



DEPARTMENT NEWS

Greetings and welcome to our Fall 2013 Department Newsletter. We hope you will enjoy reading about the many exciting things going on in CSUB's Department of Geological Sciences. It has been another record year with 18 students graduating since the last newsletter! Graduates have no trouble finding employment and we are proud that they all work in their field or are now pursuing a graduate degree with full support through teaching or research assistantships.

We went through our regular 5-year review this year. One of the interesting findings from the review is that, in terms of the number of students, we are now by far the largest geology program in any of the 23 CSU campuses. We are bigger than programs at much larger campuses such as Northridge or Fullerton with departments that have more than twice the number of faculty! In Fall 2013, we had 108 undergraduate majors and 48 graduate students.

The picture above shows most of the CSUB Geology contingent at the 2013 annual meeting of the Geological Society of America in Denver. We were able to take a group of students and the six high school teachers who are teaching our dual-credit geology class. The teachers include alumni

Chris Carrisalez (Arvin High School, standing on left), **Mike Griebing** (Frontier High School, standing fourth from left), and **Jon Walker** (North High School, standing right). In 2012/2013, about 350 high school students took the class and a good number of them were inspired to become geology majors. Of our 33 new freshmen in Fall 2013, 11 came through the high school classes. At the GSA meeting we organized a Topical Session on dual-credit classes and presented the model that we developed in Kern County to a national audience.



Stephanie Caffee Unruh, Bibi Tan, Kathy Randall, David Kong, and Kelly Harrington represented the department well in the Imperial Barrel Award competition at this spring's AAPG meeting in Monterey. Jan Gillespie was their advisor.

The dual-credit high school classes are supported with well over \$550,000 including a grant from the **National Science Foundation**, major donations from **Chevron**, and additional donations from the **San Joaquin Geological Society** and the **Pacific Section of the AAPG**.

Staffing has remained largely unchanged but we are currently conducting a search for a replacement for **Bob Horton** who is planning to at least partly retire by the end of this year. Given the tremendous growth of the department in recent years, we are hoping to add two new faculty lines starting in 2014/2015. Dr. **Sarah Brown** is now a research associate and works on special projects with our new dean.

In some school-wide news, our dean for the last seven years, **Julio Blanco**, retired this summer. He did a lot for the department and the school and will be missed. His successor is **Anne Houtman** who with her positive energy and competence is already making a difference. We are looking forward to working with her. The new engineering programs continue to expand and now include a petroleum engineering concentration. Dean Houtman has taken the initiative to create an **Energy Institute** that could make CSUB a California center for research and training in the petroleum field and other forms of energy.

FACULTY NEWS

Graham Andrews Just got back in time from fieldwork in northern Mexico to write my piece. What a busy year! I have just finished teaching graduate-level volcanology class where we traveled a couple of times to Long Valley caldera near Mammoth Lakes. The summer just flew by with lots of fieldwork with my students in the southern Sierra Nevada mountains and short trips to British Columbia and the Death Valley region. 2014 is set-up to be just as busy with teaching and graduate coordinator duties combining with a two month ocean-floor drilling cruise off the



coast of Japan in April and May. I am currently working with four graduate students, two of whom presented excellent posters at the 2013 GSA Annual Meeting in Denver, and hopefully two of them will graduate in 2014.

Dirk Baron This was another fast-paced year. A definite highlight was the annual meeting of the Geological Society of America in Denver. Almost all faculty and a large group of students attended. In all, we had 7 presentations at the meeting which also marked the 125th anniversary of the GSA. Our Topical Session on dual-credit geology classes taught at high schools was well attended. We were especially pleased that Eldridge Moores gave a keynote talk about the long and recently successful efforts to put high school geology on equal footing with chemistry and physics for admissions to the University of California system. Another highlight this year was the Geol 201 field trip based at the Zzyzx Desert Studies Center. As the instructor, Linda did a wonderful job of leading the trip. She was supported by most of the other faculty and several senior students. With about 70 people on the trip, we filled up the center including the overflow camping area. The **Claude Fiddler Field Endowment** and donations from Chevron made this 3-day trip possible.



