

# CSU Bakersfield

## Department of Geology

### Newsletter

<http://www.csub.edu/Geology>

Fall 2007



#### A MESSAGE FROM THE NEW CHAIR: DIRK BARON

Greetings and welcome to our first-ever department newsletter! This is something we have been wanting to do for a long time but it has been one of these things we just never got around to actually doing. You can thank Eugene Edward Miller who received his BS in Earth Science from CSUB in 1978 (!) for finally motivating us to make it happen. He emailed us with an update about his fascinating career (see Alumni News). He also told us that he wants to hear from his classmates. I am sure he is not the only one. The goals of this newsletter are to help you reconnect with old friends, to update you on what is happening in the department, and to encourage you to take a more active role in our old department. We are hoping to hear from many of you in the coming year and that this will be the first of many annual newsletters.

#### DEPARTMENT NEWS

We are proud to report that our programs continue to attract some of the best students on our campus. They receive an outstanding education with exceptional opportunities for student research. In recent years, our students have been honored as CSUB Outstanding Graduating Seniors, have won statewide student research competitions, have presented their research at national and international professional meetings, traveling as far as Italy, Germany and even Turkey. Perhaps most impressively, several have had their research published in premier professional journals such as *Geology*, *Geochimica Cosmochimica Acta*, *AAPG Bulletin*, and *Quaternary International*.

We currently have 25 undergraduate and 12 graduate students working towards their geology degrees. We are continually working to increase

these numbers with K-12 outreach and recruitment initiatives.

**Dirk Baron** just started a 3-year term as department chair, taking over from **Jan Gillespie** who did a fine job steering us through these interesting times.

#### Inside this newsletter:

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## DEPARTMENT NEWS CONTINUED

Last year, we welcomed a new faculty member, **Dr. Staci Loewy**. She received her Ph.D. from the University of Texas in Austin. Her areas of expertise are radiogenic isotope geochemistry, U/Pb geochronology, and structural geology.

Our students and we are fortunate that Staci's husband, **Dr. Patrick Mickler**, has also been teaching for us for the last year. He also holds a doctorate from UT in Austin. Read more about Staci and Pat in the *Faculty News* section.

Long-time geology professor **Bob Horton**, who many of you will know, has accepted an appointment as the interim head of CSUB's Grants and Contracts office. Although by all accounts he is doing a great job in his new capacity, we are hoping that he will return to the department next year. Our students and we are fortunate that despite the demands of his new position, he continues to supervise several senior undergraduate and MS theses and volunteers to teach a graduate class in winter 2008.

Many of you know **Steve Mitchell**, the longest-serving member of our department. Steve fully retired this spring. Steve left behind an irreplaceable fossil collection that needs more exposure to the general scientific community (see box about the *Mitchell Fossil Collection*). Due to the CSU system's budget constraints, we have not yet been able to replace Steve but we are optimistic that we can conduct a search next year.

Retired professors **Dr. John Coash** and **Dr. Ed Laskowski** continue to live in the Bakersfield area. We last saw Dr. Coash at the retirement reception for long-time staff member Marie Covin last year. We were sorry to hear that **Dr. John Manning**, an early faculty member, passed away a couple of years ago. We continue to use parts of his fine textbook *Applied Hydrologic Principles* in several of our hydrology and hydrogeology classes.

## FACULTY AND STAFF NEWS

**Dirk Baron** The fall of 2007 marked three interesting milestones for me: First, I have now been at CSUB for 10 productive years. I was lucky to find some very supportive and capable colleagues. With support from two major instrumentation grants from the US Department of Defense, Bob and I were able to bring two state-of-the-art analytical laboratories to CSUB. We established a laboratory for ICP/MS trace-element analysis and - just this spring - a brand new electron microscopy lab. Both labs are now used for many student research projects and also attract outside collaborators including from UC Davis, UC Berkeley, USGS, and the China Lakes Naval Research Center. I was also lucky to be able to collaborate with Rob, Jan, and Bob in several grants funding research on the aquifer used by the Kern Water Bank, and with Rob in a National Science Foundation grant for a summer research participation program for K-12 teachers and high school students.

The second milestone was the 20<sup>th</sup> Anniversary of my arrival in the US. Who would have thought that I would be in Bakersfield today when in 1987 I arrived as a fresh-faced exchange student from Germany in Oregon for what was supposed to be a one-year exchange program!

Third, with the arrival of Staci last year, I am not the "new faculty in Geology" anymore and have in fact just started a three-year term as department chair.

