

THE MYLONITE

THE NEWSLETTER OF THE GEOLOGICAL SCIENCES DEPARTMENT
CAL POLY POMONA | ISSUE 24 | DECEMBER 2016

NEWS FROM THE CHAIR • SPECIAL ANNOUNCEMENTS • FACULTY • ALUMNI

News From The Department Chair

Season's Greetings from the Geology Department! 2016 is drawing to a close and it is time for the 24th edition our Mylonite newsletter. Usually I wait until a good rainstorm to write this document—the words seem to flow better then. But so far this fall it has just been dry and cold. Forecasters are talking about a big storm tomorrow (December 15). We'll see*. El Nino never happened for southern California last year despite a new set of 10 rain gauges installed by me and Danny Miranda to welcome the event to the Icehouse Canyon-Upper San Antonio Canyon area. ***Update from Dec. 19:** Our gauges show that the storm of Dec 15-17 dumped between 6.3 and 8.0 inches of rain in Icehouse Canyon.

The Geology Department continues to grow. Our undergraduate major count is up to **156** from **136** a year ago. We welcomed a new cohort of 13 graduate students in September. The official tally of graduate students is **36** (up from **31**). We also have **26** Geology minors. The only thing not growing is new tenure-track faculty positions. We could certainly use another hire to accommodate the demand for our core and upper division elective courses. Classes that used to run once every two years are now overloaded when offered yearly, even when we teach large lectures of 40 split into two lab sections. Still, it is great to see the large numbers of students interested in geoscience careers! We do our best to accommodate them through the hard work of faculty and staff, and our graduates are still landing decent jobs or moving on to good graduate schools. Acquiring new space is becoming a big priority for us—as our program reviewers noted recently, we are “bursting at the seams.”

This year's Mylonite includes the usual goodies: student action photos, faculty news updates, reports on student awards and graduation, activities of alumni and friends, semester conversion progress, etc. The Department purchased a new van, and we completed an audio-

visual upgrade to Paleontology classroom 4-A-608 courtesy of funds from **Sally Lane** and the Pasadena City College grant. The MS program underwent its first program review. One new item this year is a geography lesson that I hope all will enjoy.

Let's kick off this issue with a photo of the GSC 503L Field Investigations class studying striations on Fault G of Andrew McLarty (BS,'00; MS, '14) in the Rand Mountains:



New Van Purchase

We were fortunate to have sufficient funds last year to buy a 10-passenger Ford Transit Van to support our many field trips. The factory ran out of 2016 models so we had to wait until October to receive a 2017 model. Just in time too, as there is rumored to be a moratorium on new vehicle purchases by the University. Ford doesn't make the E-350 van anymore, but this one will serve our purposes just fine, with its limited slip rear axle and reasonably good clearance. Students enjoy the radio that accommodates their I-tunes. Vehicle #353 joins our Ford F-250 pickup (Vehicle #138) and E-350 van (Vehicle #332) to provide capacity for 25 students plus three drivers plus quite a bit of field gear.



Our new Ford Transit Van has already logged 2000 field trip miles since late October.

Major Upgrade to Room 4-A-608

Last spring we performed a complete upgrade to the audio-visual system in the Earth, Time, and Life / Paleontology classroom / lab space. As pictured below, the room now has a new drop-down screen and projector, a smaller podium with master control box, a new high-resolution document camera, and a new computer and DVD system with high-quality sound system.

This project was made possible by a generous donation from **Sally Lane**; also an equipment line item from the Pasadena City College grant that allowed purchase of a



Room 608 now has two interactive screens in addition to other high tech AV equipment.

Smart Board that interacts with the computer via touch-screen capability controlled by the user. **Thank you Sally, for your continued support of our Lane Paleontology Laboratory!**



Geotechnician Frank Wille demonstrates use of our new Smart Board).

Geology Graduate Program Awards Five More Master's Degrees!

Five of our graduate students completed their Master's degrees during the past year. Bound copies of their theses are now housed in the Department office to motivate our active grad students when they come in for counseling. The links below provide access to their documents. Let's congratulate:

Kevin Chantrapornlert: ('16 MSc) "*Utilizing Resistivity Profiles to Map the San Jose Fault on the Cal Poly Pomona Campus*" (defended March 2016; Advisor: Dr. Polet)

Melissa Robinson: ('16 MSc) "*GIS Mapping of Uplifted Coastal Terraces Using Digital Terrain Models, Nicoya Peninsula, Costa Rica*" (defended May 2016; Advisor: Dr. Marshall)

Maksymilian Wlodarzcek: ('16 MSc) "*Shallow Aquifer Geochemistry in Areas of Intense Coal Bed Methane Recovery, Raton Basin, Colorado*" (defended June 2016; Advisor: Dr. Osborn)

Jon Marshak: "*What Dike Orientations in the Eastern San Gabriel Mountains Reveal About Middle Miocene Stresses and Block Rotations*" (defended October 2016; Advisor: Dr. Nourse)
Marshak Thesis Plates 1, 2, and 3

Raymond Ng: ('13 BSc): "*Site Characterization of the Los Angeles Basin Using Ambient Noise Spectral Ratio Measurements from High Density Temporary Broadband Deployment*" (defended December 2016; Advisor: Dr. Polet)

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

Other Information on the Geology MS Program

The graduate program welcomes applications from our Geology alumni—many have been successful in the past students despite working full-time jobs. The application deadline for spring quarter admission is **February 12, 2017**. Fall quarter applications are due **June 1, 2017**. 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 <http://www.csumentor.edu/>
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

Graduate Program Review:

Last winter I spent quite a few early morning hours compiling data and writing a self-study report to the Provost describing the first four years of our Geology MS program. This document was the basis for an academic program review conducted by external evaluators Dr. Tom Anderson (University of Pittsburgh) and Dr. Doug Yule (CSU Northridge). Our self-study makes a strong case to move the 500 and 600-level GSC courses from the current College of Extended University system back to a state-support fiscal model for which they were originally approved. The evaluators supported our proposal in late July with a generally positive report, and Geology graduate faculty have submitted their response to the reviewers' report. The next step in the process is for the Dean of Science to make recommendations to the Provost.

Our self-study report and related appendices may be viewed at:

[Geology MS Self-Study Report April 2016](#) (PDF)
[Appendices For Self Study Report](#) (PDF)

Following the external evaluators' campus visit, Dr. Anderson stayed an extra day to participate in a field trip to Cucamonga Canyon, led by Professor Emeritus Larry Herber. Larry took a break from his daily jogging routine to show several of us the trail to Sapphire Falls. Lots of great metamorphic rocks were examined amidst the lively conversation.



Drs. Larry Herber, Tom Anderson, and Nick Van Buer and enjoy a lunch break at Sapphire Falls. Photo by J. Nourse, May 4, 2016.



Three generations of Cal Poly Pomona Geology professors (Dr. Van Buer, hired 2014; Dr. Nourse, 1989; Dr. Herber, 1968) combine their petrology expertise at a site of mutual interest. Photo by T. Anderson.

Semester Conversion Updates

Geology faculty are now in the third year of the semester conversion planning process. Semester courses will begin in late August of 2018. So far our Geology BS and

MS curriculum proposals have not hit any significant snags. The plan is to continue offering one Geology BS degree with three Emphases: Geology, Geophysics / Earth Exploration, and Environmental Resources. The Geology MS program will be very similar to its current form except that we have added two requirements to the core: **GSC 4100 “Presentation, Writing and Research Skills in the Geosciences”** and **GSC 600 “Thesis Proposal.”**

The reader may view drafts of our proposed curricula at the following links:

[Proposed BS Curriculum for the Semester System](#)
(PDF)

[Proposed MS Curriculum for the Semester System](#)
(PDF)

Because the conversion guidelines required reduction of the total number of courses on the books, certain classes had to be deleted or integrated into other classes. For example Optical Mineralogy content is now absorbed by extra lectures and labs in Mineralogy, Igneous / Metamorphic Petrology, and Sedimentary Geology. Following suggestions of previous external evaluators, we have added Sedimentary Geology back into the Geology BS core. If there is concern about particular classes being cut, don't despair, as this can be alleviated at any time by offering such courses as GSC 299, GSC 499, or GSC 599 “Special Studies”.

We have also proposed a new General Education Area E course **“Planet Earth: A Citizen's Guide”** that was recently ratified by Academic Senate. Given its focus on Earth stewardship, water conservation, disaster preparation, and global environmental change, this class has excellent potential for capturing significant enrollments of freshmen who are required to take an Area E course in “lifelong learning / self-development.” The catalog description is given below. It is unclear who will teach it but given that yours truly designed the Expanded Course Outline, I likely will be drafted initially.

GSC 1010; Planet Earth: A Citizen's Guide. *Development of knowledge pertinent to Earth stewardship and global citizenship, with emphasis on building and maintaining a habitable earth. Survey of issues such as climate change, environmental and natural hazards, water resource development and conservation, and/or environmental sustainability, and their social, emotional, financial, psychological and physiological impacts. 1 unit lecture.*

GSC 1010A; Planet Earth: A Citizen's Guide Activity. *Activities directed toward educating regional or campus communities about response to / recovery from challenges posed by Earth's environment. Enhancement of skills to evaluate such challenges, engage in related conversations, and promote community awareness. Participation in events such as Earth Day, California Shake-Out, and disaster preparedness drills. Pro-*

motion of water conservation and waste recycling. Outdoor field trips. 2 units activity.