Receiving the 2013 CSUB Community Engagement Award

Sarah Brown I became a 'Research Fellow' in the department this year. I will be teaching some classes in the Winter and Spring quarters (including Water in the West, California Geology and Historical Geology) and helping to organize the NSME Science of the Dust Bowl event.



Sarah and Graham, husband and wife team, in San Luis Potosi, enjoying some well-deserved time off from doing field work in Mexico

Linda Davis What an amazing year this has been with respect to classes, research, and field trips. The Physical Geology and Mineralogy classes were huge! We had an enrollment jump to 55 students in Mineralogy that nearly overwhelmed me. If not for our TAs teaching the labs, life would have been impossible. I was truly impressed with the hard work, motivation, and determination of the group of students that came through this past year. And, now we have another large group of students finishing Physical Geology and beginning the Mineralogy and Petrology sequence. Our mineralogy collection could really use some donations of fist-sized minerals from around the world. If you have any specimens appropriate for a Mineralogy lab collecting dust, please let me know.

With the support of the other faculty in the department, I've been working on setting up new microwave digestion techniques for mantle-derived sub-volcanic rocks, and on a new calibration setup for whole rock analysis using the ICPMS: we're testing the new standardization procedure following the USGS's analytical laboratories methods. Two outstanding students

have been working with me for no pay and no credit since June: all because they want experience doing research! Kudos to Maryanne Bobbitt and Linda Anderson. Maryanne has joined the prestigious LSAMP program and Linda Anderson received a prestigious undergraduate student research award to continue working with me on the petrogenesis of Cenozoic minettes in the western U.S. I ended my Volunteer position on the Board of Directors for the Association for Women Geoscientists Foundation, and am using that "extra" time to finish manuscripts in addition to my very heavy teaching load.



Linda pointing the way from a lava tube in the Mojave National Preserve on her 201 field trip.

Department Chair Jan Gillespie Back in the saddle again...or should I say "Chair". I am once again chair of the department and miss teaching and interacting with the students. We've all been busy with CREST-related activities as well and that keeps us out of the classroom too. I spent my last summer at Lawrence Berkeley National Labs under my 3-year Dept. of Energy contract so I am ready to find some new and different summer adventures in the future—maybe spending a little more time in the field! The carbon capture and storage project continues under CREST. I also received a grant from the California Dept. of Conservation (Division of Oil and Gas) to work on mapping the depth to USDW (Underground Sources of Drinking Water) in the Kern County portion of the San Joaquin Valley. Interest in fracking activity is also growing—especially now that the state government passed a bill to regulate

that practice within the state. That means lots of interviews and public presentations for yours truly. I also continue to work with the IBA team (Imperial Barrel Award sponsored by the AAPG). We are finally figuring this out and our last team did a great job in Monterey. We already have a team for 2014!

Even though I am not teaching this year, I helped lead the Strat-Sed field trip to Death Valley and Red Rock Canyon. Strat-Sed has 45 students! Incredible! Big line of white vans rolling through the desert! Almost as big as the line of white vans for the Physical Geology field trip to Zzyzx (which involved almost all the faculty, about 70 students and was led by lecturer Dr. Linda Davis)! It was good to meet some of our majors—they are a pretty enthusiastic bunch overall! I have set up a Petrel training session for the students this winter and it has a HUGE waitlist! Happy Holidays!



Jan talking to KGET Channel 17 TV about "fracking" the Monterey Shale

Bob Horton As I enter my 30th year at CSUB, it is hard to believe all that has transpired since I arrived at a sleepy little college in 1984 (CSUB did not become a university until 1987). During the past year, my last as Department Chair, I found myself spending most of my time working on administrative matters related to the CSU's

