THE MYLONITE

THE NEWSLETTER OF THE GEOLOGICAL SCIENCES DEPARTMENT
CAL POLY POMONA | ISSUE26| DECEMBER 2018

NEWS FROM THE CHAIR • SPECIAL ANNOUNCEMENTS • FACULTY • ALUMNI

News From The Department Chair

Welcome to the 26th edition of our *Mylonite* newsletter! In my 10th round of writing this document, the text segments below may be a bit shorter to avoid repetition. Usually it helps to have a good rainstorm to get the words flowing, and this year we seem to be off to an early start. There were a couple of nice rain events around Thanksgiving that brought the Claremont season rain total to 3.45 inches (5.5 inches in Mt. Baldy village). El Nino is rumored to revisit us this winter-- Hopefully this will put a big dent in our ongoing drought.

The Geology Department is still thriving with ~ 145 BS majors and 37 active Master's students. Our graduates are finding good employment in the geoscience industries, and several have moved on to various graduate programs, including out-of-state schools like New Mexico State University and Montana Tech. Geology Faculty, Students, and Staff are winding down the first semester of our new calendar system. It has been quite an adjustment for all. I think we all agree that 16 weeks feels much longer than 11. I'm seeing more smiles now that the holidays are approaching

Our students and faculty continue to benefit from your generous alumni contributions. This year such funds were essential for offsetting costs to analyze rock and water samples for senior and MS thesis projects, and to send many students to scientific conferences and research institutions. Our productive students presented posters and talks at the national AGU meeting in Houston, the Flagstaff Cordilleran GSA meeting, and the Southern California Earthquake Center (SCEC) conference in Palm Springs. One student traveled to the University of Nebraska to measure aspect ratios of fossil bones. We also made several laboratory upgrades (described later), including a batch of dinosaur skulls (models of course) to accompany our newly proposed GE course: "Age of the Dinosaurs", and some new equipment items. All of us greatly appreciate the patronage of our alumni donors.

As you relax over the holidays, we in the Cal Poly Pomona Geology Department hope you enjoy reading about our latest accomplishments! We also wish you all the best of health and happiness in the New Year. Let's begin with a group photo showing our eager students studying a limonite-stained striated fault surface in one of my favorite stomping grounds, the Rand Mountains:

Semesters Are Upon Us

This fall was a challenge for all of us as we experienced our first term of the new semester system. Faculty and students are adapting to a new calendar that included an early start (August 20) and 15 lab meetings per term, also a number of hot field trips. Some welcome relief was provided by Veteran's Day and Thanksgiving holidays that occurred in back-to-back weeks this year, but unlike the quarter system we returned from that break with two more weeks of instruction plus a week of final exams.

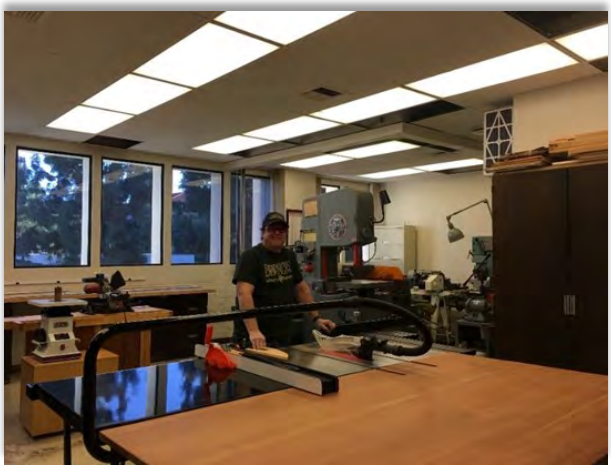
Grades are due December 21, and we are all looking forward to a long holiday season, with classes resuming January 19.

For a few more years we will be working with "transition students" caught between the quarter and semester systems. This involves creative petitions to satisfy unit deficiencies that arise upon substitution of courses that have the same name but not quite the same unit count upon conversion. So far these kind of issues have been resolved through one-on-one advising sessions.

The reader may view details of our new semester curricula in comparison to the old semester program at: http://www.cpp.edu/~sci/geological-sciences/about/degrees-and-classes.shtml

New Renovations and Laboratory Upgrades

Now that Cal Poly Pomona enrolls more than 25,000 students, the College of Science has encountered some serious space constraints. One area identified as prime real estate was the wood and metal shop in Building 8. Our Geotechnician, Frank Wille, spent considerable time over the past 6 months consolidating that work area to make room for the new SEES (Science Educational Enhancement Services) Academic Excellence Workshop. The College of Science shop machines now occupy about half the original square footage. Although somewhat cramped, Frank managed to design a functional system in which the machines can be wheeled out and rearranged for use whenever needed. Frank's office is now in the back room where we used to house the thin section prep and rock polishing equipment (see photos below):



The newly consolidated wood and metal shop in Room 8-233.

Frank's new office in Room 8-233A.

The shop renovations necessitated a major reworking of the petrology lab on the ground floor of Building 4. Frank and I worked over the summer to redesign the rock crushing /rock saw room so it now also contains our thin section and polishing equipment that was moved from Building 8. A new ventilation system keeps the dust down in that back room so we can crush, pulverize, saw, and polish to our hearts' content. Meanwhile, we reorganized the larger room so that one can accomplish XRF powder preparation, sample drying, Frantz magnetic mineral separations, lithium meta-tungstate heavy liquid separation, zircon picking, and zircon mount production in the same general area. In addition to our previous x-ray analysis capabilities we now have a fully functional "zircon factory." Students are able to run their samples through the many steps needed before individual zircon grains may be analyzed on mass spectrometers at Stanford University or CSUN.

Our newly reorganized rock prep room (4-A-639B). View from the rock crushing area shows Bico pulverizer and dust collection system on the left foreground with polishing equipment, thin section machine and rock saws farther back.

Speaking of the Frantz, we have upgraded that 1970's machine with new parts to facilitate mineral separation procedures. One welcome addition is a system for "vertical Frantzing" that can handle large volumes of Grade-B heavies from samples that we seek to extract detrital zircons (see photos below). After the paramagnetic material is removed, and minerals with different magnetic susceptibilities are separated by the Frantz, the next step in the process is lithium meta-tungstate separation. This non-toxic heavy liquid (density = 2.85 g/cm^3) effectively floats off the quartz and feldspar grains, leaving a heavy mineral residue that is much easier to hand-pick for zircons.

The first step in vertical Frantzing is to remove the iron filings produced by the rock pulverizer.

Vanessa Pena uses vertical Frantz to separate sample JNKV 1808.

Vertical Frantz results from 4 different magnetic separation steps.

These various shop and office and laboratory rearrangements required much moving of heavy equipment and cabinets, also scrubbing and cleaning many surfaces. Many thanks to Frank for his efforts therein! I assisted to the extent that my back could handle, but Frank did most of the heavy lifting without complaint. The Geology Department and College of Science have benefitted greatly from his initiative and services.

New Equipment Purchases

We were most fortunate to receive grant funding or gifts to buy five major equipment items over the past year. These new purchases will enhance our research and mission while providing the most modern learning experiences for our students:

- LIDAR ground-based surveying system ($100,000)—A lottery proposal written by Dr. Nourse was funded last April to purchase a ground-based LiDAR (Light Detecting and Ranging) system for use in several of our field courses. This tripod-mounted instrument uses a laser to scan landscape as distant as 2000 m, and creates high resolution topographic images from the reflections received. We plan to use LiDAR to delineate topographic features such as fault scarps and marine terraces obscured by vegetation, and monitor changes over time caused by active slope movements, flooding, and erosion. The associated software allows one to calculate volumes and generate topographic profiles and 3-D images of the landscape. We finished on-site demos with four vendors just before Thanksgiving. Now we are in the final selection and procurement process.

- Seistronics Seismic Refraction system ($25,000)—This fall the Dean approved Dr. Polet's proposal to purchase a new seismic refraction system to upgrade her existing seismic surveying equipment. The new

system should allow capability of using longer arrays of geophones, and running two surveys at once.

- Pelcon Point Counting Systems ($20,000)- Drs. Nourse and Murray were awarded a $15,000 SPICE (Special Projects for Improving the Classroom Experience) grant to purchase 3 automated point counters for our courses that teach microscopic petrography (Sedimentary Geology, Igneous-Metamorphic Petrology, and Mineralogy). The Dean augmented the purchase with $5000 so we now have four systems to facilitate quantitative determination of mineral modes in thin sections.