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 Jon Nourse

It's already time for another update. I have quite a few good memories to report, geologic and otherwise. Much of my time last year was absorbed with the graduate program review and other Geology Department responsibilities, but there have been many rewarding teaching moments in addition to some quality time in the field. It was fun to teach the Optical Mineralogy class again last winter—a prime opportunity to view thin sections from various study areas that have been sitting in boxes for quite some time. **Debbie Kunath** was a great help as Graduate Teaching Associate for my GIS course (GSC 401). She managed much of the 2-unit lab and assisted with two field trips to the San Gabriel Mountains. My primary class during fall quarter of 2016 was GSC 503L Field Investigations. We revisited the central Rand Mountains and mapped several cross faults that I had not looked at since my early days at Caltech in 1983. The rocks are still in about the same place, but their interrelationships are better understood now.

Master's student **Jon Marshak** created an impressive GIS data base of middle Miocene dikes in the eastern San Gabriel Mountains. His analysis of that data, along with some interesting discussion and speculations, may be viewed at this link:

[Jon Marshak: "What Dike Orientations in the Eastern San Gabriel Mountains Reveal About Middle Miocene Stresses and Block Rotations"](#) (defended October 2016; Advisor: Dr. Nourse) **Marshak Thesis Plates 1, 2, and 3**

Despite the paucity of El Niño rains, **Danny Miranda** has been making good progress in his study of Icehouse Canyon rainfall, runoff, and spring discharge. He is in the writing phase now, and we are all eager to hear his MS thesis presentation soon. Over the summer I joined Assistant Professor Nick Van Buer and graduate students on two backpacking / geochronology sampling excursions to the high San Gabriel Mountains. With **Scott Zylstra**, we collected Precambrian quartzite and Cretaceous quartz diorite-granodiorite from Ontario Ridge. From our camp at the summit of Telegraph Peak we helped **Mike Dykstra** collect a large sample of Telegraph Peak granodiorite.

Between August and December, I seized several opportunities to map in the Telegraph Wash / Chapman Trail area of Icehouse Canyon. There resides a distinctive quartzite-pelitic gneiss assemblage of probable Proterozoic age that is proving to be a decent marker unit for constraining displacements on certain faults; also for outlining the geometry of folding that appears to involve these metasedimentary pendants and Late Cretaceous meta-plutonic host rocks. The next step is to obtain detrital zircon ages on the quartzite, to hopefully tie this area into a regional tectonic picture. Given my advanced age, it takes 2 or more hours to trundle up to these sites, and about the same time to walk down without twisting an ankle. Nevertheless, it sure has been great to get outside, breathe the fresh air, enjoy the solitude, and commune with Mother Nature.



Sampling site in Lower Telegraph Wash showing white quartzite in contact with garnet-bearing biotite gneiss.



Cold storm moving into Icehouse Canyon, November 26, 2016.



Sampling a quartzite unit near Chapman Trail during Nov 26 snowstorm.

To escape the never-ending heat during early September, Phyllis and I took a trip to Oregon. We rented a house in Cannon Beach, spent some time in Astoria, and enjoyed the fine scenery around Hood River and the Columbia River Gorge.



View of the Oregon coast from Ecola State Beach.



Mouth of the Columbia River, with Astoria in the foreground.

Next summer we will likely take two trips. Phyllis and I have a high school reunion to attend. I am itching to view the third total solar eclipse of my lifetime. The path of totality will transect central Oregon and southern Idaho. John Day, Oregon may be a good place to visit, and this will be an opportunity to visit some fossil beds that are abundant in that area. Stay tuned for a report next year.

Merry Christmas and best wishes to all of you. I hope everyone is able to relax a bit and enjoy quality time with friends and family!

Student Successes

Graduation, 2016

Nineteen Geology majors and four graduate students walked in the graduation ceremony on June 13, 2016. Pictured below with Drs. Van Buer, Marshall, Polet, and Nourse (left to right in the back row): **Jesus Galeana, Steven Pestana, Andrew Garcia, Andrew Lavey, Debbie Kunath, Maksymilian Wlodarzcek, Stacey Petrashak**; middle row: ??, **Tyler Vail, Michael Dykstra, Stephanie Steinert, Chris Tafoya, Kelly Brigham, Gus Davila, Gloria Gonzalez, Taylor Robles, Lara Panosian, Raymond Ng, Melissa Robinson, Tara Vanderway**; front row: **Aura De Leon, Paula Soto, Ashley Espinoza**. The Geology banner was carried by **Tara Vanderway**, to recognize her achievement of the top GPA of this graduating class. Everyone seemed to be in great spirits.



Most of the 2016 graduation class. Photo by Hong Kee Thio.



Photo of graduation crowd from the stage.

2016 Alumni Reunion and Student Awards Ceremony

Last May 21 we held a special reunion at the historic Kellogg House on Cal Poly Pomona campus. Over 100 alumni, faculty, students, family and friends attended. Catering costs were offset by five corporate sponsors: **Leo Mercy (B.S., 1978)** from Cal Portland; **Jeff Eppink (B.S., 1979)** from Enegis, LLC; **Tom Harder (B.S., 1990)** from Thomas Harder & Co Groundwater Consultants; **Randal Burns (B.S., 2006)** from KGHM (Robinson Copper Mine), and **Mark Reese** of Beacon Energy Services. **Peter Valles** and **Larry Herber** made additional contributions that were much appreciated. **Dinah Shumway** and **Peter Valles** helped present some of the student awards. Special thanks go to **Phyllis Hosey** for arranging the logistics of this event. The photos below show some highlights:



Outdoor courtyard was just part of the venue for the 2016 Alumni reunion.



Alumni from the 1970s enjoy appetizers and conversation. How many can you recognize?



Some of our undergraduates dressed sharply and in good spirits.



There was plenty of time to catch up before the awards ceremony.

Henderson-Valles Scholarship

We had so many highly qualified majors this year that the choice was difficult. In honor of Peter Valles' attendance, we decided to make three awards of \$500. Riley Brown, Kyle Macy, and Larry James Martin were recognized for their academic achievements. Although none were due to graduate in 2016, all show excellent potential to complete their BS degrees with honors. The Geology faculty commend each of these scholars for their accomplishments!



Riley Brown, Kyle Macy, and Larry James Martin pose with Dr. Nourse and Peter Valles (BS '83) after receiving the Henderson-Valles award.

Margaret Claire Van Buskirk Memorial Scholarship

This \$750 scholarship recognizes a student who exudes enthusiasm for geology and dedicates significant time to better the learning environment around the Geology Department. This year's award was given to **David Yaralian**.



Dinah Shumway and Dr. Nourse present the Margaret Van Buskirk award to David Yaralian.

Grayce M. Teal Memorial Scholarship

The Grayce Teal award is intended to support the academic endeavors of female students who have chosen Geoscience as a career. The scholarship provides financial support for tuition. **Allison Prizlow** was chosen as this year's recipient of \$500.



Dr. Nourse congratulates Allison Prizlow on the Grayce Teal Scholarship..

Ernest Prete, Jr. Scholarship

To recognize the environmentally significant research, **Erick Rivera** received the Prete award of \$1000. Erick has been working toward his Geology degree between service in the Army reserves. He graduates in December of 2016.



Dr. Nourse presents the Prete Award to Erick Rivera.

Field Geology Awards

To encourage and promote the traditional practices of field geology, alumnus **Randal Burns (BS '06)** continues his generous donation of Brunton compasses to the Department. One of these compasses was awarded to **Aura**

DeLeon to recognize her endeavors in several field mapping classes. Congratulations, Aura!



Aura DeLeon receives the Brunton compass award from Dr. Nourse while donor Randal Burns and Aura's field geology instructors Nick Van Buer and Bryan Murray offer congratulatory remarks.

Peter K. Valles AGI Glossary of Geology Award

A few years back, **Peter Valles (BS '83)** began providing us a Glossary of Geologic Terms (published by the American Geological Institute) to award deserving students who might utilize some of these words in future geologic studies. This year's recipients were **Tony La Beau** and **Tara Vanderway**. We hope these books will expand their geoscience vocabularies and lead to great writings in the future.



Peter Valles and Dr. Nourse present AGI Glossaries to Tara Vanderway and Tony LaBeau.

Hastings Triplet Awards

Because most of our student nominees already own rock hammers, we are starting a tradition of awarding Hastings Triplet hand lenses to encourage careful examination of rocks in the field. This year we had four deserving recipients: **Elena Robinson, Clark Murphy, Saul Galvez, and Karissa Vermillion**. All have been showing good promise as well as interest in rocks and minerals.



Elena Robertson, Clark Murphy, Saul Galvez, and Karissa Vermillion receive 10X 14X hand lenses from Dr. Nourse.

Last, to honor Peter Valles attendance at this ceremony, we presented several bound “Rite in the Rain” field notebooks, each containing a vintage photo of young Valles as a Geology major in the 1970s. The recipients below are known for their abilities to take careful notes during our lectures (a fading skill in these modern times). May they do the same in the field:



Peter Valles and Dr. Nourse present field notebook awards to Stacy Petrashak, Tony La Beau and Oscar Tellar.

Bound for Graduate School!