ongoing budget issues and our periodic program review (last conducted in 2004). The 162-page Department of Geological Sciences Program Review 2012-13 was submitted to the administration in April (as a cruel joke it was due on the 15th!) and an external reviewer was brought in to evaluate the department in June. We chose Dallas Rhodes, a nationally recognized scholar whose experience includes numerous external program reviews, rather than someone from another CSU campus to conduct our evaluation because we felt that our programs are as good as or better than those of any small geology department. We received his report in July. We were extremely pleased at how laudatory it is toward our faculty and programs, and especially with his recommendation that we be authorized to hire additional faculty members. But perhaps his most important conclusion regarded the collegiality that exists within the department faculty: *"The degree of respect and appreciation for each other is far stronger than I have seen in most departments I know."* This camaraderie is what has made working here such a pleasure. And while we still await the final completion of the review process by CSUB's administration, a number of interesting things have already come to light. For example, our research revealed that we now have the largest number of both undergraduate and graduate majors in the entire CSU system, including large departments with twice as many faculty members!



Bob enjoying some well-deserved time off in the Canadian Rockies

As for non-administrative activities, my teaching was limited to Advanced Sedimentary Petrology because of the time required by my administrative duties. My research group has been going strong and I expect that several students will finish their theses this year. Wale Olabisi's work on the Famoso and Vedder sands of the Wasco oil field was presented at national AAPG last spring and Diem Nyugen presented her work on the Vedder of the Greeley oil field at GSA in Denver this fall. Stephanie Caffee presented her preliminary results at the CSU system-wide Student Research Competition at Cal-Poly Pomona after taking first place in her category in CSUB's local contest. Several other student projects are moving along smoothly and we should have more results to present at the AAPG Pacific Section meeting in Bakersfield this spring. Once again I was involved in a very successful summer REVS-UP project (this is a Chevron-sponsored program that brings high school teachers and students to campus to work with faculty members on their research). Finally, I recently presented a summary of my 30 years of research on diagenesis and porosity development in San Joaquin basin oil fields to an overflow crowd at the San Joaquin Geological Society's monthly meeting.

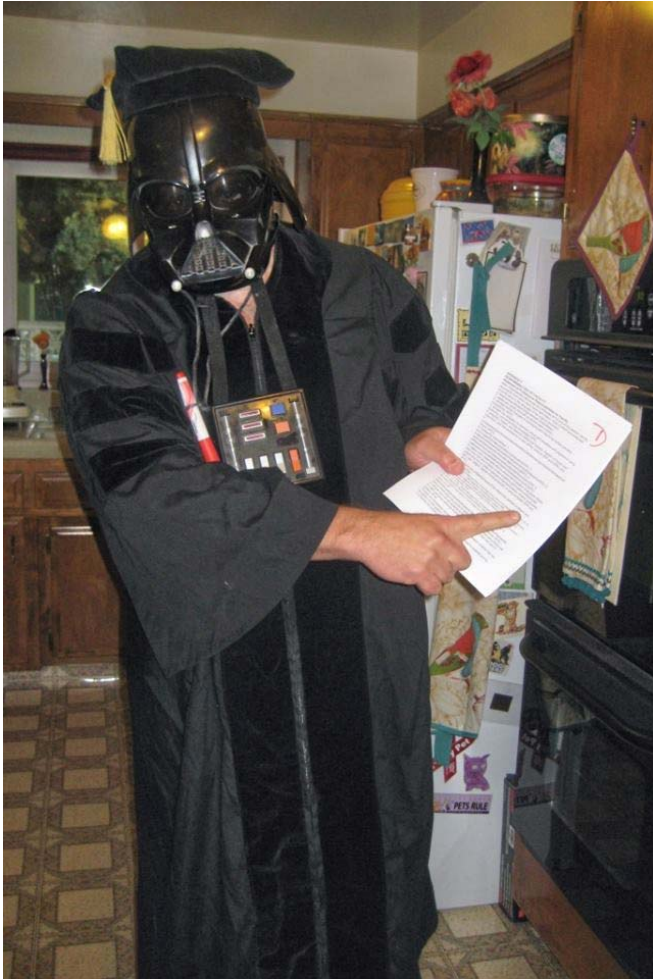
So overall, it has been a very productive year (in spite of the stress associated with the budget issues and program review). But by far the biggest story this year was my announcement of my impending retirement. Yes, this will be my last year as a full-time member of the CSUB Geological Sciences faculty! It has been a very rewarding experience, and I cannot for a minute imagine a more rewarding career (ok, maybe if the school was located in Jackson Hole or Chamonix, but then I'd have never gotten anything done). The department is currently conducting a search for my replacement and it is my understanding that they have some extremely excellent applicants. So I want to conclude by expressing my appreciation and gratitude to all the wonderful faculty members and students that I have had to pleasure to work with these past 30 years.

