

Spring 2015



A MESSAGE FROM THE CHAIR: PHIL ARMSTRONG

A lot of things have changed since our last newsletter in 2011. But at the same time, many of our hallmarks remain the same. For example, our students continue to do top-level research with their faculty mentors and publish their work; if you look at p. 8, you can see that since our last newsletter students published as lead- or co-author 22 journal papers and about 80 abstracts. Our students continue to get jobs - we polled our alumni last year and found that 88% of our alumni were hired in a geology-related job or entered grad school within one year of graduating.

Speaking of Alumni, in October of 2013 and 2014 we held our 1st and 2nd Annual Alumni Receptions in downtown Fullerton. It was great to see so many familiar faces. Great times ran amok at both receptions, as you can tell by photos on our web site (geology.fullerton.edu). Details of the upcoming 3rd Annual Alumni Reception are given on p. 7 – hope to see you all there. We also began to honor our alumni by selecting an “Alumni of the Year” recipient. Our first recipient in 2014 was Mark Zeko (BS Geology '87, MS Environmental Science/hydrology '94). We've recently selected Kay Pitts (BA Earth Science '77) as the 2015 Alumni of the Year recipient from a terrific slate of well-deserved nominees. See p. 6 for info on Mark and Kay. Congratulations Mark and Kay, and thanks for being such terrific ambassadors for our geology family.

In 2011, we had about 80 majors. Today, our files show about 160 majors – a doubling in the last 4 years. We are bursting at the seams in our major's courses and are having trouble finding seats for them in labs and in our five field vehicles. Growth is good, but we hope the growth doesn't come at the expense of the boutique nature of our programs where we tend to have a special rapport with our students. Despite the growth, we continue to maintain the required undergraduate thesis for our BS Geology students. Many, if not most, of our students will be presenting their work at our upcoming 6th Annual Geology Research Day on April 24th, 2015. See p. 7 for details of Research Day. You don't want to miss this event – it's an afternoon full of awards, raffles, meeting old or new friends, and networking.

Changes... There have been many faculty changes over the last couple years. John Foster and Galen Carlson are giving retirement a good name. Brandon Browne left CSUF to chase teaching and research opportunities elsewhere. David Bowman stepped down as Department Chair, and immediately stepped up into the interim Dean position of the College. Fortunately, we've been able to make some terrific hires to fill some holes and add to our faculty strengths. Dr. Jim Parham was hired in 2012 to teach paleontology and work with the Cooper Center. Dr. Sean Loyd joined us in 2013 to teach geochemistry. In 2014, we hired Dr. Valbone (Vali) Memeti to teach mineralogy and volcanology courses and Dr. Joe Carlin to teach oceanography courses and develop a coastal/marine curriculum. You can see the faculty research highlights beginning on p. 13. We also just hired soon-to-be Dr. Natalie Bursztyn to teach Geoscience Education courses – Natalie will begin in August 2015. It really is an exciting time with the new faculty, and we plan to hire two more next year!!

We've seen some changes in our terrific staff. After 25+ years, Candice Jones retired to play golf and chase the grandkids. Our technician and all around nice guy Otto Figueroa accepted a full-time teaching gig at Long Beach City College. While Candice and Otto are missed more than they know, we have been fortunate to hire Kristen Waters to run the office and alum Brian Killeen (BS '96) for instructional support. Kathleen Davis is still the smiling face of the department and Matt Wilkins continues to address our growing IT needs. We have an incredible staff – see p. 20 for staff info.

Finally, one thing that never changes is our need to develop department funds, awards, and scholarships. The generous donations to our several funds/scholarships allow us to give student awards and address student research needs see p. 5 for list of our 2014 (and current) donors. We now have three endowed funds/scholarships, which will provide support for our students forever. Please contact me if you have questions and/or ideas about growing our scholarship/funds. And remember, it is easy to give to any of the funds by visiting our department web (geology.fullerton.edu) and hitting the orange “Give” button.

Our Geological Sciences Program is Strong –

Phil Armstrong, Department Chair



Peggy Barthel (MS 2008, BS 1997)

You may remember me as Peggy Brown, BS 1997 (Hydrology under Prem Saint), or Peggy Barthel, MS 2008 (Hydrogeology under Rich Laton). During that time, I was working for an environmental consultant on groundwater mitigation projects. Upon – well, actually BEFORE – receiving my MS, my husband and I bought a B&B in northern California and set off in a whirlwind on a new life adventure complete with warm scones and custom-blended coffee. We still own the B&B so if you ever want to sleep in a converted caboose, eat a home-cooked breakfast, and go wine tasting, look me up: www.featherbedrailroad.com.

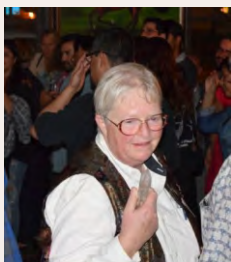
Meanwhile, I also work as a resource planner for Lake County, processing environmental reviews for grading permits for vineyards in our ever-expanding winery region. I have really taken to small town living; I am on the board of the local food co-op and recently helped plan a local steampunk festival.

Margie DeRose (BS 2004)

Since graduating from CSUF in 2004, I worked for NMG Geotechnical for 3.5 years before going on to complete my graduate degree in Geology at UC Riverside. I now work for the US Forest Service. Up until 2013, I was the Minerals and Geology Program Manager in for the Inyo National Forest in Bishop, CA. I now work for the Coronado National Forest in Tucson, AZ where I am a Project Manager and have also worked as the Forest Environmental Coordinator and Forest Planner. In my current position, I oversee permitting and operations for mining on the National Forest and lead teams of scientists through environmental review of proposed mining projects. I love what I do for the Forest Service and the wide variety of experiences the National Forests provide for all visitors. I anticipate relocating to another Forest, Region, or Washington Office in the near future. You can reach me at: mderose6@yahoo.com.



Margie DeRose with District Ranger at the Coronado National Forest Wild for Wilderness Celebration in 2014



Margaret at the 2014 Fall Alumni Reception

Margaret (Coop) Gooding (BS 1994)

I am still working for LSA Associates in Riverside where I am head of the GIS and Graphics Dept. I am still Treasurer of Inland Geological Society and Committee Chair at Redlands Art Association (I do photography, ceramics and watercolors). I do GIS consulting on the side. I am also a member of Southern California Earthquake Center, as well. I plan to continue research on the Fontana Seismic Trend. I plan to retire in 2 ½ to 3 years. Then I will have more time to do all the things I want.

My husband, Butch and I recently celebrated our 40th anniversary. Our son, Matthew, still lives with us.