The following Geology BS and MS graduates started new graduate programs this year. We wish all of them our congratulations and best wishes in future academic careers:

- **Raymond Ng**---University of Oklahoma PhD Program
- **Dandan Zhang**--- Caltech Seismology PhD program
- **Debbie Hernandez**— Cal Poly Pomona Geology MS program
- **Paula Soto**—Cal Poly Pomona Geology MS program

Geography Lesson

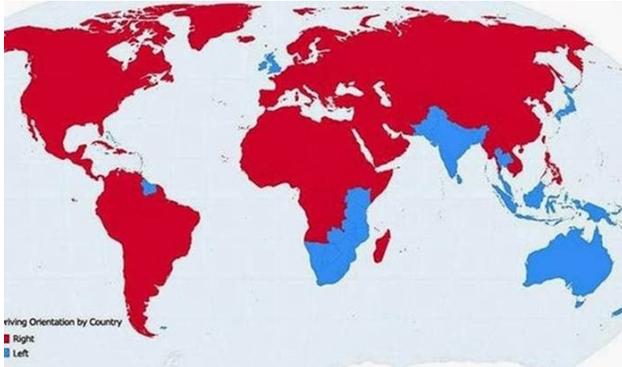
Given that geologists tend to savor maps, I thought some would be interested in a set of global images sent to me recently by a geography colleague. I don't know the data sources, and there are probably some generalizations, but some of these patterns are thought-provoking:



1. This map shows the world divided into 7 sections (each with a distinct color), each containing 1 billion people.



2. It may not come as a surprise, but more people live inside the circle than outside of it.



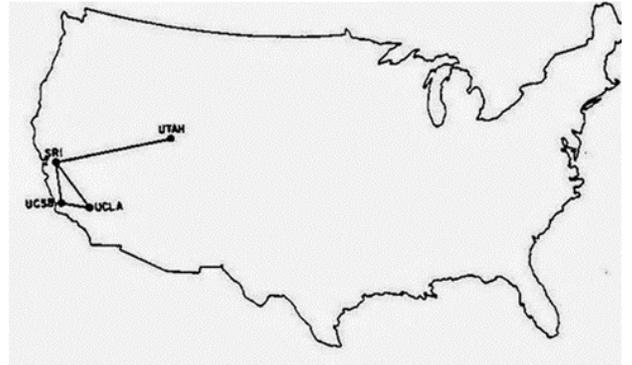
3. This map shows the countries (in blue) where people drive on the left side of the road.



6. Apparently you can't get Big Macs everywhere.



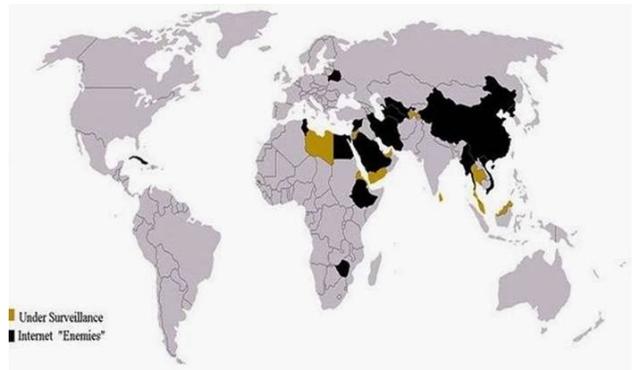
4. This map shows the countries that don't use the metric system. Is this true about England?



7. The line on this map shows all the world's internet connections in 1969.



5. This map shows the countries (in white) that England has never invaded. There are only 22 of them.



8. This map shows the countries that heavily restricted internet access in 2013.

“most cluttered” in the department. This all leads to one inescapable conclusion: I am now an old geezer. Despite being over the hill, I soldiered onward, teaching my usual classes: Geomorphology, Natural Disasters, and Watershed Restoration. I also worked with Cal Poly Pomona CEMaST as a geosciences specialist for the NSF RESPeCT Program, writing lesson plans and leading workshops for Pomona Unified K-6 teachers. Additional time went in to service as a representative for the CSU COAST Initiative, member of the International Center Advisory Committee, and chair of the Geology RTP Committee. In the broader world, I continue to serve on the NSF GeoPRISMS Education Advisory Committee (GEAC), and as a geosciences councilor with the Council on Undergraduate Research (CUR).

Last spring, graduate student Melissa Robinson successfully defended her MS thesis on ArcGIS digital terrain analysis of uplifted Quaternary marine terraces on Costa Rica’s Nicoya Peninsula. She did a great job. Congratulations Melissa! Also on the Costa Rica research front, I received a \$10k grant for continued Nicoya tectonics research through the Cal Poly Pomona SIRG Program (Strategic Interdisciplinary Research Grants). On this project, I will collaborate with two Biology and Geography colleagues to map the ecological zonation of rocky intertidal platforms that were uplifted during the 2012 M7.6 Nicoya Earthquake. We intend to engage several graduate and undergraduate students in this project, with fieldwork taking place during the upcoming spring break.

Turning to New Zealand research, I was thrilled to learn this summer that I was awarded a four-year \$380k NSF grant from the Integrated Earth Systems Program to study coastal uplift and paleoseismology along the North Island’s east coast. This grant is part of a larger collaborative effort between Cal Poly Pomona, UT Austin, Penn State, USC, USM, and the New Zealand Geological Survey (GNS Science) to better understand megathrust slip and tsunami genesis along the Hikurangi subduction margin. This project, entitled “*Subuction at Hikurangi Integrated Research Experiment*” or “*SHIRE*”, is one of several recent NSF New Zealand tectonics investigations (with *Hobbits* themed acronyms) focused on convergent margin geologic hazards. My part of the *SHIRE* project includes field and travel support for both graduate and undergraduate students through a Research Experience for Undergraduates (REU) supplement. In January, Geology undergrads Janine Angenent and Jessika Valenciano will join me on our first reconnaissance expedition with GNS colleagues along the rugged Wairarapa coastline, and to visit a potential trenching site on the Raukumara Peninsula. We also will visit the northern South Island to see the spectacular coastal uplift from the recent M7.8 Kaikoura earthquake (up to 6 m in some places!).

Over the past year, I participated in multiple research conferences and workshops. Last fall, I attended the NSF GeoPRISMS Theoretical and Experimental Institute on Subduction Cycles and Deformation held in Redondo Beach, California. Aside from great talks and discussion, this workshop included an awesome fieldtrip to view the marvelous metamorphic rocks of Catalina Island. Apart from the rocks, we also enjoyed traversing the rugged terrain, seeing a tiny island fox, snapping selfies with wandering bison, and tasting a few local microbrews while waiting for the ferry in Avalon.

Last December, I gave two talks at AGU in San Francisco and enjoyed once again our annual alumni dinner. In the spring, many CPP faculty and students attended the GSA Cordilleran Section meeting nearby at the Ontario Convention Center. I chaired the undergraduate research poster session in which several of our students presented research results. After GSA, I participated in the annual CSU COAST meeting at the chancellor’s office in Long Beach. COAST is a CSU system initiative to promote and support research and teaching focused on critical coastal resource and hazards issues. Within days of the COAST meeting, I flew to Colorado to participate in an Open Topography short course on high-resolution digital terrain analysis, including LiDAR and Structure from Motion photography, held at UNAVCO in Boulder. As forewarned by the workshop leaders, the information overload from this two-day course was like “drinking from a fire hose”. Fortunately, we had enough evening downtime to enjoy the falling snow and share a few Front Range malty beverages.

With the onset of summer, my son Kyle and I traveled to Costa Rica to participate in the 2nd General Assembly of the Latin American and Caribbean Seismological Commission (LACSC). The conference conveners invited me to chair a session on tectonic geomorphology and paleoseismology and to present a talk on my Nicoya Peninsula research. The meeting was great fun, with a diverse crowd of international geoscientists. After the conference, Kyle and I traveled around Costa Rica for 10 days, visiting several volcanoes, hiking in the rainforest, bird watching, and checking out some of my favorite field sites on the Nicoya coastline. It was cool to see how terrestrial vegetation has now reclaimed much of the area uplifted beyond the tidal zone during the 2012 earthquake.

Later in summer, Kyle and I traveled with my mom and brother to visit Ohio relatives in Toledo (my dad’s side) and in rural Richwood (my mom’s side). Highlights included a Toledo Mudhens baseball game, the 75th anniversary Jeep festival and parade, home-cooked Ohio suppers at several cousins’ farmhouses, and road trips in the countryside to seek out ancestors in old pioneer graveyards.

And, as always, time flies like an arrow (and fruit flies like a banana). Kyle just had his 14th birthday! Next year, he will move on to high school. After returning from AGU last week, I took him and 12 of his friends to see the new Star Wars film “Rogue One”. They then descended on my house for a marathon video game sleep over. What a blast! And, yes, I managed to survive (barely). This week, we head down to grandma’s house in San Diego for Christmas and the New Year. To all of you, Peace and Happy Holidays!

Bryan Murray

Hi all!