Undoubtedly the most rewarding thing during my time at CSUB has been the work with our students including some of our best majors and graduate students. Recent highlights of this work include Liz Golob's thesis on the geochemical correlation of the Kern River Ash, Leslie Boockoff's research on arsenic in groundwater in the southern San Joaquin Valley, and Anne Draucker's work on the characterization of obsidian from archaeological sources in Coso Range. This year, I am working with one of the CSUB Student Research Scholars, Jenn Kalkis, on the geochemical characterization of chert samples from archaeological sites in southern France.

**Jan Gillespie** Whoa—have I really been here 17 years? Sun, fun, stay, play—just like the old Bakersfield billboard said! I have just come off a 3-year stint as department chair and was glad to hand the reins to Dirk Baron. Hopefully, I will have more time to spend getting back up to speed on all the new GIS technology but, with Dirk as chair, I'll probably have to take over more of the hydro duties.

Besides being department chair, I've been spending most of my time on petroleum geology and subsurface mapping studies. My two most recent graduate students Ariel Auffant and Sophia Cobos recently completed subsurface mapping theses in the western Bakersfield Arch/Elk Hills area. Occidental played a major role and part of the study was funded by a Department of Energy grant as well. Ariel now works for Chevron in Houston and Sophia for Oxy International in Columbia. I'm also collaborating on papers with Ariel and with Dan Steward who is working for Noble Petroleum doing deepwater Gulf exploration and production. Next, I'd like to learn more about applying subsurface mapping to CO<sub>2</sub> sequestration so that I can be more politically correct!



*On top of Devil's Tower*

I've also started working on a long-time passion which heretofore has had to take a backseat to the more practical pursuits of oil, groundwater and GIS. I've spent the last three summers working as a ranger at a couple of the national monuments--first at Devils Tower, Wyoming where I created a geology tour website for the National Park Service. I also learned how to

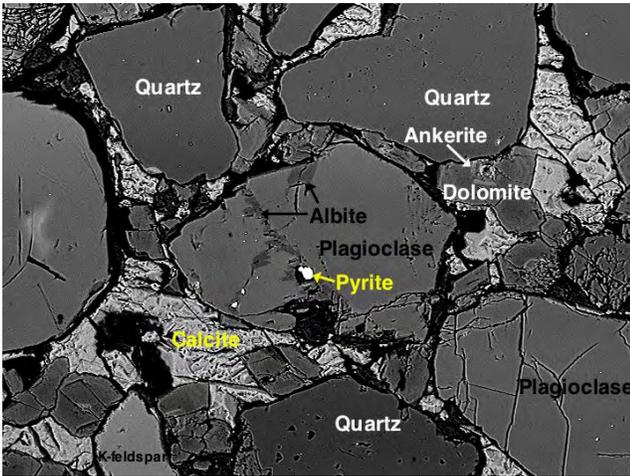
rock climb. Yes! I climbed to the top of the Tower—several times now!

Last summer I was at Grand Staircase-Escalante National Monument in southern Utah where I worked on a self-guided geology fieldtrip along one of the rough dirt roads through this 2 million acre monument. Undergraduate student Rosemary Marble came out to Utah for a few weeks and worked on a self-guided hiking tour of the Box area in the Paria Wilderness. I hope to get more students involved in the parks and monuments in the future.

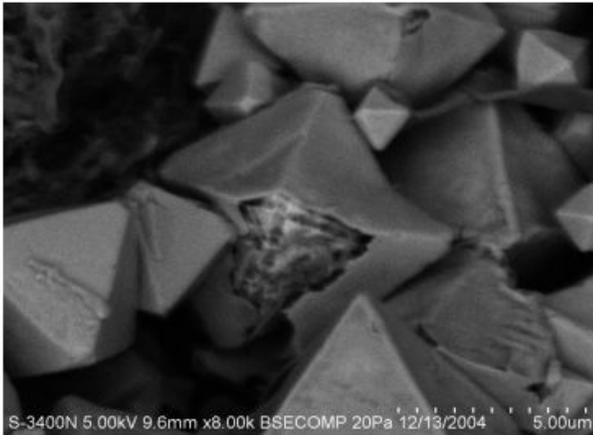


*Jan at "The Wave" in Grand Staircase and soon-to-be-alumna Rosemary after being rescued out of the quicksand in "The Box".*

**Bob Horton** I've been involved in plenty of interesting and fruitful projects in recent years. Brian Taylor's recently finished thesis on the Point of Rocks Formation, as well as Andy McCrea's work on very deep core (>18,000 ft) in the Maricopa sub-basin and Kay Coodey's study of lithologic influences on secondary oil production at Kern River field, have been very interesting, as has my own work on porosity development elsewhere in the San Joaquin basin. It has been especially fun to work with our newly acquired scanning electron microscope, which is equipped with an energy-dispersive x-ray spectrometer and a state-of-the-art real-time color cathode-luminescence detector (we were one of the first, and still one of the only, California universities to have this equipment).



