



SPRING BREAK FIELD TRIP 2015! TURN TO PAGE 6 FOR MORE!

# PLU

## Department of Geosciences!

### 2015 Newsletter

IN THIS ISSUE

## Our third newsletter!

As our third issue gets ready for publication, we're optimistic we can maintain this newsletter on an annual basis. Each spring, we hope you will check in with us with your own news, so we can include it on our alumni update page. This year, our Facebook request for alumni updates brought news from former students across the country and around the world! Check out pages 7-8 for the latest from your peers. We also asked class of '14 alumna Kristiana Lapo to share her experiences from the past year – her first as a PLU graduate (page 5)!

2014-15 was an exciting year in Rieke Science Center! We welcomed three new faculty in the past year; you can read about them on pages 2-5. This year also brought a change of leadership in the Department of Geosciences. You can read a note from our new Chair on page 6.

In this issue, we feature our first submissions by Geosciences students. We asked graduating senior Blake Warner to share her summer 2014 field camp experience in Nepal (page 3), and we asked junior Nicole Combs to offer

her perspective on the spring break field trip course. We also show off field trip photos taken by junior Maricel Fee! See more on page 6!

Spring has been especially busy in the Department. How many of you remember your Geosciences capstone? If you graduated 1998 or later, you were required to complete one! We can only assume your capstone memories are fond ones! All Geosciences majors have to complete a senior capstone project before graduating (see page 2 for a list of 2014 topics). This year's projects covered a wide range of topics – ranging from paleoceanography to economic geology - and a wide range of field areas ranging from Antarctica to Montana to PLU's campus!

We'd also like to draw your attention to the last page of our newsletter where we offer an opportunity to support student-faculty research in the Geosciences. If you're in a position to make a donation to the Brian Lowes Endowed Field Geology Fund, please see the contact information on page 9.

We appreciate your continued interest in PLU Geosciences. Please stay in touch!



## Faculty Profiles

We welcomed three new faculty this year!  
Pages 2- 5



## Field Camp in Nepal!

A student's far-flung field camp experience!  
Page 3

## FACULTY PROFILES

**Dr. Peter Davis**

While on sabbatical, Peter continues to study deep-seated tectonic processes by studying exposures of metamorphic rocks in New Mexico and Washington. In New Mexico, Peter is part of a team of researchers studying the processes of continental assembly as viewed from the mid-crustal depths. We do not have a good understanding as to how long it takes to make stable continental lithosphere, and New Mexico has compelling localities in which we might learn a little bit more. This location has been the focus of several undergraduate summer research and capstone projects. His interest in Washington State is currently just south of Cle Elum, which displays a wide range of subduction and overlying volcanic arc related rocks and mineral textures. Peter is also currently developing a board game that models the interaction of consumer energy sources in order for students to investigate the role of energy sources in our future. Peter and his wife Carmen Eyssautier are enjoying their son Oliver, a wonderful, bouncing baby boy who loves to ride his tricycle and has a very good sense of direction (geological talents show early!).

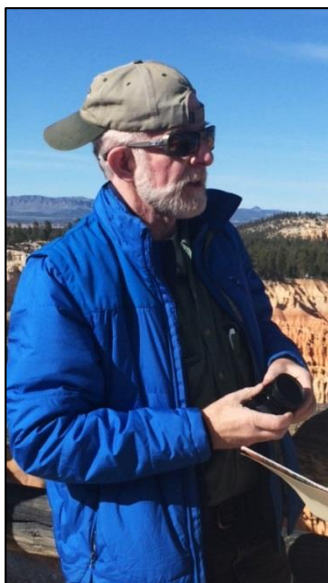
**Dr. Claire Todd**

Claire spent the 2014-2015 academic year teaching Meteorology, Global Climate Change, and a course in Environmental

Studies. She also spent December and January performing student-faculty research in Antarctica!

**Dr. Duncan Foley**

Duncan spent the 2014-2015 academic year teaching Geologic Hazards, Hydrogeology, Spring Break field trip and seminar. This load has kept him busy, and looking forward to next year's sabbatical.



Duncan, along with colleagues from Yellowstone National Park, the University of Auckland, and GSI Ltd., has been funded by the National Geographic Society and the Yellowstone Park Foundation, with additional support from the National Park Service and the University of Auckland, for a research project in the park (see picture on page 4!). The purpose of this study is to learn more about Old Faithful Geyser and to improve protection of the natural processes associated with the geyser. The plan is to visualize the shallow subsurface (< 20 feet deep) in the area of Old Faithful Geyser. The study will use ground-penetrating radar to detect subsurface structures, such as thickness of the hot spring deposits, fractures, vents, and cavities.