Janis Hernandez (BS 1995)

An update on my doings...I've been at the California Geological Survey since 2001, after working for geotechnical firms in the



Here's me standing along the west wall of a fault trench near the Capitol Records building in Hollywood, '14.

consulting industry the previous 9 years. Since coming to CGS, I've been involved with several programs including Seismic Hazard zoning, geologic mapping, report reviews for new school buildings, and most recently preparing Fault Evaluation Reports. My latest project, evaluation of the Hollywood Fault, was interesting in that fault-related geomorphic features can still present themselves, even within a highly developed area such as Hollywood. Grading practices in this area during the 1920's were very minimal, resulting in development that was basically draped over the existing landscape...nice! I feel such a

connection to areas where I have studied the geology, and so fortunate to have selected it as my career. My husband, daughter, doggies and I are all doing great!

James Kubicki (BA 1983)

Jim Kubicki (Advisor Brem) was married this August in Reno, NV to Doris Reich of State College, PA. They reside in State College where Jim is a professor of geochemistry in the Geosciences Department. His son, Cody, is a senior at State High and planning to attend Penn State next year majoring in Engineering. Jim is working on editing his fourth book "Molecular Modeling of Geochemical Reactions: An Introduction" while working on diverse research project from quartz weathering to plant cell wall biochemistry. Travels this year include San Francisco, Atlanta, Leipzig and Dresden to present research at various meetings and Germantown MD to participate in a DOE workshop on Biological and Environmental Research Molecular Sciences Challenges. He enjoys teaching a variety of courses ranging from general education environmental sciences to graduate geochemistry. He requests that if anyone out there has figured out how to get today's students to read a book, please let him (and everyone else) know. You can reach Jim at jdk7@psu.edu.



Mark Milligan (BS 1992)

Thank you CSUF Department of Geological Sciences for teaching me geology! After graduating in 1992 I left my native SoCal to earn a master's degree at the University of Utah. From there I followed a girl to North Carolina where I managed the state's Underground Injection Control Program. But the South was not for me. Luckily, I then found a great job with the Utah Geological Survey, where I have worked for 17 years. I get to answer questions about geology and things the public think are geology; work with kids; lead field trips; and write about geology. I have authored or coauthored over 40 technical and non-technical brochures, articles, and booklets published



Milligan family in the Sechura Desert, Peru, June 2014.

by entities ranging from the Utah Geological Survey, to the GSA, to the L.A. Times. The girl followed me back to Utah. We've been married for 17 years, with a 15 year old daughter and 11 year old son. Mark Milligan (MarkMilligan@utah.gov)

Wayne Mills (BA 1973)

I retired from Caltrans in 2009 after 25 years as an Environmental Engineer. I was also District Paleontology Coordinator and part-time Archaeology Technician. Divorced in 1996 after 21 years of marriage, I still delight in my two "children" Chelsea (36) and Todd (32). I have been president of Orcutt Mineral Society 4 times, 2 times winner of Outstanding Adult Advanced Article for the California Federation of Mineral Societies, currently edit two bulletins, and am active in succulent, mineral, archaeological and metal detecting groups. I have lived in the same house in Arroyo Grande, California for 35 years (accumulated too much stuff, can't move)! It would be great to hear from some of my classmates (wwmills50@hotmail.com).

Pedro Monarrez (MS 2012, BS 2009)

After finishing my Master's degree in 2012, I became an intern for the NSF-funded Panama Canal Project-Partnerships for International Research and Education program at the Florida Museum of Natural History at the University of Florida. I spent 8 months conducting fieldwork along the Panama Canal and other areas of Panama where I primarily collected Miocene vertebrate and invertebrate fossils while working out of the Smithsonian Tropical Research Institute in Panama City. After I returned to the US, I spent 6 months working in paleontological mediation. Shortly after my brief stint working in industry, I was hired back by the Florida Museum of Natural History to be the intern supervisor as well as the lead field technician in Panama. I left that position this past summer to start a Ph.D. program in geology at the University of Georgia where I am focusing on stratigraphic paleobiology.

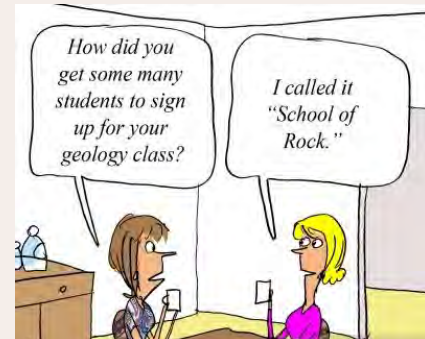


Shauna Nielsen (BS 2008)

I've had quite a year this year. Quick back story. I graduated with my BS in 2008, followed by graduate school, completed with an MS in 2011. I went directly to work after graduation for a seismic company that caters to the Oil and Gas industry, HQ in Houston. I worked on crews that traveled all the lower 48 as a Field Geophysicist for 2 years. This last year has been something special. I was nominated into a Leadership Development Program, where I visited every department within our company. This included some awesome experience to a crew in North Slope, Alaska, Turkana Valley, Kenya, our office in Dubai and a conference in Amsterdam. The program lasted a year and I am on the cusp of something new. I've just been promoted as Crew Manager in North Slope, Alaska. This puts me in charge and responsible for 160 people for the winter season and not to mention makes me the first female to be a Crew Manager within our entire world wide company. Since leaving CSUF, I've been extremely fortunate. It's taken me out of my comfort zone and into uncharted territory. I've loved every second! Cheers to another exciting six years! Thank You CSUF Geology for being the beginning of this amazing ride so far! I can be reached at Shaunamo13@hotmail.com.



In camp, near Lokichar, Kenya with our local vibe drivers... Vibe is pictured in the background.



Have you Moved? Have the most AMAZING job?

Well of course you do!

Make sure we have your updated info!