The back-scattered electron imagery obtained using this instrument has revolutionized our ability to study mineralogical and geochemical variations in thin sections. It has also allowed us to make major in-roads into identifying the source of arsenic contamination in groundwater in the San Joaquin Valley.



Close-up view of arsenic-bearing authigenic pyrite crystals in shale showing dissolution textures (grain in out). SEM backscattered- electron image. Well 23h, depth = 550 ft.

There has been a major shift in my professional duties (and lifestyle) due to my appointment last spring as Interim Assistant Vice President (AVP) for Grants, Research, and Sponsored Programs at CSUB (GRaSP). Wearing a coat and tie and putting in 8-5 days is a BIG change! CSUB recently moved the administration of grants and research contracts from the CSUB Foundation to Academic Affairs and it has been quite a challenge to oversee the reorganization of this office. I would never have guessed how much time I now spend in meetings. And although this is a very challenging and tiring job, the work is

extremely interesting and we are making progress at improving the entire grant process, from proposal writing to final report submission. In spite of these challenges, I have continued to work with both graduate and undergraduate students on research projects and I plan on teaching Advanced Sedimentary Petrology during winter quarter. So, I have quite a bit on my plate at present. As my appointment is temporary and CSUB is now conducting a search for a permanent AVP-GRaSP, it remains to be seen whether I will continue in this office or return to the Geology Department full-time come fall.



**Staci Loewy** I am very excited to join the faculty at CSUB. Everyone has made me feel very welcome and it is exciting to have such a wealth of diverse geology that is so

easily accessible for teaching, research and pure enjoyment.

I am originally from upstate NY, but I come to CSUB from the University of North Carolina in Chapel Hill, where I was a research professor and manager of the U/Pb geochronology and radiogenic isotope laboratory. In this lab, I helped people analyze the isotopic compositions of rocks and minerals to determine their precise ages and constrain the processes by which they formed. Prior to working at UNC, I was at The University of Texas at Austin, where I completed my PhD and also worked as manager of the isotope laboratory.

My research interests center on how continents have collided with each other in the past. Currently, I am interested in a period of time, about one billion years ago,



when all the continents came together to form a single supercontinent, called Rodinia. Pangea was the most recent supercontinent. It formed approximately 300 million years ago. Rodinia would be an earlier supercontinent that formed and broke apart prior to the formation of Pangea. This research requires a lot of field work. So far, I have been fortunate to work in South America, Scotland, Northern Canada and the Southern Appalachians. I look forward to working with CSUB students to study the tectonic history of southern California, using a combination of field and laboratory work to analyze structures, petrology and chemical and isotopic compositions. In the Geology Department at CSUB, I am setting up a clean lab where students and I will prepare samples for isotope and geochemical analysis. In addition to studying California geology, I plan to continue work in South America. In December 2007, I will present new geochemical data from The Arequipa Massif of southern Peru at the national meeting of the American Geophysical Union (AGU) in San Francisco. The Arequipa Massif was once part of another continent, but it became part of South America when it collided with it, approximately one billion years ago. This new data will help us constrain the identity of the Arequipa Massif's "parent continent". This year, I started a new project analyzing rocks from Argentina. I am working with Argentinean and Canadian colleagues to evaluate whether a portion of the South American continent that now lies in Argentina (The Precordillera Terrane) was originally derived from North America about 450 million years ago.

**Patrick Mickler** It has been a few very busy years for Dr. Loewy and me. After moving 4 times to 3 different states over the last 4 years we are happy to settle into life in Bakersfield. I've been busy since my arrival, teaching courses in introductory geology, sedimentology, petrology and field methods. In these classes I have taken advantage of the spectacular geology and exposure Southern California has to offer. Field sites visited include Rainbow Canyon off of Santa Barbara Canyon and Wind Wolves Preserve (both used as new field mapping sites

for field methods), Precambrian stromatolites and snowball-earth diamictites of Death Valley, and ancestral Lake Manix deposits in the Mojave Desert. In addition to class work I am beginning my own research in the area.



