we receive from time to time, we're looking forward to strengthening the PLU Geosciences community. Please keep in touch with us!

The past few months in the Department of Geosciences have brought the announcement of Dr. Steve Benham's retirement, a newly renovated lab, and lots of opportunities for students and faculty to get out into the field.

We're showing off our 2013 graduates in the picture above. Congratulations to (front row, l to r) Allie Jo Koester, Anna Pfohl, Kelsey Spears, Michelle Maris; (middle) Cameron Reister, Greg Pickard, Matt Hegland, Mark Christensen, Sarah Finley, Erin Liden; (back) Nathan Page, Ryan Ransavage, Michael Farnum and Angel Rioslaboy.

All Geosciences majors have to complete a senior capstone project before graduating (see page 2 for a summary of 2013 topics). We have thirteen capstone students this year! We encourage alums to join us for capstone presentations on May 3<sup>rd</sup>, 2014 in Rieke Science Center! This year's projects cover a wide range of topics and field areas ranging from Mount Rainier to Kansas to Norway!

This fall, faculty and students returned to Rieke Science Center for another semester full of learning experiences inside and outside of the classroom. Seniors are developing their capstone projects, meeting with mentors, and heading to the field and to the library to begin their investigations. Some students began their work during the summer months (see page 4 to learn more!), while others are exploring a topic completely new to them. We are excited to see where the capstone journey takes all of us this spring.

As faculty, we are proud of our current and former students. Feel free to drop us a line from time to time to let us know how you're doing! Happy New Year from PLU Geosciences!

# PLU

## Department of Geosciences!

### Spring 2014 Newsletter

### IN THIS ISSUE



### Faculty Profiles

*Remember us? Check out our faculty profiles inside! Big news about this particular faculty member on page 5!*

Pages 2, 4, & 5



### A Newly Renovated Lab!

*It's a new world in Rieke 110! Join us for a tour at our celebrations in April!*

Page 3

## FACULTY PROFILES

**Dr. Duncan Foley**

Duncan Foley continues to teach Geologic Hazards. He had the somewhat sobering realization that he has been teaching this class off and on for almost 40 years. He hopes, with enough continued practice, eventually to get it right. In January 2013, he taught Hydrogeology. The class was fun, but the part about outdoor labs in January left him feeling a bit cold. He also teaches an Honors maps class, and our senior seminar.

Duncan returned to Yellowstone again last summer, where he worked with colleagues from the private sector, park service and USGS to research the preservation of Old Faithful and its surrounding thermal systems. The report on their work should be out in 2014.

Duncan's wife Leslie continues to direct the Academic Assistance Center at PLU. His son Paul is in his senior year at Western Washington University, where he seems to be emphasizing sailing.

**Dr. Peter Davis**

Peter continues to teach the Hard-Rock sequence of classes as well as Geology of Energy. He serves as the faculty representative to PLU's Bicycle Coop, and organizes the South Sound Undergraduate Research Conference. Peter continues his field research, including subduction-related rocks in Turkey and Washington, and Precambrian units in the Tusas Mountains of northern New Mexico. Most recently he was awarded a Regency Grant for student-faculty investigation of subduction-related rocks near Cle Elum, Washington, and he submitted an NSF proposal for student-faculty research in New Mexico.



Peter and his wife Carmen will soon celebrate their son's first birthday. Baby Oliver is growing quickly via his healthy apatite. Oliver also shows an aptitude for the basic skills of geoscience such as sorting, hammering and gesticulating wildly.

**Dr. Jill Whitman**

Jill's teaching includes Oceanography, Marine Geology, Geophysics, and one of our capstone courses. She has chaired our department for most of the last decade; this spring will be her final term in that role. In the fall, she will become Chair of the Faculty. This faculty governance position gives her an opportunity to participate in pan-university discussions, to help shepherd the faculty committee system, and to see the inner workings of the university!

On the home front, Jill's oldest son Bobby got married in July; he is a middle school teacher in Bellingham, WA. Her younger son David is in a Master's of Structural Engineering program at Lehigh University. Jill and her retired husband Don have enjoyed extended times at the family cottage in Maine the past few summers.

**Capstones 2013!**

by Senior Geosciences Students!