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STUDENT AWARDS

2015

OUTSTANDING MAJOR, BA - STEPHANIE NGUYEN
OUTSTANDING MAJOR, BS - KALIE DUCCINI AND MICHAEL WAHL

OUTSTANDING ACADEMIC ACHIEVEMENT, BA MAJOR - NATALIE LAW
OUTSTANDING ACADEMIC ACHIEVEMENT, BS MAJOR - EMMA GRIFFIE

DEPARTMENT OF GEOLOGICAL SCIENCES FIELD CAMP SCHOLARSHIP - SARA BURCHILL

MARILYN A. BROWN SCHOLARSHIP - PETER KLOESS

JOHN D. COOPER FIELD CAMP - CHRISTOPHER JOHNSON

CANDICE L. JONES OUTSTANDING SERVICE - ANTHONY MACIAS

PREM K. SAINT HYDROLOGY - RANDALL MORLAN

DR. MARGARET SKILLMAN WOYSKI SCHOLARSHIP - MICHELLE BARBOZA

DAVID L. WILLOUGHBY SCHOLARSHIP - CHRIS HUGH

2014

OUTSTANDING MAJOR, BA - PRIYANKAA CID
OUTSTANDING MAJOR, BS - DANIEL PHILO

OUTSTANDING ACADEMIC ACHIEVEMENT - KALIE DUCCINI

DEPARTMENT OF GEOLOGICAL SCIENCES FIELD CAMP SCHOLARSHIP - ANDREA AREVALO

MARILYN A. BROWN SCHOLARSHIP - WILLIAM PILESKY

JOHN D. COOPER FIELD CAMP - SARA BALDWIN

CANDICE L. JONES OUTSTANDING SERVICE - KELLY SHAW

PREM K. SAINT HYDROLOGY - EMILY VAVRICKA

DR. MARGARET SKILLMAN WOYSKI SCHOLARSHIP - ELIZABETH WHITE

DAVID L. WILLOUGHBY SCHOLARSHIP - MIHAI AGIU

2013

OUTSTANDING MAJOR, BS - NATALIE HOLLIS

OUTSTANDING ACADEMIC ACHIEVEMENT - SARA BALDWIN

MARILYN A. BROWN SCHOLARSHIP - KELLY KATHE VREELAND

**JOHN D. COOPER FIELD CAMP - NATALIE HOLLIS AND
ADAM PIESTRZENIEWICZ**

CANDICE L. JONES OUTSTANDING SERVICE - ZACHARY HAYGOOD

PREM K. SAINT HYDROLOGY - ERIK CADARET

DR. MARGARET SKILLMAN WOYSKI SCHOLARSHIP - PRIYANKAA CID

DAVID L. WILLOUGHBY SCHOLARSHIP - JOSEPH HAWKINS

2012

OUTSTANDING MAJOR, BS - ADAM PIESTRZENIEWICZ

OUTSTANDING ACADEMIC ACHIEVEMENT - ALEC DOTZER

MARILYN A. BROWN SCHOLARSHIP - CHRISTOPHER BUCHEN

JOHN D. COOPER FIELD CAMP - GREG SHAGAM

**CANDICE L. JONES OUTSTANDING SERVICE - LILLIAN RUBI AND
NATALIE HOLLIS**

PREM K. SAINT HYDROLOGY - HEIDI SICKLER

DR. MARGARET SKILLMAN WOYSKI SCHOLARSHIP - ALEC S. DOTZER

**DAVID L. WILLOUGHBY SCHOLARSHIP - CORAL SHAW AND
ERIK CADARET**

D O N O R U P D A T E

There is no greater influence than the generous donations the Department of Geological Sciences receives each year from our Alumni, Students, Faculty, Staff, and Friends. We want to thank each of our donors listed below for their amazing gift. Without these contributions, the Department of Geological Sciences would not be able to fund the many scholarships presented to our students at the Annual Awards banquet in April and throughout the year.

☞ Tammy Adler
☞ Aera Energy
☞ Phil Armstrong
☞ Shelby Barker
☞ Beverly J. Berekian
☞ Tish Butcher
☞ Diane Clemens-Knott
☞ Nancy H. Cooper
☞ Lucy Cortez
☞ Michael J. Cruikshank
☞ Kathleen L. Davis
☞ Thomas Devine
☞ Earth Forensics, Inc.
☞ EEC World
☞ Holly Eeg
☞ Everett H. Ferguson Jr.



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Aron Taylor ☞
Carolyn Tomas ☞
Steve and Angela Turner ☞
Preston and Kristen Waters ☞
William B. Woyski ☞
Mark and Janet Zeko ☞

Throughout the years, we have been asked by many “Does my donation really make a difference?” Without hesitation, our answer is “Yes!” Without these donations, several of our accounts would not have become endowed. **Three of our funds are now endowed at or greater than \$25,000.**

Descriptions of the Geology Funds, Awards and Scholarship

Department of Geological Sciences Fund

This fund is used to provide scholarship and award funds for our various student awards, to support travel to meetings, and field vehicle maintenance/repair and equipment repair. This is one of our greater needs funds.

Prem K. Saint Award

This is an award to a student who shows outstanding academic performance in Hydrology, Hydrogeology or Water Quality. This fund award is in honor of Dr. Prem Saint.

Marilyn A. Brown Scholarship Fund

We use this money to support graduate studies in the areas of paleontology, sedimentology, or stratigraphy.

David L. Willoughby Scholarship Endowment

We use the interest from this endowed fund to give a scholarship to undergraduate students who are studying geology or paleontology, or who are participating in course-related fieldwork.

John D. Cooper Award

We use this money to present an annual award to a declared Geological Sciences major with outstanding performance in Geology Field Camp. This award honors the memory of the late John Cooper.

Margaret Skillman Woyski Endowment

We use the interest money from the endowment to provide an award to a student who shows financial need and outstanding academic achievement and service to department/university or who has demonstrated excellence in field work and is attending field camp in summer.

Geology Field Camp Scholarship

The field camp scholarship is used to provide financial assistance for geology students that will be participating in our annual summer field camp.

Geology Student Research Fund

Remember your research experiences in geology? This fund is to provide some money for geology students to support direct costs associated with research for their undergraduate thesis. This is one of our greater needs funds.

John H. Foster Applied Geosciences Fund

This fund supports teaching and research activities associated with Engineering Geology and Hydrogeology. This is our newest fund set up by Dr. John Foster, who recently retired from our Department.

Geology Walk Through Time Fund

Installation and maintenance of a scaled timeline marking important events in geology and evolution on the walkway between McCarthy and Dan Black Halls.

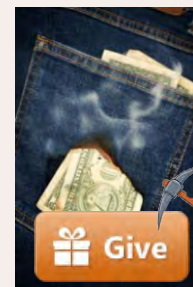
Geological Sciences Scholarship Account


General scholarship account for the Department of Geological Sciences. We can use this money to support students' research or educational needs.

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in the lower right corner

2015 - Kay Pitts



Kay graduated from CSUF with an Earth Science BA in 1977 and later earned an MS in Geology from USC. Since 1980, Kay has worked in the oil industry for Getty, Texaco, Bechtel Petroleum, and from 1998 until her recent retirement (2014) at Aera Energy in Bakersfield. Her positions at Aera spanned the breadth of hydrocarbon science and management, from reservoir management to project manager to business solutions program manager. She has been a highly respected leader in the management and production of hydrocarbons in the Bakersfield area for 1.5 decades.

Kay has been extremely involved in the American Association of Petroleum Geologists (AAPG) leadership at regional and national levels. She has held nearly every leadership position in national and Pacific Section AAPG. Kay received several awards for work at AAPG and in the Bakersfield region, including AAPG Honorary Membership, Pacific Section AAPG life membership and Distinguished Member, AAPG Certificate of Merit, Bakersfield Rotary Club President's Award. Kay has been a strong supporter of women in industry and science and has achieved several honors and positions for these efforts.

