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*The Newsletter of the
Geological Sciences Dept.
Calif. State Polytechnic University
Pomona, Calif.
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The Mylonite

NEWS FROM THE CHAIR

Department Synopsis for 2014

Dear Geology Alumni and Friends: The holiday season is approaching, finals are given and it is finally raining. This will be a good day to stay indoors and write the Mylonite, now in its 22nd year. I hope our newsletter reaches all of you in good health. The Geology Department faculty and staff are pleased to report a wide range of achievements and student-centered experiences that are enhancing our teaching and research mission. The photographs and descriptions presented below offer a colorful record of our many recent activities.

The Department's academic programs have now grown to about 125 Geology BS majors and 29 active graduate students (not including the five who graduated this year with MS degrees). We hired a new faculty member (Nick Van Buer) who will be teaching or team-teaching courses in Mineralogy, Petrology, Field Geology, Geochemistry, Geochronology, GIS, Isotope Geochemistry and Tectonics. Drs. Berry, Klasik and Jessey all formally retired this year, leaving a large void to fill in our instructional mission. A new faculty search is ongoing in the area of Sedimentary Geology / Earth System Science. We will be requesting additional faculty searches next year. With a somewhat more streamlined advising system, Geology faculty are all busy guiding students toward efficient graduation, in between teaching, grading papers, mentoring student research and writing grants, among other things. Our new equipment purchases and laboratory upgrades are getting lots of use. We continue to celebrate our student successes through scholarship awards at the annual alumni reunion and graduation ceremonies. Last year we sent 20 new graduates out into the working world. I am especially pleased to report that its

students are competing successfully for graduate school admission and full-time jobs in local geoscience industries.

All of these accomplishments required a concerted team effort. Looking back on our last year's highlights I feel very fortunate to be working with such a productive and dynamic group of faculty, staff and students. Described below are various news items of general interest. For additional information please also visit our Geology Department web site at

<http://www.cpp.edu/~sci/geological-sciences/index.shtml>

You may view past issues of "The Mylonite," archived back to 2006, at

<http://www.cpp.edu/~sci/geological-sciences/alumni-and-friends/mylonite-newsletter/index.shtml>

Please enjoy this 22nd edition of our annual newsletter. Let's begin with this March 2014 photo of my Structural Geology class at Glorieta Canyon, Anza Borrego State Park



Geology Graduate Program Awards its First Master's Degrees!

We are pleased to announce that five of our graduate students completed their Master's degrees in less than 2 years. Bound copies of their theses are now housed in the Graduate student office to motivate our 29 active grad students. The logistics of writing and formatting the document, defending the thesis and coordinating with the Library and Graduate office are long and arduous, but it can be done! Congratulations are due to:

- **Andrew McLarty:** (thesis advisor Jon Nourse)—*“Structural Reactivation and Overprinting of The Eastern Rand Thrust Complex, Mojave Desert, Southern California.”* Andrew is now Project Geologist and Registered PG at Tetra Tech Corporation in Pasadena
- **Hannah Mejia:** (thesis advisor Jascha Polet)—*“Depth Determination by Waveform Modeling of Earthquakes Along the Outer Rise Region of the Kuril Islands.”* Hannah is now a PhD candidate at Baylor University.
- **Celia Pazos:** (thesis advisor Jascha Polet)—*“Analysis of Micro-Earthquakes in the San Gabriel Mountains Foothills Region and the Greater Pomona Area as Recorded by a Temporary Seismic Deployment.”* Celia is now a Staff Geologist at Geologic Associates in Claremont.
- **Logan Wicks:** (thesis advisor Jon Nourse)—*“Hydrogeologic and Geochemical Investigation of Robust Spring Discharge at Wingate Ranch, Eastern San Gabriel Mountains, California.”* Logan is now a Senior Environmental Scientists at TRC Solutions, Inc. in Los Angeles
- **Josh Sargent:** (thesis advisor Stephen Osborn)—*“Sources of Fluids and Salinity in Shallow Groundwater Near Natural Gas Extraction Weld, Adams and Boulder Counties, Colorado.”* Josh is now a Staff Geologist with Stantec, Inc. in Redlands.

Eleven new students have joined the MS program since last January, including three from out of state and four from various UC schools. The word is getting out about our unique program offerings. Enrollments were good in our fall quarter classes (GSC 501 Current Topics seminar, GSC 503L Field Investigations and GSC 575/L Contaminant Transport).



Part of this year's entering graduate class work on their GSC 503L maps during the lunch break along San Antonio Creek, September 2014.

The graduate office (Room 8-243) is getting crowded but still functions well as a work space and general student hangout. We have plans to add a couple new computers and more comfortable furniture next year. Most of our graduate students are supported with financial assistance in the form of Graduate Teaching Assistantships (GTAs) or Graduate Assistantships (GAs). GTAs during the 2013-14 academic year were held by **Rob Ellis, Celia Pazos, Shawn Morrish, Debbie Kunath, Tamara Yerkes, Melissa Robinson, Kevin Chantrapornlert** and **Michael Vadman** who served as lab instructors or co-instructors in Field Methods, Optical Mineralogy, Earth Time and Life and Principles of Geology Lab, Natural Disasters, Quantitative Applications in Earth Sciences, and the Yellowstone Field Module. The GA awards come with the requirement to help out around the Department, so those students have been kept busy organizing laboratories and libraries, assisting with field trip logistics, grading papers and making movies among other tasks.

We invite applications from Geology alumni. The application deadline for Spring quarter admission is **February 3, 2015**. Fall quarter applications are due **June 15, 2015**. 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.csummentor.edu/>
- For prompt feedback, also send hard copies (or elec-

tronic files) of your application and supporting materials to:

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

Graduate Courses Open To Working Professionals

Are you interested in taking one or more graduate courses for general professional development or to gain skill sets in GIS Applications, Groundwater Modeling, Contaminant Transport, Shallow Subsurface Geophysical Surveying, Seismology, Quaternary Geology, Soil Physics, Mining Exploration, etc.? It is possible to earn graduate credit by manually enrolling in our courses through Open University. The cost is \$300 per unit. Instructor permission is required to ensure that appropriate pre-requisites are met. Please contact Dr. Nourse if interested. The web link below provides a description of graduate courses, prerequisites and learning outcomes; also a -year schedule of graduate course offerings:

<http://www.cpp.edu/~sci/geological-sciences/masters-program/index.shtml>

Faculty Search for Assistant Professor in Sedimentary Geology / Earth System Science

The Geology Department's request for another faculty search was approved by the Provost last May. Given the retirement of John Klasik, our search will focus on the important core areas of Sedimentary Geology and Earth System Science. If all goes well a new Assistant Professor will join us next September. This new person will teach a variety of courses and engage students in research. He/she is expected to contribute to our new graduate curriculum (see above). If you know any potential candidates with a PhD and expertise in Sedimentology, Stratigraphy, Earth History, Global Environmental Change, Critical Zone Science, Energy Resources, Basin Analysis, Marine Geology or a related field, please refer them to our position description at <http://www.cpp.edu/~sci/geological-sciences/open-positions.shtml>. The deadline for applications is January 7, 2015.

New Equipment and Laboratory Upgrades

The Geology Department has gained new equipment and laboratory upgrades through successful external grants and redirection of Instructional Cost Recovery funds. The collaborative grant with Pasadena City College (PCC CPP STEM Pathway) continues to provide signifi-

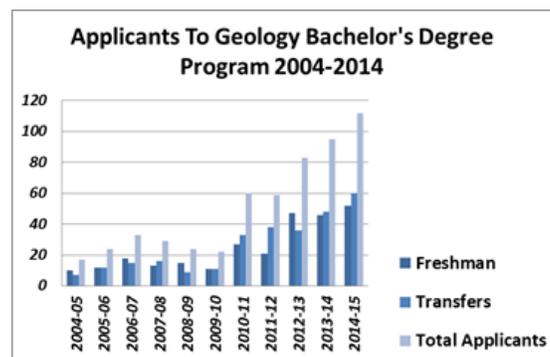
cant resources for equipment; other small grants and internal funds are also important revenue sources. We are well-prepared to support undergraduate and graduate-level teaching and research with the most current equipment available.