Chris Krugh The students, staff, and faculty at CSUB have been great to work with during my first, and now second, year with the Dept. of

Geological Sciences. I got to explore (and map) some fantastic field areas with the Senior Field Seminar in Spring Quarter 2013. We had several 2-3 day mapping projects at the Wind Wolves Preserve (San Emigdio Range), Rainbow Basin, and Poleta Folds (White-Inyo Ranges) where students learned field mapping techniques and put their knowledge of geologic principles to the test. The students stepped up to the task and found it a valuable primer for their Summer Field Camp experiences. Over the summer I was able to start up a NSF funded collaborative research project to investigate relationships between sediment source area(s), geomorphic processes, and grain size distributions from a catchment in the Eastern Sierra. I was also able to collect new samples for a pilot study on the development of the Sierra Nevada Frontal Fault Zone and start working with Graduate students on projects in the Sierra Nevada and San Emigdios. This academic year is shaping up to be just as exciting and busy. I had another great group of students in my Structural Geology course (39 students!) and I am looking forward to this year's Senior Field Seminar.



Rob Negrini After a year of concentrating on CSUB CREST-related administration and research rather than instruction, Rob (aka, Darth "Grader") was back in the classroom this Fall teaching Paleoclimatology.



*Darth "Grader" at the Honors student Halloween Party. Note the bad grade being handed out.
Photo by J. Kegley.*

Students in this class studied interesting topics like Ordovician-aged glaciogenic petroleum reservoirs in Libya, the Snowball Earth, the Monterey Formation Hypothesis, etc. They also walked on shoreline evidence of late Pleistocene and Holocene lake-level events around the Owens Lake basin that correlate in time with Tulare Lake events on our side of the Sierra inferred from geochemical and geophysical analyses of core.



Early Holocene beach gravels in the Owens Lake Basin. Mt. Whitney in the background. Photo by M. VanGrinsven.

The class also engaged in some "high impact" learning (what the rest of academia is now calling what the sciences have always done - lab work) by continuing Ashleigh Blunt's (M.S. 2013) Tulare Lake thesis study back in time from ~20,000 years ago to 40,000 years ago. Ashleigh found that, for much of the past 20,000 years, Tulare Lake levels and, hence, Sierran precipitation followed east Pacific sea surfaces temperatures closely. She resisted the temptation to move on to Ph.D. work and is now working across the street as a geologist at Chevron, USA. Rob also submitted a manuscript to the Journal of Geophysical Research with J. Lopez, D. McCuan and Bob Horton, and has one nearly finished to be submitted to AAPG Bulletin (G. Henley 1st author) later this month. He also submitted two National Science Foundation proposals, one of which was funded. The other is pending and, if funded, will support work in Chile conducted by Rob and his students in conjunction with two investigators at the Desert Research Institute of the University of Nevada.

DONATIONS

In this time of ever-shrinking state funding for the CSUs, support from the community and our alumni becomes essential for maintaining the quality of the educational experience of our students. We gratefully acknowledge donations to the Department from the following (all in alphabetical order and all very much appreciated):

Corporations and Organizations: Aera Energy, American Petroleum Institute, Apache Energy, Chevron, CSUB Alumni Association, Oxy, Pacific Section AAPG, PennState/AfricaArray, San Joaquin Geological Society, Samuel Roberts Noble Foundation, and Shell.

Individuals Cynthia Huggins (B.S. '84), Dan Schwartz, Sandra and Dan Steward (BS '92, MS '97).