- Gatan Mini-Cathode Luminescence Imaging system ($20,000)—This is an add-on to the JEOL scanning electron microscope housed in the College of Engineering. It creates high resolution images of our zircon mounts prior to U-Pb analysis at Stannford or Northridge. Resulting photomicrographs illustrate magmatic zonation as well as core-rim relations within individual zircon grains that allow one to select specific spots to target with the ion or laser beam. This purchase was accomplished with funds from several sources: the Sally Lane Laboratory Support fund, the Chemistry Department's CM3D grant, the Geology Department discretionary account, and the College of Science Dean's discretionary account.

- HP DesignJet Poster Printer ($2500). Our aging poster printer purchased in the late 1990's has finally failed. We were able to replace it with a more sophisticated model for ¼ the original price. It's interesting how the cost of certain technology has dropped in twenty years. Our students will use this machine regularly to print presentations for conferences, senior projects, and classroom assignments.

Geology Graduate Program Awards Five More Master's Degrees!

Five of our graduate students defended Master's theses since the last printing of the Mylonite. Let's congratulate:

- Patrick Gillespy ('18): ***"Ontogenetic Change in Distal and Proximal Limb Bones in Pleistocene Coyotes (Canis latrans) and Dire Wolves (Canis dirus) from the Rancho La Brea Tar Pits, California"*** (defended May 2018; Advisor: Dr. Prothero)
- Danny Miranda ('18): ***"Response of Streamflow and Spring Discharge from Precipitation Recharge Events in Icehouse Canyon Watershed, Eastern San Gabriel Mountains, California"*** (defended May 2018; Advisor: Dr. Nourse)
- Katherine Long ('18): ***"Evolutionary Patterns of Late Quaternary Birds from La Brea Tar Pits During the Last Glacial-Interglacial Cycle"*** (defended June 2018; Advisor: Dr. Prothero)
- Drew Faherty***: "Geophysical Controls on Fault-Groundwater Interaction at San Andreas Oasis, at Dos Palmas Preserve"*** (defended November 2018; Advisor: Dr. Polet)
- Caleb Strom: ***"Correlation between Headwall Steepness and Rock Glacier Size and Growth on Earth and Mars"*** (defended November2018; Advisor: Dr. Van Buer)

Several other students are diligently writing their final thesis documents. We wish them success!

Please check out our MS Thesis archive at http://www.cpp.edu/~sci/geological-sciences/masters-program/thesis-archive.shtml to access PDFs of all Geology MS theses completed to date.

Additional Information About the Geology MS Program

The graduate program welcomes applications from our Geology alumni—many have been successful graduate students in the past despite working full-time jobs. Some examples include **Andrew McLarty** (MS, 2014); **Logan Wicks**, (MS, 2014), **Hannah Mejia** (MS, 2014), **Josh Sargent** (MS, 2014), **Celia Pazos** (MS, 2014), **Suzan Perez** (MS, 2015), **Kennis Ho** (MS, 2015), **Shawn Morrish** (MS, 2015), **Rachel Hatch** (MS, 2015), **Raymond Ng** (MS, 2016), and **Ken Craig** (MS, 2017). It seems that earning a BS degree from CPP Geology Department provides good training / work ethic for completing a Master's degree.

The application deadline for Spring semester (2019) has passed, but Fall semester 2019 applications are due **April 1, 2019**. Early application is strongly encouraged to allow time to process financial aid requests. Details of the MS program, including admission requirements, curriculum and instructional plan for the next three years may be viewed at: http://www.cpp.edu/~sci/geological-sciences/masters-program/index.shtml

How to Apply:

- Apply online through https://www2.calstate.edu/apply
- **For prompt feedback, also** send hard copies (or electronic files) of your application and supporting materials to:

  Jonathan Nourse, Graduate Coordinator; janourse@cpp.edu
  Department of Geological Sciences
  3801 W. Temple Avenue
  California State Polytechnic University
  Pomona, CA 91768

Geology Department on Facebook

If you enjoy pictures of students in action, there are many more posted on our student-run Geology Department Facebook site: https://www.facebook.com/geology.csupomona . This site is not officially censored by us, but Drs. Polet and Marshall provide occasional updates with news and images of various Geology exploits.

Personal Notes from Dr. Nourse

2018 was a very productive year for separating and analyzing zircons in between teaching responsibilities that included Structural Geology, GIS Applications, and several advanced Geological Mapping courses. It was kind of sad to teach our last offering of Optical Mineralogy last winter, but so it goes with the new semester system. That part of the curriculum has been incorporated into our Mineralogy, Igneous-Metamorphic Petrology, and Sedimentary Geology that now have 15 weeks of lab instruction. I am in my 10th year as department chair, the senior member of the College of Science Department Chair's meetings that now convene every week.

Research projects in the Rand Mountains, various parts of the San Gabriel Mountains, and Sonora, Mexico continue to develop as new zircon ages roll in and new mapping is accomplished. Several of my students presented related posters at the Cordilleran GSA meeting in Flagstaff, Arizona last May. **Karissa Vermillion (BS, '18)** described new mapping and zircon analyses of metamorphic exposures in Placerita Canyon. **Clark Murphy (BS, '18)** showed new mapping from the nearby Limerock Canyon metasedimentary assemblage, accomplished with co-author **Larry Martin (BS, '18). Homar Colin** displayed his map and stereonet analysis of folded biotite gneiss, quartzite, calcsilicate, and marble in Lost Canyon (a tributary of Icehouse Canyon). Graduate student **Michael Dykstra (BS, '17)** presented XRF Analyses and preliminary zircon ages that confirm an Oligocene age for intrusive rocks initially studied by **Garrett Hazelton (BS, '93)** for his SDSU Master's thesis. Finally, I gave two presentations, a talk and poster, highlighting new zircon ages from the Magdalena metamorphic core complex (my PhD thesis area). This new geochronology resulted from a new collaboration with Mexican colleagues Carlos Gonzalez-Leon and Luigi Solari.

My Master's student **Danny Miranda (MS, '18)** defended his thesis last May after 3½ years of gauging stream flow, spring discharge, and precipitation in Icehouse Canyon. His thesis document is accessible at:
"Response of Streamflow and Spring Discharge from Precipitation Recharge Events in Icehouse Canyon Watershed, Eastern San Gabriel Mountains, California"
It quantifies the different time scales at which discrete rain events materialize as creek flow and spring discharge. In mid June, the two of us led scientists from the *American Association For Advancement of Science* on a pre-conference field trip to Icehouse Canyon to showcase the main results.

Our springer spaniel, Gordie, continues to bring much joy and keep me in a good mood most of the time. He has become my main sidekick for daily hikes (usually two) and many geologic mapping and sampling excursions. I don't think he cares much for rocks or geology (doesn't see the point of it all), but he does enjoy riding in my Pathfinder and experiencing the sights and smells of the great outdoors. He also likes our students and continues to make new friends around the Geology Department and on class field trips. The photos below show a few of our favorite haunts:

Gordie celebrates his second 4th of July. (Check out last year's picture to see how much he has grown).

Gordie enjoys his first snowstorm in Icehouse Canyon—the only time it snowed last February 2018.

Gordie checks out the view of Mt. San Antonio from Blue Ridge camp at 8000 ft.

Gordie studies an outcrop of calcsilicate gneiss on Blue Ridge with one of his best buddies, Clark Murphy (BS, '18).

Gordie goes romping in Prado Regional Dog Park.

One last thing to mention is that I will be on sabbatical this next spring semester, my first in nine years. Stephen Osborn and Jascha Polet are minding the shop in my absence. This time there are no international trips planned, just several local mapping excursions to the Mojave Desert and San Gabriel Mountains, and multiple short trips to the ion probe (SHRIMP) lab at Stanford University and ICP-MS laserchron lab at CSUN to complete zircon analyses. In addition, there is a long list of manuscripts to complete with various professional collaborators from Stanford, Mexico, the USGS, Cal Poly Pomona, and New Mexico State. As Department Chair it has been difficult to find the quality time needed for writing—this will be a welcome opportunity.

A bit of welcome news came in Dec 13 just before press: I passed all three exams required to be certified as a Professional Geologist in the state of California. The tests (taken last October) were challenging and required serious cramming—something I had not done since graduate school days in 1985. It was interesting to be a student again. I was by far the oldest person in the room during the Fundamentals of Geology (GIT) exam.

I wish everyone a very Merry Christmas and Happy New Year. Enjoy a relaxing break with your family and friends!