Kay is an ardent supporter of our department. She spent two days on campus evaluating our program and ultimately helped write a report that already is helping to guide our department's future in developing students for industry careers and potential involvement in extra-curricular activities.

Kay is an outstanding and distinguished Alum who continues to advocate for our students and department.

2014 - Mark Zeko



Mark graduated from CSUF with a Bachelor of Science in Geology in 1987 and a Master of Science in Environmental Science / Hydrogeology in 1994. He is the vice president and chief financial officer of Environmental Engineering & Contracting, Inc. (EEC), an environmental consulting firm based locally in Santa Ana.

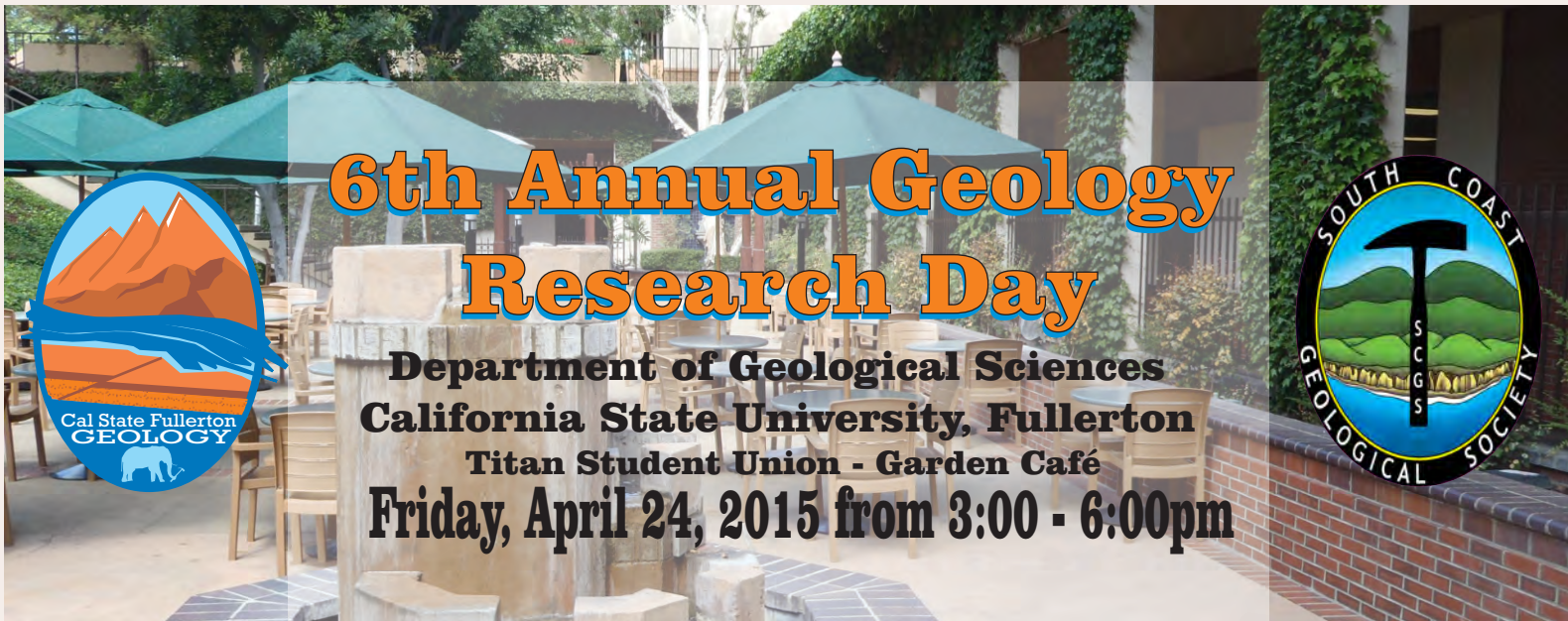
Mark has employed many CSUF alumni at EEC and generously volunteers his knowledge and time to mentor CSUF undergraduates in developing successful careers.

For his professional accomplishments and personal commitment to the CSUF Department of Geological Sciences, Mark is a prime example to the CSUF community, and the professional community at large, of the value of a CSUF education and therefore deserved to be named the Geological Sciences Alumni of the Year in 2014.



Call for Alumni of the Year 2016
nominations will be announced at the
3rd Annual Fall Alumni Dinner
October 16, 2015





6th Annual Geology Research Day

**Department of Geological Sciences
California State University, Fullerton
Titan Student Union - Garden Café
Friday, April 24, 2015 from 3:00 - 6:00pm**

The Department of Geological Sciences
(Click above)
at
Cal State Fullerton
cordially invites you to the
3rd Annual Fall Alumni Dinner
Friday, October 16, 2015
6:00pm
Location: TDA
Additional Party and Donation Challenge Information to Follow

2015

- Berekian, B.J.**, Clemens-Knott, D., and Ma, Chi, 2015, Possible new Ca-REE-Bi phosphate minerals from a tungsten-rich calcsilicate skarn, Sierra Nevada Mountains, California: *American Mineralogist*, v. 100, p. ###-##.
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2014

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2013

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2012

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2011

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STUDENT ABSTRACTS

2015

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Nicole Bonuso

They say a picture is worth a thousand words...and as you can see the Evolutionary Paleocology Lab has been busy. Starting from the top left, Lorianne Elmer presents her research on a Cooper Center whale specimen at our annual Research Day in the Spring 2014. Middle top, Kelly (Kathe) Vreeland managed to defend her Master's thesis, give birth to Owen, and walk at graduation—that girl knows how to get things done! Top right: my 5th Spring Break field trip for Historical Geology. We visited the Grand Canyon, Zion and Bryce National Parks in Spring 2014; In this picture we are all lunching on the “Great Unconformity”. Bottom left: Me, Kyle Williamson (CSUF alumnus), Mihai Agiu (BS 2014), and Edween Hernandez (MSc 2015) before we headed out to measure Edween's thesis section in Favret Canyon, NV. Bottom Right: Bethany Malenick (MSc. 2014) examines a Pliocene section at Tourmaline Surf Park; Bethany completed her work on the Plio-Plesitocene section this past Spring.



Adam Woods

2014 was a banner year for my graduate students! Paul Alms, Jen Kirton (née McCoy), and Billy Pilesky all successfully defended their MSc theses (Paul and Jen on the same day!). Paul's work on trace fossils from the Lower Triassic Union Wash Formation from Darwin, CA demonstrated that the recovery from the Permian-Triassic mass extinction was more complicated than we previously thought, while Jen's work on similar-aged rocks from the Virgin Limestone showed that microbialites are an important bellwether for documenting environmental stress following extinctions. Billy's work on the Upper Ordovician – Lower Silurian Ely Springs Dolomite represents a new research direction for my lab, and provided important paleoenvironmental information in terms of how eastern Panthalassa was affected by the Hirnantian glaciation and how this may have related to the end-Ordovician mass extinction. My stable of graduate students is almost empty, and I've been filling it in with a gaggle of new undergraduate students.