Alumnus **Dan Steward** and his wife Sandra made the first of what will be an annual \$5,000 donation and we established the **Steward Field Camp Scholarship**. This year we made the first two awards to the top students in Structural Geology, **Alyssa Ramirez** and **Marc Halling**. Going forward, we plan to give awards to the top students in Structure and the Senior Field Seminar each year.

A donation of \$2,500 plus a \$2,500 match from AERA Energy was made to the department by **Dan Schwartz** and alumna **Cynthia Huggins**.

Apologies if we forgot someone, let us know so we can acknowledge you in next year's newsletter.

STUDENT NEWS

Recent BS/BA Geology Graduates Angela Espinoza, Tucker Plunkett, Irais Villasenor, Logan Prosser, Benjamin de Marseille, Marc Halling, Brandon Jackson, Alyssa Kaess, Camille Ramirez, Zachary Martindale, Michael Thompson, Aaron McCall, Kelsey Padilla, and Jennifer Head

Recent MS Geology Graduates Ashley Blunt, Jonathan Goodell.

The Spring 2013 **Outstanding Graduate in Geology** was **Marc Halling**.



Marc Halling enjoying a day in the field.

Jordan Martin was the first recipient of the new Sam Gonzelez Memorial Scholarship.

Jon Goodell was honored as the 2013 **Outstanding Graduate Student** of the entire NSME school and also won first place in the CSUB Poster Student Research Competition. **Stephanie Caffee** won first place for her talk in the Student Research Competition.

Marc Halling received a \$10,000 scholarship from the **CSUB Alumni Association**. This is a highly competitive award and only one a year is given for the entire university. From the citation: *Marc is a member of Alpha Chi College Honors Society, was the Outstanding Graduating Senior in Geological Sciences, and has received multiple merit based scholarships and awards. Marc has worked as a Geological Sciences tutor for CSUB, an instructional student assistant and assisted on a grant intended to encourage local high school students to pursue a college degree in Geological Sciences. He has worked in local high schools to assist underachieving Earth Science students improve their grades. He has volunteered to work for CSUB's Middle School Science Day, and as a Boy Scout Geology Merit Badge Counselor. Marc's academic and community accomplishments are in alignment with the CSUB tradition of excellence.*

C.E. Strange Scholarships were awarded to most of the students taking field camp in summer 2013. The list is too long to include here. Everybody really appreciates this endowment that was made before anybody currently in the department can remember. We salute the late C.E. Strange!

AfricaArray Scholarships were awarded to Phillip Herrera, Martin Jimenez, Esteban Macias, Azael Salinas, Noe Torres, Cristina Rivas, Monica

Sanchez, Kelsey Padilla, and James Wilson. These are \$5,000 scholarships from the PennState program. Azael and Phillip also had a chance to participate in the Summer 2013 Field School in Pennsylvania and South Africa.

NSF CREST Scholarships These range from \$3,000 “pre-CREST” awards to \$20,000 scholarships for undergraduates and \$30,000 scholarships for graduate students, and total over \$250,000 this year. Awardees include Brynn Galindo, Nick Moreno, Jeffrey Kimber, Jordan Martin, Rachel Tiner, Noe Torres, Azael Salinas, Phillip Herrera, James Wilson, Martin Jimenez, John Wilson, Greg Thompson, Cristina Rivas, Brandon Jackson, Diem Nguyen, Alyssa Kaess, Kelsey Padilla, Lindsey Medina, Emmanuel Garcia, Logan Prosser, Zach Martindale.



USDA/WRPI Scholarships Several students received \$4,500 scholarships from an USDA grant through the CSU Water Resources and Policy Initiative.

National Science Foundation Scholarships for new freshmen and recent transfers from community colleges: Kelsey Walsh, Victor Medrano, and Jordan Dickson.

Diem Nyugen received the **James Weddle Scholarship**.

Several students received **SJGS Field Camp** and **Graduate Research Scholarships**.

Cristina Rivas, Gurleen Kaur, and Janine Roza won \$2,000 scholarships from the **CSUB Graduate Student Center** to support their thesis research.