Student Successes

Graduation, 2018

Our larger student body means a bigger graduating class. **Thirty five** Geology majors and MS students participated in commencement on a warm Sunday afternoon, June 10, 2018. The photo below captures most of them in fine spirits:

Most of the 2018 graduation class.

Katelyn Ruiz carries the Geology Department banner in recognition of her achieving the top GPA of this graduating class.

2018 Alumni Reunion and Student Awards Ceremony

Our 2018 Bar-B-Que / picnic was held at Memorial Park in Claremont on May 5. It was a warm day (95 degrees) compared to last year's drizzly event, but there was plenty of shade to stay comfortable. We enjoyed visiting with our alumni, friends and emeriti faculty, including **Peter Valles (BS, '83)**, **Sally Lane**, **Randal Burns (BS, '06)**, **Larry and Lucy Herber**, **John and Gerry Klasik**, **Darrin Hasham (BS, '01)**, **Lauren (BS, '09) and Logan Wicks (MS, '14)**, **Michael Dykstra (BS, '17)**, and **Anne-Marie Katze**. The photos below show some highlights:

2018's Venue at Memorial Park in Claremont.

Emeritus faculty Dr. Larry Herber and Dr. John Klasik pose with Lucy Herber, Darrin Hasham, and Dr. Jon Nourse.

Peter Valles and Dean Baski with emeritus faculty Dr. John Klasik and Dr. Larry Herber; as well as Dr. Jon Nourse.

The assistance of Geology Club cooks Shane Bonanno, Arnold Pimentel (BS, '18), Manny Vejar, and Isaiah Durden was much appreciated.

Drs. Klasik and Nourse present the $750 Margaret Van Buskirk award to Manny Vejar.

Dr. Nourse presents the raffle prize (collection of Cal Poly Pomona memorability) to alumnus Anne-Marie Katz. This gift was courtesy of Melissa J. Martinez, our College of Science Director of Development.

Dr. Polet says a few words about her student Kyle Macy, recipient of the Geophysics Award. This year's item was a Leatherman multi-purpose tool that Kyle should find

This year we had four recipients of the recently re-named Valles-Henderson scholarship. Peter Valles and Dr. Nourse present the awards ($500 each) to Katelyn Ruiz, Margaret Grenier, Rachel Kreuziger, and Brianda Hernandez.

Dr. Nourse presents the $1000 Prete Award to Karissa Vermillion (BS, '18).

Randal Burns (BS, '06) was here to present his annual Brunton compass award to Arnold Pimental (BS, 18). Drs. Murray, Van Buer, and Nourse also said a few words.

Peter Valles (BS, '83) and Drs. Murray, Van Buer, and Nourse present the Peter Valles field mapping award to Michael Dykstra (BS, '17).

Peter Valles (BS, '83) and Dr. Nourse present the AGI Glossary Award to Peter Flores.

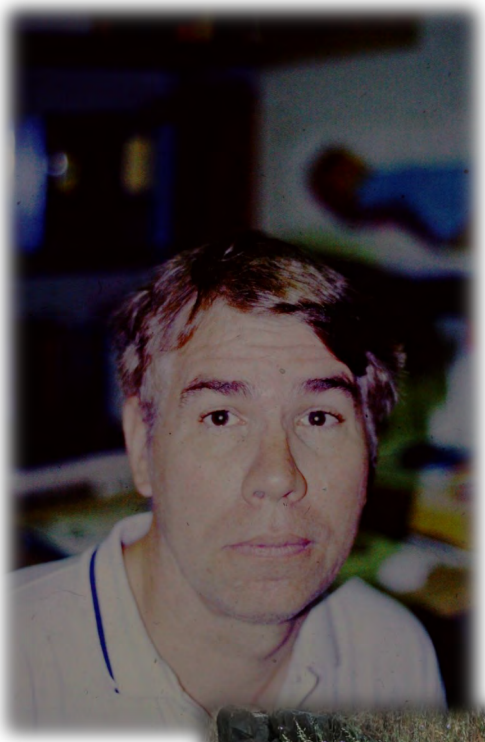
Aly Young receives this year's Peter Valles Field Notebook award.

Mark Thompson and Vanessa Pena were chosen for the Hastings Triplet award (each received a 10X hand lens).

In Memoriam: Dr. David Jessey

We received sad news that our colleague David Jessey passed away April 11, 2018 after battling cancer for several years. Dr. Jessey taught Mineralogy, Petrology, and Ore deposits to many generations of Geology majors between 1980 and 2014. During his last three years with the Geology Department, he taught one of his passions: Exploration and Mining Geology (GSC 440). Dave joined the Department in 1980 fresh out of the PhD program at the University of Missouri, Rolla (a.k.a. Missouri School of Mines). He brought a special expertise and practical industry experience in minerals, hard rock petrology, and ore deposits. Our former students will recall Dave's enthusiasm about these topics. He was also instrumental in finding good jobs for many of them.

I have many fond memories of Dave, from the time he hired me as a Lecturer in during Summer of 1989 through the many dynamic field trips he led to the Mojave Desert and various mining districts. I feel most fortunate to have participated in his Nevada trips to Robinson Mine, Round Mountain, and Cortez Mine during 2009 and 2011. Dave Jessey was a very supportive colleague to me and a highly valued Professor in the Geology Department. He will be greatly missed.



Dr. Dave Jessy in both his elements. The indoor classroom and the one he preferred the outdoor classroom. (Picture (R) taken by: Kacie Wellington '11)

In Memoriam: Lucy Herber

We lost another member of the Cal Poly Pomona Geology family early last summer. Lucy Herber, wife of Professor Emeritus Larry Herber, passed away at home on June 28, 2018. Those of us who spoke with Lucy at the alumni picnic are most grateful to have had that opportunity. Lucy has long been a Geology Department supporter. She was a regular attendee of our alumni events, even after Dr. Herber retired. She was always so cheerful and a positive influence on the Geology majors. Our deepest condolences go out to Larry Herber, who I know is staying active, carrying on with his early morning walks in the Cucamonga Canyon area.

Lucy and Larry Herber (on the left), engaged in conversations with Sally Lane, Gerry Klasik, and Darrin Hasham (BS, '01), among others, at the May 5 Alumni picnic.

In Memoriam: Dr. Steven Martindale:

Another sad message came to us from Steven Martindale's sister, Carol Trumpfheller, informing us of his passing on August 25, 2018 . This was quite sudden news to me—Steve and I had just spoken on the phone a month earlier and he seemed well at that time. Steve was an important adjunct instructor in our Department between 2012 and 2017. I very much enjoyed co-teaching the Advanced Engineering Geology course (GSC415/L) class with him and Ernie Roumelis. He took the lead on several fields trips for that class. Steve also taught several sections of Engineering Geology I (GSC 321/L). He gave the students valuable perspective about what it is like to work in the geotechnical industry, employed with the Orange County's Engineering Geology division. His stories about testifying as expert witness in several trials /lawsuits involving slope failures and subsequent mitigation were memorable. Steven Martindale maintained high standards in his classes, and our students learned much from him.

Dr. Steven G. Martindale.

course, during a massive heat wave!) to obtain additional data on the amplification and depth of the basins. These research projects and several others have been presented at a variety of meetings this year, including NCEE, AAASPD, SCEC, SEG, SCCUR and AGU (next week), which has led to publication of two expanded abstracts and a conference paper this year. In terms of publications, I was also part of a team that published a paper in Reviews of Geophysics on Probabilistic Tsunami Hazard Analysis.

Fortunately, there was still some time for me to travel, and I visited two of my favorite countries this year, Italy and Switzerland. I'm hoping to be able to visit Chile next year in time for the total solar eclipse.

Happy Holidays!