My research focuses on the use of the geochemistry of speleothems, secondary cements that are mostly calcite that formed in caves (such as stalagmites and stalactites), in the study of past climate change. Specifically I grow speleothem calcite on glass plates in natural cave environments so the chemistry of the calcite and the corresponding drip water can be directly compared to current environmental conditions. This work is fundamental to calibrating speleothem geochemistry to climatic conditions so the geochemistry of ancient speleothem may be used as past climate proxies with greater reliability. Previously my work has focused on Barbados and Texas. In Barbados and Texas you need to drive hours to experience a substantially different climate. The many caves in the Sequoia National Forest offer a chance to sample speleothem calcite from differing climatic zones. You only need to move up or down in elevation to substantially change the climate experienced at the caves. Developing a research program in these caves will be my future goal.

I would like to thank the teachers and students at CSUB for making us feel so welcome in Bakersfield.

**Rob Negrini** It's been 20 or so years since I advised the first CSUB Geology M.S. theses, John Acord's (1990) gravity study near the intersection of the southern Death Valley and

Garlock Fault Zones and Bill Robin's (1991) seismic refraction study using the generalized reciprocal method to study the groundwater hydrology of Short Canyon, near Lake Isabella.

Since then there's been a steady march of both M.S. and B.S. students that have done research under my supervision. Much of this research has been published and some of it presented at



meetings as far away as Florence, Italy. For example, at the 42<sup>nd</sup>

Quadrennial meeting of the International Geological Congress, Carol Register (Class of 2005) presented hers and Joanna

Oseguera's

(Class of 2007) work on the use of grain-size and total organic carbon data for testing Sam Zic's (MS 2001) hypothesis of depositional environments in Oregon lake sediments. Carol's travel expenses were paid for by the Geological Society of America. I've managed to fund this large body of student research through grants from a wide variety of sources including the National Science Foundation, the US Department of Agriculture, the CA Department of Water Resources, various petroleum companies, and government agencies, the latter two of which have been very generous with their contributions. To see more of this work, visit my web page at the department web site.

For the past several years, Jan and I have been teaching Geology 100 for the Helen Hawkes Honors program. This has been an especially rewarding experience in that it's brought us several solid majors to augment an already talented group of B.S. students.

**Elizabeth Powers** Fall 2007 marks my 7<sup>th</sup> year working as Instructional Support for the Physics & Geology Department. I am fortunate to be immersed in a great academic program with such accomplished faculty and students.



As the department has grown over the years so has my personal life. I am now a proud mother of three girls and I am currently a graduate student pursuing a Masters Degree in Geology.

## STUDENT NEWS

### C.E. Strange Scholarships

In 2006 and 2007, **Diana Cosima, Rosemary Marble, Katie O'Sullivan, Joanna Oseguera, Joanna Pounds, Catherine Schindler, Jessie Becerra, Jlynn Bowen, Jennifer Kalkis, Kenneth Kay, James Vickery, and Marco Voinich** have been awarded **C.E. Strange Scholarships**. These scholarships were established through a generous gift in 1974. We could not find data about awards that far back but we very impressed to find that just since 1993, over \$70,000 in scholarships have been awarded to 140 of our students through this wonderful program. It is enabling students to cut back on outside employment and to focus on their academic work. The scholarships have also supported the summer field camp of virtually every geology major. Please consider contributing to our scholarship fund. Support for field camp is especially important because we do no longer offer field camp at CSUB anymore and students participate in field camps organized by other universities.



*Jennifer Shives, Paul Philley, Rick Schroeder, Brian Cunningham and Devon Hovis took the Southern Utah University field camp and mapped all over southern Utah. The pictures above show work on maps as well as Anne, Rick, Jenn, and Paul enjoying some well-deserved R&R on a weekend trip to Las Vegas.*

### **Student Accomplishments**

**Anne Draucker** presented her thesis research on the geochemical characterization of archaeological obsidian samples at the **2007 Goldschmidt Conference** in Cologne, Germany. Anne also won the 2007 statewide **CSU Student Research Competition** in Dominguez Hills. **Brian Taylor** presented his thesis work on diagenesis and porosity development in the middle to late Eocene Point of Rocks sandstone in the McKittrick oil field at the **2007 Annual Meeting of the Geological Society of America** in Denver. **Sarah Schindler** presented her work on the 3D fault geometry and offshore basin evolution in the Northern Continental Borderland at the **2006 International Workshop on Comparative Studies of the North Anatolian Fault and the San Andreas Fault** in Istanbul, Turkey. The thesis research of **Liz Golob** on the Kern River Ash was published in a 2007 paper in the journal *Quaternary International*. The senior research project of **Sara Draucker** was published in a 2004 paper in the journal *Geochimica Cosmochimica Acta*. Undergraduate student **Jennifer Kalkis** was selected as a 2007/2008 **CSUB Student**

**Research Scholar** for work on the geochemical analysis of chert samples associated with archaeological sites in southern France.