**Capstones 2014!**

**Reed Gunstone:** Understanding Ecosystem Development in the Emmons Pro-glacial area of Mount Rainier, WA

**Thomas Haney:** Atypical Hydrocarbon Maturation by Igneous Thermal Activity near the Sutter Buttes, CA

**Kristiana Lapo:** Surface-exposure Dating Glacial Deposits on Mount Rainier, WA

**Karen Marie Oseland:** Climate Change in Western Norway and Western WA

**Dan Paduch:** Geothermal Gradient Models of the N Tusas Mountains, NM

**Andrew Peterson:** Playa Lakes and Their Relation to the Ogallala Aquifer

**Cody Pohren:** Stream Channel Change of Western Washington's Skagit River

**Rayce Rybin:** Assessment of the Lower Puget Sound Aquifer

**Beth Steele:** Turbidite stratigraphy of the Cascadia Subduction Zone

**Aaron Steelquist:** Patterns of Melt-Segregation in Mantle Materials

**Alison Tecca:** Paleooceanographic Synthesis of Changes during the Eocene Oligocene Transition

**Khadijah Tividad:** Shoreline Erosion Between the Hoh River & Abbey Is, WA

**Blake Tomasch:** Paleoglacial Basal Thermal Regimes of the Puget Lobe



*Congratulations class of 2014!*

# Field Camp in Nepal!

By Blake Warner '15



*Blake in Mustang, Nepal, close to the Tibetan Border*

In the summer of 2014, I spent 7 weeks earning my field camp credits by exploring and learning the geology of Nepal. This study-abroad experience was jam packed with both cultural immersion and intensive fieldwork. The group was a mix of American students and Nepali students taught by both an American professor and multiple Nepali professors. It was great to see the different teaching styles and to make new friends. Starting in the country's capital, Kathmandu, we were introduced to the Nepali language and given an introduction to the geology of the region. From there, the majority of our time was spent trekking through the Kali Gandaki valley, identifying different rock units, mapping, creating stratigraphic columns, and synthesizing our observations to explain the historical geology of the Himalaya. The rest of the field camp was spent assessing the geohazard risks, with a specific focus on landslide and earthquake hazards, as well as completing a field study project. The project my partner and I created was focused on geomorphology and land-use change in the Phewa Lake Catchment (in the city of Pokhara), which was completed through mapping the current land uses in the catchment and analyzing the change in the size of Phewa Lake over the course of 50 years. This was a once-in-a-lifetime opportunity; I was lucky enough to get credit while I got to experience another culture and learn valuable geological skills in an unbelievable setting.



*All photos for this story courtesy of Blake Warner*

## MORE FACULTY PROFILES!



### Dr. Alex Lechler

Alex grew up in Ohio and earned his undergraduate degree from Denison University, a PLU-style liberal arts college set in rolling hills on the outskirts of the Appalachian Plateau. Alex entered college as a budding engineer but was quickly lured by an Intro Geology class that showed how cool it was to study the world around us. From Denison, Alex traveled to the University of Michigan for his PhD. He finally transplanted out West, making a two-year stop in New Mexico for a postdoc position and finally migrating to the beautiful Pacific Northwest, first for a one-year research position just up the road at UW before finally arriving 'home' at PLU last Fall. Alex's first year has been filled with an array of teaching challenges and rewards. As part of his fall Natural Hazards class, he enjoyed exposing a group of PLU undergrads to the reality that we do in fact live on an active plate boundary with earthquakes, volcanoes, and landslides ready to make their presence known. He then dove into a new GEOS course offering on Stable Isotope Geochemistry during J-Term 2015 that was an intense, but fun- and isotope-filled learning experience for both professor and 10 budding geochemists. In Spring 2015, he taught the department's gateway course (GEOS 201) to an impressive group students who have the look of a fine, new crop of PLU Geosciences majors. Alex is mentoring three PLU undergraduate researchers this summer as part of a Murdock Trust-funded project investigating the glacial paleoclimate of the Palouse region of eastern Washington. Lots of loess-dust digging and stable-isotope analyzing to come this summer!

# Geoscience is a field science!

Students and faculty work in the field - in our classes, as part of capstone research, or through student-faculty research programs. Enjoy these recent highlights!