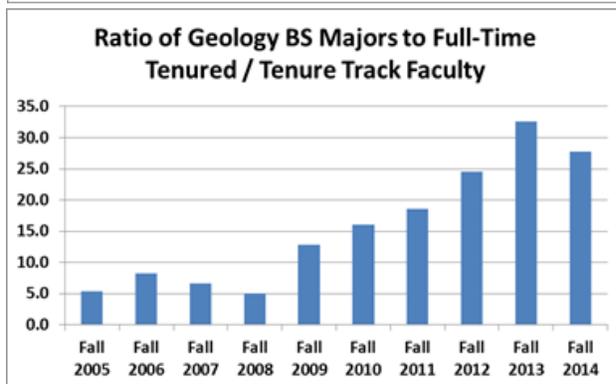
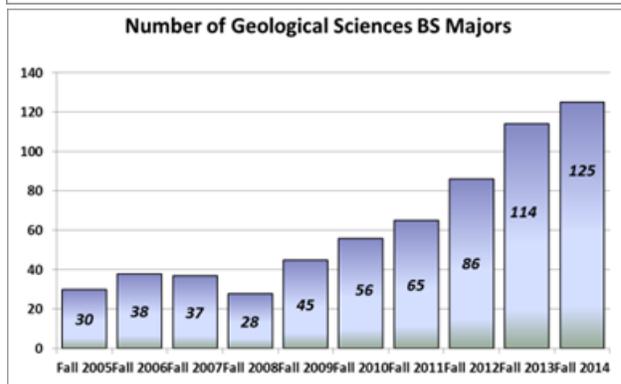
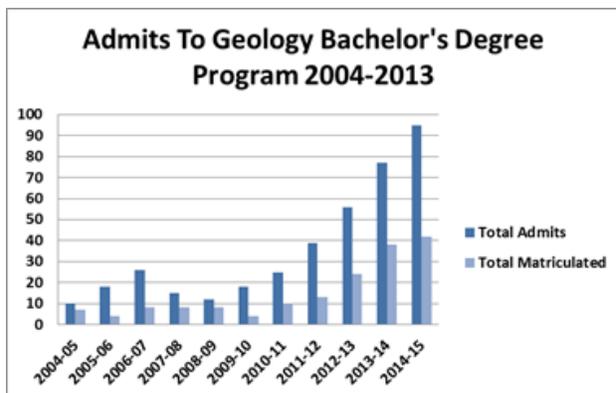
Below is a partial list of significant equipment purchased during the past year or encumbered for this year:

- Three more field-deployable Guralp seismometers-- we now have fourteen(?), making it possible to deploy a dense array of instruments (or possibly two separate arrays) for detailed micro-seismicity studies.
- A Bico misc mill to pulverized crushed rock samples to specific size specifications for mineral separation.
- A Gemini gravity separation shaker table, manufactured in Australia. Among other things, this will provide capability to separate zircon, sphene and apatite crystals for radiometric dating.
- 8 groundwater flow models to simulate the effect of recharge, pumping and contaminant transport.
- 10 new desktop PCs to upgrade the student computer lab in room 4-A-626
- A SMART board for our heavily used Geology lecture-lab room 4-A-634

Geology Undergraduate Enrollments Still Increasing!

The Bachelor of Science Geology degree program continues to gain popularity. Approximate 32 students participated in required summer Orientation sessions, and recently I advised two new Winter 2014 admits. The November application deadline just passed and we have a record number of applicants (120) for next fall. Geology faculty are adapting to large enrollments in core courses. We have devised creative mechanisms to handle quarterly advising of each Geology major. The charts below reflect our latest gains through September 2014. Clearly there is renewed interest in the Geology career path during recent years:





Planning for Semester Conversion

With a bit of trepidation Geology faculty are planning for the CSU-mandated conversion from quarters to semesters. Scheduled start date will be September 2018. The conversion process will be time-consuming, with difficult choices to make about merging of course content and balancing faculty expertise, but as always we intend to meet the challenge. Last September we held a faculty retreat at Rancho Santa Ana Botanic Gardens to hammer out a curriculum for the undergraduate program. Our plan is to create three separate Options within the Geology BS degree that mimic the current emphasis areas (Geology, Geophysics / Earth Exploration and Environmental Resources) that are popular with our students.

One of the more daunting chores involved with this process is revision and updating of Expanded Course Outlines for each of our GSC courses. I just checked the Cal Poly Pomona catalog—we have 63 of them. Hmmmm....

New Website To Be Launched Soon

Another University mandate is Cal Poly Pomona's decision to migrate all Department websites to a new web interface called "Cascade." Geology faculty members began working last spring with a web design team to create a visually appealing layout that includes all components of our current website. Fortunately the web designers are performing the conversion at no cost to us (other than our time). The new system is being promoted as user-friendly when it comes to performing web updates. It also should allow the University to maintain better security of their web pages.

Last year I promised to post movies but got sidetracked with other tasks. Given the potential recruiting potential, an important priority is to integrate video clips with captions into the new website. These movies document various Geology Department teaching and learning endeavors, with the intent of highlighting the practical uses of our field equipment. I believe you will enjoy watching the student actions in motion. We also hope you enjoy the new web interface when it goes live: <http://www.cpp.edu/~sci/geological-sciences/index.shtml>

Geology Department on Facebook

I'm not much of a social media user, but many of you may be. If you enjoy pictures of students in action, there are many more posted on our department Facebook site: <https://www.facebook.com/geology.csupomona>. Dr. Polet is continually updating this site with news and images of various Geology exploits.

Personal Notes from Jon Nourse

Geology Department business continues to keep me occupied more than full time. The department's latest challenge is our ongoing University-mandated conversion from a quarter system to semesters. This will require significant planning over the next 4 years. More details about that in a previous section.

Last winter there were 42 students enrolled in my Structural Geology class (GSC 333). Despite the logistical challenges we were able to take day trips to Cow Canyon Saddle, West Fork San Gabriel Canyon and Glendora Ridge Road to map spectacular structures. We also ventured on a three-day field trip to Anza Borrego State Park.

These trips would not have been feasible without logistical support from Graduate Assistants **Melissa Robinson**, **Michael Vadman** and **Tamara Yerkes**. My other teaching assignments included two sessions with the Field Module (GSC 491L) and GIS Applications II (GSC 411); also the graduate level Field Investigations class (GSC 503L). All of these courses get me out in the field. Not only do they provide a welcome break from the office but there are always new discoveries that open up possibilities for future Senior and Master's thesis projects.



Structural Geology teaching moment at Cow Canyon Saddle.



Structural Geology teaching moment in Glorieta Canyon.

Coordinating the Master's program, recruiting new students and supervising Master's theses continues to be a major focus. Two of my MS students (**Andrew McLarty** and **Logan Wicks**) have now graduated. **Susan Perez** is just about finished. **Fredy Aguirre**, **Reggie Agunwah**, **Danny Miranda** and **Jon Marshak** have all started research projects in the San Gabriel Mountains. **Debbie Kunath** is making great progress mapping and monitoring water quality of springs and oil seeps in Towsley Canyon. This is a project of Debbie's own design, supervised by Stephen Osborn and me.

During early September I took another trip to the Pacific Northwest to scout more sites for the GSC 491L Field Module class. One of many highlights was Roaring Springs Ranch in eastern Oregon, where we mapped and sampled a group of spectacular springs that discharge along a contact for at least ½ mile. The movies that document this exercise turned out well; they will be posted soon.



One of the streams fed by Roaring Springs that discharge from the base of a basalt flow in the distance.

We also happened to cross the 45th parallel on our drive south through Oregon on US Highway 395. Perhaps you might enjoy a comparison with the same latitude traversed by last summer's Yellowstone field trip:



45th Parallel along the John Day River in eastern Oregon.



45th parallel, somewhere in Wyoming.

During my occasional down time I shut off the computer to relax with friends and family and catch up on yard work. Maybe this year we will get enough rain that I can turn off the sprinklers for awhile.

Best wishes to all of you, and I hope everyone has a healthy and festive holiday season!

Student Successes

Graduation, 2014

Ten Geology majors and 6 graduate students walked in the graduation ceremony on June 13, 2014. Pictured below with Drs. Polet and Osborn are (from left to right, back row): **Christina Heinlein, Cody Riegel, Kurtis Morentz, David Nget, Ryan Edgley, Daniel Nolan, Jake Loukeh, Rebecca Greenwood, Katrina Kaiser and Oliver Wolfe**, (also MS students, front row): **Celia Pazos, Magali Barba, Shawn Morrish, Josh Sargent, Logan Wicks and Andrew McLarty**. Everyone seems to be in good spirits:



Also graduating last year, but not in attendance were **Hannah Mejia** (MS student), **Rigoberto Mendoza**, and **Wendy Clark** (BS students). The Geology banner was carried by Oliver, to recognize his achievement of the top GPA of this graduating class.