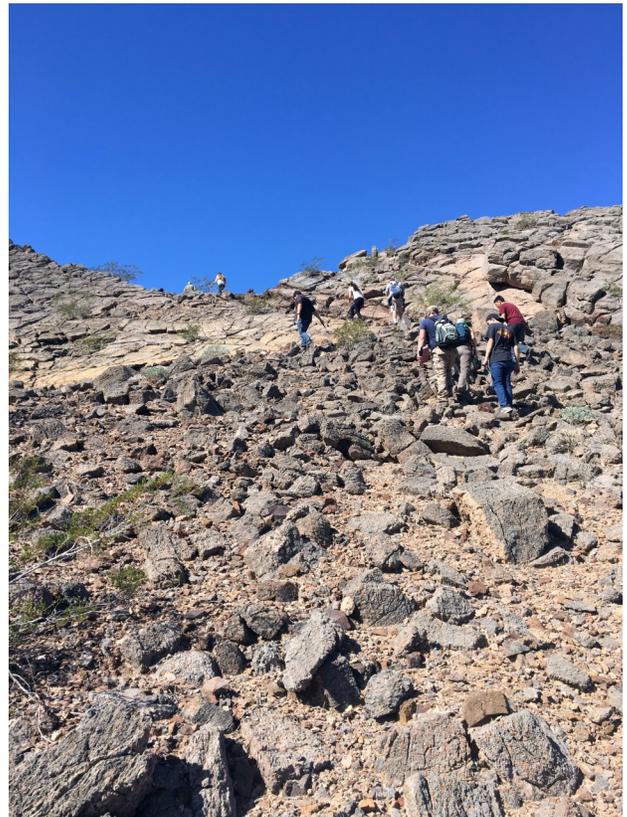
My first year at Cal Poly Pomona has been exciting and productive. Much of my time this year was spent developing material for my classes and working on research projects. Last fall quarter I taught Sedimentary Geology, which included field trips to the Vasquez Formation in Agua Dulce to collect paleocurrent indicator data and to Ridge Basin near Castaic to talk about its tectonic development and to measure a marine-fluvial transitional stratigraphic section. During the winter, I became familiar with the spectacular rock samples that our department has in stock when I taught Megascopic Petrography. I also taught the Earth, Time, and Life lecture and lab courses that quarter and took my lab students out to collect trilobites and oncoids in the Marble Mountains. It was a fun experience watching many of the non-majors, some who have never even been camping or off-trail hiking, gain a greater appreciation of earth history and what geologists do. On the way to the Marble Mountains we stopped at Pisgah Crater to check out at lava flows and had some fun running up the cinder cone and crawling around in lava tubes. In the spring quarter I took my Field Module course to the northeastern Calico Mountains outside of Barstow. This was an area where I’ve recently been doing some field work and it was a great opportunity to involve the students in the research process.

My research efforts this year mainly focused on understanding the history of basin development and magmatism in the Calico Mountains, and how it relates to early Miocene extension of the central Mojave metamorphic core complex. During the winter and spring quarters, I spent a collective few weeks in the field mapping and accumulating samples for geochronology and petrographic analyses to be completed sometime this year. In September I gave a poster presentation on this research at the GSA annual meeting in Denver. I’m also continuing to work on research projects stemming from my PhD dissertation on extension and magmatism in the northern Sierra Madre Occidental, Mexico. I presented two talks this year at GSA meetings related to this research and I just received several

new Ar/Ar dates on silicic ignimbrites collected from the Copper Canyon region; this data will be incorporated into an undergraduate thesis project (Janine Angenent) on the ignimbrite stratigraphy of the area. I’m collaborating with an international group of researchers from several universities (WVU, UNAM Juriquilla, UC Davis, Oregon State, IPICYT, UNLV, Auburn) on an NSF grant proposal to study silicic supervolcanism processes in the Sierra Madre Occidental; if successful this grant could provide funding for several CPP graduate student projects. In the coming year, I plan to expand on several local research projects related to Miocene volcanism and basin development in southern CA, which includes an undergraduate thesis project on characterizing the Glendora Volcanics (Michael Dykstra).

This upcoming year should be a fun one as well. I’m currently teaching a course on “Tectonics of Sedimentary Basins” and have taken over co-teaching the Field Methods course. My wife and I are expecting a new baby girl in early November, so much of this year will be filled with diaper changes and missed sleep, but I couldn’t be more excited.

Until next year!
Bryan Murray



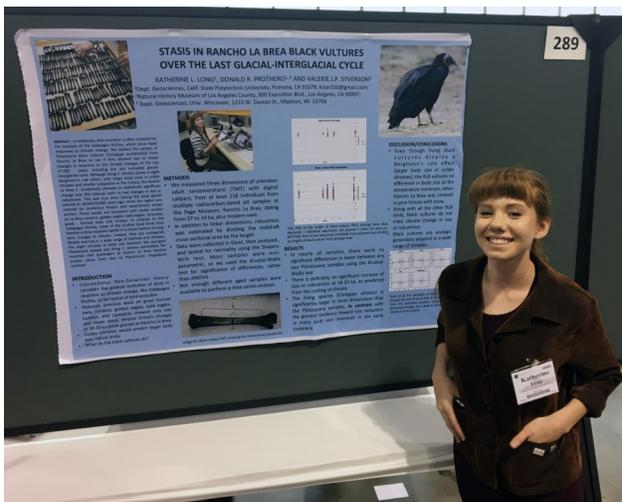
GSC 151L Earth, Time, & Life lab students in the Marble Mountains.



Camping out in the northern Calico Mountains – GSC 491L Spring 2016. ~ Dr. Bryan Murray.



GSC 151L Earth, Time, & Life lab students (and Frank Wille, Dept. Geotech—far left) enjoying lunch on a lava flow at Pisgah Crater. ~ Dr. Bryan Murray.



Katherine Long (MS student) presenting at GSA 2016 annual meeting in Denver. ~ Dr. Bryan Murray

Stephen Osborn

The Hydrogeology Research Group in in flux thus year (pun intended). The work that we have been doing in the Rocky Mountain region is winding down. We have graduated two graduate students and 4 undergraduates with theses on that project. Currently, I am working on two journal articles to publish with students in the next year. I just contributed to a 5-year NSF grant to do more work in Pennsylvania and New York sampling groundwater gases in areas with oil/gas extraction. This proposal is exciting as it takes advantage of a new analytical technique that identifies the temperature of formation of methane as a fingerprint for the specific source of methane in shallow aquifers. If this gets funded, Ill be looking for graduate and undergraduate students to complete fieldwork for the next three summers. Recently, I also received a small grant with Dr. Polet to continue water quality work and initiate a geophysical survey at Dos Palmas Springs and Natural Preserve in the Coachella Valley. This work is funded through the Bureau of Land Management (BLM) and will support several graduate and undergraduate students. Last year we measured arsenic in many of our samples and want to investigate the source of arsenic at the springs. We also started a new project near Porter Ranch, California measuring soil gases above the natural gas storage aquifer that leaked last winter. My graduate student Ken Craig also received a student research grant from the American Association of Petroleum Geologists (AAPG) for that work. I plan to monitor soil gases through next year with undergraduates as that storage facility comes online again. I have continued to develop connections with environmental organizations in Southern California, which have led to internships and small projects for students, such as Mujeres de la Tierra and the Inland Empire Water Keepers.

This December, I will be an invited speaker at a symposium co-sponsored by the U.N. and the International Atomic Energy Agency (IAEA) intended to provide the state of knowledge to third world countries on tracking environmental impacts in petroleum systems. I'm excited for the opportunity to present my research on an international stage. As for teaching, I continue to update my core classes (Hydrogeology and Geochemistry). I am still trying to get groundwater flow models that I can install on department computers so that I can teach groundwater flow modeling. I have taught the "Water in a Changing World" and Soil Physics classes several times now and both seem to be popular. I'm very pleased to see more students interested in Hydro/Environmental studies.

I'm excited for the potential of a productive 2017 with students. Happy Holidays! ~ Stephen Osborn



Clark Murphy preparing samples for analyses on the Ion Chromatograph for the Field Module class. ~ Dr. Stephen Osborn



Stephen Osborn and his students during Field Module class in Coachella bailing a groundwater well.

Jascha Polet

Hi everyone!

I should start with the part of these Mylonite contributions that is the most fun to write and read about: field trips and other travel opportunities! This year I led another summer geophysical field experience, this time to the Long Valley caldera. With a group of 14 students, we visited Yosemite NP, ran several geophysical surveys across traces of the Hilton Creek Fault System, and were visited by a UNAVCO field technician who demonstrated the use of a terrestrial laser scanner. The student wrote a wiki about their experiences, which can be found at <http://cpplongvalley16.wikispaces.com/> and there are photos of this trip, as well as various other class field trips, at:

<http://geology.cpp.edu/jpolet>

[Jascha Polet at Cal Poly Pomona/Field Photos.html](http://geology.cpp.edu/jpolet)



An example of one of the many photos in the wiki Long Valley trip.— Dr. Jascha Polet.

In addition to the class related field trips, I also had the opportunity to do some traveling related to my research, as well as just for vacation. To participate in the Global Tsunami Model and TSUMAPS-NEAM (Probabilistic Tsunami Hazard Maps for the coastlines of the North East Atlantic, the Mediterranean, and connected seas) project, I was invited to workshops in Athens and Rome, two of my favorite cities in the world. After that great experience, my vacation trip to the Big Island in Hawaii led to another amazing sight: lava flowing into the ocean! We took a sunrise boat tour to the Kalapana coast and watched the active lava flow up close and personal.

I also received several new grants this year to support our research efforts. After more than 18 months(!) of on-campus paperwork, a subcontract with the Jet Propulsion Laboratory has finally been processed, which will enable me to continue my work on using interferometric synthetic aperture radar data to image the rupture processes of large global and regional earthquakes. I also submitted two new proposals to NSF in the past two months, which include significant funding for undergraduate student stipends and student travel to conferences.

Class enrollments keep climbing higher and higher, as the number of Geology majors continues to grow. This past year I taught Global Geophysics and Seismology classes, and co-taught a new Volcanology class, which was well received. One of the highlights of the year for me was receiving the Outstanding Faculty Advisor of the College of Science award, a great honor! Many undergraduate and graduate students presented their research at conferences in the past year, and several will present at the Fall American Geophysical Union conference next month. Kevin Chantrapornlert defended his MSc thesis this spring, and Raymond Ng will defend his MSc research later this quarter and then continue on to a PhD at the University of Oklahoma. Our Geology graduates continue to do well in applying to MSc and PhD programs, and in finding positions in local industry.