My family took a fun trip to Palm Springs last February to spend lots of time by the pool, relaxing, and had our annual trip to the Mississippi Gulf coast and New Orleans in August, where I ate my weight in oyster po' boys. Wyatt started Kindergarten a week after we got back, which was a change for him from his preschool, but he seems to be settling in nicely. Wyatt had his first season of T-ball last spring (I was a very proud assistant coach on his team), and recently finished his second season of AYSO. Vivian is taking gymnastics, and also started a new preschool in the fall.

If you're on campus, please stop by and say hello! It's always great to catch up with our alumni. You can check out my new office (with a window!) and lab!

Joe Carlin

Dr. Joe Carlin joined the CSUF Geology team this past August and is excited to be part of such a great group with a strong tradition of excellent. Joe is a coastal marine geologist who came from Texas A&M University where he earned his Ph.D. in Oceanography. He is looking forward to working on such a dynamic coast and can't wait to get introduce the students to the fun of working offshore, and all that entails. So far this year he participated in a short (3 day) oceanographic research cruise offshore in the Monterey Bay region. There he collected some sediment cores from the shelf, the heads of some of the submarine canyons including the Monterey Canyon (one of the world's most spectacular submarine canyons), and from seamount in water over



Joe, his wife Mary and their lovely daughter Mabel at the French Quarters, New Orleans...and yes, Mabel is quite the Fashionista

2000 m deep. Collecting cores in that deep of water was quite an experience in patience as it took almost 2 hours for the core to make the decent to the seafloor and back up, all the while hoping to recover a good sample. In the end, Joe is excited about the new position, the department, and exciting research opportunities to come.

Diane Clemens-Knott



This fall I'm back to work after a year of leisure focused on remodeling the backyard and juicing pretentious veggies. However, that year wasn't entirely playtime: I also rehabbed a ~1980 lever espresso machine in order to better hone my barista skills! But before high-tailing it out of town in May 2013, I shuttled 8 students out the door: Michelle Gevedon, Patty Robards and Chris Buchen all finished their masters degrees, while Natalie Hollis, Nick Hensing, Isaac Shirley, Josh Sobolew and Hector Fernandez finished their undergraduate theses. Liz White worked on, while Kalie Duccini, Enrique Lopez and Phillip Sergeant started their projects that summer. All joined me on repeat trips to the Kern Plateau to expand a chemical database of Sierran mafic rocks, a project started by the 2013 Gabbro Girls (Michelle, now at UT Austin; Natalie, now at Idaho State; and Liz, now at SDSU).

Immediately prior to the May 2013 graduation, I lead a second GSA field trip to the western Sierra Nevada foothills, where I've worked with so many CSUF alumni. Joining that trip were alumni Janis Hernandez ('91), Christopher Lopez ('01), Daniel Sturmer ('04), Mike Martin ('11) and Kelly Ferguson ('13).

While not teaching or making espresso, I was able to spend much more time writing. I'm looking forward to at least two alumni co-authored papers hitting the presses in 2015: Bev Berekian's apparent discovery of a new family of rare-earth-element phosphates will be announced in *American Mineralogist* in February; and Mike Martin's detrital zircon study of the oldest Mesozoic record of non-marine California should come out in a GSA Special Paper later that year. With a little luck, zircon manuscripts by Chris Buchen and Michelle Gevedon will also see the light of day. Scheduled for July 2015 is a 2-week-long workshop/field trip for 8 undergraduates and supervising faculty from 4 universities (CSUF, along with Trinity, Indiana, and Northern Arizona Universities). We'll head first for 10,000' in the White Mountains, then circle counterclockwise through Yosemite NP, to the northern Coast Ranges, and back through the Great Valley to CSUF. This workshop represents the first stage of an NSF-funded student-faculty collaboration in which we'll study the trace element record of Sierra Nevada arc magmatism as recorded by zircon grains deposited in Mesozoic sedimentary basins surrounding the arc. Students and faculty will learn how to shoot lasers at zircon grains using the SHRIMP ion microprobe housed at Stanford University, and we'll all meet up in Denver in 2016 to present our results at the annual GSA meeting. Speaking of GSA, I'm currently chairing the Cordilleran Section board, and hope soon to be announcing a multi-year slate of future Cordilleran meetings at exotic locales...get your boots and your board shorts ready!

On the home front, the growing Knott boys are getting their own lives, somewhat curtailing our family vacations (sorry, Tom Devine!). In summer 2013 we joined up for a week-long paddle trip down the Colorado River with river-guiding colleagues of CSUF alumna Jenny Arkle ('08 BS, '11 MS). After laying over at Phantom Ranch, we hiked out of the Canyon on Jeff's birthday to watch condors circle over the South Rim. Needless to say, my Geology of the National Parks lecture on the Grand Canyon is now much improved! Similarly, this summer led to improvement in my Yosemite lecture, as we spent 4 days hiking up and around Vogelsang High Sierra Camp. Somehow, we managed to spend an entire day hiking in the rain—an impressive feat during this seemingly unending drought. On that note, stay hydrated and keep in touch in 2015!

Brady Rhodes

During the Fall semester, I am very fortunate to have a 1 semester sabbatical leave. I am also fortunate to be spending the semester at Chiang Mai University in northern Thailand where I am spending a very relaxing time writing a paper and proposal, inventing a new online class, joining CMU field trips and giving some guest lectures. I've also had a chance to travel a bit with a visit to Singapore (highlight was a \$25 Singapore Sling at the Raffles Hotel), and I will be visiting Hong Kong next week.

Last summer, for the first time, I taught our new class Geology 371 – Earth Science Issues in Thailand. Twelve CSUF students – mostly Earth Science majors, travelled with me to Thailand and joined 12 Chiang Mai University students for an exploration of the environmental geology and earth science hazards of Thailand and California. The course is project oriented with the assignments accomplished in pairs – one CSUF and one CMU student. Communication and cultural learning at least equaled the science! We also enjoyed a several field trips, including a visit to the highest point in Thailand (it was actually cold), and a visit to the small intermontane Pai valley, where the class mapped huge prehistoric debris flows. We also visited the largest coal mine in Thailand at Mae Moh (see the pic).

Back in California, I continue to explore (now mostly vicariously via my students and Dr. Kirby) the story held by the layers of mud beneath the Los Peñasquitos Marsh and Seal Beach wetlands. In the former, we think we have found the first documented paleotsunami deposit in southern California, and in the latter a story of at least two large prehistoric earthquakes along the Newport Inglewood fault – another first. Stay tuned for the complete story coming soon to a journal near you!