2014 Alumni Reunion and Retirement / Scholarship Awards Ceremony

Last year's alumni reunion, attended by approximately 50 alumni, friends, faculty and students, was held April 26, 2014 at a Cahuilla Park in Claremont. All attendees were well fed, with the burgers custom-cooked by **Patrick Thomas, Jenna Marietti and Ryan Santos**. In addition to presenting our usual student awards and scholarships, this year we recognized Dr. Klasik's imminent retirement. The photos below show some of the highlights:

Dr. Klasik's Retirement

Our ceremony kicked off with commemoration of Dr. John Klasik's 33 year career with the Geology Department. In addition to presentation of a Department gift by Dr. Nourse, we heard many words of appreciation and some historical anecdotes from alumnus **Peter Valles**, emeritus faculty **Larry Herber** and student **Alex Mundo**. We were especially pleased to see long-term Department benefactor **Sally Lane** here to congratulate John. The Geology Department is very appreciative of all of the good things John has done for us over the years.



Dr. Nourse presents a sundial as the Department gift to John Klasik.



Peter Valles expresses his appreciation.



Larry Herber tells some tales from the past.



Alex Mundo congratulates Dr. Klasik on his teaching excellence.

Henderson-Valles Scholarship

This year we made two separate awards of \$750 to **Rachel Hatch and Patrick Thomas** in recognition of their academic achievements and future potential as geoscientists. Rachel completed her BS degree with honors last June and has joined the Cal Poly Pomona Geology graduate program this year. She is presenting results of her MS thesis work on microtremors of southern California earthquakes at the December AGU. Patrick has been working with Dr. Osborn on a senior project in Colorado describing water quality of the September 2013 South Platte River flood. Results were presented at a GSA talk in Vancouver in October. The Geology faculty commend both of these scholars for their accomplishments!



Peter Valles presents the Henderson-Valles awards to Rachel Hatch and Patrick Thomas.

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 **Ryan Edgley**. Ryan completed a double major in Geology and Science, Technology, Society while keeping active around the Department. Ryan was presenting research results at the Keck Geology Consortium conference in Massachusetts during our alumni event, so we took the picture below in front of Building 4 after his return:



Dr. Klasik presents the Margaret Van Buskirk award to Ryan Edgley.

Grayce M. Teal Memorial Scholarship

The Teal award is intended to support the academic endeavors of students who have taken up Geological Sciences late in their career. The scholarship provides financial support for tuition. **Jenna Marietti** was chosen as this year's recipients of \$750.



Dr. Nourse congratulates Jenna Marietti on the Grayce Teal Scholarship.

Ernest Prete, Jr. Scholarship

To recognize the environmentally significant research, **Lucas Lenhart** received the Prete award of \$1000. In his application Lucas described his ongoing senior thesis project that involves monitoring discharge and water quality of springs that feed Evey Canyon. He plans to graduate Summer 2014.



Dr. Nourse presents the Prete Award to Lucas Lenhart.

Brunton Compass Award

Alumnus **Randal Burns (BS 2006)** has generously contributed two more Brunton compasses to the Department. One of these compasses was awarded to **Michael Vadman** to recognize his endeavors in several field mapping classes and need for a Brunton to finish his Master's thesis mapping in Anza Borrego State Park. Congratulations, Michael!



Dr. Nourse presents the Brunton compass to Michael Vadman.

Peter K. Valles AGI Glossary of Geology Award

A few years back, **Peter Valles** began providing us a Glossary of Geologic Terms (published by the American Geological Institute) to award a deserving student who might utilize some of these words in future geologic studies. This year's recipient was **Alex Mundo**. Alex is especially expressive in his many writings that promote Geology Department events and faculty. We hope this glossary will add to his vocabulary.



Alex Mundo receives the AGI Glossary award from Peter Valles.

Peter K. Valles Rock Hammer Awards

Rock hammers are essential geologist tools. Made possible by contribution from Peter Valles, we like to make this award to field-oriented students who do not already own one. This year **Ryan Santos** and **Lisa Seese** were our top picks.



Peter Valles and Dr. Nourse present rock hammers to Ryan Santos and Lisa Seese.

Monica Baez Chosen for the College of Science Staff Award

One more bit of news: Geology Department coordinator **Monica Baez** was selected for the College of Science Quarterly Staff Award for winter quarter 2014. Congratulations, Monica! In addition to her name on a plaque, Monica received the flowers and balloons pictured below, as well as gift cards that were presented at the College of Science Holiday party.



Faculty News (in alphabetical order)

John Klasik

Greetings to all you fine Alumni! I have been involved in, almost certainly, every one of our twenty or so annual reunions. All reunions are wonderful. All reunions provide an excellent opportunity to re-new acquaintances,

meet new faculty and interact with our current majors. An important part of all reunions has been the celebration of excellence of both faculty and Geology majors. Now, because I have been involved in all alumni reunions I have noted that some stand out more than others and become special in some respect. Perhaps if you too are a regular attendee (all of you should be) of our reunions you may also have noted this. For me, examples include, the event held at the Ranch at Kellogg West way back in the late 1990's, was an emotional tribute to the life of Margaret Van Buskirk. Back in 2004 we celebrated Dr. Tarman's retirement with one last grand field trip to Death Valley – absolutely memorable. The time at Carbon Canyon Park when three or four former Van Buskirk awardees were in attendance to help honor the newest recipient is also on my list. Well, to make a long story short(er), this past April's reunion was certainly memorable -- at least to me.

The spring quarter of 2014 marked the completion of my 37 years at Cal Poly Pomona. The April 26th reunion was what you might call my retirement celebration. We were lucky that the rain, yes, actual rain, ended by dawn on that Saturday morning. By the time the picnic / reunion started it was cool, but we had fine weather. The students did an excellent job of BBQ'ing hot dogs and hamburgers. The side dishes provided by our alumni were great, as always. There was a good mix of "older alumni" – forgive me Harold, Darrin, Leo and Peter – as well as new participants – hello to Lauren, Logan, Sara and Alex, for example. This already sounds great. Then it was time to acknowledge me.

Dr. Nourse started this off by reviewing my time in the Department and some of the contributions I had made and courses I had taught and / or created. He then presented me with a gift. Not just any ordinary gift, but a real live sun dial! I later learned that many contributed to this perpetual gift. The sun dial is now a great addition to our backyard. It is frequently looked at. Believe it or not, the earth keeps pretty good time. I thought we were done. Nope.

Geology major Alex Mundo (**'15**) came forward. Alex had interviewed me earlier in the spring quarter (if you want to read Alex's take on "my legacy" email me) and was a student in my winter quarter meteorology class. He presented a student's perspective regarding my "history". He added comments of appreciation and acknowledged my assistance to his academic success in meteorology. I thought we were done. Nope.

Alumnus Peter Valles (**class of '83**) came forward. Peter traveled all the way from Houston to add to the festivities. Peter's kind words gave a former student's per-

spective of me as a mentor and educator. I thought we were done. Nope.

Dr. Larry Herber came forward. Larry gave a peer's perspective from our thirty or so years of department association. His comments were especially moving, touching and deeply appreciated. They came from a person, my senior, who I admired all during our long association. Now, yes we were done!

Those of you that were there hopefully can add your own memories to what transpired. The remarks were extraordinary, kind, deeply humbling, moving, most appreciated. Several times during the commentaries, I started to well up with emotion. At the conclusion I hope I remembered to say thank you for all the kind remarks and great gift.

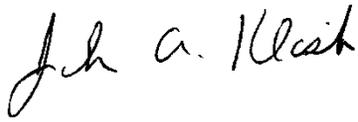
Since the end of spring quarter we have not done anything "retirement-like". No we have not (and have no intention to) bought an RV and become vagabonds. We did take our usual July trip to the south Jersey shore family reunion. There were something like 17 of us at one point. Before heading to the beach, we visited our son Daniel in Silver Spring, Maryland. Aside from spending time with Daniel, the highlight was going to see the space shuttle Discovery at the Smithsonian's air and space "annex" at Dulles Airport. The shuttle is quite impressive.

This fall has certainly been different. This is the first fall since I was five years old and starting kindergarten that I have not been in school. That is very different. At the beginning of fall quarter I definitely felt uneasy being home when I was "supposed" to be taking care of "my" classes. I am over that phase now and getting used to finding other things to do.