Please make sure to follow the department's Facebook page for photos of students presenting their research, field trips and other department events throughout the year.

Happy Holidays!
Jascha

Annie Scott (Lecturer, 2006-07)

We seldom get to hear from our lectures, but we heard from Annie last April who sent us an update on how she is doing. This is what she had to say:

We haven't been back to California since we left in 2010 but we both miss it. Our yearly west coast trips generally take us to see my family in Portland but we hope to visit again soon, especially Channel Islands and Joshua Tree. My husband has been at the USGS in Reston for four years and I hope to land there as well, now that the kids are older. We enjoyed our two years in Montreal during his post doc as well. We'll definitely pop in to say hello when we finally make it back to California.

Have a great day,
Annie

Nicholas Van Buer

Hi Everybody!

Lots of new field trips this year. In the winter, I led a field module to the Spring Mountains in southern Nevada, in collaboration with alumni Leo Mercy (BS '78) and Ryan Santos (BS '15) of CalPortland, where we mapped a Miocene caldera and resurgent rhyolite dome. We actually had

a few flakes of snow our first weekend mapping in January! Jascha Polet and I had another cold trip, while co-teaching a new Volcanology class, which we took up to the recently-active volcanoes in the Long Valley Caldera/Mono Lake area. In spring, I was teaching two new field trips for Geotectonics. One trip made a transect across the Cordilleran passive margin, from the Red Spring Thrust at Red Rock Canyon near Las Vegas, to Death Valley, where we camped in the core of the Funeral Mountains metamorphic core complex at Monarch Canyon. The second trip went up along the southwestern Sierra Nevada; visiting sites in its namesake batholith and the Kings-Kaweah ophiolite, a remnant from when the northeast-trending passive margin was truncated against oceanic lithosphere by transform faulting in the latest Paleozoic. Then we returned via the coast ranges, including stops in the Great Valley Group, the Franciscan Formation, and the famous offset channel of Wallace Creek at the San Andreas Fault.

In the summer, I had some time to catch up on research, including setting up new heavy liquid separation procedures for the extraction of zircon crystals from rock. At the end of the summer, master's student Scott Zylstra and I went up to Stanford to use the SHRIMP (secondary-ion mass spectrometer) to measure U-Pb ages of zircons from various igneous and metamorphic rocks from the western Mojave and the San Gabriel Mts. The metamorphic rocks, which were quartzites from the high-grade package of rocks Scott is studying on Ontario Ridge, only had narrow rims of metamorphic zircon growth over much older detrital cores, so we used a special technique where you mount the grains in indium metal and only drill the ion beam into the outermost few microns of the crystal.

Other summertime activities included a week in Prague and Vienna with my wife Sandy, who had just finished a business trip in Europe, and climbing Mount Williamson, the second highest peak in California. During the latter adventure, I stumbled across a rock glacier, which upon further research led me to realize that (a) the Sierras are full of rock glaciers (over a hundred), and (b) there has been hardly any research done on them—no one had even done an inventory of how many there were until 2008. So, towards the end of the summer, I took another trip into the Sierras, which included a backpacking trip up Tinemaha Canyon to observe and photograph three of the larger rock glaciers in the Sierra Nevada. My plan is to return and take new photographs from the same locations in a few years to see how much the rock glaciers have moved in the meantime.

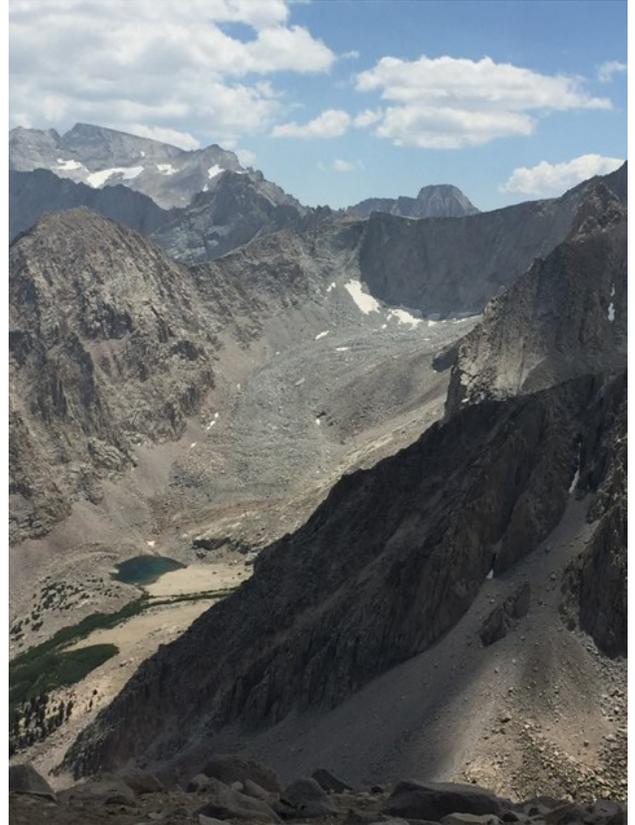
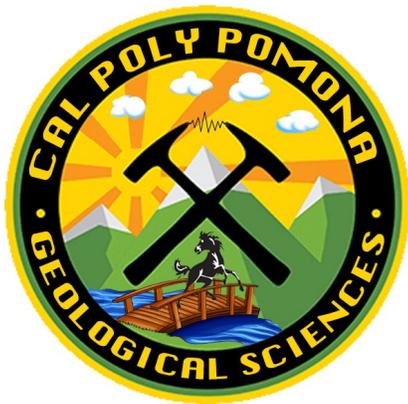
In addition to Mineralogy, this Fall I've been teaching Structural Geology for my first time at Cal Poly, including

a successful mapping trip to Rainbow Basin near Barstow. I've also gotten the XRF back into top shape, with a new measurement application tailored for measuring major and trace elements in granites and other felsic to intermediate igneous rocks. Now off to meet with Leo Mercy about possibly collaborating with CalPortland for another field module this winter!

Cheers,
Nick Van Buer



Volcanology students investigate surge deposit from the 760 ka Long Valley Caldera eruption. - Dr. Nick Van Buer



Rock glacier in the Eastern Sierra.— Dr. Nick Van Buer



Structural geology students mapping in Rainbow Basin.—Dr. Nick Van Buer

Emeritus Faculty News

Greetings to all you fine alumni!

Let me start this edition by commending last May's Alumni Reunion. It will certainly go down as one of the memorable events. The Department was most fortunate to obtain the Pomona House for the evening. This stunning venue, a DJ, good food, a bar all contributed to an attendance which, no doubt, set record highs. I was very gratified to have had the opportunity to talk to so many alumni. The alumni conversations kept me so busy (a good thing) that I hardly had a chance to sample the diverse food. I almost lost my voice from talking so much. Peter Valles' ('83) (Henderson-Valles Award) assistance in the awards ceremony enhanced the meaning of the award. Dinah Shumway's (Van Buskirk Board member) recounting of the contributions of Margaret Van Buskirk to the Department, to women in the geosciences and to espousing local geology added depth and historic context to this award. All this could not have been done without the generous assistance of numerous corporate donors. Corporate support was precedent setting. So a heartfelt Great Job for such a fine event.

I am now going on two and a half years of retirement. It has been a good year for myself and Jerry. Two of our three trips were to volcanic sites. Therefore I am going to call this "the year of the volcano".

In late February into early March, Jerry and I spent almost two weeks in Hawaii. We spent six days on Hawaii and seven on Oahu. We both are infatuated with the Big Island. It is much more authentic Hawaii than Oahu. Oahu is like a version of southern California with less crowded beaches. The Big Island has no freeways, is far less crowded has wonderful contrasts in climate and vegetation.

Such contrasts are especially true at Volcanoes National Park where the recent lava flows are starkly barren. This is right next to tropical rain forest. Quite a contrast. Experiencing hot spot volcanism and seeing shield volcanoes in person is quite amazing. One cannot photograph the huge volcanic edifices and give an impression – like photographing the Grand Canyon – of what the island is like. While in the Park we went through the Thurston Lava Tube, hiked the Mauna Ulu trail, drove the Chain of Craters drive, saw petroglyphs and witnessed the awesome glow of the lava lake at night. The

photo is of me at the Thomas Jaggar Museum caldera overlook.

Hilo is great, authentic, pleasant, friendly, and while we were there, not rainy. Kona is nice, has a wonderful dry climate but clearly much more touristy than Hilo. We also liked Kona. If any of you alumni took Oceanography from either Dr. Berry or myself you would have seen as Dr. Berry put it the "oldie but goodie" video "Waves on Water". The last five minutes of the film covers tsunami. Hilo was devastated by the 1946 tsunami. Our Hilo motel was within walking distance of the bridge photographed in the movie. Oh, by the way, how many airports can be characterized as peaceful? The Hilo airport certainly qualifies.

We were not as infatuated with Oahu. It is a smaller version of southern California except with different scenery. It is much more crowded and has freeways. The Kailua Beach Park has got to have the best beach on the island. We hiked Diamond Head, did Tantalus Drive, enjoyed sitting on Sunset Beach and watched the surfers at Waimea Bay. Oh, by the way, on March 8th we did see some of the partial eclipse of the sun (total in Indonesia and the central Pacific). It was cloudy. But, for a few minutes, through the breaks in the clouds, we saw maybe five percent of the sun covered.