*PLU President Tom Krise watching students in Duncan's Hydrogeology class measure discharge at Gonyea House, the president's residence.*



*The site of Duncan Foley's most recent research project – Old Faithful in Yellowstone National Park! This image is from a webcam that allowed the world to follow his work. Can you find Duncan? Neither can we!*

## MORE FACULTY PROFILES!



### Dr. Kat Huybers

Kat Huybers has joined the department to teach Conservation of Natural Resources, Introduction to Climate Change, GIS, and courses in the Environmental Studies Program. Kat's research uses models to explore how geophysical systems, including glaciers, lakes, and the general circulation of the atmosphere, respond to climatic change. While pursuing her PhD at the University of Washington, Kat had the opportunity to work with two amazing PLU students in Antarctica, and is very happy to be part of the PLU community. Outside of research and the classroom, Kat fills her time with crosswords, riding her bike, and enjoying food with friends. This summer, she is looking forward to a trip to Iceland with her fiancée, Matt.



### Dr. Tarka Wilcox

Tarka Wilcox grew up exploring the gorges and bluffs of Ithaca, NY, which through the avenues of ice-climbing and hiking led to an interest in Geology. The majority of Tarka's professional career to date has been spent performing field mapping and geo-hazard characterization studies of field sites in places like Taiwan, Colombia and Rwanda. Currently he's interested in exploring research projects a little closer to home, including investigating processes of active faulting and seismogenesis associated with the easternmost boundary of the Basin and Range. This summer, Tarka will teach Geologic Hazards!

## Senior Spotlight: Greg Hibbard



Greg Hibbard, from Olympia WA, will graduate from PLU in August 2015 with a B.S. in Geosciences and a B.A. in Economics. Greg has explored his interest in global climate change through a series of projects, including summer 2014 student-faculty research with Dr. Sergia Hay (PLU - Philosophy) about climate change reparations. In the fall his economics capstone explored an economic model of world dependency on fossil fuels for energy and this spring his geosciences capstone models the projected effect of global energy consumption behavior on future climate. He has been a varsity athlete at PLU all four years, playing football and serving as a co-captain of the team in the 2015 season. This spring he was a recipient of a prestigious NCAA

Postgraduate Scholarship, one of only 29 fall sport male athletes from all 1100 NCAA schools nationwide. He is also a recipient of the National Association of Geoscience Teachers scholarship for field study that will support his summer 2015 field camp experience through Eastern Washington University.

## What happens after graduation?

We asked alumna Kristiana Lapo ('14) to share her experiences during the year after graduation!



"Just over a year ago I was frantically prepping for capstone and graduation with little plan for my future. I survived capstone and my last round of finals and jumped in a car to drive 12 hours to field camp in Idaho less than 24 hours after graduation. Exhausted after field camp, I spent two weeks camping and traveling through Grand Teton, Yellowstone, and Glacier National Parks where I became fast friends with my bear spray and my books. Following my solitary vacation, I began work as a gardener at Grunewald Guild, an art-centered community and retreat center in the heart of the Cascades. Working under a volunteer botanist and artist, I tended a 40x40ft organic vegetable garden that

supplied produce to the kitchen for the summer and fall. I was in charge of managing the garden, harvesting the produce, and cooking and preserving unused fruits and veggies for winter stores. After leaving the Guild and a



water hydrology intern at the USGS working on projects in the Piedmont watersheds and the Chesapeake Bay."

*All photos in this story courtesy of Kristiana Lapo '14*

### MORE FACULTY PROFILES!



#### Dr. Rose McKenney

Rose probably suffered permanent water logging from attempting to jump from rock to rock in Silver Creek near her childhood home in Oregon. Water has remained a theme throughout her professional career as a fluvial geomorphologist. In addition to teaching Geomorphology, this year she has also taught Interdisciplinary Inquiry and Analysis, Environmental Studies Capstone and Writing 101—Cultivating Sustainability for interdisciplinary programs at PLU.



#### Dr. Jill Whitman

Jill has lived in most corners of the US – born in the territory of Hawaii, grew up near Boston, college in Vermont, and graduate school in Miami and San Diego. Now in her 27<sup>th</sup> year at PLU, she feels settled in the northwest but still deeply rooted to the northeast; she returns each summer to enjoy the beauty of the Maine coast and spend extended time with her family. She and husband Don continue to enjoy having their grown children nearby – Bobby in Bellingham and David in Seattle. In the fall, Jill introduced 25 wary, but very dedicated majors, to the world of Geophysics. This spring she taught Oceanography and the spring Capstone class with a record 19 seniors! This year Jill began her 2-year term as Chair of the Faculty, leading the faculty governance system and liaising with the administration around pan-university issues.