Faculty News

Jascha Polet

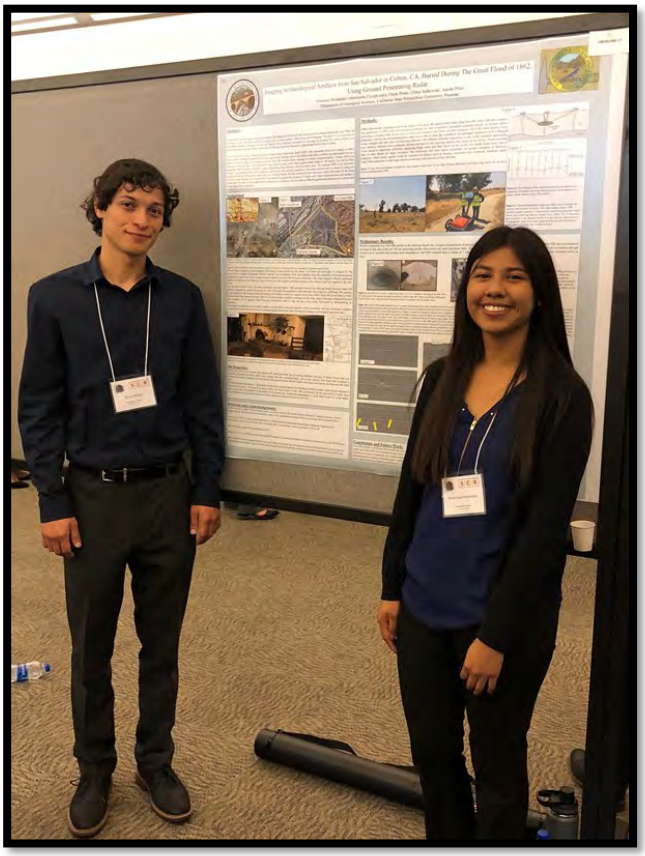
Hello!

Just a quick note before I leave for AGU. I'm happy to say that we survived the transition to semesters, and I'm looking forward to a longer winter break. Much of my teaching focus this year has been on re-working my classes for semesters, and the development of a new class, taught for the first time this Fall: Quantitative and Computer Applications in the Geosciences.

On the research front, numerous student research projects have been successfully completed this past year, and many more have just started. Significant research funding was obtained through the Learn Through Discovery project by two research teams, one led by Chloe Sutkowski and one led by Stacey Petrashek. Chloe's research is an archeo-geophysics project to detect artifacts from San Salvador in Colton, CA, buried during the Great Flood of 1862. Stacey is also using a variety of geophysical techniques, to image groundwater-fault interaction at Dos Palmas Preserve. This project is extending research that was originally started by Drew Faherty, who just defended his MSc thesis last week. A third research team, led by Anisha Tyagi, is investigating the seismic site response in the San Gabriel and San Bernardino Basins. This project was supported by a grant from the Southern California Earthquake Center this year, and we installed several broadband stations this summer (of

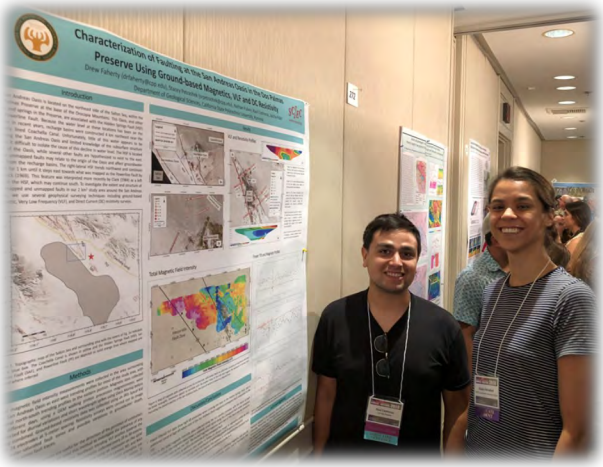
Photos from the GSC 4340 field trip to Dos Palmas Preserve.

Anisha Tyagi, Jose Gomez, Peter Flores and Kyle Macy installing a broadband seismometer for the BASIN project this summer.

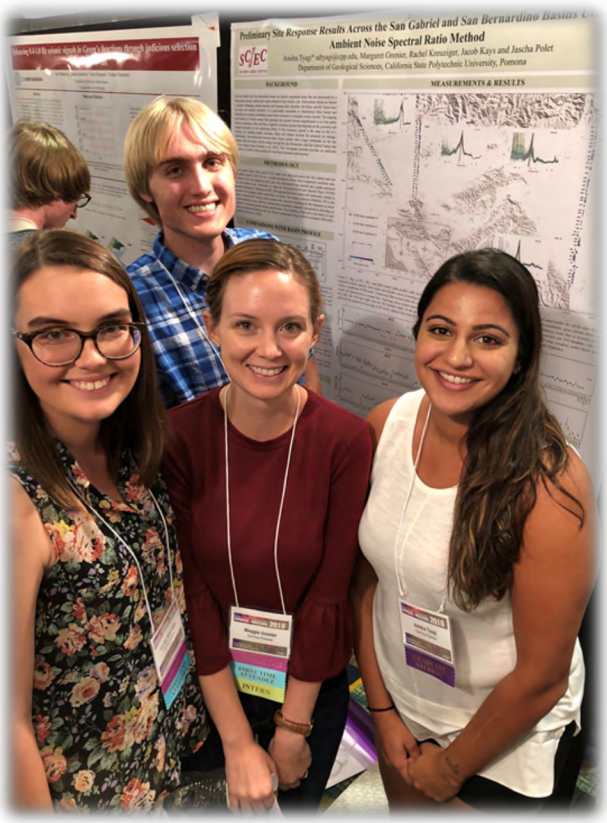


Oscar Prado and Veronica Hernandez at their Southern California Council of Undergraduate Research poster presentation.

At the award ceremony for the Learning through Discovery project, where Chloe Sutkowski, Oscar Prado, Veronica Hernandez, Raul Contreras, Nathan Pulver and Stacey Petrashek received research scholarships.



Raul Contreras and Stacey Petrashek at their poster at the Southern California Earthquake Center annual meeting.



Anisha Tyagi, Maggie Grenier, Rachel Kreuziger and Jacob Kays at their poster at the Southern California Earthquake Center annual meeting.

Part of the GSC 4340 student group during the Dos Palmas field trip, as taken by a drone (and no, the boat is not ours.)

Stephen Osborn

The Hydrogeology Research Group has been productive since my last Mylonite two years ago. I was on sabbatical last Fall and unable to submit an update. So, this Mylonite is a two-year update. Since 2016, there have been two graduate and eleven undergraduate theses completed on a variety of projects that ranged from soil gas surveys of the Porter Ranch natural gas leak to water quality assessments that investigated elevated Arsenic and hyper saline brines in shallow groundwaters and surface waters. In addition to several projects locally in Southern California, we completed research at Mt. Colima in Mexico and Nicaragua. Each of the past two years, I submitted two NSF proposals with colleagues from the University of Arizona, Ohio State, and others. Despite getting excellent reviews, we were not funded. The NSF program manager has encouraged us to submit again. Doctor Polet and I completed work on a grant from the Bureau of Land Management that constrained faults and groundwater at Dos Palmas Nature Preserve three miles from the Salton Sea. I have published two papers as a co-author. One in the Proceedings of the National Academy of Science that details results in part from field sampling that students and I have conducted in Colorado in previous years. The second paper was just accepted for publication in Environmental Science and Technology Journal that reviews the current science identifying and monitoring potential environmental impacts related to oil/gas production and hydraulic fracturing. This paper is an outcome from an invited talk that I gave at the International Atomic Energy Agency in Vienna, Austria in 2016 with several colleagues from all over the world. This was an amazing experience.

The semester conversion has been challenging but overall it has gone well. I have spent a lot of time updating and redesigning my entire curriculum for the conversion. This first semester, I taught Geochemistry and a graduate class on Advanced Hydrogeology. The semester experiment continues in the Spring with undergraduate level of Hydrogeology and soil Physics. I'm excited for the potential of a productive 2019. We currently have seven graduate students and ten undergraduate students that are in various stages of research. I'll do my best to help them finish and graduate. Happy and safe holidays! Cheers!

Stephen Osborn

Dr. Osborn out in the field with his students.

Nicholas Van Buer

Hello Everyone,

This year's entry will be a bit shorter than usual, not due to a shortfall of activity, but due to a shortfall of time, resulting from a pernicious combination of the start of semesters and the birth of my firstborn child. Let's start there: Ian arrived June 2nd, right before Spring finals week, and is growing rapidly–so far he is a very active and smiley child. On campus, the last year has seen a big turnover in student researchers, with five students completing senior theses during Winter and Spring quarters (and 9 student presentations between the Lunar and Planetary Science Conference, the GSA Cordilleran Section Meeting, the Pacific Section AAAS meeting, and the Southern California Academy of Sciences meeting). We also installed a new cathodoluminescence detector so we can map our zircons before we zap them for ages. Field trip highlights include a new Field Module to the Big Maria Mountains in SE California, where some overturned and metamosphosed equivalents of the Grand Canyon sequence form the footwall of a detachment fault, a new petrology field trip to the tilted crustal section of Joshua Tree National Park, a particularly snowy Volcanology trip to the Owens Valley/Mono Basin area, and a new Structural Geology mapping area in an overturned syncline south of Mount Piños. On to next year!