**Mark Christensen:** PLU's Mima Mounds of Mystery

**Sarah Finley:** Downstream Fining in the Carbon and Puyallup River Systems

**Megan Kjelland:** Asbestos Formation in the Rainy Creek Complex, Montana

**Allie Jo Koester:** Suspended Sediment Transport on Mount Rainier

**Erin Liden:** Geomorphic Implications due to Channelization at the Proposed Pebble Mine

**Michelle Maris:** The Geologic Formation of Gold Deposits in the Tintina Gold Province, Alaska

**Nathan Page:** Geochemical Analysis of Glacial Meltwater on Mount Rainier

**Greg Pickard:** Long Lake Eutrophication

**Anna Pfohl:** Defining Necessary Characteristics of Tectonic Tremor

**Ryan Ransavage:** Characterization of Proglacial Sediments on Mount Rainier

**Cameron Reister:** GPS and Tremor Data Show Differences in Subduction Zones



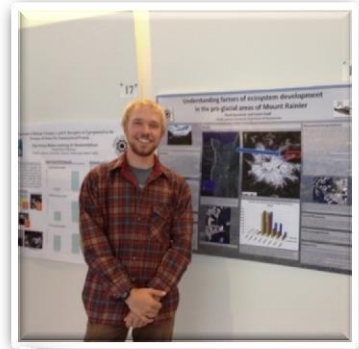
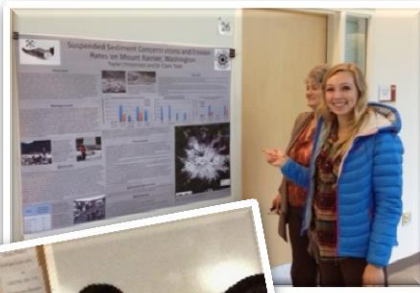
*Jill's 2014 Capstone Class!*



## Student-faculty Research at PLU Geosciences!

Student-faculty research in Geosciences takes many forms. As seniors, every student will work with faculty on an independent research project. Other

students may take advantage of summer research positions. All projects result in a presentation on campus, at a regional conference, or at our final capstone presentations in May!



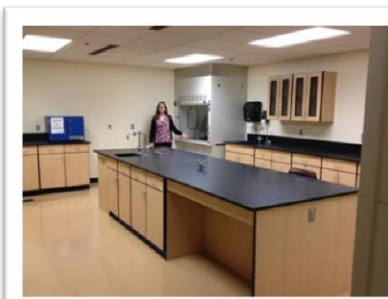
### SEE YOU AT GSA? AT AGU?

In recent years, PLU Geosciences had over 10 students present their work at the annual Geological Society for America Meeting or the American Geophysical Union Meeting.

Be sure to find us at next year's meetings!



## More Changes around Rieke Science Center!



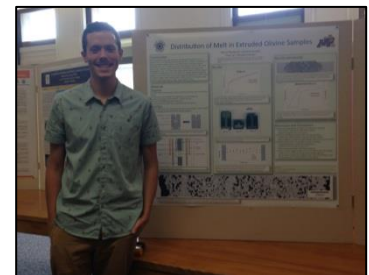
Last year's newsletter reported a remodeled "rock room," upgraded teaching spaces, and new instruments. Last fall, we improved another Rieke space for use in student-faculty research and upper-division classes. You may remember preparing thin sections in '110.' Now, thin section preparation happens in our remodeled rock room, and Rieke 110 is an aqueous geochemical lab!

## Students Accepted to Prestigious Research Experience for Undergraduates programs!

**Kristiana Lapo** joined a Research Experience for Undergraduates program at Northern Arizona University with 10 other young women geologists who applied different methods of dating to cinder cones in the San Francisco Volcanic Field, just north of NAU. Kristiana's group used cosmogenic  $^3\text{He}$  to date two cinder cones of disputed age. She participated in sample



collection, data analysis, and pulling everything together into a poster to be presented at the national GSA meeting.



**Aaron Steelquist** traveled to the University of Minnesota to investigate stress-driven melt segregation within partially molten samples of rock extruded through a channel. Small discs of olivine and a basalt melt were brought to a high temperature and compressed, forcing the material to plastically deform into a channel with smaller cross-sectional area than the original discs. Analysis of these deformed samples helps explain patterns observed at ophiolite sequences, and how new crust is formed at mid-ocean ridges.



# Geoscience is a field science!

All of our students get out into the field be it in our classes, through their capstone research, or through student-faculty research programs. Enjoy these recent highlights!