## Spring Break Field Trip in Utah!

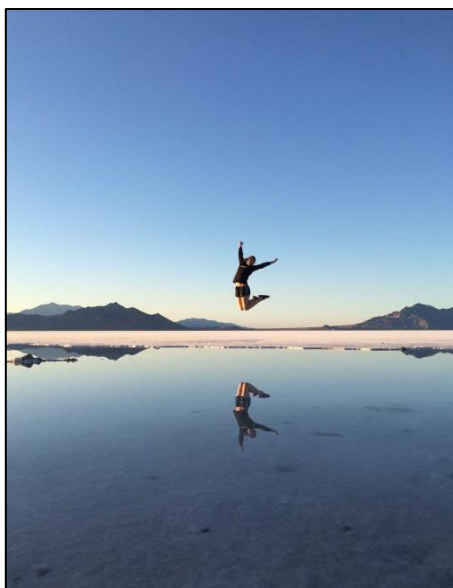


By Nicole Combs '16



Isabella Von Trapp presents the geology of Delicate Arch (Photo: Duncan Foley)

Field Trip is a required course for Geoscience majors, but it is also a great opportunity to see and experience geology outside of Western Washington in an academic setting! Each student had a field-presentation to give in Oregon, Idaho, and Utah, which meant we were geologists, but also tourists! We visited five major National Parks in Utah: Bryce Canyon, Arches, Zion, Capital Reef, and Canyonlands among many other small stops like the Snake River Channel in Twin Falls, Idaho and some views of ancient petroglyphs in Utah, which are shown in the photo! The trip was fun and informative, and was a great use of Spring Break!



Bonneville Salt Flats (Photos: Maricel Fee '16)

## Letter from our new Department Chair, Rose McKenney!

It's an exciting and challenging time in the Geosciences Department! We welcomed three new faculty members—Alex Lechler, Kat Huybers and Tarka Wilcox—who bring new ideas, different sub-disciplinary specializations, and lots of energy to the department. At the end of this year, Duncan Foley is finishing his teaching career at PLU, and we will miss his humor, ability to connect diverse geologic ideas, and beautiful pictures, especially of Yellowstone.

We have over 50 declared majors and the department is buzzing with students! This summer, students are tackling the challenges of field

camp; most will travel to the Rocky Mountains, studying in locations from southwestern Montana to northern New Mexico. Others are engaging in student-faculty research this summer with Alex investigating chemical signals of climate change in eastern Washington or with Claire investigating glacial and hydrological systems at Mt. Rainier.

We look forward to seeing what the department and our alumni accomplish!

*Rose McKenney*

# Alumni Updates!

Thanks to all alumni who responded to our request for updates ! Congratulations to Class of 2010 for submitting the most responses. 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)

"I am currently working as a contract geologist for Kennecott Exploration on an exploration mining project in western Montana. My work involves looking at lots of rocks, hiking for field work, and working with earth science professionals from all over the world."



**Jaclyn Layton ('11)** After graduating from PLU, Jaclyn Layton enrolled in UW Tacoma's GIS Certification Program in 2013. Since becoming a certified user of Geographic Information Systems, she pursued a career in public service working part-time for both the City of Tacoma's Environmental Services Department, as well as Metro Parks Tacoma's GIS Division. All her hard work paid off, and as of April 13, she is working full-time at Metro Parks Tacoma as a GIS Technician in the Planning, Design and Development Department. She is passionate about the ever-changing world of GIS and the implications that open-data has on her community.



## Allie Jo Koester ('13)

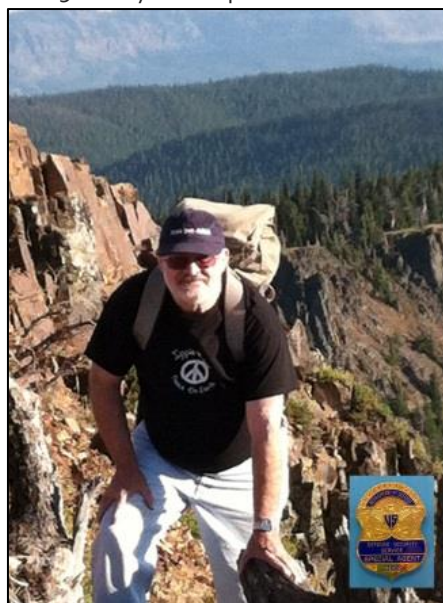
"I'm currently working towards a Masters of Geology from the Earth and Environmental Sciences Department at Boston College. My project will be constraining Laurentide Ice Sheet thickness using beryllium-10 dating in the New England mountains. My summer will be spent conducting field work on three different mountains in New England."