**Recent BS/BA Geology Graduates** include James Vickery, Brian Cunningham, Joshua Courter, Neil Durham, Ben Fleming, Joanna Oseguera, Katie O'Sullivan, Ben Nelson, Vanessa Perez, Carol Register, Rick Schroeder, Jennifer Shives, and Jonathan Walker.

### **Recent MS Geology Theses**

**Ariel Auffant** - Stratigraphy and paleogeography of the Calistoleum Zone, Etchegoin Formation, Elk Hills and Coles Levee Fields, San Joaquin Basin, California

**Leslie Boockoff** - Arsenic in groundwater from Water Bank Well 30S/25E-23H01, San Joaquin Valley, California

**Liz Golob** - Tephrochronology of four neogene volcanic units from California and Nevada, U.S.A., using laser ablation ICP/MS : implications for petroleum bearing formations in the San Joaquin Valley, California

**Anne Draucker** – Geochemical characterization of obsidian from the Coso Range, California by laser ablation ICP-MS as a tool for archaeological investigations

**Cari Meyer** - A Paleoclimate record from the Black Rock Subbasin of Lake Lahontan, Nevada, U.S.A.: 29,000-11,000 calendar years

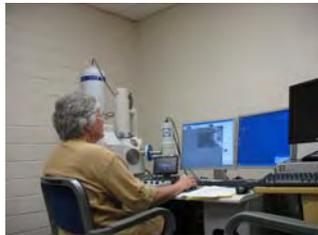
**Craig Byington** - An Integrated structural analysis defining structural and geochemical controls of petroleum migration near the 38 and 44 fault systems in the Midway-Sunset Oil Field, Kern County, California

**Sophia Luz Cobos** - Seismic sequence stratigraphy of late Miocene to Pliocene sediments in the Elk Hills Area, Southern San Joaquin Basin

**Brian Taylor** - Diagenesis and porosity development in the middle to late Eocene Point of Rocks sandstone in the McKittrick oil field, California

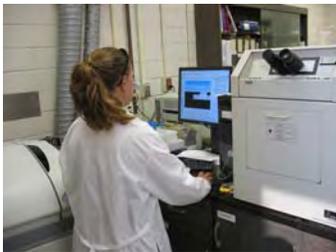
## NEW LABORATORIES AND FIELD EQUIPMENT

Just this spring we were able set up a brand new **Electron Microscopy Laboratory** with a Hitachi S-3400 variable pressure scanning electron microscope equipped with an Oxford



Inca energy dispersive x-ray spectrometer (EDS) and Gitan ChromaCL live color catholuminescence (CL) imaging system. The EDS detector measures the elemental composition of samples and the CL detector shows subtle, otherwise invisible textures such as zonation in crystals. Funding for the instruments was through a \$200,000 grant from the US Department of Defense to Bob and Dirk.

Our **Trace-Element Geochemistry Laboratory** was established through a \$200,000 grant from the US Department of Defense to Dirk and Bob. Its center is a Perkin Elmer Elan 6100 Inductively Coupled Plasma Mass Spectrometer (ICP-MS). Only a few mL of liquid sample are needed for quickly measuring most elements with sub parts-per-billion detection levels. A Cetac LSX-200 plus laser ablation sampler allows direct ICP-MS analysis of solids such as minerals and rocks. We also have an Parr Microwave Digester for dissolution of rocks, sediments, and minerals for ICP-MS analysis.



An exciting new addition to our field equipment is a **Giddings Coring Rig** for the collection of sediment cores and installation of shallow monitoring wells. We have used it for the collection of samples from the Tulare and Buena Vista Lake basins in the San Joaquin



Valley, Soda Lake in the Carrizo Plain, and Coyote Dry Lake in the Mojave Desert. It has also been used for investigations of the seismic history of faults. The rig was purchased as part of a grant from the National Science Foundation to Dirk and Rob.

The labs and equipment are available for appropriate analyses and projects from outside users. Do not hesitate to contact us if you have an interesting project, especially if it can provide research opportunities for our students.