The Geol 371 class "workin' in the coal mine" at Mae Moh, northern Thailand

Jeff Knott

Year 13 – Since the last newsletter in 2012, completed undergraduate theses are:

- Aaron Case (Geochemical Correlation of Basalts in Northern Deep Springs Valley, CA, by X-Ray Fluorescence Spectroscopy (XRF)),
- Chris Johnson (Geology of a Tertiary Intermontane Basin of the Last Chance Range, NW Death Valley National Park, CA),
- Kyle McCarty (Provenance of Pliocene Deposit, Northeast Eureka Valley, CA),
- Ernie Nunez, Jr. (Fault Scarp Morphology Along The Northern Eureka Valley Fault Zone, CA),
- Kelly Shaw (Debris Flow Deposits on Starvation Canyon Fan, Death Valley, CA),
- Courtney Verdadero (Geochemical Analysis of Basalt Flows in the Last Chance Range of Death Valley National Park, CA), and
- Dan Whitmer (Clast Provenance In Tertiary Sediments In The Northern Last Chance Range, CA).

Aaron, Kelly, and Chris presented posters at the 2014 Cordilleran Section meeting in Bozeman, Montana. The thesis work of Ernie, Chris, Courtney, Dan and Dave Manoukian formed the basis for presentations at both the 2013 Cordilleran Section meeting and the 2014 GSA annual meeting in Vancouver. Kelly won outstanding student poster at the 2014 Desert Symposium and Aaron's poster won a prize from the South Coast Geological Society at 2014 CSUF Geology Research Day.

The Fall 2010 Quaternary Geology class published the following article:

Knott, J.R., Fantozzi, J.M., Ferguson, K.M., Keller, S.E., Nadimi, K., Rath, C.A., Tarnowski, J.M. and Vitale, M.L., 2012, Paleowind Velocity and Paleocurrents of Pluvial Lake Manly, Death Valley, U.S.A.: *Quaternary Research*, v. 78, p. 363-372.

Marsha Fronterhouse Sohn completed:

Sohn, M.F., Knott, J.R., and Mahan, S.A., 2014, Paleoseismology of the Southern Section of the Black Mountains and Southern Death Valley Fault Zones, Death Valley, U.S.A.: *Environmental and Engineering Geoscience*, v.XX, n.2, p. 177-198.

Anna Garcia authored:

Garcia, A.L., Knott, J.R., Mahan, S.A., Bright, J., 2013, Geochronology and paleoenvironment of pluvial Harper Lake, Mojave Desert, California, USA: *Quaternary Research*, doi: 10.1016/j.yqres.2013.10.008.

Current M.S. student Aaron Katona is working on tephrochronology as well as working for the DOGGR in Bakersfield. Current B.S. students Chris Hugh, Anthony Garcia and Jacob Kato are working on Death Valley projects. I taught engineering geology for the first time in Fall 2013 and it was so traumatic that I took sabbatical for the 2014-15 academic year. Much to Diane's delight, I'm completing my chores at home without interruption. I will return to teaching in Fall 2015.



May 2014 – 15,539 feet (2.94 miles) from the ground surface in the Stillwater platinum mine, Montana. Left to right, Diane, Jeff Knott, Dylan Garcia (CSUF 2014), Dave Sauer (CIT alum), Diane Clemens-Knott (kneeling), Chris Johnson (CSUF 2014), Aaron Case (CSUF 2014), Michelle Gevedon (CSUF 2013), Kelly Shaw (CSUF 2015).



Dan Whitmer, Kyle McCarty, Ernie Nunez and Dave Manoukian finding out that January is really cold in Death Valley – even with the sun out.

Rich Laton



Laton family on their recent Mediterranean trip

It's hard to believe that I have reached 15 years of service at the University. Thanks to everyone who has been keeping me busy over these years because the time has flown by!

Having mostly wrapped up our research in the southern Mojave area a few years ago, I've been spending quite a bit of time studying issues in Northwestern Los Angeles County most recently. Specifically, my students and I have been researching the hydrogeology and geology in and around Malibu. (Not a bad place to do work, I must say.) The city has some challenging problems as they contemplate installing their first municipal wastewater treatment plant.

Catherine and I currently have one daughter, Maggie, in high school. Our son William is in middle school, and our youngest daughter, Helen is still in elementary. We enjoy the challenges that all of these ages are bringing. This past summer, we all took a fantastic trip overseas. We quickly visited London, and then it was onto Turkey and Greece for a few weeks of travel by planes, trains, buses and boat. We were awed by the Capadocia region in Turkey – amazing geology and history. (Underground cities that could sustain thousands of inhabitants for months at a time – dug by hand thousands of years ago!) The rest of the crew continued onto Iceland and they assure me that it must be on my bucket list now. Are any alumni out there interested in going along?

I am still active with the National Groundwater Association and my alma mater, Western Michigan University. The volunteer work I do with these two organizations is fulfilling. I've also been enjoying working with the department to organize our annual CSUF Geology Department Alumni get together which happens in October. It is great to see how well all of our former students are doing.

Meet Joe Carlin

Marine Geologist Studies Impacts on Coastal Environments

Story Courtesy of CSUF News Service



As a marine geologist, Joe Carlin investigates the role of geological and oceanographic processes in coastal environments — such as oceans, deltas and estuaries — and how they are affected by human activities and influence the geologic record.

"My research, for example, lends itself to looking at the effect of dams on sediment transport to the ocean or the impact of engineered structures on natural beach processes," said Carlin, assistant professor of geological sciences. "This work can provide a scientific basis useful for decision-makers interested in minimizing their impacts to the environment."

Carlin began teaching at Cal State Fullerton this fall semester and looks forward to introducing his students to coastal geoscience and the issues affecting seaside environments.

"Even though our campus is close to the ocean, it can sometimes feel far away. But by introducing students to the varied and exciting coastal environments in their own backyard, I can inspire a lifetime of engagement and learning no matter what career path they ultimately choose," said Carlin, who advocates student involvement in experiential, or high-impact learning outside the classroom, to better understand concepts and achieve academic success.

"I look forward to getting students out on the water as part of their coursework so they can learn about oceanography or marine geology firsthand. There is no substitute for the impact on a student's life that even one afternoon of doing science on the back of a boat can impart."

Carlin, who grew up in the Dallas/Fort Worth area, attended Texas A&M University for his undergraduate and graduate studies. He earned a doctorate in oceanography with an emphasis in coastal geological oceanography and a bachelor's degree in ocean and coastal resources at the Galveston campus. He also earned a B.A. in communications and attended the Corpus Christi campus.

His doctoral dissertation focused on sedimentation related to the Brazos River, which runs through Texas to the Gulf of Mexico. Carlin has mentored students on such projects as investigating the impact of shrimp trawling on the seabed and sediment remobilization in a shallow estuary; the latter study was presented at international conferences.