*Students in Rose's Geomorphology class studied soils at WSU's extension in Puyallup.*



*Students in Duncan's Hydrogeology class perform well tests on a cold day in January!*



*A trip to Emmons Glacier in Glacial Geology!*

## MORE FACULTY PROFILES!



### Dr. Claire Todd

Claire had a blast teaching GEOS 190 Global Climate Change in January and Glacial Geology last fall. Claire recently submitted a grant proposal to return to Antarctica for research, and looks forward to another summer of student-faculty research on Mount Rainier



### Dr. Rose McKenney

Trained as a fluvial geomorphologist, Rose continues to collaborate on a range of projects with people in other disciplines. Recently she's been working with faculty in Social Work, and alum Joel Zylstra '05, who now directs PLU's Center for Community Engagement and Service. Together, they are developing the new Tacoma Urban Immersion Program, a local study away program that will focus on social and environmental issues in downtown Tacoma. Last fall in addition to her courses, Rose visited PLU's Telemark, Norway study away program. While in Oslo, she visited Laura Smids Arnesson '03 (nee Medsker), and met Laura's son Oscar.

Rose and Jay continue to enjoy their view of American Lake. Rose is still making jewelry, growing fruits and veggies, and puzzling over her unexpected foray into clubbing as she travels to watch Jay perform.

# Dr. B is retiring!



*One of many field trips to Kalaloch. Want to relive the experience? Keep reading!*

Dr. Steven Benham began his career at PLU in the fall of 1982. He is noted for his devotion to students, his enthusiasm on field trips, and his passion for building the fossil and rock collection in the Department of Geosciences. During his career of more than three decades he has been an enthusiastic teacher and tirelessly given his time and expertise in service to the university and the community in a variety of capacities.

Dr. B. grew up in rural Kitsap County, WA, attended Olympic Community College, and earned his Bachelor of Science degree in Geology from Washington State University. He went on to pursue a Master of Science and a PhD in Geology from Indiana University, where he studied carbonate petrology and calcareous algae in the Florida Keys. Prior to coming to PLU, Steve taught at Ball State University, the College of

William and Mary, the University of Missouri, Kansas City, and he worked in the exploration and mining industry.

Dr. B. has taught a wide range of science courses at PLU, to both geology majors and non-majors over the years. These have ranged from introductory courses in Physical Geology, Historical Geology, Geologic Principles, Geology of National Parks, and Oceanography, to upper division courses in Stratigraphy and Sedimentation and Paleontology. He also led many field trip courses that students remember fondly, notably to Hawaii over J-term and to the interior Southwest in the four corners area over Spring Break. Steve spent many hours working with students on the SEM and helping students to make thin sections in the rock lab.

## **We are planning a celebration of his career - with three ways you can participate and contribute!**

**(1) Join us for the celebration – Saturday, April 26**

Tour the Geosciences rooms and labs in the Rieke Science Center including our new geochemistry lab. In the evening, join us for a reception and dinner in the University Center.

**(2) Join Steve on a special alumni field trip! – Sunday, April 27**

Steve will lead a special alumni all-day field trip to sites along the north coast of the Olympic Peninsula. This is an opportunity for you to relive some of your undergraduate days and visit some old familiar sites or new ones! Your participation in the field trip will both honor Steve and help support the **Brian Lowes Endowed Field Geology Fund**. Space will be limited.

**(3) Make a donation!**

As you all know, Steve is passionate about getting students out into the field and we hope that you will recognize Steve's devotion to students and his many contributions to the department by making a contribution to the **Endowed Field Geology Fund** that was established in 2008 to help ensure that future generations of students will be able to continue the field-oriented legacy of the founders of the department (see page 8!).

**Look for more information very soon!**



# Alumni Updates!

Our first alumni update page! We're still working on how best to solicit and format updates from our alums, so please bear with us! If you would like to be included in our next issue, look for a more widespread solicitation over the next year. As always, we would love to hear what you're up to.

**Whitney Bausch** ('10) worked with Dr. Julie Baldwin at Montana State and graduated with a Master's degree in Geology. Whitney's Masters work was based on the petrology and geochemistry of the East Fork Dike Swarm and surrounding Lost Trail Pass pluton in southwest Montana. She is currently working for a gold mining company in Montana.