## ALUMNI NEWS

This list is complete and accurate to the best of our knowledge but undoubtedly contains errors and omissions. Please send any corrections, updated addresses, news, and pictures for inclusion in future newsletters to Dirk Baron ([dbaron@csu.edu](mailto:dbaron@csu.edu)). We would love to hear from more of our alumni. Note that all degrees before 1985 were in Earth Science, afterwards in Geology.

**John Acord**, BS 1986, MS 1990, works for Oxy at the Elk Hills Oil Field, CA

**Fidelis Agbor**, BS 1992

**Richard Aldrich**, BS 2000, is a school teacher in the Lake of the Woods, CA area

**Michael Alexander**, BS 1975

**Anthony Amarante**, BS 1981

**Harry Angell**, BS 1997, works at Vintage Petroleum in Bakersfield

**Jason Anthony**, BS 1994, MS 2002 – last we heard from Jason he was working for *Shaw Environmental and Infrastructure*, a large engineering firm, in New Jersey.

**James Armstrong**, BS 1988

**Richard Armstrong**, BS 1980

**Ariel Auffant**, BS 1998, MS 2005, now works as a geologist for Chevron in Houston.

**Suzanne Baehr**, BS 1989, is a senior geologist for the URS Corporation in Bakersfield

**David Bates**, BS 1994

**Charles “Charlie” Bauer**, MS 2002

**Christy Beiber**, BS 1978

**Dave Beiber**, BS 1974

**Karen Bennett**, BS 2003

**Gregory Berg**, BS 1989

**Michael Blackwell**, BS 1993

**Cheryl Blume**, BS 1986

**Dean Boehler**, BS 1980

**Leslie Boockoff**, MS 2005 works for Chevron in Bakersfield in petrophysics.

**Floyd Bowen**, BS 1978

**Michael Bowery**, BS 1975

**Scott Briscoe**, BS 1993

**Bryan Bruce**, BS 1993

**Craig Byington**,  
MS 2005, works  
for Millenium  
Mining in  
Clancy, Montana.



**Meniford Canterberry**, BS 1973

**Christopher Carrisalez**, BS 1994

**Clifford Carter**, BS 1973

**Michelle Casterline**, BA 2001 – Michelle is now a Hydrogeologist with the Kern County Water Agency and also working on her graduate geology degree at CSUB.

**Rasa “Kay” Cates** (now Coodey), BS 2004 – Kay is currently working on her graduate degree in geology at CSUB.

**Richard Charboneau**, BA 1998

**Robert Chow**, BS 1973

**Michael Coburn**, BS 1987, MS 1996

**Sophia Luz Cobos**, MS 2006 – Sophia was our first international student to receive a graduate degree. She came to us from Venezuela and is now working for Oxy in Columbia.



**Kevin Coodey**, BA 2003, works for the Bureau of Land Management in Bakersfield.

**Florn Core**, BS 1974, is the Water Resources Manager for the City of Bakersfield.

**Joshua Courter**, BS 2005, works as a geologist for the US Forest Service in Porterville.

**Ronald Cribbs**, BS 1976

**Callie Cullum**, BS 1989

**Brian Cunningham**, BS 2006

**Kevin Danley**, BS 1994

**Thanh Dao**, BS 1996, last we heard, Thanh works for Oxy International in Houston

**Flora Darling**, BS 1983

**Rick Darke**, BS 1977

**Robert Diosi**, BS 1976

**Anne Draucker**, BS 2003, MS 2007 – Anne just completed her masters thesis on the geochemical characterization of obsidian samples from the Coso volcanic field. This project was in collaboration with our archaeologists. She presented her work this summer at the Goldschmidt conference in Cologne, Germany. She is now working as a geologist for Chevron in Bakersfield.

**Sara Draucker** (now Ante), BS 2002 – Sara went to the University of Nevada, Reno for her graduate work. She completed a MS Geology thesis on thermoluminescence dating of sediments from off the coast of Antarctica and got to go on a research cruise to Antarctica to collect her samples. She is now a geologist with Chevron and is leaving any day now for a two-year assignment in the Duri oil field on the Indonesian island of Sumatra.



**Richard Durbin**, BS 1972 – Richard is one of two alumni in our first graduating class. We would love to hear from him.

**Neil Durham**, BS 2005, is currently working in Bakersfield for Clear Creek Systems, Inc. as an Engineering Project Manager.