Cheers,
Nick Van Buer

Ian Ottensmann Van Buer.

Good students, badlands: mapping structure in the Plush Ranch Basin south of Mount Piños.

Volcanology students trudging through snow. Mono Craters rhyolite domes in background.

Bryan Murray

Happy Holidays!

There has been a lot of field geologizing going on this past year at CPP! For Spring 2018 Field Methods, due to some extreme heat waves, we visited a few new field sites in search of cooler temperatures. We spent a day mapping in beautiful Red Rock Canyon State Park, and then took refuge at higher elevations the following weekend for two days of mapping at Devil's Punchbowl, which included lots of fun off-trail scrambling and a hike to the Devils Chair to see an excellent exposure of the Punchbowl Fault. We returned to the Marble Mountains and the Ludlow DQ for Fall 2018 Field Methods and had unbelievable great weather for November. We ended the days in the field with spectacular sunsets, baked ziti, and pumpkin pie (with whipped cream courtesy of Frank)! Another trip with great food and fun was to Santa Barbara County for my Earth, Time, and Life lab. After examining stratigraphic relationships in the Santa Ynez Mountains, we camped at Jalama Beach, just north of Pt. Conception. After waking up to the sound of crashing waves, we searched the beach cliffs for late Miocene fish fossils in the Sisquoc Shale, then devoured a delicious "Jalama Burger" before heading home. The final field trip I led was to the Calico Mountains for my Spring 2018 Field Module course, where students were greeted by a swarm of thirsty bees and enjoyed very bright campfires in the evenings.

This year I've presented some of my ongoing research results at several meetings, with much of the research for these presentations coming from the work my students and I completed during my Field Module courses. I gave a talk on new geochronology from the Calico Mountains at the 2017 GSA Annual Meeting in Seattle, and a poster presentation on preliminary stratigraphic interpretations in the western Palo Verde Mountains near Blythe at the 2018 GSA Cordilleran Section Meeting in Flagstaff.

Until next time, cheers!
Bryan Murray

Camping in the Calico Mountains for spring 2018 GSC 491L Field Module.

Sunset over the Calico Mountains (S18 GSC 491L Field Module).

We just had to take this picture—Pallett Creek (S18 GSC 2550L Field Methods).

Going to extremes to get that strike & dip (S18 GSC 255L Field Methods)

Spring 2018 GSC 255L Field Methods trip to Devil's Punchbowl.

Scrambling at Devil's Punchbowl (S18 GSC 255L Field Methods).

Whip it, whip it good—Frank mixing up some whipped cream in the Marble Mountains for our pumpkin pie (F18 GSC 2550L Field Methods)

End of a great day mapping in the Marble Mountains (S18 GSC 2550L Field Methods).

"Is this the Zabrewski?" Marble Mountains, spring 2018 GSC 2550L Field Methods).

Marble Mountains camp kitchen—complete with running hot water! (S18 GSC 2550L Field Methods).

Jeff Marshall

Hi folks. Well, there goes another year. The switch from quarters to semesters made this year fly past in a jagged blur. The loss of an entire month of summer was indeed tragic (insert sad face emoji). The shift of gears into semester mode resulted in lots of awkward adjustments and a few pounding headaches. No worries though, we will survive (insert cool sunglasses emoji). For our final year on quarters, my teaching was pretty much the same as always, with Geomorphology, Quaternary Geology, and Grad Seminar in the fall, as well as Natural Disasters and Watershed Restoration in the spring. Service included the usual dose of work with the Geology RTP Committee, CSU COAST Initiative, NSF GeoPRISMS Education Advisory Committee (GEAC), and Geosciences Division of the Council on Undergraduate Research (CUR).

My winter quarter was devoted to New Zealand research with the NSF SHIRE Project *(Seismogenesis at Hikurangi Integrated Research Experiment)*. This is a four-year multidisciplinary collaboration between five US universities and GNS Science (New Zealand Geological Survey) to investigate megathrust earthquakes and tsunami along the Hikurangi subduction margin. In late February, we embarked on our second three-week SHIRE field expedition to study uplifted paleo-shorelines along the east coast of the North Island. Our field team included REU undergraduate students Jennifer Hamel and Caleb Miller, and grad students Chris White and Noah Zohbe. We focused most of our efforts on mapping and sampling coseismic Holocene marine terraces near Cape Kidnappers in the southern Hawkes Bay region. For their senior thesis projects, Jen and Caleb are using airborne LiDAR imagery to study uplifted terraces at the coastal villages of Waimarama, Ocean Beach, and Clifton. Fieldwork included mapping terrace treads and risers, topographic surveying with laser range-finders, and collecting shell samples for radiocarbon dating. We spent many hours hiking along rural roads and beaches, and digging into stream banks and coastal cliff outcrops for shell fossils. For Chris White's MS thesis, we traveled to the village of Riversdale on the southern Wairarapa coastline, where we worked with GNS colleague Nicola Litchfield to collect sediment cores from uplifted Pleistocene marine terraces for OSL dating. Chris will also work with LiDAR imagery from this area to evaluate active uplift, folding, and faulting.

On one day at Waimarama, we were joined in the field by collaborator Kate Boersen from East Coast LAB, a geologic hazards public outreach and education center located at the National Aquarium in Napier. Kate filmed our fieldwork and produced an online video that is featured

on the East Coast LAB Facebook Page. On another evening, we attended a public lecture at the LAB on tsunami hazards and early warning systems presented by two Japanese colleagues. In addition to our fieldwork and outreach activities, we also enjoyed a few side excursions to places like Te Mata Peak for a spectacular overview of Hawkes Bay, Ahuriri Lagoon to view the coseismic uplift area from the 1931 Napier earthquake, Maraetotara Falls for a short forest hike to a beautiful cascade plunging over limestone cliffs, and the Tuki Tuki Valley for an excellent afternoon investigating the "terroir" of vineyard soils and their influence on the quality of wine grapes grown on Pleistocene river terrace gravels. Another fun field trip was with the famous Gannet Safari, riding in a 4WD microbus out to the tip of Cape Kidnappers to view Pleistocene marine terraces, as well as a massive colony of nesting Australasian gannets. Tea and cookies with the squawking gannets was a particularly kiwi touch to this adventure. And, as usual, we spent some time exploring the wonderful city of Wellington, riding the Cable Car, walking through the botanical gardens, and exploring the beautiful waterfront, including the Te Papa Museum. We also made a trip to Lower Hutt to visit our colleagues at GNS Science and take a walk along the Wellington Fault scarp at California Park.

This year also involved several professional conferences and workshops. Last October, a large group of Cal Poly Pomona faculty and students attended the GSA Annual Meeting in Seattle. At this meeting, I participated in the Advancing Subduction Zone Science Townhall, which focused on the recent release of the USGS Subduction Zone Science Plan and SZ4D Initiative Report. I also attended the business meeting of the Council on Undergraduate Research Geosciences Division, and met with several SHIRE research colleagues. The Cal Poly group shared a great dinner at Ivar's Salmon House on the wharf, and many of us enjoyed other evening expeditions out to great restaurants, microbreweries, and live music venues.

In December, I traveled to New Orleans for the AGU Fall Meeting. Undergraduate student Jessika Valenciano presented a poster on her New Zealand senior thesis research, and I gave a workshop talk on the NSF MARGINS Mini-Lesson Project, an online collection of university-level plate tectonics teaching resources I helped to develop several years ago. I also attended the NSF GeoPRISMS Townhall and another Subduction Zone Science Townhall, as well as alumni reunions for UCSC and Penn State. The Cal Poly contingent gathered for our annual AGU reunion at the Oceana Grill in the French Quarter, and then we all spilled into the streets for, well, you know. In addition to the science and revelry, I also escaped from the meeting on occasion to do some very cool touristy things, like eat lots of food, walk the French Market, enjoy a café au lait and beignet at Café du Monde, tour the Old Mint and New Orleans Jazz Museum, and peruse the Mardi Gras and Hurricane Katrina exhibits at the Presbytère. What a blast!