**Katherine (Katie) Bryant** ('11) has gone on to San Jose State University to work with Dr. Bob Miller. Katie's current project is focused on the timing of basaltic dike emplacement around the Entiat Pluton in the Cascades of Washington State.

**Ad Byerly** ('12) is working on a Master's project with Dr. Basil Tickoff at the University of Wisconsin Madison on the emplacement tectonics of part of the Idaho Batholith. He is considering staying at Wisconsin to continue on for a Ph.D.

**Kimberly Kurtz (Fowler '04; 2<sup>nd</sup> from left in picture)** got her Geology MS from Boise State in 2007. Kimberly and her husband (Gene Kurtz) have been enjoying living in Elko, NV for the last 3 years. She started a full time position as a Database Administrator for some of Barrick Gold Corporation's drillhole databases in September 2012. This allows her to stay connected to her geologic roots while expanding her knowledge of mining and SQL querying.



Since graduating from PLU in 2003, **Laura Smids Arneson (Medsker '03)**, has worked as a geologist in Washington and South Dakota. She is currently on maternity leave with her son, Oscar but will resume working as a geotechnical engineer for COWI in Oslo, Norway soon.



**Jennifer Swenson** ('92) is currently a physicist in Z Program at Lawrence Livermore National Laboratory in Livermore, California. Though primarily situated in front of a computer, her job has taken her twice to Baghdad, and frequently to Washington, D.C.. She also volunteers as a laboratory ombuds. She came to the Laboratory in 1999 as a seismology post-doctoral research associate.

**Elyssa Tappero** ('10) is doing community outreach projects with the Red Cross and currently works with a non-profit in Tacoma focused on health care outreach for military service families.



**Denise Thompson** ('03) just returned from a one year Albert Einstein Distinguished Educator Fellowship in Washington DC where she served as a legislative aide to a Senator from Illinois. Since the end of her fellowship, she has returned to the Orting High School science classroom where she teaches Math, Biology and an Introduction to Aerospace Technology. She also continues to facilitate Earth Science related professional development and advocate for improving STEM education opportunities for students. She and her husband just celebrated their 24th wedding anniversary.

## Featured alumni profile – What's up with Eric Allen ('08)?



Following graduation, I was accepted as an AmeriCorps intern with the Hood River Watershed Group in Hood River, Oregon. Everything about the position was terrific- my duties ranged from public education for adults and middle schoolers, helping a tribal hatchery program, planting projects, and conducting water

quality monitoring. The experience solidified my desire to work in the outdoors (in particular rivers/fluviol geomorphology), with people, and on a practical application of science. However, I found that I would need a Master's degree to qualify for most jobs in which I was interested, but at that time most grad schools had many more applicants than positions. Luckily, I was accepted at Utah State University, which was a great fit due to an up and coming watershed sciences program and the proximity to skiing and hiking (which proved a much needed break from the lab!). My thesis was using tree-ring data to reconstruct streamflows of a local river back to the year 1605. No one at USU had done this type of research before, which meant I helped establish and develop the program. Upon graduation in May 2013, I took a position with the USGS in Columbia, Missouri where I currently work. The work involves studying riverine habitats in the Missouri River and select streams in the Ozark Mountains. The people at the USGS are terrific, which from my experiences is perhaps the most important aspect of any job. I should also mention that my experiences at PLU, and continuing relationship with professors there have helped guide me to where I am today I owe my PLU education a thanks for these opportunities.



**Bryan Donahue** ('09) has worked within the environmental sciences conducting field research for a variety of companies and institutions. Research within fluvial ecosystems has taken him from



night snorkeling in the dead of winter to being an assistant research scientist at the University of Washington. He takes a geologic approach to fisheries research and specializes in many scientific methods for counting, collecting, and/or analyzing fish populations. He has a GIS certificate and is currently pursuing a fisheries engineering

degree. His goal is to obtain a broad set of skills to handle a variety of dynamic issues within the fisheries and hydrologic sciences.

Following graduation, **Nathan Page** ('13) had a successful field camp experience full of maps, stereonets, and just a little bit of beer. He then traveled south for the winter and worked in California as an Outdoor Educator teaching geology and other environmental sciences for K-12 students. In November he went even farther south and has been living in Costa Rica working at an eco-lodge, a Permaculture Center, and an Organic Farm with his girlfriend (and fellow Environmental Studies grad) Brett Rousseau ('13).