John Wilson received \$2,000 from the highly competitive AAPG Grant-in-Aid program.

Geology students won 8 of the 15 campus-wide **CSUB Student Research Scholarships**, \$2,000 each.



SRS scholarship recipients from left John Wilson, Alyssa Kaess, Courtney Libben, Diem Nyugen, Linda Anderson, Gurleen Kaur, and Sara Freeman. Not pictured Dawn Fetzer.

Geology Student Club

Join the CSUB Geology Club site on Facebook to keep up on club activities, and job and scholarship



opportunities. Mark your calendars for the **2014 Geo Club BBQ**. After last year's success, we will again host it in the **Buena Vista Museum of Natural History**. The date is February 21, 2014. Mark your calendars and look out for more information forthcoming.



Geo Club President Cali Terrasas giving a Geology lesson to elementary school students during one of the many Club outreach efforts

ALUMNI NEWS

To save paper and printing costs, this year we are listing only our new alumni. The complete alumni list can be found in previous newsletters which are available on the department website. We plan to have an updated complete list in a future newsletter so please keep us updated.

Please send any corrections, updated addresses, news, and pictures and stories from the old days for inclusion in future newsletters to Dirk Baron (dbaron@csub.edu). If you are ever in the area, please stop by to see our new facilities and meet current students and faculty. We are also always looking for alumni to give seminar presentations about their work and careers. These are very inspirational for students. We would love to hear from more of our alumni.

2012 – 2013

Ashleigh Blunt, MS 2013, works for Chevron.

Benjamin de Marseille, BS 2013, works for Oxy.

Jonathan Goodell, MS 2013, works for Oxy.

Eric Glauser, BS 2013, is a Geoscience Specialist for California Heavy Oil, a subsidiary of Oxy.

Marc Halling, BA 2013, is working on his graduate degree at CSUB supported by CREST and a teaching assistantship.

Jennifer Head, BS 2013, is working at Oxy and has also started graduate school at CSUB.



Camille and Jennifer at the 2013 commencement

Brandon Jackson, BS 2013, is working on his graduate degree at CSUB, fully supported by a CREST fellowship.

Alyssa Kaess, BS 2013, is a graduate student at CSUB.

Aaron McCall, BS 2013.

Kelsey Padilla, BS 2013, is working on her graduate degree at CSUB, fully supported by a CREST fellowship.

Tucker Plunkett, BS 2013.

Logan Prosser, BS 2013, is working on his



graduate degree at CSUB, fully supported by a CREST fellowship.

Logan leading the Geology graduates at the 2013 commencement.

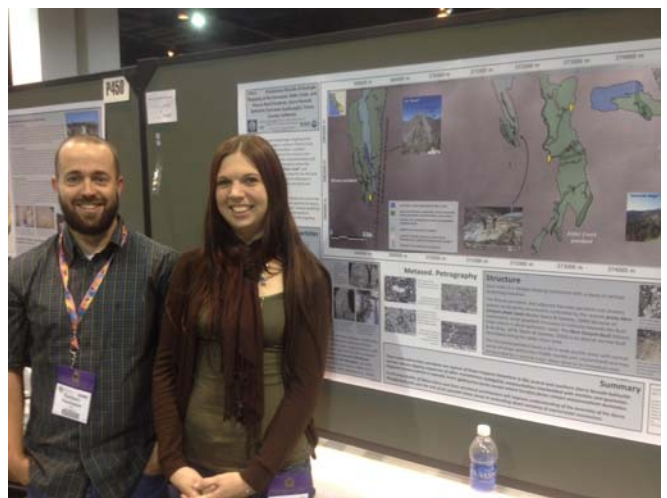
Camille Ramirez, BS 2013, is working for Oxy.

Michael Thompson, BA 2013, is working for the Kern County Department of Environmental Health.

Irais Villasenor, BS 2013.

Angela Espinoza, BS 2012, is working for Chevron.

Zachary Martindale, BS 2012, is working on his graduate degree at CSUB, fully supported by a CREST fellowship.