In June, grad students Chris White and Emmons McKinney joined me on a trip to Austin, Texas to participate in the NSF SHIRE Project Meeting held at the University of Texas Institute for Geophysics. I gave two talks, one on the science results of our fieldwork, and another on the education and outreach components of the entire SHIRE Project. We enjoyed several evening meals out at Austin eateries with project colleagues, and on the final night, Emmons, Chris, and I gorged on Texas BBQ and watched the spectacular nocturnal display of Mexican free-tailed bats at the Congress Avenue bridge.

Over the short summer, my son and I visited grandma and cousins several times in San Diego. Highlights included boogie boarding at La Jolla Shores, riding motorized Lime scooters along the downtown waterfront, and touring the Sea Shepherd cutter M/V Farley Mowat. I also attended the ESRI GIS User Conference at the San Diego Convention Center.

Kyle is now a high school sophomore, getting straight A's, and keeping busy with Theatre and Speech & Debate. He'll turn 16 next week and is working toward his driver's license (eek!). I also have a birthday next week, but I'm not going to say how old I am. After the birthdays, we head down to grandma's house in San Diego for Christmas and the New Year. Peace to all and Happy Holidays!

Cal Poly Pomona Geology students Caleb Miller, Noah Zohbe, Chris White, and Jennifer Hamel, Tiakitai Reserve, Waimarama, North Island, New Zealand.

Caleb Miller, Jen Hamel and Chris White preparing to collect shell fossils for radiocarbon dating from the uplifted paleo-interidal platform at Waimarama Beach, New Zealand.

Noah Zohbe and Caleb Miller extracting OSL sampling tube from uplifted Pleistocene marine terrace cover beds, Riversdale, New Zealand.

GSC 4910L Coastal Tectonics field trip with a little homage to Cal Poly written in the Sand.

GSC 4910L Coastal Tectonics students taking measurements with the laser range finder.

GSC 4910L Coastal Tectonics students taking measurements with the laser range finder, this time on the beach. Not a bad field trip don't you agree?

Emeritus Faculty

John Klasik

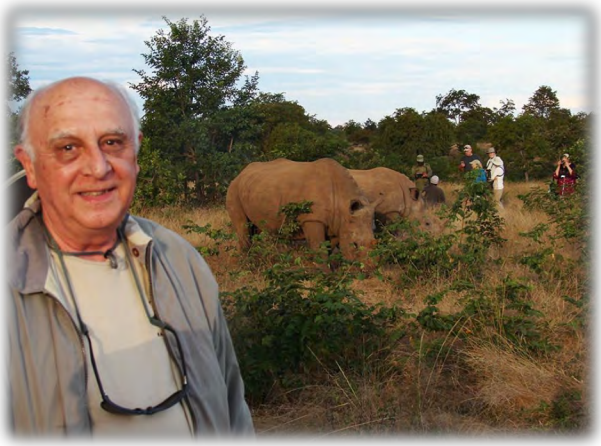
GREETINGS TO ALL YOU FINE ALUMNI
I start my 2018 Mylonite article by marking the passing of two individuals, Dr. David Jessey and Mrs. Lucy Herber. I had known both of them for more than 30 years.

Dr. Gerry Henderson's untimely passing in 1981 (I believe) opened a position in economic Geology. Dave was hired to fill that position. I am sure we could not have made the best of first impressions. First, we put Dave up in the Lemon Tree Motel. It is close to campus, but also right next to the I-10 near the Fairplex exit. It was not a nice place. Second, the Saturday that Dave arrived was PolyVue (I think that is how it was spelled). This campus open house, PolyVue, annually show-cased the students, faculty, research efforts and teaching to the community. That year, Geology's exhibit was in one of our field camp Army surplus tents. It was a very hot April day. The inside of the tent was stifling. Dave put on a good front and tried to enjoy himself. In spite of these first impressions, Dave accepted our offer and became our economic Geologist. His presence transformed the Department and its programs. He probably was the first hire who not only was an excellent field geologist, but an adept lab geologist. The ore deposit collection, containing samples from key mines from around the globe, is Dave's doing. The study of polished sections via reflected light microscopy is Dave's doing. The same is true for fluid inclusion studies. His work in the Mojave, especially, the Calico mining district, greatly advanced the understanding of ore deposition, detachment faulting and tectonic history of the Mojave. Dave was instrumental in obtaining the XRF, the Atomic Absorption Spectrometer and the shatter box. Dave's self-taught knowledge of computers brought in our first units and created our first network. His accomplishments go on and on. His strategic thinking and wise guidance facilitated many Departmental advances. Most noteworthy of which was his dogged multi-year effort to establish a graduate program. Dave was also my friend and colleague.

Lucy Herber was a wonderful ray of sunshine. I truly enjoyed her company and conversations with her. She brightened each and every Alumni Reunion that she attended. She had a keen wit, was articulate and had a sharp memory. At last May's Reunion she was interested my activities and what our two sons were up to. She had a great memory. She was a kind and generous person. Plus, she, somehow was able to put up with Dr. Herber for 57 years of marriage!

OK, now on to my adventures. The highlight of this year, and perhaps my lifetime, was a two-week, Road Scholar run, safari in southern Africa. We spent three nights in Botswana's Okavango Delta, three nights in Zimbabwe at the Imbabala Lodge, and five nights in Zambia, one at the

Thorntree Lodge and four at the Mfuwe Lodge in the south Louanga National Park. The experience was one of contrasts: primitive, luxurious, powerful, beautiful, gruesome, savage, tranquil, breathtaking, bucolic and humbling.



Our twice daily safari outings allowed us to see the "big five" (lion, elephant, leopard, cape buffalo, white rhino) and much more. We saw lions, hyenas and vultures feeding on carcasses (gruesome, savage, stinky and fascinating). We saw Victoria Falls (beautiful, powerful and very wet). We stayed in camp tents and high-end lodges (primitive and luxurious). We saw verdant fields full of grazing animals (bucolic and tranquil). We experienced the awe of the wonderfully dark southern African skies (breathtaking and humbling). The roughly 16-hour non-stop flight from Atlanta to Johannesburg was certainly unique.

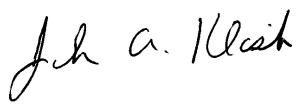
In June / July we traveled back east for our annual family reunion on the south New Jersey shore. Our week-long

stay on the shore was fun and all 17-people had a good time. Last year I commented I could not go in the water because it was too cold. This year I had no trouble. Each and every day I enjoyed myself body surfing in 72 plus degree waters.

In mid-September we traveled to Glacier National Park. By mid to late September winter is fast approaching. Each

day was chilly. The highs were generally in the 40's. It was frequently very windy. That made for a biting wind chill. Plus, it rained frequently. In spite of all this uncooperative weather we truly enjoyed ourselves. The fall colors were in full display. We managed to hike to Hidden Lake overlook above Logan Pass (picture). We also hiked around Swift Current Lake (in the rain) at Many Glacier. Going to the Sun Road offered many great photo opportunities. We also spent two nights in Canada's equivalent, Waterton Lakes. Unfortunately, much of Waterton Park was off limits due to fires. None the less, we braved the chilly temperatures and the high winds and saw just about all you could see and visit. One disappointment was the fact that the Park Service Visitor Centers displays and other Park signage was very light on Geology. There was hardly a mention of the Belt Series or the Lewis Thrust. Seeing the sedimentary / meta sedimentary Belt Series was great – although rather repetitive. It was wonderful to see sedimentary rocks in all their grandeur. A second disappointment was that many trails, lodges, restaurants were already closed for the season.

That about covers the exciting parts of my 2018. It certainly was a remarkable year. I enjoyed this past May's Alumni Reunion. I sincerely hope more alumni decide to come to next year's. I would certainly like to talk to all of you!
Best regards,



2018 News, Updates and Photos from Alumni and Friends

We are proud to have such wonderful Alumni & Friends of the Geological Sciences Department here at Cal Poly Pomona. Thank you all for your support throughout the years it means a lot to not only the students, but the faculty and staff.

Please find below the latest news from our Alumni & Friends, pieced together by Monica Baez and Dr. Nourse. Some have come from our Alumni & Friends themselves and others from various notes from fragments of e-mails, phone calls and other communications, e.g; Linked In, we have received over the past year.