**Lisa Crowder** ('95) graduated with a Bachelor of Science degree and played varsity soccer. After pursuing a graduate degree at the



University of California, Santa Barbara and a stint of pushing papers in Washington, D.C. for the National Science Foundation she got her dream job in 2001 as a marine lab technician with the Ocean Drilling Program, now the International Ocean Discovery Program. After 13 years of traveling the world and sailing over 25 expeditions she still

enjoys the adventure of going to sea and serving the scientific ocean drilling community. When not traveling the world, Lisa competes in triathlons and enjoys just spending time at home cooking for herself.

**Luke Weinbrecht** ('09) is currently an Academic Specialist for the Carrera Pregnancy Prevention Program for Union Public Schools in



Tulsa, OK. For the last three years, he taught Chemistry, Physics, and Earth Science at the 8th grade level. For the 2013-2014 school year, he was named Teacher of the Year! After finishing at PLU, Luke married fellow lute Kate Wilson ('09) and moved to Oklahoma so she could pursue her degree. Luke

started working in December of 2009 as a sign language interpreter. He completed his Master's in Education in 2009, and is currently working on his Ph.D. in Professional Educational Studies: Science

Education. His dissertation research investigates secondary science teacher's beliefs and classroom practices regarding the use of scientific inquiry. He will graduate in May of 2015, after which he and Kate plan to move back to the Northwest. He hopes to do research in Geoscience and Education with PLU in the future!



**Kerriann Pederson** ('05) reports that she can't believe she has already worked in Houston for 5 years. She is a Stratigrapher at ExxonMobil, currently working at the Research Lab on a team called Process Stratigraphy. The group is a mix of Sedimentologists, Stratigraphers, and Computational Scientists working to extract quantitative flow dynamic information out of the rock record. It's a

fascinating project, and it has her traveling all over the world to South America, Spain, Ireland, and South Africa.

**Matthew Hegland** ('13) recently began a job as a Wellsite Geologist in the Williston Basin in northwest North Dakota. He uses gas analysis, gamma radiation, geologic samples, and 3-dimensional surveys to steer oil well drilling. He works with drillers and engineers to keep drills in the target geologic formation and to maximize economic viability.



**Cori Jo**

**Jahnsen** ('10) is currently living in Akiak, AK, a small village of about 300 people on the Kuskokwim River in southwestern Alaska. She teaches 7th-12 grade math and science in a K-12 school of about 100 students. Village life is simple and quiet but there is still much to do. Her favorite part of teaching in Akiak is getting to integrate the culture and subsistence lifestyle into the curriculum.



**Ryan Ransavage** ('13) tests, inspects, and monitors environmental conditions at two dozen mining and concrete production facilities. Testing involves sampling different types of water discharges and measuring pH, turbidity, dissolved solids, suspended solids, conductivity, and/or dissolved oxygen. While testing facilities, he also inspects to make sure there are no discharging chemicals, and



maintains good practices to reduce spills. Along with inspecting, he trains company personnel on good environmental practices, and works with WA Departments of Natural Resources and Ecology to develop and implement plans that reduce the environmental impact of mining at

Miles Sand & Gravel facilities. In addition to field work, he is also responsible for creating and maintaining company mapping information. Most weeks are half office work, and half field work.



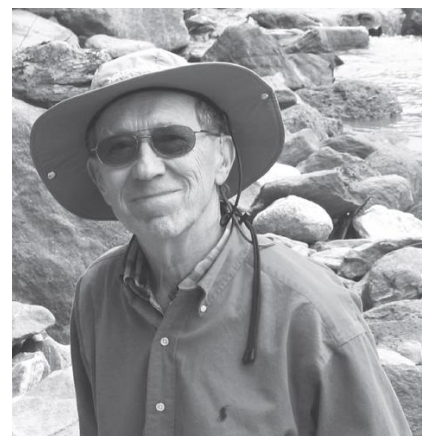
# Give to the Brian Lowes Endowed Field Geology Fund!

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 contributions. Brian was devoted to getting his students out into the field to experience geology first hand. We continue to honor him with a fund that supports student-faculty research in field-related projects. We hope you will recognize Dr. Steve Benham's career 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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Spring 2014  
Newsletter

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