In late June we took our annual trip to the east coast and the family reunion on the south Jersey shore. This year before the beach week, Jerry and I drove to Colonial Williamsburg, Jamestown and Yorktown. Williamsburg is overflowing with history. The docents / guides were authoritative. It was humbling to set foot in Jamestown and feel part of the true beginnings of America and its government. Yorktown was interesting in its historical context. There were 17 of us at the annual beach reunion. We had great food, wonderful weather and enjoyed to cool Atlantic.

At the end of September we were off to our second volcano of the year, Mt. Lassen National Park. We spent three days hiking and exploring the Park. The scenery is beautiful, the geology interesting and the deafening (yes it is almost painful) quiet is awesome. We hiked to Bumpass Hell and to King's Creek Falls. We visited Manzanita Lake, walked around Summit Lake, and learned about the native conifers. At night we observed the night sky from just outside our motel room. It was the first time I had seen the Milky Way since grad school. It was so dark, the galaxy, Andromeda, was a naked eye

target! Awesome! Lassen is a wonderful place. Yes, by the way, I am wearing the same shirt in both photos.

Let me end by reminding you of the August 21, 2017 total eclipse of the sun. If you don't know already, the path of totality goes diagonally from the Oregon coast to South Carolina. It gives everyone a great opportunity (and no excuses) to see the event right here in the US. Perhaps we will see some of you in eastern Wyoming.

I hope to see all of you at the next Alumni Reunion. I truly enjoy catching up with you all at these events.
Best regards,

John A. Kleck



Akaka Falls



Kite surfers

Faculty and Student Scholarly Activities (2015-16)

For many more details on Geology faculty activities (research, student-mentoring and service) please refer to the **Annual Report** posted on our web site: <http://www.cpp.edu/~sci/geological-sciences/docs/academics/GeologyDeptAnnualReport2015to16.pdf>

We hope you are impressed by the collective productivity and accomplishments of Geology faculty and students during the past year.

SAVE THE DATE!!!

The Geological Sciences Department's Alumni Reunion & Student Award Ceremony will be held on Saturday, May 6, 2017. The "Where" is still to be determined, but it will be a picnic/barbecue. So mark your calendars and we hope to see you there!

2015 News, Updates and Photos from Alumni and Friends

Below is the latest news from our active alumni and friends. We have pieced together various notes from fragments of emails, phone calls and other communications received over the past year. We are always interested to learn what you all are doing—please send me or Monica (mlbaez@cpp.edu) an update anytime you have a few free moments. Photos are always welcome. Jon Nourse.
Note: Opening edits done by Monica Baez

Melissa (Pratt) Bautz (BS '95)

Melissa has been up to fun stuff again this year and it's always great to hear how her, and her family is doing. I participated in a video with Wyoming DEQ, showcasing Geomorphic Reclamation in the remote Gas Hills Mining District. Eventually it will be posted to the WDEQ website, but for now here is the link:

<https://vimeo.com/183512939/8c8dfb4b14>

I continue to enjoy my newest role at Wyoming DEQ, working as Project Manager for the Abandoned Mine Land Division overseeing a 600-acre reclamation project in the Gas Hills Uranium Mining District (central WY). The Day Loma mine site is being reclaimed by AML using Geomorphic Reclamation. It is a 9 phase project and it reclaims several 400 deep open pits and uranium spoil piles. Lots of scrapers and dozers and excavators!

I also manage 60 general construction contracts to get reclamation work done across the state. These general con-

tracts are an efficient way for AML to complete smaller reclamation jobs in a short time frame; no need to go out to bid, which consumes lots of precious time, especially when mine subsidence or mine fires are concerned!

I have oversight of a new 3rd party evaluation of AML's Geomorphic Reclamation. This includes working with University of Wyoming graduate students and guiding them as they design their test plots to evaluate our reclamation's success.

I also work with local and out of area schools, from 2nd grade through college level and Boy Scout Troops to discuss Geology, Mining, and Paleontology. It turns out that the fossils I collected as a Cal Poly student in the infamous strat/paleo field trip are a big hit with the 2nd graders.

I've been creating multiple GIS databases to proactively target high subsidence risk areas across the state and learning all about grout in order to backfill underground mine voids. With help from knowledgeable consultants, I get to experiment with different mixes of sand, cement, fly ash and locally available materials. The goal is to find a financially viable grout mix that will fill the mine void and prevent catastrophic subsidence under infrastructure. Grouting of underground historic coal mines: some of the mine voids in Hanna, WY are up to 20' thick! Thicker voids pose unique challenges when backfilling in order to prevent subsidence under infrastructure.

I continue to enjoy my family life with 4 kids and my dear husband, Greg. We are still a hunting and fishing family. Our takings provide the majority of our family's protein.



Henry Bautz pictured on a Muscovite vein.

The summer garden gives plenty of veggies. No complaints here. Very fortunate to live where I do.

I'm restarting my local bagpipe band and my oldest daughter, Jenny (age 14), is my lead snare drummer with my younger daughter, Theresa (age 11), is the band's official Highland Dancer. The boys, Henry (age 7) and Andy (age 5) are still a bit young for the pipe band. Someday...

I hope everyone is well out there. I often draw upon and

think back fondly on my Cal Poly Geology student experiences. There is no question that a field intensive Geology curriculum is good!

Take care everyone!

Melissa (Pratt) Bautz – BS 1995



The Bautz family – Easter 2016

Steven Carpenter (BS '77)

Steve and his wife Carole attended the 2016 Cal Poly Geological Sciences Alumni Reunion and Awards Ceremony in June and Steve was gracious enough to share some fantastic field photos of his time here as a student. Thank you Steve!



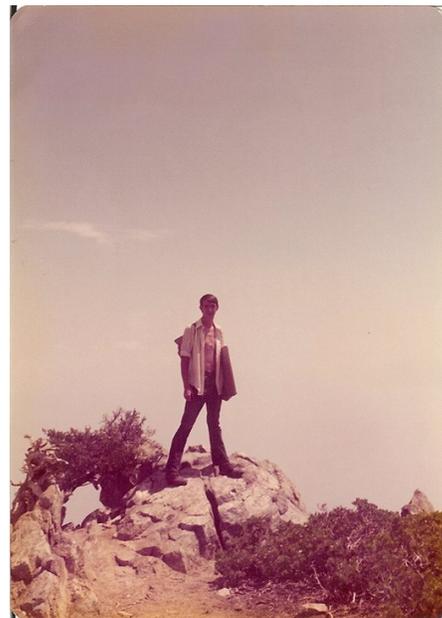
Vasquez Rocks campground while mapping in Tick Canyon. Field Class of 1973. Back Row L-R: Dr. Larry Herber, Hank Brown, Kathy (?), Scott Carney, Rick Gorman. Front Row: Alan Snyder, Bob Archer, Dave Rogers, Steven Carpenter.



Plane table mapping project on the Cucamonga Fault. (1973).



Mapping a landslide in Puente Hills. (1973).



Steve Carpenter on the summit of Cucamonga Peak which was in their mapping area.



Mapping in Tick Canyon with Dr. Herber. (1973).

Pattie Gonzales (Attended 1983-85)

While attending Cal Poly Pomona, Pattie's last name was Stephens, she went on to graduate in Business with a minor in Geology from Cal State San Bernardino. We are happy to have Pattie as our valued friend after all this time! She sent us a submission this year with some photos of her geological adventures as well as all the things keeping her busy.

The past year has been great fun! I was remarried on October 17, 2015 to Robert Gonzales. (My first husband passed away from cancer in 2011.) My new husband Robert works for Greg Carrillo Racing (NHRA Top Fuel Car) and Mobil Oil. He enjoys rock hounding and prepping mineral & fossil specimens with me and I get to go to various racing and car show events with him.



Pattie & Robert

The Mobil corporate employees I have met say Cal Poly should be proud, because I know more about Geology and Oil production than some of them do (HAHAHA). My husband's boss has been highly successful in the sportsman classes of NHRA (National Hot Rod Association) and hope to now join the Professional classes in 2017. (Look for us on Fox Sports 1 at

some of the races next year, we may be there with the dragster.)

I retired from Raytheon Missile Systems, February 1, 2016. When asked about what kind of R & R I had planned, I responded "Race Cars & Rocks." In April, Robert & I joined a group from the University of Arizona to collect petrified wood on a private ranch near Snowflake Arizona. We collected for the school and were allowed to keep 100 lbs. for ourselves. (See pictures 1 - 3 below). U of A got the large trunk in picture 1. Robert holds the branch he



worked to dig out in 1 piece in photo 2. My stump is in photo 3. From this I cleaned and restored a large stump with removable sections to reveal the colorful heart wood.



It makes a great centerpiece for one of our flagstone tables on our patio, where visitors can take the sections apart and put it back together again.

In June, we took a combined cruise and land journey to Alaska. We managed to pan \$70 worth of gold in Skagway; experience pays off. (The average panner on this excursion pans about \$10 - \$20.) I got a partial view of Denali on my birthday, June 21, but my favorite was Glacier Bay. Get got to see several small calving events and I captured a small avalanche high up one peak near the Johns-Hopkins Glacier.



Alaska trip—Avalanche bottom picture.



Other trips this year included the Tucson Gem & Mineral Show, the Deming New Mexico Gem & Mineral show, and Prescott Gem and Mineral Show where I purchased my first Lapidary saw and diamond polishing wheel set-up. I am having fun learning to perfect techniques on Agate & fossil coral collected from Payson, AZ in May and some of the petrified wood. We were also able to collect and subsequently polish some nice Jasper collected near Chino Valley, AZ during the Prescott Trip in August.