We are always interested to learn what you all are doing so please send us an update anytime you have a few free moments. You can send updates and/or photos to either Jonathan Nourse at **janourse@cpp.edu** or Monica Baez at **mlbaez@cpp.edu**

Now on to what our Alumni and Friends have been up to:

Reggie Agunwah (BS, '08)

Reggie started a new position in March as an Engineering Technician with the City of Riverside. He is enjoying a much shorter commute. Congratulations, Reggie! Meanwhile, he is finishing up his MS thesis document describing mechanics and geometry of the Hogback Landslide failure in the Mt. Baldy area

Tom Harder (BS, '90)

Tom visited the Department in May to participate in the "Professor for a Day" program. He delivered a lecture to Dr. Osborn's Hydrogeology class. Our students learned much from Tom's industry expertise.

Darrin Hasham (BS, '01)

As an officer in AEG (Association of Engineering Geoloists), Darrin recently hosted a big conference at Kellogg West. About 70 working professionals attended to listen to many talks related to the theme of post-fire debris flows

Larry Martin (BS, '18)

Larry is now an entry level geologist at TetraTech. It's nice to hear that our hard-working graduates are doing well.

Shawn Morrish (MS, '15)

Hello all, I hope the semester switch finds you well... I had wanted to write a full-blown novel to report my rock-hounding shenanigan trips this past year, but the string of random sentences, thoughts, and half sensical paragraphs filling the space in my 'Mylonite Article' MS Word file were too segmented to turn into a full-blown novel. Instead, you get a half-blown summary and some fun photos.

I made it a goal this year to do a few things I had always wanted to do in and around the beautiful state of Utah. The first adventure involved a lot of hiking and forensic rockhounding years in the making. A mysterious locality that I stumbled across years ago in a single published paper from the 70's had piqued my interest due to its beautiful location and unique content. With nothing to go on but 1) a blurry black and white photograph showing a mountain range in the distance to suggest a particular hill, and 2) a township and range to suggest where said particular hill may be located… on a sunny day in June, fellow alumna Kelly Kinder and I followed a random cow path into the unknown. Upon scrambling up some slickrock and determining we were in the correct sandstone unit and that it must be on the ridge up ahead, we hiked a bit further and stumbled onto the locality of not-so-pretty yet quite fascinating sandy calcite Xtals. Joyous we had sleuthed our way to the location, we observed, collected, and happily ate lunch gazing across the Utah countryside.

- Back at the hotel cleaning the days take of sandy calcite crystals from Garfield County, Utah.

The next day we ventured into Grand Staircase-Escalante National Monument to hike some of the world's tightest slot canyons in the vicinity of Dry Fork Wash. I have always had a fascination with slot canyons and the concept of rushing water from a flash flood being funneled from large drainage areas into deep and tortuous cracks carved within the earth. Deeply carved cracks they were and they were certainly tortuous in more ways than one. We hiked a fairly arduous hike through Peek-a-Boo Canyon, Spooky Gulch, and Brimstone Gulch. A word of advice for anyone planning to ever hike and explore slot canyons of Utah's canyon country- prepare for a work out, prepare to be bruised and exhausted, and please assure your gut is no larger than mine is these days. Peek-a-Boo Canyon required some rock scrambling to get into, but is a lovely little canyon with some nifty arches within its shadows. Spooky Gulch was the most ominous of the bunch due to keeping with its name's sake of being spooky because once in, I had to get out. We ascended into spooky gulch from upstream and approached a rock fall within the canyon. It appeared to be a non-issue as we could scramble over, until we noticed on the other side that the rockfall was suspended about 25 feet above the canyon's true floor. We took about 45 minutes to negotiate our way to the floor (with the help of some fellow canyoneers visiting from Europe) and were finally committed. Once below, the canyon was tight, MAN was it tight. I had to crabwalk sideways along many segments while holding my backpack in front of or behind me and tore my shirt. At one point we encountered a French photographer coming up the canyon, he was visibly concerned upon seeing us and in a not-as-hushed-as-he-thought tone mentioned to Kelly "The male will not fit, you must turn around". I took it as a challenge and continued onward. Several squeezes later, in hindsight some more foolish than they should have been, we made it to the mouth. I breathed an excited sigh as the adventure was quite a thrill yet painful and exhausting. We continued a sandy wash death march to Brimstone Gulch where we were met by a bad omen of a sick crow… long story short, I stopped and rested not too far within the canyon and Kelly had to stop a bit further in as SHE did not fit sliding sideways down the canyon. For those who know Kelly Kinder, let that sink in for a moment…

Later in the year I took a separate trip to Western Utah and parts of Nevada to check out more geological wonders. Kelly Kinder and I met up with Cal Poly Alumnus Robert Ellis and checked out a mining claim on Utah's Topaz Mountain. With Utah's state gem being topaz, a location called Topaz Mountain lived up to its name and after a thrilling blast early in the morning, we spent the entirety of the day smashing rocks for beautiful champagne colored topaz Xtals. We came back with many specimens and several loose crystals of which I need to get around to sending off to a gem cutter to have them The problem is being I'm a rockhound, I'd rather have

them sit on my shelf so I can stare at them and keep them safe…

- Kelly Kinder (BS, '11) smiling with a sandstone window

- Shawn Morrish navigating the constricting walls of Spooky Gulch, Utah.

We ventured into Nevada and met up with another Cal Poly Alumna Julie Brown at a beautiful campsite high on the slopes of Wheeler Peak within Great Basin National Park. This was our base camp for many activities of which one was visiting a nearby cave with some unique features. Crystal Ball Cave was privately owned and toured for years but is now owned by the BLM and appreciatively toured by the same family that owned it before (for donations). While the cave offers several known speleothems found in caves around the world, most of the cavern is completely covered with massive calcite crystals. I had never seen anything like it and it was a fascinating site to behold. Entire chambers covered in fist sized calcite sprays as far as the eye can see, having to walk on crystals to get into other chambers, and some fossils to boot. If you are ever in the area… quite literally 20 miles beyond the middle of absolutely nowhere, please make an effort to go see this cave, it is unlike any other I have been in.

- Fist sized calcite crystals encrusting a room within Crystal Ball Cave, Utah.

To cap off our trip after other shenanigans, we successfully summited Wheeler Peak (13,064'). We had rain and thunder and lightning the day before, freezing rain pummeled us during our ascent (for which I was woefully unprepared for), but we made it and were rewarded with an amazing view. Wheeler Peak is the second most prominent mountain in Nevada (after Mount Charleston) and the 360 degree view was breathtaking (of what little breath I had left after the grueling ascent).

- Alumni Julie Brown (BS, '08) and Shawn Morrish on the north face of Wheeler Peak, Nevada (after a bout of freezing rain).

I am already planning my adventures for next year and I hope to update you afterward again. Thanks for reading and remember to get out there and run your own field trips being you're no longer going on ones run by faculty. Cheers!

--Shawn Morrish

Alex Mundo (BS, '15)

Alex couldn't get his article to us in time for this publication, maybe next time, Alex? But he said he's doing very well in NYC so that is great to hear!

Clark Murphy (BS, '18)

Clark recently landed a job with a local Environmental firm, AECOM, monitoring wells and supervising drillers. His main job sites are in Torrance and near Edwards Air Force base. The commutes are long, but he seems happy. Clark joined two of my advanced mapping trips this fall (GSC 5030L on Blue Ridge and GSC 4910L in the Rand Mountains). Clark's company is always welcome, and he cooks the steaks to perfection—Gordie will testify to that!

Rick Nelson (BS, '81)

Rick has become involved with the Geology department on several fronts. In addition to making generous gifts, he joined my GIS class in the field last spring to help with a topographic survey of Lower San Antonio Canyon. A few weeks later, Rick visited campus to present a seminar on job-seeking strategies. Our students picked up many words of wisdom that will be helpful in the future.

Celia Pazos (MS, '14)

Celia is rejoining the department next January as a part-time lecturer to teach our Advanced Shallow Subsurface Geophysics lab (GSC 6640L). She has recently changed jobs from Geo-Logic Associates in Ontario to a new position as an Engineering Geologist with the State of California Regional Water Control Board in Santa Ana.

Oliver Wolfe (BS, '14)

It was nice to receive this note in from Oliver, just before press time:

Hi Dr. Nourse!

I hope you have been doing well. How have things been going at Cal Poly?

I'm gearing up to finish up my dissertation and defend in March. I'm thankful for the the experience at RPI, I've enjoyed working with Frank on a bunch of classic terranes in New England and we've gotten a few papers out already (and another one in review). I could send you copies if you're interested in taking a look, I think a lot of the methods would be interesting to try out on some of the garnet bearing samples in the Pelona Schist. Pretty much all I have left is to finish up my last dissertation chapter and get ready for defense. I want to say thank you for everything you did for me at Cal Poly as it set me successfully on this path.