Before joining CSUF, he conducted postdoctoral research in the Marine Science Department at Texas A&M University-Galveston. He also participated in the National Science Foundation/University-National Oceanographic Laboratory System chief scientist training program, a weeklong expedition geared for early career scientists aboard a research ship.



Joe Carlin in the field



FUTURE GEOLOGICAL SCIENTISTS

Congratulations

Baby Wyatt – Kelly Ferguson Young MS, 2013

Baby Oliver – Meredith Riven Staley MS, 2010

Baby Kennedy – Kelly Ruppert (Lecturer)

Baby Clara Ann – David Carpenter BS, 2012

Baby Izzy – Jennifer McCoy Kirton MS, 2014

Baby Owen – Kelly Kathe Vreeland MS, 2014

Baby James – Jim Parham (Faculty)

Sean Loyd

My students and I work on various projects associated with the geochemistry of carbonate rocks (limestones, etc.). Our goals include characterization of mineralization environments with particular interest in determining whether or not biology and/or the cycling of biologically important elements play a role.

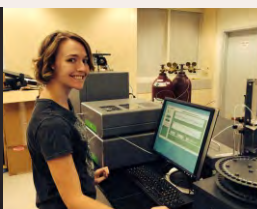
My new graduate student, Kylie working on determining potential carbonate mineralization in domes. This work has recently been and includes collaboration with UT Austin. Kylie's work will help us interactions occur in salt dome important mineral and hydrocarbon Beida has spent that last year analyzing ~500- Ultimately, she aims to compare the isotopic limestones in order to reconstruct carbon cycling in Earth's isotopic compositions of late Cretaceous septarian concretions, structures that are particularly common in the geologic record yet poorly understood. Carbon isotope data will allow Julie to determine the carbon sources responsible for mineralization as well as identify the potential role of the microbial degradation of sedimentary organic matter.



Kylie Caesar (masters, above)



Sean Loyd



Allison Bieda (undergrad, above)

Caesar, began Fall 2014 and is now microbial reactions that may lead to association with Gulf Coast salt funded by a CSUF incentive grant research groups at UCR, UCLA and understand what types of microbial environments as well as provide preservation of economically reserves, respectively. Undergraduate Allison 600 million year old limestones from northwestern Mexico. compositions of carbon phases preserved within these ancient oceans. Undergraduate Julie Unson is exploring carbon compositions of carbon phases preserved within these ancient oceans. Undergraduate Julie Unson is exploring carbon compositions of carbon phases preserved within these ancient oceans. Undergraduate Julie Unson is exploring carbon compositions of carbon phases preserved within these ancient oceans.

In addition to student-driven research, I have been working on comparative inorganic and organic carbon isotope analyses of non-septarian concretions from the late Cretaceous. An extensive data set reveals variable contributions from microbial organic matter degradation and perhaps more importantly, that concretions can act as a significant component of marine carbon cycling. These findings are to be presented at the upcoming American Geophysical Union annual meeting in San Francisco (Dec. 15-19, 2014).

Past and continuing research efforts have led to two 2014 publications in scientific journals. One publication (published in *Geology*, Peng et al., 2014) presents new data related to the alteration of a widely used geochemical proxy and indicates the need for detailed screening processes for certain geochemical analyses. Another publication (published in the *Journal of Sedimentary Research*, Loyd et al., 2014) provides new temperature-of-formation data from carbonate minerals of septarian concretions from the United Kingdom and New Zealand. These data indicate that some septarian concretions exhibit a complex mineralization history spanning up to the recent past.

During the summer of 2014, Hope Johnson (CSUF Biology Department) and I were instructors for the International Geobiology Course. The course brings together PhD students from US and international academic institutions to participate in collaborative geological, geochemical and microbiological research. In addition to early fieldtrips, the course spent two weeks at CSUF preparing and analyzing samples in both Dr. Johnson's lab and my lab. The work conducted by the students has led to several presentations that have been or will be given at various scientific meetings in 2014.

Matt Kirby

The past few years have been fun! New students, new projects, and new discoveries.

If you are a Kirby lab alumnus or alumna (or just an interested department graduate), check out our happy happenings on our lab Facebook Page... just search [CSUF Kirby Paleoclimatology and Paleotsunami Laboratory](#) (or follows the link below). Feel free to update us with your exciting news.



Matt Kirby takes himself a bit too serious



Meet Valbone 'Vali' Memeti

Geologist's Work Focuses on Volcano Eruptions, Study of Magma

Story Courtesy of CSUF News Service



Valbone "Vali" Memeti began teaching at Cal State Fullerton this fall semester. The geologist studies volcanoes and volcanic eruptions across the globe.

Geologist Valbone "Vali" Memeti has spent extensive periods of time in the field conducting geologic mapping and sampling to better understand volcanoes and magma reservoirs.

From the time Valbone "Vali" Memeti first learned about volcanoes in high school, she has been fascinated with powerful volcanic eruptions — and the molten rock, or magma — that cause the often dangerous and destructive natural disasters.

Memeti has studied volcanoes and volcanic eruptions across the globe. Her field research has taken her to California's Yosemite and Joshua Tree national parks, to ancient volcanic calderas in New Mexico and Colorado, as well as international locations in Argentina, Peru and China.

She has spent extensive periods of time in the field conducting geologic mapping and sampling, and in the lab analyzing the geochemical compositions of rocks, growth rings of minerals and the age of rocks.

"Although we have learned a fair amount about the basic nature of volcanoes, we still know very little about the processes that cause eruptions and occur at deeper levels in the underlying magma reservoirs, or the magma plumbing system as a whole," said Memeti, assistant professor of geological sciences.

The geologist, who began teaching at Cal State Fullerton this fall, focuses her studies on magma reservoirs, which feed volcanic eruptions, and the processes that occur in these reservoirs and result in different styles of eruptions.

"I am interested in understanding how magma reservoirs grow at deeper levels of the earth's crust and how magma is stored through extensive geologic time until magma that does not erupt crystallizes to become granite," explained Memeti, who has authored numerous papers and presented invited talks.

Memeti earned her doctorate in earth sciences from USC and her master's and bachelor's degrees from the University of Technology in Darmstadt, Germany, where she grew up. She received a Marie Curie Fellowship from the European Union to conduct postdoctoral research at Durham University in England.

Due to her multicultural background — her parents are from an Albanian region of the former Yugoslavia, now Serbia, and Memeti grew up speaking Albanian and German — she appreciates the opportunity to teach at CSUF.

"I love the fact that we have such a diverse student population, first-generation students and students who come from nonacademic families. Opening the world of science to these students is very rewarding to me because I also come from an immigrant, nonacademic family."

With teaching experience as a graduate student and lecturer, she hopes to inspire students in the classroom and in her lab in ways that are valuable in today's scientific arena. "I would like for our students to be creative, innovative and highly skilled geologists who are capable of tackling problems in any chosen career path."