I hope all of you on the west coast had an opportunity to view the October 23 partial solar eclipse – the first in two and a half years in S. Calif. The Department set up a telescope and I set up my binoculars (yes with solar filters) to view the event. We had perfectly clear weather – although temperatures in the lower 90's made it a bit toasty. For about an hour and a half we observed, from the patio area between buildings 8 and 3, the eclipse and very obvious, large and detailed sun spots. The moon did not cover enough of the sun (about a third) to change the brightness or appearance of the area. For me the real "perk" is to watch the wonder of people who, for the first time, look through a telescope and see such an amazing sight. The next solar eclipse in the US is August 21, 2017. Because the path of totality passes diagonally across the US from Oregon to South Carolina, just about all of you will have a chance to experience that event.

Well that does it for this Mylonite's edition. I hope to see all of you at next spring's alumni reunion.

Best regards,



Jeff Marshall

Howdy Folks! Once again I'm writing from the AGU Conference in San Francisco where our faculty and students are presenting research, engaging in workshops, and otherwise having a grand old time. This has been a crazy meeting so far! Over the past few days, I participated in an NSF GeoPRISMS planning workshop for New Zealand research, gave an invited talk on mentoring student projects in a workshop run by the Council on Undergraduate Research (CUR), and joined in a variety of science town hall meetings, alumni receptions, and general conference merriment. Tonight, the Cal Poly Pomona geology contingent will gather again for our 2nd Annual AGU Alumni Reunion Dinner. Looking forward to seeing some of you there!

Here is a quick run-down of my activities over the past year:

In addition to my usual teaching, student advising, and committee service, I moved ahead with ongoing research efforts on the tectonics and earthquake hazards of Costa Rica and New Zealand. Our article on coseismic deformation from the 2012 Mw7.6 Nicoya Costa Rica earthquake was published in *Nature Geoscience* in January. This was a nice accomplishment that garnered a lot of press. Along with GPS results from our Costa Rican and US collaborators, the paper presents geomorphic field data on coastal uplift that Shawn Morrish and I collected during NSF-funded earthquake rapid response fieldwork. My goal this coming year is to write and submit several additional papers presenting results from a decade of Nicoya coastal tectonics fieldwork with Cal Poly Pomona students. Now, I just need to carve out some time!

At spring break, I traveled to New Zealand for a second field season along the beautiful east coast of the North Island, which lies along the Hikurangi subduction margin. This trip was at the invitation of colleagues from the New Zealand Geological Survey (GNS Science), who graciously paid all of my expenses. The original plan was to conduct a trenching investigation at an isolated beach on the rugged coastline north of Gisborne. The goal was to examine the stratigraphy of uplifted Holocene paleo-shorelines to better understand their uplift history and to identify suspected

tsunami deposits. Unfortunately, this project was postponed due to permitting issues with the landowners over potential disturbance of Maori cultural relics.

Shifting gears, we turned our focus to scouting other potential coastal tectonics and paleoseismic study sites including uplifted marine and fluvial terraces, as well as subsided wetlands. We walked many kilometers of coastline, climbed up steep terrace risers, collected fossil and tephra samples, and enjoyed some amazing scenery. We also spent several days on the Mahia Peninsula, exploring ideas for a student field camp that I'd like to run in this area (if I can drum-up the funding). Mahia is a classic location for rapid tectonic uplift above shallow forearc thrust faults, including spectacular coastal terraces and great outcrops of faulted and folded marine sediments. My favorite location is a previous trenching site at the southern tip of the peninsula that reveals the stratigraphy of four uplifted Holocene terraces that are each thought to represent single earthquakes.

Other highlights of my New Zealand trip included hunkering down in the city of Napier while Cyclone Lusi lashed the North Island with torrential rain and wind, a quick visit to see massive marine terraces on the west coast at Whanganui, a hike to a site of historical coseismic uplift on the Wainuiomata coast, a day of paleoseismic wetland coring around Wellington, a ride on the century-old Cable Car to Kelburn Lookout, and a rousing Wellington Phoenix soccer game at Westpac Stadium. My goal is to continue doing research in New Zealand and I hope to bring students on upcoming trips. I recently submitted an NSF proposal for collaborative research on Hikurangi margin tectonics and megathrust earthquakes. This includes funding for fieldwork with both undergraduate and graduate students over four years. Lets keep our fingers crossed!

Also in spring, I traveled with students Shawn Morrish, Dustin Stewart, and Ryan Edgley to South Hadley, Massachusetts to attend the Keck Geology Consortium Student Research Symposium at Mt. Holyoke College. Dustin was one of ten students from across the country that participated in the Keck research project I directed in Costa Rica the previous summer studying Nicoya Peninsula earthquake geomorphology. Shawn was the project teaching assistant, and Ryan was a student on a different project on lake geomorphology in Ontario, Canada. At the Keck Symposium, student-faculty teams from each of the year's eight projects presented research results in both talks and posters. The meeting also included a fun day of field tripping in the Berkshire Mountains.

My summer began co-leading two weeks of science education workshops for teachers from Pomona Unified School District. This effort was part of a new multi-year NSF

funded project called “NSF RESPeCT” directed by the Cal Poly Pomona Center for Excellence in Math and Science Teaching (CEMaST). I serve as the geoscience content expert on this project, developing new inquiry-based lesson plans and training master teachers to use them. Later in summer, I attended the ESRI GIS User Conference in San Diego with grad students Shawn Morrish and Melissa Robinson. Both students are using GIS to conduct digital terrain analyses of the Nicoya Peninsula, Costa Rica for their M.S. thesis research. At the conference, they learned new methods for developing GIS models. At the end of summer, I traveled to Northfield, Minnesota to co-lead a workshop on developing college-level mini-lessons based on research results of the NSF MARGINS Program. I serve on the NSF GeoPRISMS Education Advisory Committee, and the mini-lesson project is one of the many activities that we coordinate.

In addition to all of this summer busy work, I had the opportunity to escape for awhile with my son Kyle, taking him on a camping road trip to Yosemite, Big Sur, and Montaña de Oro. We had great fun exploring these parks, watching wild critters, and roasting marshmallows around the campfire. We also visited my brother in Santa Cruz, went whale watching on Monterey Bay, and stayed in San Francisco for a few days, including rocking out at a Paul McCartney concert in Candlestick Park. Kyle keeps busy these days playing on a club soccer team (Claremont Stars), taking piano lessons at the Folk Music Center, and having a blast as a Boy Scout. All of these activities also keep dad pretty busy...

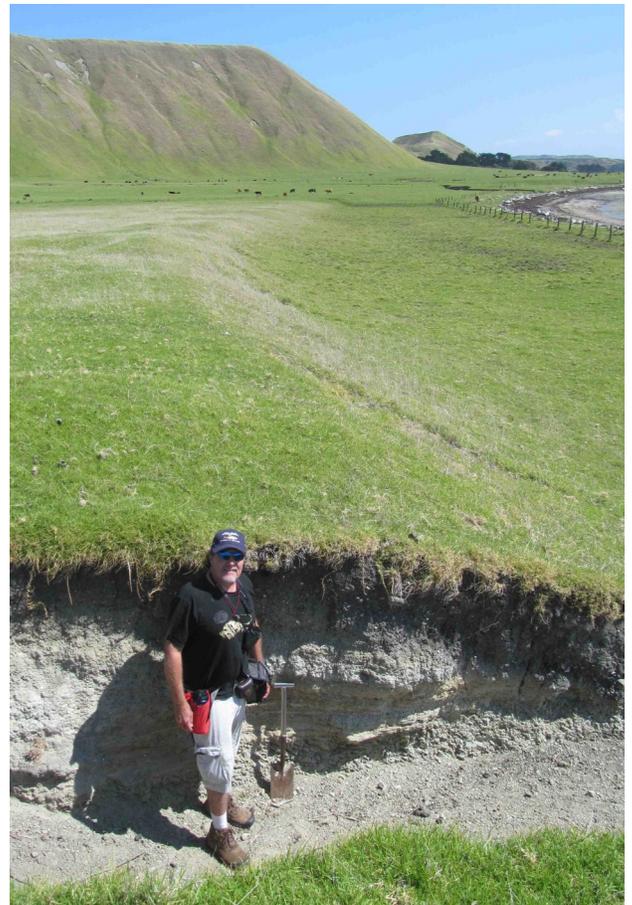
Well, I guess its time for me to get back down to the AGU Meeting! Until next time, rock on!