My final trip this year was to the Searles Lake Gem-o-Rama



in early October. This was my third adventure to collect Hanksites, Halites, Sulphalides, etc. The light colored halite has crystals over 2 inches across. We are hearing that this may have been the last show, but local residents are fighting the mine to keep



(Halite above, Hanksite below.)



it going. We will see. So, in-between a local race for an Alcohol Funny Car, of which we are both part of the team, I have been cleaning specimens.

This weekend (Nov. 4-6th) I am off to Las Vegas for the SEMA car show at the convention center. Last year I had an impromptu lunch with NASCAR legend Richard Petty. We sat at a table and talked for an hour while crews were

setting up exhibit booth in the convention center. Whenever I go to Las Vegas, I am pleasantly reminded of a trip back in 1983 when Dr. David Berry took several of us on an overnight camping trip to Arrow Canyon nearby to collect Pennsylvanian-Permian fossils. I still have those fossil treasures. I will never forget Dr. Berry, Dr. Tarman, Dr. Klasik and many others. All of my collection are used for presentations at local Elementary & middle Schools and I tutor Pima Community College & U of A undergrads in basic Physical/ Structural/ Historical Geology and Paleontology. Need to make my professors at Cal Poly proud!

Best wishes,
Pattie Rose (now Gonzales)

Marianne Grillo (BS '13)

It's always great to hear from our graduates. Marianne recently contacted me to get in touch with Dr. Berry and she also gave us a small update on how she is doing since she Graduated.

I've been working at the Natural History Museum in LA for a little over 2.5 years on membership, the Dino lab, and doing some private tours. I've also been working for Paleo Solutions as a field tech for paleo and I've been living out here (Los Angeles area) for over 2 years as well.

Audra Hanks (BS '13)

Got a small update from Audra. She is living in Illinois and got her MSc at Illinois State University in Hydrogeology in 2015. Audra just recently got a new job around June of 2016 with the Illinois State Geologic Survey and we wish her all the best!

Mary Ireland Kunze (BS '93)

Over the summer I was able to re-connect with Mary Kunze (Ireland) and got a nice update from her for the Mylonite. It was great to hear from her. This is what she had to say.

Earlier this year I accepted the position of County Executive Director of the Wagoner and Mayes County offices of the USDA Farm Service Agency. This was a full circle return to my "home" county. Although I don't work with rocks directly. I do use the GIS skills, mapping, field testing and experience (especially finding your way around in the middle of nowhere) and meteorology in my position. The forward thinking of Dr. Jessey and the rest of the department with the "cutting edge" computers and software of "my day" has provided me with many advantages throughout the years.

Time flies quickly and I now have two children in college and one a sophomore in high school. Seems like I was just a student myself. Moving my daughter to the university this year reminded me of so much fun and the great memories I have of our days and overnights in the lab. As we toured the studios my daughter will spend her years doing projects with her fellow students, I told her she will make some wonderful and crazy memories with her classmates. To all of you in school now, enjoy the trips, labs and study hours. It'll be gone before you know it and be some of the best days you will ever have.

Anthony Mack (BS '13)

Anthony sent Dr. Nourse a note this past spring when we sent out invitations to our annual Alumni reunion. He couldn't make it out, but gave us an update on how he's doing for the Mylonite. Glad all is well, Anthony!

I am currently living in Naples, Florida. I am working for the county as the Environmental Specialist with the Solid and Hazardous Waste Management Department. The job entails managing the groundwater monitoring program for the landfill and I've also started a project to observe and track the composition of the landfill gas. I have a theory that introducing oxygen could reduce the amount of reduced sulfur created thereby reducing the amount of sulfates and sulfides that are produced by the exhaust of the Landfill Gas to Energy Plant. I have also become qualified to train and certify County employees in accordance with 29 CFR, 24 Hour HAZWOPER course. Trying to make myself as valuable as possible.

Things are going well, I'm hoping to buy a house before the summer is over and I have started the process to get my Masters in Environmental Science from Florida Gulf Coast University.

Hope all is going well there. Following the department Facebook It looks like both the Graduate and Undergraduate programs are going strong.

Again, I hope to get out there next year,
Anthony Mack

Kim (Craig) Martinez (BS '07)

I heard from Kim over the summer and she and her husband Gabe are doing great. Here is what she had to say and she sent us some adorable pictures of her family. Thank you Kim!

I am taking a break from teaching junior high science to spend time with my 4

year old daughter, Delaney and our newborn twin boys, Zachary and Everett. The twins were born on May 20th and are doing

great! We recently went on our first camping trip with them in Morro Bay.





The Martinez Family—Gabe, Kim, (twins) Zachary & Everett and Delaney.

Scott McKeag (BS '82)

Scott contacted Dr. Nourse last spring around the time of our alumni reunion but regrettably could not attend. This is what he had to say though:

I am still drilling out a huge porphyry in the Red Sea State in Sudan. Please give my best to anyone there that might still remember me.

Andrew McLarty (BS '00/MS '14)

After much hard work, studying and taking the CEG exam, Andrew passed with flying colors last December. Congratulations, Andrew on a job well done! We look forward to hearing about your upcoming adventures out there in the field of Geology!

Jeff Pepin (BS '11)

Jeff dropped us a note in mid-September to catch us up on what he's been up to, his update is to follow. It was great to hear from you Jeff!

I have been continuing my work at New Mexico Tech towards my Ph.D. in hydrology. It looks like I'll be done in about 2 years. I've also started working for the USGS as a career pathways intern at their New Mexico Water Science Center. I'm hoping to move up to Albuquerque next summer. I got to do some traveling last year. Last September, I spent 10 days on a research vessel (R.V. Langseth) off the

coast of New Jersey deploying marine geophysics equipment (MT) with the Scripps Research Institute and Woods Hole Oceanographic Institution. I also got to attend an AGU Chapman conference in Valencia, Spain for a week in October; this marked my first time out of the country. Overall, it's been a great year. I hope everyone has been doing great!

Valorie (Taylor) Plesha (BS '86)

We got a little message from Valorie during spring and she was heading to England. I wonder if she found any of that old red sandstone that Dr. Herber used to talk about. If you did, Valorie, please be sure to let us know for next year's Mylonite.

Meredith (Staley) Rivin (BS '03)

Dr. Nourse got a note from Meredith last December and she gave him an update on how she is doing up in Washington state. It's great to hear from you Meredith!

I just wanted to say hello and happy holidays from Seattle! I'm settling in to work here at the Burke Museum and at the University of Washington, although I miss southern California. I also miss that I wasn't able to teach another class at Cal Poly - that was wonderful fun.

The Burke Museum is a wonderful little museum, the UW campus is gorgeous, and I've really enjoyed getting to know all the people I am working with up here. It's a great group, and a fantastic group of students too. It's a little weird being associated with Biology instead of Geology though! Next quarter (I'm back in the quarter system), I'm project manager on a project with the Engineering department to 3D scan and print and entire mammoth skeleton - should be an awesome project!

Best,
Meredith

Marian Rudnyk (BS '83)

It is nice to hear from alumni that had lost contact with the department and we were very happy to hear from one such alumni, Marian Rudnyk who graduated with us in 1983. He gave us a nice submission for the Mylonite and a link for his book at the end. Thank you Marian!



Hi Everyone!!! To say that I have done many things since graduating is an understatement. First, I found myself at NASA-JPL (Jet Propulsion Lab) doing planetary mapping of Jupiter's moon Europa, and lava flows on Mars. Soon



after I was working as an Astronomer – an asteroid hunter! Splitting time between JPL and the famous Palomar Observatory, I participated in over 200 discoveries. My first asteroid, 4601 Ludkewycz, I named in honor of my mom. Later I was manager of NASA's Planetary Image Facility at JPL (the place that keeps all of NASA's pictures), and was also on the imaging science flight teams on the Voyager mission at Neptune, Magellan at Venus, etc.

Constantly creating, drawing, and writing while bouncing around NASA I was encouraged by everyone to shoot for the stars – this time in Hollywood! While retraining (learning animation & digital paint), I worked 11 part-time jobs – including pool boy at a city plunge, fitness trainer, english & math tutor, as well as movie & TV extra. If you've ever watched the original “*Beverly Hills: 90210*”, then you've no doubt seen me as a student wandering the halls. Or, you may have seen me rubbing elbows with Superman on “*Lois & Clark*”, or undersea on “*SeaQuest DSV*”, etc. I also published science writing (for NASA, The People's Almanac, various science encyclopedias & books, etc).

Soon after I did traditional animation for a Levis TV commercial, and suddenly wound up on the Oscar winning visual effects team on James Cameron's “*Titanic*”. My movie credits now also include such blockbuster feature films as “*Armageddon*”, “*The Matrix: Revolutions*”, “*Star Trek 9: Insurrection*”, “*Lord Of The Rings: Fellowship Of The Ring*”, “*Unbreakable*”, “*End Of Days*”, “*A Beautiful Mind*”, and countless others (credits at: <http://www.imdb.me/marianrudnyk>). I was on staff at *Disney Feature Animation*, *Digital Domain*, and many other big Hollywood studios. I even got to do work on *Disneyland's California Adventure* park. All very exciting stuff!

But - having accomplished what I set out to, I decided again to shoot for yet more new dreams!