Something to make you smile...

Does an excellent student of volcanology graduate magma cum laude?

Never lend a geologist money. They consider a million years ago to be recent.

A volcano is a mountain with hiccups.

Here in California, when a bridge falls down, we know it must be San Andreas' Fault!

Jim Parham

2014 is my second, full, calendar year in the department and I think the Parham lab is starting to hit its stride. In the spring, Katrina Awalt became the first Parham Lab student to file an undergraduate thesis. Katrina worked on fossil sea turtles from Miocene sites around Orange County, and presented her research last year at the Society of Vertebrate Paleontology Meetings. We hope to submit the manuscript for publication soon.

All of my students work on fossils from the Orange County Paleontology Collection, primarily housed at the John D. Cooper Archaeology and Paleontology Center where I am the Faculty Curator. Active thesis students include Michelle Barboza (vertebrate biostratigraphy of the Capistrano Fm.), Crystal Cortez (a fossil white shark from Miocene of Orange Co.), Adrian Garibay (a fossil pinniped from the Miocene of Orange Co.), Brian Kussman (vertebrate biostratigraphy of the Emory Borrow Pit), Isaac Magallanes (a fossil walrus from the Miocene of Orange Co.). Five other students did non-thesis research in my lab, including Mihai Agiu (micropaleontology), David Morales (fossil birds), and Shawn Robison (GIS mapping). Michelle Harb and Tara Redinger worked with on preparation at the Cooper Center.

I currently have two graduate students. Peter Kloess is working on fossil seabird communities from Orange Co., as well as the “real dinosaurs” of Orange Co. from the Cretaceous sites of the Santa Ana Mts. Peter presented his work at the Society of Vertebrate paleontology meeting in Berlin in November. Gabriel Santos is working on a terrestrial Eocene bonebed from Orange Co., as well as a side project on a very old individual of a bizarre marine mammal (desmostylian).

Other lab members include Anita Valenzuela-Toro from the Universidad de Chile and an NSF postdoc, Dr. Jorge Velez-Juarbe. Anita visited for one month to collaborate on the study of fossil sea lion specimens from the Cooper Center. Dr. Velez-Juarbe was supposed to be here for two years, but is now just part time, because in January he will start his new position as the Marine Mammal Curator at the Museum of Natural history in Los Angeles. This is an exciting development because, as vertebrate paleontology curators in the Los Angeles basin we are planning to collaborate on many projects.

Some of my students did international paleontological fieldwork this year, with Michelle Barboza participating in the PCP-PIRE internship program in Panama, Crystal Cortez working in Thailand with Brady Rhodes, and Peter Kloess going to Mongolia with the Alf Museum. Other students (Isaac Magallanes, Gabe Santos) gave platform presentations on their research at the Triennial Meeting on the Secondary Adaptations of Tetrapods to Life in the Water at George Mason University and the Smithsonian.

In addition to wrangling this herd of enthusiastic students, I have kept myself busy. This year I published papers about a whale graveyard in Chile (<http://cerroballena.si.edu/>), a fossil sea turtle from Chile, methods for using fossils to calibrate the tree of life, a comparison of the turtle tree of life based on genomes and fossils, and also edited a special section of *Palaeogeography, Palaeoclimatology, Palaeoecology* about the “Physical drivers in the evolution of marine tetrapods.” I did some fieldwork for fossil marine mammals and living legless lizards in the San Joaquin Valley and also received three grants that will fund CSUF student research including an intramural grant for work on legless lizards next spring, a CSUPERB grant that will fund mini-internships at the California Academy of Sciences, and finally a FMURCA grant that is funding Isaac Magallanes to make 3D scans and prints of fossil walruses from the Cooper Center and San Diego Natural History Museum.

It's been a busy, but successful, year. I am excited for 2015, for the opportunity to continue working with my students and recruiting new student researchers and collaborators, bit mainly because my wife and I are expecting our first child on January 1st!

Wayne Henderson (Full-Time Lecturer)

This year has been fun, I have had a number of great classes and have had time to do some work in the Nopah Range. As membership manager for the Pacific Section of SEPM (sidebar you should join), I helped organize field trips out to Gypsy Sally and upcoming this year to Hawaii and Anza Borrego. In October, I was able to take fifty new 201 students out to the Mojave and Death Valley with my former 201 student, Dr Scott Mata. This summer, I will be working in Indonesia and in the fall plan on talking to a whole new crop of future geologists in the fall.



S T A F F U P D A T E S



Time flies when you are having fun...and boy am I having an awesome time! **Kristen Waters**

When Candice Jones retired in July 2013, I was offered her position with entrusting me to carry on the torch of excellence in Geology. Since then, I have not regretted my decision to work in this department; in fact, I feel blessed! Since day one, the department has considered me to be a member of the family. I'm sure this is exactly what many of you experienced when walking through the doors of the Geology Department for the first time.

The best parts of my job are having the opportunity to meet so many new incoming majors; along with getting to know numerous alumni while putting together the 1st and 2nd Annual Fall Alumni receptions. The last 12 months have also brought forth a lot of firsts for me with learning the intricate nuances of scheduling classes, being a part of Research Day 2014, and last, but not least, celebrating my 1-year anniversary...all while getting to work with an amazing faculty and staff! Did I mention I work for an the greatest department ever!?!?

I want to thank everyone for making my first year extraordinary and I look forward to the future! As a reminder, in order to keep in touch, please make sure we have your current contact information. You can update your information at: [>> http://geology.fullerton.edu >>](http://geology.fullerton.edu) [People tab >> Alumni Update.](#)

My Summer 2014 vacation to Colorado Springs. **Matt Wilken**

Family and I visited Garden of the Gods in Colorado Springs and toured the Mollie Kathleen Mine, 1000 feet underground, at Cripple Creek. It was a great time for the whole family!



A message from Kld, Geology
Kathleen Davis

I've been with the department for a few years now and enjoy working with our Geology Family (student, faculty and staff). I had the opportunity to go on a few class field trips 105, 201 and part of 481; they were quite adventurous.

Was great to see many of our alumni at the 2nd Annual Alumni Reception; stay in touch!



On October 6th of 2014, everything was better. **Brian Killeen**

I was exceedingly lucky enough to be hired as the new Instructional Support Technician for the Geology Department. For the better part of 20 years, since graduating with a degree in Geology from CSUF, I enjoyed working in the Geotechnical Engineering industry. Recently having been given the opportunity to apply for my new gig at CSUF, I didn't hesitate to rejoin a great community and haven't looked back. My family is equally happy for me, while we fill our time participating in extracurricular activities such as High School and Club Volleyball, Little League Baseball and keeping our house beautiful. This year has proven to be one of the best in recent memory.

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