Ryan Edgley presenting his project poster at the 2014 Keck Geology Consortium Student Research Symposium, Mt. Holyoke College, Massachusetts.



Dustin Stewart presenting his project poster at the 2014 Keck Geology Consortium Student Research Symposium, Mt. Holyoke College, Massachusetts.



Jeff Marshall in paleoseismic trench dug across uplifted Holocene marine terraces at Table Cape, Mahia Peninsula, New Zealand.

Stephen Osborn

This last year was modestly productive and successful for the Hydrogeology research group in our department. We have been busy conducting field and laboratory work on continuing projects investigating groundwater quality in Colorado near oil/gas production and sources of water/water quality in the foothills of the San Gabriel Mountains (in collaboration with Jon Nourse). We have also opened new research directions with some new funding investigating oil/brine seeps near Santa Clarita, and the sources of water/salinity at Dos Palmas Springs near the Salton Sea. I'm trying to develop new water and environmental focused research avenues in the Central Valley, coastal areas near Santa Barbara, and the Los Angeles Basin through partnerships with the BLM and colleagues on-campus and at other CSU institutions, and local municipalities, like Culver City, which I hope will support both graduate and undergraduate student focused research in the coming years.

We have had several undergraduate students completed their theses this past year with presentations at the Geological Society of America Meetings, Southern California Conferences for Undergraduate Research (SCCUR), and the College of Science research symposium. One of my graduated undergrads, Wendy Clark, was accepted into a Ph. D. program at UCLA and she is currently finishing her first term there. Another of my graduated undergrads, Ryan Edgley, was accepted into the Colorado School of Mines for this current fall term. In fact, Ryan won a highly competitive internship, which he completed this past spring, with the Keck Geology Consortium. I'm proud of all my students and what they have done after graduation. There are nine other undergraduates that are currently in the pipeline working on various theses projects with several others expressing interest in hydro/environmental work. I'm really pleased with the growth of interested in Hydrogeology and Environmental Geoscience work amongst our undergraduate students. We have also graduated our first Master of Science student, Joshua Sargent, who investigated groundwater salinity patterns in areas with intensive oil and gas production in Colorado. We also have five other M.S. students that should be done with their degrees in the coming year. I have recruited one new M.S. Student and have room for another, I believe.

This past year, I was able to get work completed with colleagues and students published in the refereed journals Applied Geochemistry, Hydrogeology Journal, and Clays & Clay Minerals. We are currently in various stages of preparation for two other manuscripts to be submitted shortly to Applied Geochemistry, and Environmental Science and Technology Journals. One of our undergraduates, Patrick Thomas, has helped out conducting fieldwork in Colorado the past two summers is nearly finished with his thesis in-

vestigating the effects of the 500-year flooding that occurred throughout oil and gas production areas in Colorado (September 2013). We were lucky to collect samples of the South Platte River just before and during the flooding that have yielded interesting results documenting the potential effects of floodwaters and sediment loads on water quality in the river. He has already given an oral presentation of these results in a special session on undergraduate research at GSA in Vancouver. He did a great job! He and I will publish his results as a white paper through the National Science Foundation, Sustainability Research Networks program.

From the Teaching side of things, I continue to update my core classes in Hydrogeology, Advanced Hydrogeology, Contaminant Fate and Transport, and Geochemistry. Our New Hire, Nicholas Van Buer will co-teach geochemistry as he will handle the high temperature stuff and I will cover the low-temperature geochemistry. I'm also developing a graduate level isotope class, which I hope to co-teach with Nick next Fall quarter. I have updated and taught a new soil physics class, which is cross-listed with the Agriculture Department. I will also be teaching a new lower division, GE class, entitled "Water in A Changing World". I'm excited about this class. I have also been talking with some in the Biology Department about the possibility of teaching an interdisciplinary class on biogeochemistry and microbial processes in the environment. We will see where that goes. Happy Holidays!

Cheers, Stephen Osborn



Dr. Osborn with his Advanced Hydrogeology class on a field trip to the mud volcanoes at the southern end of the Salton Sea.

Jascha Polet

Hi everyone!

Another eventful year has flown by! Due to my sabbatical in Spring quarter, my teaching load this year was fairly low, but included three new classes: a graduate class in “Advanced Seismology”, a 100-level class called “Living in Earthquake Country” and a geophysical Field Module in (mainly) Yellowstone NP. For the Seismology class, we took a weekend field trip to see some of the iconic sights of the San Andreas Fault, such as the Wallace Creek offset and the Pallett Creek trench. The Yellowstone Field Module took quite a bit of effort and time to organize, since it involved both field vehicles, 17 participants, 10 days, thousands(!) of miles of driving and a huge array of geophysical equipment. I definitely appreciate the help of my co-teachers: Celia Pazos and Michael Vadman (both graduate students at the time; Celia has since graduated). In addition to Yellowstone, we also visited Zion, Bryce Canyon and Grand Teton National Parks on the way there and back. In addition to geysers, canyons, mudpots, a quake lake, a very impressive landslide and massive earthquake scarp, we also saw bears with cubs (both black and brown), a wolf, osprey, elk, deer and many, many bison (as well as a coyote upon our return to campus). For just a small selection of photos, visit http://geology.csupomona.edu/jpolet/Jascha_Polet_at_Cal_Poly_Pomona/Yellowstone_2014.html. The students also created a very entertaining wiki about their experiences on this trip: <http://cppyellowstone14.wikispaces.com>. One of the other teaching related highlights of the year for me was receiving the College of Science Distinguished Teaching Award, definitely a great honor! I would like to thank the students who nominated me, as well as the Teaching Award committee.

This year I started my 4th year as the Principal Investigator on the PCC subcontract and this grant continues to create great opportunities for our students. We have received funding for conference attendance by students, class development and also for teaching and research equipment. I also received notification that my USGS National Earthquake Hazard Reduction Program proposal on “Rapid Finite Fault Inversion for Earthquakes in Southern California” has been funded, but I had to postpone the start of this grant due to my other grant related and teaching commitments this year. I submitted two small proposals this quarter to request funding for student research on the dataset of a new temporary seismic deployment. This network, called the Los Angeles Syncline Seismic Interferometry Experiment (or LASSIE for short), involved a collaborative effort with UCLA, Caltech, USGS and Nodal Seismics. Cal Poly Geology grad students installed and maintained 8 sites of a long line of 72 broadband sensors across the LA Basin. Students Ray Ng and Mikey Herrman,

who both started in our MSc program this Fall, will be using this data for their thesis research, but many additional graduate and undergraduate students helped out with the fieldwork.

Our work on the LASSIE experiment came about due to my sabbatical efforts on developing an NSF proposal for a seismic deployment of the Koa’e Fault System on Kilauea volcano on the Big Island of Hawaii. I spent several weeks of my Spring sabbatical in Hawaii to check out potential field sites and collect preliminary data. The proposal will involve the installation of numerous seismic sensors called “Nodes”, which were developed by Nodal Seismics, as well as our own Guralp seismometers. Based on my interaction with Nodal Seismics on the results of testing their sensor in a volcanic environment, I was invited to join the LASSIE deployment. Hopefully I will be able to submit a proposal on the Koa’e Fault System seismic deployment, involving some of my LASSIE collaborators, in 2015.

My first graduate students successfully defended their MSc thesis research this year: Celia Pazos and Hannah Mejia both presented their projects over the summer. I was also the principal research advisor for CSUSB student Malcolm Thomas, who submitted his thesis this quarter. Congratulations to Celia, Hannah and Malcolm! Numerous students presented their geophysical research at conferences such as the annual Seismological Society of America (SSA) meeting and the Southern California Earthquake Center (SCEC) conference this year. Magali Barba, Rachel Hatch, Austin Baca, David Nget, Jonathan Levario, Hannah and Celia all presented their research. In addition to Ray and Mikey, Brad Ruddy, Julie Leiva and Dandan Zhan started their MSc research projects with me this Fall. Due to the incredible growth of our undergraduate and graduate programs, large groups of students now attend conferences. The SSA meeting in Alaska was attended by a group of 8 students, 14 students participated in the SCEC meeting in Palm Springs, and a group of 13 will be traveling to San Francisco for the American Geophysical Union Fall conference next week! It is great to see so many students interested in geoscience research, who actively participate in conferences and present their own work. It was also wonderful to see Dr. Klasik again at the partial solar eclipse viewing party on campus that was organized by the Society of Exploration Geophysicists student club. The event had a great turnout! Having just watched the trailer for the new “San Andreas” movie, I think the premiere of this movie would be a good occasion for another club event...