## Krista Sparks ('11)

"I'm happy to announce that I graduated with a Master's degree in Geology from Northern Arizona University in December. I've been working with Clear Creek Associates (a hydrogeologic consulting firm) in Phoenix since January and I love it so far!"

**Robert Conley ('72)** "I was an undergraduate student at PLU from 1968 to 1972; and graduated in 1972 from the Earth Sciences Department. I returned to PLU and completed my Masters of Natural Science (MNS) graduate program in 1980. I was recruited in the 1980's by the Department of Defense (DoD) as a federal Special



Agent/Advanced Technology Scientist to oversee and protect DoD Advanced Technology Programs and Projects. Having served 26 years, I retired in March of 2013. From April of 2013 to the present I have worked in my retirement job at the University of Washington as their UW Office of Research Advanced Technology Export Control Specialist for the Seattle Campus, the Bothell Campus and the Tacoma Campus."

**Greg King ('98)** is Senior Scientist for the Department of Defense. In Washington D.C. He studies Geomatics and the geosciences.



**Connie Martinson ('10)** "I currently spend as much time as humanly possible globetrotting and adventuring. To pay for these trips, I work for an engineering company in Kent that designs and engineers fiber



optic pathways on behalf of major cell phone carriers and the largest cable provider in the US. We also must permit to all jurisdictions and

government entities to do so. I am currently the coordinator and facilitator of this process. My sons are all taller than me now! They are 19, 17 and 14. I look forward to being able to travel year round someday when I win the Lotto! This photo is of me at Coba in the Yucatan after hiking to the top."

**Aaron Steelquist ('14)** "Since August I've been working at PLU as the Programs Coordinator for Student Involvement and Leadership.



It has been nice sticking around Tacoma for an extra year as I shop graduate schools and figure out where I would like to be next year. In September I will be heading to Stanford to pursue my PhD in Geological Sciences with Dr. Jessica Warren as my advisor. We'll be working on peridotite mylonites to determine deformational conditions and mechanics on oceanic transform faults using both dredged and outcrop samples. In the meantime I will be finishing up my contract with PLU in May then hiking, backpacking, and goofing my way through summer!"

**David Horne ('10)**

"I am on my third year as an Assistant Geologist for Burns & McDonnell in St. Louis, MO. I have been traveling around the Midwest performing a variety of services (monitoring well installations, air sampling, groundwater sampling, soil sampling, etc.), and I am moving toward groundwater remediation investigation, planning, and implementation. I purchased a house last September in St. Louis with my wife and cat."



**Benjamin Kortlever ('06)** Ben is currently living with his wife, Candice, in Melbourne, Australia and working for Cardno as a Senior Environmental Geoscientist. After working in Seattle for 7 years, Ben accepted an opportunity to fulfill a lifelong dream and transfer to Australia. Ben is a licensed Geologist and currently serves as a Project Manager and health and safety representative for his company. He deals primarily with former petroleum sites requiring soil and groundwater remediation, but also spent 6 months in the Australian bush supervising demolition of large petroleum distribution facilities. And yes, he can successfully drive on the left side of the road.

**Chris Knox ('10)** is a geologist and lead driller at American Engineering Testing Inc. "I'm still working in North Dakota and eastern Montana. Work is still busy as ever." He is considering a move back to the Pacific Northwest, and he's getting married next year!

**Collette Breshears ('10)** "Last year I took a job as a Natural Gas Analyst with Genscape, Inc in Houston, Texas! I like what I do, which is to study the development of new natural gas pipeline infrastructure to transport the gas from where it is produced at the wellhead to where it is consumed by end-users like people, power plants or industrial factories. My knowledge of geology and skill at reading maps really helps me add in another layer of



analysis. Other than that, I have been having a ton of fun learning Houston and the culture here. I'm not crazy about the climate, but the people here are fantastic, and there is so much to do that I don't think I could ever experience it all!"

# 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 help to support Geosciences students by making a donation to this fund.

## PLEASE CONSIDER A GIFT

We welcome your gift to the Brian Lowes Fund

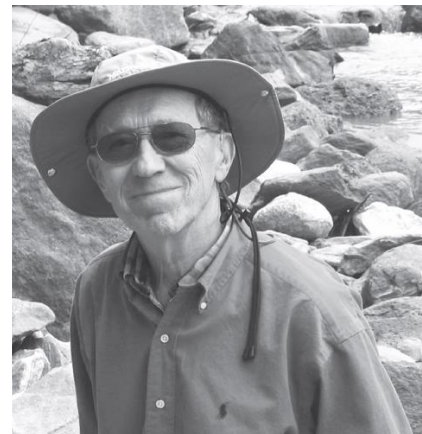
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