Currently I am doing many things – again! I have 2 more of my asteroids that are up for naming. I'm also a published author! My second book, is the hit novel “*Santa's Sister*” which is available now on Amazon. It is an adult family-friendly novel that is good for all ages. If you like Christmas movies such as “*Elf*” (starring Will Farrell) or the Tim Allen “*The Santa Claus*” movies, then you will love my book. It is the story of a little girl named Snowflake who stumbles upon a mysterious book claiming Santa has a long-lost sister, named Noel Kringle, who lives at the South Pole. Running away to seek out Noel's help, Snowflake winds up inadvertently triggering a global crisis. Will she find this mythical sister of Santa, or will she somehow manage to make it to the desolate windswept frozen plains of Antarctica, only to perish in search of what is only a fairy tale...? Fantasy, adventure and a dash of romance await you! – I hope you will check out my book! There is also a “*coming soon*” Christmas soundtrack – all songs by me!

On a personal note I'm still never-married and dreaming of the right girl & having a family! So the dream continues!! And that's what I'm up to!!!

Please feel free to look me up:

Like me: [Facebook.com/MarianRudnyk](https://www.facebook.com/MarianRudnyk)

Follow me: [Twitter.com/MarianRudnyk](https://twitter.com/MarianRudnyk)

My book is available at:

<https://www.amazon.com/Marian-Rudnyk/e/B01BEOD5DY/r>

- or simply via SantasSister.com – which will bounce you straight to Amazon

And make sure to follow Noel's ongoing adventures at:

[Facebook.com/NoelKringle](https://www.facebook.com/NoelKringle)

Or just drop me a note and say “Hi!” at: marian@spacetiki.com

I look forward to connecting with you all!

PS. And special *ADVANCE* heads up to all of you fellow alumni: my book will be available for **FREE** on **Christmas Eve**!

Ken Symons (BS '79)

Here is another alumni that we were able to re-connect with and are very happy to get an update from for the Mylonite. It was really great to hear from you, Ken and thank you for the great pictures as well. We hope to keep in touch! Here is Ken's update:

I graduated in 1979 from Cal Poly. I went to work for a soil compaction firm in Orange Co. and worked there for nine months. I then moved to Utah, where I thought I'd go to grad school for petroleum geology. Unfortunately the job market collapsed and I ended up at an aerospace company doing propellant and composite sample testing to certify missile propellant and composite fiber and cloth for customer delivery.

After nine years I got a job as an environmental scientist with the State of Utah in the air quality department. I've been at this job for 23 years. My department installs the air monitoring shelters, air monitoring gas and particulate instruments, and then runs and maintains the instruments to ensure valid data to submit to EPA. We also do survey sampling in remote areas to determine background ozone levels and possible ozone transport concentrations in those remote areas.

It's been an interesting career so far. I've seen the advancement and sophistication of gas analyzer monitors over the years. Ozone concentrations used to be measured using by measuring the stress relaxation on a rubber band stretched across a weighted gage (see attachment) on a rubber band exposed to ozone in the air, to ozone analyzers measuring levels using a *chemiluminescence* detection method.

We used to gather data over phone lines from each station. Now the new analyzers have Ethernet data ports to send data via the internet.



I like to look for petrified wood when I visit the Hurricane, Utah monitoring station. I've also collected California tourmaline and associated pegmatite stuff with another graduate,

Paul Purington. I pick up rocks wherever I travel. I also metal detect around spots along the original Transcontinental Railroad route.

Thanks.

Ken

Gary Thompson (BS '90)

It's always great to hear from Gary Thompson and it was nice to see him wandering the halls here at Cal Poly last year. We hope you come visit again soon, Gary and thank you for your submission as always!

Last year, I skipped over a fair bit in my submission due to a rather tumultuous year. This time I am making up for that fact as my letter covers the last 20 months or so. I read that Cal Poly has been going through changes but I am glad that the Geology Department is still going strong. Over this period, I am probably more familiar with your area (Mom lived near Diamond Bar) than Taunton. But lately, in Taunton, we have had a mixed bag of weather, but it's still fairly warm.

Since February, 2015, I have been back and forth between LA and the UK 5 times to attend to my late mother's estate. It's been a period of highs and lows. While my wife, Felice, spent much of her time in the U. K. looking after our son, Gianpaolo, helping him with his schooling; I spent most of my time sorting through my mother's effects.

Mom had relations who were in U. S. Army and the railroads, thus I came across many items of interest. For example; an old newspaper from the 1906 San Francisco earthquake, some old (circa 1870-1910) school books, survey maps of L. A., a Daguerreotype photo, and some items dating back to the Civil War and a few going back to the 1750's. Two unexpected finds were a business card signed by Senator JFK and a piece of jewelry with either emeralds or demantoid garnets. See photo. I would need a microscope to determine if there are any of the garnet's tell-tale horsehair inclusions.



During my family's visits to LA, my son and I had our fair share of Disneyland and made a visit to Universal Studios. We bought some annual passes and we saw Disney's lead-up to the Season of the Force. We also attended the D23

Expo. Once, we drove up the 101 to San Francisco to meet family. On the way, we stayed at the Madonna Inn at S. L. O., road along 17-mile drive into Monterey and toured the Apple campus in Cupertino (where we saw a skeleton of the donut-shaped Apple HQ.) On our way back, we took a tour of Pixar Studios (featuring artwork from *Inside Out*). On New Year's Day, 2016, we viewed the Rose Parade and saw some beautiful floats (including Cal Poly's). I later visited Tijuana with my son. We seized the opportunity because he was doing a school project on immigration. Timely, all things considered. Finally, we took in a Star Wars Celebration convention in London and my son had photos with two of the original movie's stars.



Paying my respects at Leonard Nimoy's star.

Our son also had an eventful year. He was awarded for Outstanding Achievement in his grade and then another for his creative writing. He also went on field trips to The Eden Project, saw plays at two London theaters and visited The Wizarding World of Harry Potter Studios with his class. He has just started a full load of science in Year 9. We will now regroup and resume a semblance of normality again.

Peter Valles (BS '83)

It was great to have Peter out for our Alumni reunion last spring. His donations and contributions to our Department are always appreciated and well received by our Undergrads and Grads. Thank you so much Peter for all you do and for your continued support. Here is Peter's update:

This June our oldest daughter Emilie was married. We had the entire family from California out to Texas and everyone had a great time. It was a once in a lifetime event. Emilie now lives with her husband in Borger, Texas where she teaches 3rd grade.

Our middle daughter Hannah, an honors student at the University of Arkansas, spent the summer in Seville, Spain as a part of her curriculum requirement. Her Spanish as drastically improved. She is thinking about going on to obtain a masters or pursuing a degree in law. Cassidy, our youngest girl travelled to California after the wedding and spent time with my mom and dad in Cucamonga. Later in the summer she and my wife Laura made the journey to London, England as a part of a choir trip sponsored by our church. I returned to the Eastern Sierra Nevada and backpacked around McGee Creek where the Mt. Morrison Roof Pendant is on display. I camped at around 10,500 feet and suffered from altitude sickness as I live at 200 feet above sea level. My main activity was fly fishing for Brook Trout at Grass Lake and sleeping in my hammock. The trip brought back the memory of my Cal Poly Field camp in the summer of 1982, which was led by Dr. Donald Tarman and assisted by Mike McAtee. That summer, we spent the first two weeks mapping the Paleozoic rocks on the west flank of the Inyo Mountains, east of Independence; the second two weeks we mapped at the Poleta Folds and camped just beyond Westgard Pass. The third and final two weeks of our summer field season was spent in Laurel Canyon just south of Mammoth Lakes where we mapped the Mt. Morrison Roof Pendant. The camp cost was \$500 dollars (about \$1250 usd in 2016) including transportation to and from Cal Poly and with food!

What a deal. I plan to hike the John Muir Trail next summer if I can obtain a permit. Work at Shell keeps me busy. I am now a Leadership Coach for our junior technical staff and with a cadre of about 15 individuals. It is very satisfying work as I am able to pass along much hard-earned wisdom from the leadership roles I have had over the years. I became a certified professional coach in 2012 and the coaching skillset is proving to be quite useful. It was great to see everyone at the Alumni Dinner and Awards at the Kellogg Mansion this year. Thanks to all who organized the evening as it was a special treat to be in such a place and with such passionate geologists. I hope to see you at our get together in 2017.

All the best,
Peter

Alumni Updates from LinkedIn and Elsewhere

Reginald Agunwah (BS '08) - GIT, has a new job at County of San Bernardino Public Works – Flood Control.

Christina Bloom (BS '12) – is now a Quality Analyst at Concentrix AdventureWorks, New Zealand.

Julie Mitchell (Brown) (BS '08) – is celebrating a 1-year work anniversary at Quantum Spatial as a Remote Sensing Field Technician.

Jake Loukeh (BS '14) – has a new job at City of Chino Hills as a Water Use Efficiency Coordinator

Matt Lusk (BS '07) – is now a Geologist at Aera energy LLC in Bakersfield, California.

Ryan Santos (BS '15) – is now a Geologist at CalPortland in Bakersfield, California.

Stephanie Steinert (BS '16) – is now a Staff Geologist at Kling Consulting Group.

Patrick Thomas (BS '15) – is now a Staff Geologist at Irvine Geotechnical.

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 gifts continue to support our annual scholarship funds.

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 really appreciate your continued patronage.

We'd really like to stay in touch with you! Please send us any updated contact information to Monica Baez at mlbaez@cpp.edu or through USPS at:

Monica Baez
Administrative Coordinator
Geological Sciences
Cal Poly Pomona
3801 W. Temple Ave
Pomona, CA 91768

You can also find me on LinkedIn

Geology Department Facebook page:
<https://www.facebook.com/geology.csupomona/>

Geology Department Webpage:
www.cpp.edu/~sci/geological-sciences/