Happy Holidays!

Jascha



Advanced Seismology field trip to Devil's Punchbowl.



Geophysics Field Module class measuring the scarp of the Hebgen Lake earthquake.



Students in the Advanced Seismology class taking a closer look at the famous Palmdale San Andreas Fault road cut.



A small selection of the geophysical equipment put to good use in Yellowstone NP.



Geophysics Field Module class in front of an erupting Lone Star geyser in Yellowstone NP.



Partial solar eclipse viewing party outside of Building 8, with students Rachel Hatch and Kennis Ho in the foreground.



Grad students Ray Ng, Terry Cheiffetz and Mikey Herrman at one of the seismometer sites of the LAS-SIE experiment.

Nick Van Buer

Hello, alums and geoscientists! It's an exciting time to be joining the Cal Poly Pomona Geosciences Department! Since I'm just starting now, I'll begin with a little background. I'm a southern California native hailing from west Los Angeles. I originally gained my interest in geology via a high school club, the Geology Paleontology Society of Loyola High School. I went to college at Caltech, and though I started out as a chemistry major, I soon switched to geology and haven't looked back since. In 2005, I graduated and headed directly to Stanford to get my Ph.D. with Elizabeth Miller, focusing on the tectonic evolution of the northern Sierra Nevada batholith—many people don't realize it, but the granitic backbone of the Sierra Nevada actually continues northeastward across NW Nevada. Unlike the main part of the batholith you see in Yosemite or Kings Canyon, this part of the magmatic arc cuts across exotic oceanic terranes that weren't accreted to North America until the early Mesozoic. My dissertation suggested that the batholith's emplacement, culminating in >1000 km² bull's eye shaped intrusions, was largely unaffected by this major change in the crustal type, so it must have been powered entirely from mantle depths.

In early 2012 I began a postdoc at MIT, where I had the opportunity to do eight weeks of geologic mapping in the Indian Himalaya and Karakoram, at elevations up to 18,500 feet. Our original focus was mapping one of the sutures formed in the collision between India, Asia, and an island arc that got trapped in between. We also had the opportunity to investigate an active fault I had identified from satellite images, which turned out to be a major normal fault revealing middle crust in its footwall. This normal fault connects two of the major strike-slip faults bounding the Tibetan plateau, and seems to help the upper crust of Tibet squeeze out eastward as India crushes into

Asia. More recently, my wife Sandy and I moved back to southern California, and, for the last year until I started here, I was working for a geotechnical start-up that reports whether residential and commercial properties are likely to be affected by natural hazards. Our goal was to develop automated software that could more efficiently interpret published hazard maps (and knows when to pass the decision on to a human).

Fall term at Cal Poly has passed in a whirlwind. I've been very impressed by the energy and commitment of the students. This term I was teaching a newly redesigned Mineralogy course, with a new field trip to the Mojave Desert. We made stops in the Calico Mountains, to investigate the lacustrine evaporite deposits there, in the Marble Mountains to investigate a skarn deposit, and at Bristol dry lake to collect halite and gypsum. As a bonus, the students learned how to free a low-clearance sedan from deep sand! For next term, I'm preparing material for a newly required Megascopic Petrography class, and updated Intro to Geochemistry course I'll be co-teaching with Stephen Osborn. Other courses I'm looking forward to teach include Igneous and Metamorphic Petrology in the spring, Geotectonics with Jon Nourse, and the radiogenic part of a new isotopes class with Osborn (geochronology is one of my specialties).

Right now I'm starting to ramp up my research at Cal Poly. One of my long term research goals is to figure out what makes the part of California's magmatic arc in the Mojave Desert and the Transverse Ranges so much different than the continuous and consistent structure and petrology of both the Sierra Nevada batholith to the north and the Peninsular Ranges batholith to the south. Towards this goal, I've been trying to get out into the field on a near-weekly basis, taking student field assistants when I can, beginning with reconnaissance-level study of the surprisingly under-studied granites that make up much of the outcrop in the western Mojave Desert. Next term I'll be running a field module in the northern Calico Mountains, where Upper Paleozoic metamorphic rocks are intruded by (probably Cretaceous?) granites and capped by Tertiary volcanics; hopefully the class' geologic mapping results will help clarify the geologic history of this complicated corner of the Mojave Desert.

Another exciting development is that our plans to create a mineral separation laboratory at Cal Poly are now coming together. We have already received a shaker table for density separation of heavy minerals like zircon that can be used for radiometric dating, as well as a dust-collecting machine to go with the rock pulverizer that should ship early next term. These will compliment existing department equipment such as our rock crusher and magnetic

separator so that we can efficiently process rock samples for geochronology.

Thanks, everyone, for the warm welcome into the Cal Poly community, and have a good holiday!



Students in Dr. Van Buer's GSC 215 class collecting Halite at Bristol Lake.



Mineralogy camp near the Marble Mountains.

Faculty and Student Scholarly Activities (2013-14)

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/GeologyDeptAnnualReport2013to14.pdf>

I believe you will be impressed by the collective productivity and accomplishments of Geology faculty and students during the past year.

Student Internships

Our students have been active gaining practical experience with various internships offered through industry and academia. Below is a list of a few for which I have information:

- **Danny Miranda** was recently hired by Cal Poly alumnus Andy Campbell to work for Inland Empire Utilities Agency in between his graduate studies
- **Larissa Kupfershmidt** spent fall quarter working at Marshal Space Flight Center, applying ArcGIS techniques to analysis of lunar surfaces.
- **Lara Pannosian** is starting an internship at Jet Propulsion Laboratory (JPL) in Pasadena on Dec 15th. She will be working on rock strength characterization for the upcoming Mars 2020 mission.
- **Alex Mundo** spent a week last summer in Boulder Colorado as an intern for the SOARS (Significant Opportunities in Atmospheric Research and Science) Academy. Among other things, he gained hands-on experience working with Doppler radar tools.
- **Ryan Santos** spent all summer working with Cal Poly Geology Alumnus Leo Mercy as an intern for Cal Portland. His duties in the Mojave desert included geological mapping of limestone deposits and driving a quarry truck.
- **Paula Soto** and **Danny Miranda** were awarded internships through the USDA's Water Resources Policy Initiative program to support their watershed-related thesis research.
- **Steven Pestana** was awarded a "Student Investigator" position with NASA's Planetary Data System (PDS) working under Dr. Susan Hoban with the Small Bodies Node at the University of Maryland Baltimore County.
- **Austin Baca** was invited back to Los Alamos, New Mexico for a second summer to serve as a teaching assistant with the SAGE (Summer of Applied Geophysical Experience) program.
- **Rachel Hatch, Debbie Hernandez, Magali Barba** and **Jamie Kang** have been working various internships with JPL in Pasadena related to Planetary Science investigations. Unfortunately I don't have the details handy.

Bound for Graduate School!

The following Geology BS graduates started graduate programs this year. We wish all of you our congratulations and best wishes on your future academic careers:

- **Ryan Edgley**—Colorado School of Mines Hydrogeology PhD program

- **Hannah Mejia**—Baylor University Seismology PhD program
- **Andrew Barnhart**—UC Irvine PhD program
- **Wendy Clark**—UCLA Atmospheric Sciences PhD program
- **Oliver Wolfe**—Rensselaer Polytechnic Institute PhD program
- **Taylor Van Hoorebeke**—UC Riverside MS program
- **Rachel Hatch**—Cal Poly Pomona Geology MS program
- **Raymond Ng**—Cal Poly Pomona Geology MS program
- **Stephen Quimpo**—Cal Poly Pomona Geology MS program

In Memorium—Luke Roebuck (contributed by Cynthia Gabaldon)

It is with sadness that we have to inform the Cal Poly Geology alumni that we have lost one of our own. **Luke Anthony Roebuck - February 20, 1958 to October 16, 2014.** Luke was Cal Poly Pomona Geology major from 1978 through 1982 (finished up in 1991).



Luke was born in Port of Spain, Trinidad in 1958. Growing up in Trinidad, Luke's love of the natural world was groomed. His love of geology and fish (guppy) breeding were both lifelong. He married Diane and they had their daughter, Amanda. Although needing to work to provide for his family, he continued to finish school. Luke spent most of his life working and breeding fancy guppies.