I'm hoping to move back to California as soon as possible. So far I am applying for a full time faculty position at Santa Barbara City College that looks really exciting. I'll see if any other positions open up, I'm hoping to see petrology faculty post open up at one of the Cal States or other colleges.

I hope you have a great holiday season! Cheers!

Oliver Wolfe,

PhD Candidate in Metamorphic Petrology

Rensselaer Polytechnic Institute

Steven Pestana (BS, ’15)

Hi CPP Geology!

I'm entering my second year of grad school at the University of Washington in Seattle where I'm studying snow hydrology and remote sensing. So far, I've had the opportunity to do some field work in the Cascades, Sierra Nevada, and Colorado Rockies, while also learning neat tools like structure from motion surveying with drones. (photos attached from "snow field school" in Colorado, and setting up for a drone survey of Easton Glacier at Mount Baker in the Washington Cascades) and I'm looking forward to seeing any folks from Cal Poly Pomona at AGU in December!

Take care,
Steven Pestana 2015

Above: Steven at Easton Glacier, Washington.
Below: Steven doing field work out in the snow.

:

Valorie Plesha (BS, ’86)

Greetings from Colorado! Last year, a dinosaur fossil was discovered a few miles away from my home here in Thornton, and it really fired me up. I didn't realize we had any Cretaceous rocks out here on the plains, and so I went searching for a geologic map of the Front Range to check it out. I georectified the thing and - boom! The location of the find was smack in the middle of the upper Cretaceous Denver formation. Who knew? The dinosaur has been identified as a Torosaurus, and is the most complete one ever found, to boot! I presented a poster on this beast at Esri's International User Conference in San Diego this past July, and have just completed a story map which I am excited to share! It is best viewed using Chrome or Firefox browsers. Enjoy!

https://arcg.is/0W9S0y

Cheers!
Valorie (Taylor) Plesha, GISP (grad year 1986)

Valorie presenting a poster at the ESRI conference.

Gary Thompson (BS, ’90)

For most of 2018, our lives have been focused on our son’s school education and activities. Nevertheless, we did take a short break in mid-February to New York City and we also recently returned from our longer holiday to the Los Angeles area. The remainder of 2018 and most of 2019 will be devoted to preparing for GCSEs, which are next May, near the end of our son's last year of secondary school. Last June, he was selected to be Head Boy of his school. This year, in addition to his studies, he will be overseeing 80 Prefects in his school. During 2017 and 2018, our son visited Oxford University, Cardiff Castle and Paris Disneyland, through his school. The Paris Media group's bus ride out to Disneyland was threatened by a heavy snowfall. But, thank-

fully, they all made it there and back safely and had a wonderful, if tiring, time.

On the home front, we completed the outside work on our house, by getting the exterior of our home repainted. The terms of BREXIT should be agreed with the European Union sometime between the end of this September and the end of 2018, prior to our actual exit on March 29, 2019. Both a combination of U.K. population's apprehension to the upcoming BREXIT event and ever-increasing on-line competition have negatively impacted many high-street retailers; such as *Debenhams*, *John Lewis, Waitrose* as well as my own firm, *Marks and Spencer*. We are all tightening our belts, revising our options and hoping to ride out the economic storm.

We enjoyed our excursions to New York City and Los Angeles. In New York City, we visited the *9/11 Memorial and Museum*, *One World Trade Center;* we took in *Chicago* and did a great amount of walking with the friends we met there. This was our first time visiting the Memorial and Museum. Both had a great impact on us and were, quite simply, overwhelming in nature. The summer of 2018 was was, officially, the warmest on record for the U. K., which was bad for most crops, except for grapes. The beginning of our Los Angeles trip was dominated by the *London Film and Comic Convention* (where our son met four of the 'Doctors' from *Doctor Who*) and then a visit to Disneyland, in Anaheim. Disneyland is undergoing quite a bit of renovation, in preparation for the opening of *Star Wars: Galaxy's Edge,* in the summer of 2019. Most of our stay in L. A. was leisurely. Near the end of our stay, we travelled north to Cupertino and San Francisco. Highlights of the trip were seeing the huge, donut-shaped *Apple Park* in Cupertino and visiting *LucasFilm Ltd.,* in San Francisco.

We send a big shout-out to all our friends at the Cal Poly, Pomona Geological Sciences Department! We sincerely wish you, all the alumni and students a phenomenal year in 2019!

Yoda Fountain San Francisco Presidio—Lucasfilm.

Castle Green, Tauton, UK

Gary Thompson (BS, '90)

Matt Shumaker (BS, '78)

My 40th anniversary with the U.S. Bureau of Land Management was in October, 2018. I still remember walking in to my first job with the BLM after graduating from Cal Poly in 1978. It was on Central Avenue in Riverside, California. The job was a temporary one, and was only going to last four months. Somehow that got extended for a term of two years. That was all right by me, because it gave my beloved wife, Kathy time to finish nursing school. Kathy and I had our 42nd anniversary in September, 2018. (For readers of Douglas Adams novels, you'll recognize how

significant that anniversary is to the both of us.)

I didn't plan to stay with the BLM beyond the end of the California Desert Plan project in 1980. But that term job somehow morphed into something with full-time status, and then to my later surprise, a permanent job. I had only expected to stay until I quit having fun so I could return to college to earn a Master's. But it seems that I never stopped having fun. (All jobs have bad days, but not a lot of them.) The paychecks were regular, and that mattered. While I was the BLM Indio Resource Area geologist, still with an office in Riverside, I was able to provide logistical assistance to geology students from Cal Poly who were working on senior projects. For two years, I was also able to provide logistical help to Central Washington University's "summer" field camp, which they conducted in December and January, in the desert near Blythe.

Moving to Phoenix in 1985, I became the training coordinator for the BLM's mining law and mineral examiner training program. Then came a short interlude with the U.S. Forest Service, then back to BLM where I returned to mining law training. I had only intended to remain in Phoenix for four, maybe five years. That turned out to be wrong, because I'm still here. After several job title changes, I became known as an expert on financial frauds that use alleged precious metal deposits as their "hook" to unwary investors, mostly retired people. Then I became BLM's Chief Mineral Examiner in 2010. I only expected to stay in that job for two years.

So is there a moral to this rambling story? Yes. I attended a seminar at a professional meeting in 1988. It was entitled, "Career Planning, Phooey." The takeaway from that was simple. Find something you enjoy that pays your bills and lets you get ahead and stick with it. I did that for 40 years. I have no idea where all that time went.

John Utick

We recently heard from John, a Geology Major from the late 1990s who was one class short of finishing. It turns out, with the new semester curriculum, certain units could be rearranged to accomplish graduation out of residence. (Some other former students in similar situations should consider this). Congratulations, John—maybe you can join our commencement ceremony this May!

Karissa Vermillion (BS, '18)

Karissa is now a Master's degree candidate at New Mexico State University in Las Cruces. Her thesis involves isotope geochemical analysis and geochronology of a Tertiary caldera in the Organ Pipe Mountains of southern New Mexico.

Lauren (Carey) Wicks(BS, '09) and Logan Wicks (MS, '14)

Lauren and Logan just purchased a home near Walnut Creek trail in Covina. They have been really busy the past couple months fixing it up in between full-time work at Geoscience Support Services in San Dimas. Levy the dog now has more room to romp.

David Yaralian (BS, '17)

David is now living in Montana, working in the paleontology field. It sounds like this is keeping him really busy with GIS and data base management, also some field work.

If you have made it this far, please read a few more lines and consider giving back to the Geology Department:

*****A Request for External Support*****

We in the Geology Department wish to express our sincere gratitude to the many alumni and friends who have made generous contributions in recent times. These gifts have been directed toward fundamental needs that include thin section preparation, laboratory analyses of rock samples, geochemical analyses of water samples, student or faculty travel to GSA and other professional conferences, field vehicle expenses, campground and parking fees, and purchase of field or laboratory equipment, camping gear and firewood. Several recent gifts continue to support our department mission.

These are challenging economic times for everyone. That is why your gift at this time will be especially meaningful to all of the students and faculty in Geology. In offering your gift, we ask that you make your check payable to **Cal Poly Pomona Foundation** and mail to the address below. If you wish your contribution to be directed to a particular emphasis, please indicate so on your check:

Geology Department
3801 W. Temple Avenue
California State Polytechnic University
Pomona, CA 91768

Thank you so much, and we very much appreciate your continued patronage.