**Kathy Edwards**, BS 2002

**Daniel Erbes**, MS 1993, works as hydrogeologist for the Bureau of Land Management in Carson City, Nevada

**Anne Falcon**, BS 1988, works as geologist for the Bureau of Land Management in Bakersfield

**Alan Febus**, BS 1989

**John Ferguson**, BS 1974

**Ben Fleming**, BS 2006

**Dayne Frary**, BS 1979

**William Galloway**, BS 1972 – William is the other alumnus from our first graduating class. We would love to hear from him.

**Lance Garcia**, BS 1977

**Boyd Getz**, BS 1980

**Lee Gholz**, BS 1973

**Joy Gillick**, BS 1997

**Rene Glass**, BS 1989

**Elizabeth Golob**, MS 2005 – Liz' work on the chemical characterization of a prominent volcanic ash layer in the Kern River formation has just been published in the journal *Quaternary International*. It suggests that the Kern River formation is much older than previously thought. Liz now lives in Colorado with her husband and two kids.

**Jacinto Gonzalez**, BS 1976

**Dennis Green**, BS 1990 - last know position was with Landmark Graphics (aka Halliburton) in Houston.

**Jatinderpal Grewal**, BS 1994

**Michael Griebing**, BS 1979

**Elihud Grijalva**, BS 1989, last we heard, Eli was with Chevron, USA, in San Ramon, CA

**Karin Hagan** (formerly Faber), BS 1997, MS 2002

**Kevin Hamilton**, BS 1989, MS 2000 now is a Waste Management Specialist with the Kern County Waste Management Department. He led a very interesting field trip looking at the groundwater monitoring system at the Bena landfill for our hydrogeology class a couple of years ago.

**Mark Hamilton**, BS 1979

**Greg Hammett**, BS 1996, is the General Manager of the Belridge Water Storage District.

**Dawn Hanson**, MS 1998

**Khalil Hassan**, BA 2004, works for Halliburton in Bakersfield

**Patrick Hauptman**, BS 1983

**William Hawes**, BS 1978

**Mitchell Herd**, BS 1995, last we heard, Mitchell is with Oxy International in Houston, TX

**Gene Hershberger**, BS 1979

**Adam Herrera**, BS 1997 – Adam writes “*I graduated in 1997 with a BS in Geology and a BS in Physics. I worked in the oilfields for 7 years, prior to my career change. I am now in my third year of teaching Earth Science at North High School. I am currently enrolled in the master's program at Point Loma Nazarene University for Teaching and Learning. I have recently returned to CSUB in hopes of earning a second master's degree in Geology. I have a wonderful wife Deborah and four awesome kids, Nicholas, Anita, Bianca and Isaiah*”. Adam and Deborah were among the K-12 teachers who worked with us over the last years in our summer research participation programs funded by the National Science Foundation.

**Bill Hluza**, BS 1998, works for AERA Energy in Bakersfield

**Daniel Holland**, BS 1978

**Karla Hoobler**, BA 2004

**Barbara Houghton**, MS 1994, is a hydrogeologist with the County of Kern.

**Devon Hovis**, BS 2004

**Patrick Howard**, BS 1997

**Cynthia Huggins**, BS 1983, is a geologist at AERA Energy in Bakersfield

**John Huff**, BS 2002, works as a geologist for CA DOGGR in Cypress, CA

**Carl Hulick**, BA 1984

**Hal Hynds**, BS 1979

**Ellett Jackson**, BS 1975

**Christopher Jamison**, BS 1994

**Robert Jelaca**, BS 1988

**Richard Jewell**, BS 1973  
**Joseph Johnson**, BS 1992, works as a geologist for Oxy International in Houston, TX  
**Christopher Jones**, BS 1995  
**Grant Jones**, BS 1992  
**Richard Jones**, BS 1975  
**Harvinder “Nikki” Kaur**, BS 2000  
**F Kirn**, BS 1988  
**Lori Kloesel**, BS 1997  
**Melvin Krause**, BS 1975  
**Tara Kuhn**, BS 1997  
**Harmon Larue**, BS 1974  
**Dwight Lee**, BS 1986, is a consulting geologist working out of the Sierra Valley area in northern CA  
**Lea Lehman**, BS 1973  
**Tim Lester**, BS 1985, last we heard owns a geotechnical company in the San Diego area  
**Robert Lewy**, BS 1982, teaches high school science at East High School in Bakersfield and geology at Bakersfield College.  
**Robert Lisenbee**, BS 1976  
**Timothy Long**, BS 1996  
**Katherine Longcrier**, BS 1977  
**Oscar Lopez**, BS 1973  
**William Lowry**, BS 1996  
**Christine Luther**, BS 1994  
**Charles Magee**, BS 1994, last we heard works for Kern County Solid Waste Department  
**Adam Mahan**, BS 2001, works as a geologist for Aera Energy in Bakersfield.  
**Andrew Marinello**, BS 1988  
**Frank Martens**, BS 1975  
**Laura Martin**, BS 1994  
**Kyle Mayborn**, BS 1991, went on to pursue a Ph.D. at UC Davis and is now an associate professor at Western Illinois University.  
**Janet McAlee**, BS 1996, works as a geologist for Bonanza Creek Energy in Bakersfield  
**Michael McCray**, BS 1994, works as a geologist for Oxy at the Elk Hills Oil Field, CA  
**Marc McCulloch**, BS 1993