Luke's geology career started at Pioneer Consultants, then to Shaffer Dixon, then Kleinfelder, Haley and Aldrich and then URS. Luke started as a soil engineering technician, then staff geologist and finally a project geologist. Luke was a registered geologist in California.

To those he worked with, Luke was known to be a detailed oriented field geologist. He was impeccable in his soil classifications, drill logs, trench logs, and field accuracy. Luke was very proficient and thorough when performing geotechnical laboratory testing. In the 90's he was qualified to perform all of the Caltrans soils and materials tests.

Luke worked on projects throughout California. He worked on massive water pipelines, major solar farms, numerous tracts and commercial centers, the BNSF Triple Tract Project through the Cajon Pass, numerous remediation sites, California Speedway (Fontana), and many other projects.

Luke was also known for helping and teaching the younger staff the **art** of field geology. Luke did make it an art.

Luke was also an internationally known champion show guppy breeder. He was a champion breeder, judge and international spokesman for the guppy hobby.

If you would like to send the family a message, please use:

[http://obits.dignitymemorial.com/dignity-memorial/obituary.aspx?n=Luke Roebuck&lc=2391&pid=172851868&mid=6162399](http://obits.dignitymemorial.com/dignity-memorial/obituary.aspx?n=Luke+Roebuck&lc=2391&pid=172851868&mid=6162399)

News, Updates and Photos From Alumni and Friends

Below is the latest news from our active alumni and friends. I have pieced together various notes from fragments of emails, phone calls and other communications received over the past year. Also a few have connected to me via LinkedIn, so some information was gathered that way. We are always interested to learn what you all are doing—please send me or Monica an update anytime you have a few free moments. Photos are also welcome. Jon Nourse

David Jessey (Professor Emeritus)

Hello everyone. I have recently received some disheartening news. I have been diagnosed with lymphoma (cancer of the lymph nodes). It appears to be in an advanced stage and my prognosis isn't all that great.

Anyway with that in mind, I want to thank all of the alumni and current students for the wonderful experience you provided me over the years. I got to know and work with many of you and some became my lifelong friends. These are memories I will cherish. I wish I would have had a longer time to enjoy my retirement, but the opportunity to meet and get to know such a wonderful, intelligent and talented group of individuals is more than most ever experience in a lifetime. Thank you all.

Meredith (Staley) Rivin ('03)

We were most fortunate to have Meredith teach the GSC 112 Earth Time and Life lecture for us at short notice. Dr. Berry has been ill and she stepped in at short notice to cover the course all quarter. This despite being an expectant mother with the baby due in mid December. Meredith made it all the way through her last lecture on December 3, then one of us proctored her final exam. I notice that grades were submitted on time. Meredith, we very much appreciate your dedication!

Ashley and Matt Lusk ('07)

We just wanted to to say hi and see how things are going around there. From what I've seen of the Geology Club on Facebook and looking at the department website, it looks like the department is thriving!! Glad to see it!

I'm not sure if you heard but Matt and I are back in California. After almost 4 years in Houston, we decided that we might as well try to move back closer to family and friends so we asked one of our old bosses at Shell if she had any connections at Aera in Bakersfield. Just after we put all of that into motion, we found out I was pregnant. So fast forward a year, we are now living in Bakersfield, working for Aera and we have an amazing 3 month old son. Everything just kind of fell into place.

Hope all is well with you. We always say that we need to stop by the department one day and say hi. When is the alumni picnic this year? It's normally in May right? Maybe we'll be able to make it now that we are closer.

I attached a couple pictures with our little guy (Barrett):



Valerie Plesha ('86)

Please give my regards to my professors and friends this weekend. I will be thinking of you all as I run my first 15k of the year on Saturday. I will raise a cup in honor of my friends if there's any beer left by the time I finish!

Steve Martindale, Lecturer and Engineering Geologist, Orange County Public Works

The photo below shows preparation of the Orange County Public Works, track-mounted, hollow-stem auger drill rig to drill and recover ring samples from the bedrock in a cutslope in Modjeska Canyon, in the Santa Ana Mountains. The bedrock is sandy siltstone to silty sandstone that is oriented in a daylight bedding condition, dipping out of the face of the cut slope. The ring samples were later sheared in the laboratory to determine the shear strength of the bedrock and to be able to calculate the factor of safety of the cut slope. The bedrock is the Pleasants Sandstone Member of the Williams Formation, of Cretaceous age. This site is a GSC 321 Engineering Geology I, field trip exercise location, where students learn to use a Brunton Compass in the field and to calculate the factor of safety for a cut slope.



David Hankins ('94)

My wife Nancy and I have not lived in Lytle Creek Since 2004 (long story) and currently live in Claremont. A lot has happened since then. Since graduating from Cal Poly, I have worked as a geologist for a few different environmental consulting firms. However, I have had medical issues over the past several years. I developed a tremor in my left arm and hand and an abnormal gait in my left leg and I was diagnosed with Parkinson's disease about 5 years ago. Needless to say, this has had a major effect on my personal and professional life. Medications keep me fairly stable most of the time. Prior to my condition, I did a lot of hiking and climbing in the eastern Sierra Nevada Mountains

and in the local mountain ranges which I can no longer do. After my diagnosis, I continued to work as a geologist but my company banned me from conducting any field work which was fine with me since most of the field work is at oil refineries. Then in late 2012 my company offered me a position as a GIS analyst which I accepted (I earned a GIS certificate at UC Riverside in 2010). I also work with my company's modeling group assisting in creating 3D models of subsurface geology and contaminant plumes. My company's SoCal office is in Signal Hill but I home office 90% of the time.

Thanks for sending me a copy of the Mylonite. Congratulations of becoming the department chair! Looks like everything has changed so much over the past few years with Dr. Klasik and Dr. Jessey both retiring, you and Dr. Berry are the old-timers now! It's really cool that the Cal Poly geology department is growing and now has a master's program, If it had been around when I graduated, I may have gone for it.

Phil Horton ('95)

I'm still teaching Earth Science, Physics and Chemistry at Rio Hondo Prep school in Arcadia. Continued funding allowed us to once again take the Earth Science class to Northern Arizona for a week of studying morphology, a bit of mapping, and lots of historical geology. 28 students participated in this year's trip in early October. See photo below:



Jeff Pepin ('11)

Over the last year I've been finishing up my M.S. in hydrology at New Mexico Tech. During the summer I was able to publish my first paper in the journal entitled, *Geofluids*. The paper discusses the genesis of a geothermal hot-springs system in Truth or Consequences, New Mexico. This Fall, I started the hydrology Ph.D program at New Mexico Tech. My dissertation research will focus on using magnetotellurics (MT) to analyze deep geothermal groundwater

circulation patterns throughout New Mexico. The research also has an exploration component that seeks to identify new potential geothermal resources in the State. Overall, I'm enjoying living the small town life in Socorro, NM (population ~10,000). It's a welcome change from the busy streets of Los Angeles. I hope you're all doing great and enjoying life! Great job with the CPP graduate program!

Kevin Kwong ('11)

Kevin recently received his MS degree from the University of Utah. He is beginning a PhD program in seismology at Southern Methodist University.

Oliver Wolfe ('14)

Oliver was inaugurated into the PhD program last fall at Rensselaer Polytechnic University. He sent this update: I hope you're enjoying your summer. I moved to New York two weeks ago and have used this time to get acclimated to life here, as well as the bizarre weather. My class schedule for the fall semester was only recently finalized and I should be taking courses in thermodynamics and electron microscopy, in addition to seminar and research credits. In the department I was shown how to operate the electron microprobe and Raman spectrometer. I will be starting at the same time as another PhD student from Germany and a Master's student in the metamorphic petrology lab. Once this week is over, I will officially start my classes and RA. I will be sure to give you updates as the school year goes by, and I wanted to wish you a great upcoming school year.