Zach and Alyssa presenting a poster at the 2013 GSA meeting in Denver.



Our Seniors traveled the World this year for their Field Camp. Here are Esteban Macias, Allison Burich, Monica Sanchez, Lindsey Medina, Martin Jimenez, and Cristina Rivas at their field station in Turkey.



Geo Club officers Maryanne Bobbitt (above) and Allison Burich (left) working on Geology lessons with students from Almondale Elementary School during Science Field Day, one of the many outreach activities of the Club this year. The Club also supported several guest lectures in the department.



Linda's Geol 201 field trip at the Zzyzx Desert Studies Center before heading out in the field. The class was joined by BC professor and alumna Cari Meyer who brought along some BC students who are planning to transfer to CSUB soon. Several senior CSUB Geology students and most of the Geology faculty joined as well. The trip was made possible by support from the Claude Fiddler Field Endowment and Chevron.

Donations

As you can see from the newsletter, there are many exciting things going on in the department and their education serves our students and alumni well. All this despite ever-shrinking state funding for the CSUs. This makes external support ever-more important if we want to give our current students the exceptional educational experience that we hope our alumni experienced during their time here. We are doing our part and are bringing in major external funding by winning highly competitive federal grants. Industry partners, folks from the community, and many alumni have also stepped up. Please follow their inspiring example, dig deep, and consider a donation to - as Rob Negrini likes to say - "a gem of a small department" that provides great services to the community and our profession.

Please make your check payable to **CSUB Foundation** and indicate that it is for the **Geology Department Trust Account TR036**. Indicate the specific cause you want your donation to go to below on this form.

Return to the address on the back of this page, to the attention of Dirk Baron.

Name:

Affiliation (if applicable):

Address:

City, State, Zip Code:

Email:

Please indicate the amount you want to donate:

\$500 \$1,000 \$2,500 \$5,000 \$10,000

Other _____

Please indicate if you want your donation to go to one of these specific causes:

- Sam Gonzalez Memorial Scholarship** (**NEW** – to support students who after exploring other fields have discovered Geology as their calling)
- Student Scholarships (will be added to the existing CE Strange Scholarship Fund)**
- Field Activities (will be added to the new Claude Fiddler Field Endowment)**
- Undergraduate Student Research**
- Unrestricted to support current needs identified by department faculty**



The "4-Wheel Drive Training Wheel Award" that we received at the 2007 Friends of the Pleistocene trip to the Mojave Desert for getting one of our vans stuck in the sand. Passed it on to Cal Poly Pomona State the next year. A picture of our entire intrepid crew is in the 2007 newsletter.



Part of the Fall 2013 Geol 201 field trip in a lava tube off

Thank You!

Kelbaker Road in the Mojave National Preserve



California State University, Bakersfield
Department of Geological Sciences
62 SCI
9001 Stockdale Highway
Bakersfield, CA 93311

Address Service Requested

Geological Sciences Department Fall 2013 Newsletter inside

Photo on Front Page of the Newsletter (Fall 2013 GSA Meeting in Denver)

Back from left: Chris Carrisalez (Arvin High School teacher and CSUB Geology alumnus), Steve Kiouses (Ridgeview High School teacher), Dena Kiouses (CSUB-Fresno State Doctoral student), Mike Griebing (Frontier High School teacher and CSUB Geology alumnus), Karen Blount (Foothill High School teacher), Dirk Baron (CSUB faculty), Jan Gillespie (CSUB faculty), Pam Knight (South High School teacher), Janine Roza (CSUB graduate student), Emmanuel Garcia (CSUB graduate student), Alyssa Kaess (CSUB graduate student), Graham Andrews (CSUB faculty), Jon Walker (North High School teacher, CSUB Geology alumnus, and photographer).

Front from left: Zach Martindale (CSUB graduate student), Chris Krugh (CSUB faculty), Maryanne Bobbitt (CSUB undergraduate student), Robin Richardson (CSUB graduate student), Martin Jimenez (CSUB undergraduate student).