Robert Jones – (IES '05)

I have not done a Mylonite update in a while. It has been a very eventful year. In April of 2014 I relocated to Houston, TX to take a position at Houston Methodist Hospital in the Environmental Health & Safety Department. The decision to leave California was made easier due to my girlfriend, mother, sister, brother-in-law, and 2 year old niece already living here. After almost six years working as an engineering geologist for the California Environmental Protection Agency, I am now doing very different work, under very different circumstances. I have been fortunate or some might say unfortunate to work at a major healthcare facility during the Ebola epidemic that is spreading from West Africa. As an environmental scientist at the hospital I have had the opportunity to see the preparations and training that are necessary in the treatment of this infectious disease. My chief duties include oversight of the hospitals: regulatory and departmental reports and manifests pertaining to hazardous waste, underground storage tanks (UST), air permitting and emissions. A typical day includes anything from; conducting hospital safety inspections in patient areas; running fire drills in one of our 73 Operating Rooms; responding to code reds (fire alarms)

throughout the hospital, monitoring air emissions on top of the roof of one our 30 story buildings; investigating an unknown chemical substance on the Life Flight Helipad, or visiting the morgue to assess the cleanup of a chemical spill. Yes my days are varied and at times unpredictable. Working in a hospital is very unique and my job affords me the opportunity to see things only medical professional typically see. In the future, I plan on taking a few continuing education courses at the University of Houston. For now I am busy planning a wedding. I recently became engaged to my girlfriend, now fiancée, Quarry Williams. Yes her name is Quarry, as in a rock quarry, minus one "r". As a hydrogeologist at heart I managed to utilize the prairie wetlands and lake at Warren Ranch for my proposal location. We are looking at a possible wedding in the spring of 2015. Right now we are trying to determine if we want an inside or outside reception.

As a California native, weather was never really much of a concern most of the year. The weather in Houston is sometime unpredictable. The humidity and the thunderstorms are at times very intense. I have taken up the hobby of storm tracking and anytime I can see a storm system develop its pretty amazing. Just storm tracking via remote sensing, not storm chasing, you won't catch me near any tornadoes, although in Houston they are rare. As an amateur photographer I have been using the Gulf Coast weather to capture lightning photographs. On clear nights I also plan to begin dabbling in astrophotography, and even solar photography during the day. My love for photography really started at Cal Poly Pomona back in 2002 when I decided to change majors from Applied Mathematics to Earth Studies. I found myself on field trips to the mountains, the desert, the coastline and I began snapping away with my little Kodak Easy Share film camera. Seems like so long ago, but last week I was reminded it wasn't that long ago. Still a student at Cal Poly Pomona in 2004, I remember when the European Space Agency's Rosetta spacecraft launched with the Philae Lander in tow. I remember thinking in 10+ years I'll be able to see if it actually makes it to the surface of 67P/Churyumov-Gerasimenko! It was amazing seeing those first images from the surface. It was an incredibly awesome feat. It will be interesting to see if the solar panels are able capture enough sunlight to power the lander back up in August of 2015 so it can continue performing its science mission. All the way back here on earth I didn't quite travel as far as the Rosetta spacecraft, but my family and I did enjoy our September 2014 trip throughout California. We flew in from Houston and drove from Los Angeles up to Sequoia National Park, Yosemite, Santa Rosa and San Francisco. We drove back to Southern California partly via the Pacific Coast Highway. The beauty of the California coastline never gets old. Its great to see the Geological Science De-

partment continuing to grow and remain focused on the success of its students. I look forward to reading the *Mylonite* and seeing what interesting things everyone has been up to. Good bye for now.



Gary Thompson ('90)

Hello to everyone in the Cal Poly Geology Department:

I was down loading the *Mylonite* from your website recently (we are in the process of paper de-cluttering) and I then noticed the change in the Cal Poly department hierarchy. I'm glad to see the Geology Department survived. Although I missed the deadline for the last *Mylonite*, I thought I would send you a short summary of the recent, news-making weather events here.

I woke up this morning to about 20 minutes of large, fluffy snowflakes falling from the sky. As you have probably seen on your newscasts, the UK has endured a long series of storms over the last couple of months and there has been widespread flooding. This is mainly due to a well-positioned and stable jet stream sending the weather systems our way. These conditions have given the UK it's wettest January in 200 years!

The local flooding has not affected us, (other than rain

over-filling our gutters) but it was bad in Burrow Bridge, which is only 10 miles away from here. Burrow Bridge lies in the Somerset Levels and is at an elevation of less than 30 feet above sea level. It has been subject to Severe Flood Warnings, which means there is a danger to life. The Prince of Wales, AKA Prince Charles visited the area about two weeks ago, and the Prime Minister, David Cameron, visited the Taunton Fire Service, in Taunton, a couple of days ago. They have been pumping the areas, with pumps moving water at a rate of 1 million gallons per hour.

The last storm brought up to 100 mile per hour winds which hit our area and South Wales hard. Roofs have blown off some buildings. Yesterday, we had an interior designer showing us curtains in our house, and outside the howling winds were whipping the trees about and the rain was just lashing down. Across the street, where a small animal farm has recently popped up (with chickens, goats and llamas) the areas devoid of grass are now a big pond!

The British military is getting involved, helping to relocate people affected by the flooding. I just saw a military helicopter fly by our house. The Thames has begun flooding near London also. Many train lines have been temporarily closed. The line from Taunton to Exeter is closed due to flooding and the line to Plymouth was completely washed out about a week ago. They had to cut the track, as it was undercut and left hanging.

They say the groundwater levels are so high in some areas that water is coming up through boreholes and floorboards of houses. Even if the rain stops now, in some areas, the water will not soak into the ground for months due to heightened water levels. This situation has put the Environmental Secretary in the hot seat and has re-ignited the debate on dredging rivers and building further flood defenses. And more storms are forecast for the future.

I still remain neutral to skeptical when it comes to the whole man-caused, global-warming debate, but I am by no means, an expert in the field. But these weather events will certainly fuel the arguments for those in support of global-warming and will have a lasting impact on UK flood defense and planning policies for some time to come.

I have a week of holiday coming up so I will call you sometime soon, when I get the chance, probably this weekend in your mornings.

Melissa (Pratt) Bautz (95)

The Bautz family in Lander, WY is going strong. Melissa & Greg's four kids are ages 12, 10, 5, and 3. As expected, we are busy with them having fun, celebrating milestones, even collecting bellemnite fossils (see photo of the two boys on

Derby Dome), fishing, hunting, etc... Greg, though technically retired, keeps occupied by holding down the home front with the kiddos, hunting, fishing, home/car maintenance, and intensive gardening during our short (90 day) growing season. This year we had a splendid crop of tomatoes, carrots, beans, and roma beans. Ice fishing season is around the proverbial "corner". :-)

Melissa accepted a promotion within Wyoming DEQ and is now a Project Manager with the Abandoned Mine Lands (AML) Division. She oversees AML reclamation projects statewide. Her sites include a 400 acre uranium open pit mine and various underground subsidence investigations. As some of these sites are in residential areas, Melissa spends a lot of time visiting with homeowners explaining to them what is or may be occurring under their homes! The highlight of the new job is that Melissa can now use her Brunton compass on the job, measuring attitudes of Tertiary aged coal and sandstone beds (in order to help with the subsurface subsidence investigations.) "Just being asked to use my Brunton compass brought a smile to my face!"

I hope all is well with everyone. Blessings.

P.S. Below is a photo of our girls getting ready to fish at Worthen Reservoir above Lander.



Also a picture of me holding our then-4-year-old boy at the new bridge at Hoover



Peter Valles ('83)

Here is my submission for the upcoming Mylonite. Please say hello to everyone.
Kind regards,

Of the Mountain

Beyond the well-trodden trail
Into the vastness of a granite ocean
Contoured by the endless wash of rain
Gouged by frozen ships of ice
Forged over eons
The mountains cut into the sky
Rooted in stillness beneath
Lost playground for the soul
Enter this sacred place
With reverence and awe
On altars of stone tablets
In shrines of speckled stone
Walk in the chancel
Hide in the clefts and crevices of nature's cathedral
Recline on the throne of monoliths
The pluton speaks with a windy breath
Exhaling an ancient knowing
The wisdom of the stones becomes known
All at once I am home
(Peter Valles Sept 19, 2014)

“In Veritatis Amore” – “In the love of truth”.

Matt Willis ('09)

I see regular updates on Matt through LinkedIn. He is now Director, Project & Commercial Development at WesPac Midstream, LLC.

Also from LinkedIn:

Jose De Loera ('04)

is celebrating 2 years at Oneida Total Integrated Enterprises (OTIE).

Audra Hanks ('13)

is now Intern at Genesis Engineering and Redevelopment

Terry Watkins, PG ('03)

after 2 years at Pacific Surveys, LLC, is back with Geoscience Support Services in San Dimas.

Jose Pena-Cortez (IES '09)

is now Laboratory Coordinator at HDR Engineering.

Cynthia Gabaldon (Friend and Supporter of Geology Dept.)

is now President at CG Water Resources and Engineering Inc.

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:

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Pomona, CA 91768**

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