**Patrick McCullough**, MS 1995  
**Inge McDonald**, BS 1984, is the New Ventures Manager at Pearl Exploration and Production in Calgary, Alberta  
**Cari Meyer**, MS 2005, is a geologist at Soils Engineering, Inc., in Bakersfield  
**Gregory Middleton**, BS 1990  
**Edward Eugene Miller**, BS 1978 - Edward is the President of Gas TransBoliviano S.A. ([www.gtb.com.bo](http://www.gtb.com.bo)) in Bolivia. He writes “*I have been working and living in South America for the past 25 years. Currently in Santa Cruz, Bolivia working for GTB -the pipeline company that provides gas for Sao Paulo, Brazil. Prior to Bolivia, I lived 10 years in Argentina with YPF S.A. - an international oil company. I would love to hear from classmates...*” Thanks Edward, for prompting us to finally work on a department newsletter!  
**Michael Minner**, BS 1997, is a geologist for Chevron, USA, in Bakersfield  
**Charles Moore**, BS 1991  
**Jonathan Mullings**, BS 1993  
**Ben Nelson**, BA 2005  
**Mary Newman**, BS 1977  
**Geoffrey Nicholson**, BS 1974, is back in Bakersfield as a consulting geologist after almost 20 years in Saudi Arabia with ARAMCO  
**Erik Oehlschlager**, BS 1997  
**James Ogilvie**, BS 1975  
**Joanna Oseguera**, BS 2006, works for Oxy at the Elk Hills Oil Field in Bakersfield  
**Katie O’Sullivan**, BS 2005, is now a Ph.D. student at the University of Notre Dame pursuing her interest in the geology of the solar system and working with rocks from the moon. How cool is that!?  
**James Ostdick**, BS 1993, MS 1997 – Jim teaches high school in some beautiful place on the central California coast. He continues to hike sections of the Pacific Crest Trail every summer. Last summer we heard about his adventures traversing Oregon, battling monster mosquitoes much of the time before finally

hiking down the beautiful Eagle Creek Trail to the Columbia River and crossing over to Washington state. Here is a picture of a happy moment with Jim on the rim of Crater Lake.



**John Otto**, BS 1975

**Peggy Panero**, BS 1978

**Kathy Parker**, BS 1985 MS 1993, works as an air quality control specialist for Insight Environmental in Bakersfield

**Nedra Peace**, BS 1975

**Dawne Pennell**, MS 1997, is a geologist for AERA Energy in Bakersfield

**Vanessa Perez**, BS 2005, works as a geologist for CA DOGGR in Cypress, CA

**Paul Philley**, BS 2004 – Paul went on to receive his MS in Urban Planning from UCLA and is now an Urban Planner for the City of Sacramento.

**Daphne Porter**, BS 2000 – last we heard from Daphne, she was a science teacher at Arvin High School.

**Michael Quilliam**, BS 2001, works for Plains XP in Bakersfield

**Frances Razo**, BS 1997

**Carol Register**, BS 2007, is now working on a graduate degree in anthropology at CSUB. Below is a picture of Carol with her poster at the International Geological Congress in Florence, Italy.



**Kenneth Renz**, BS 1980

**Keith Roberts**, BS 1977

**Bill Robin**, MS 1991

**William Rosica**, BS 1981

**Juan Santiago**, BS 2005, works for Oxy and has also started his graduate work in geology at CSUB.

**Lorelea Samano**, BS 2003, works for consulting firm Insight Environmental and is also finishing up her graduate degree in geology at CSUB.

**Michael Sarad**, BS 1977

**Justin Schimnowski**, BS 1994

**Rick Schroeder**, BS 2004, is finishing up his Ph.D. dissertation at the University of Calgary. We saw his interesting talk about his research on seismicity at depth and surface geomorphology of the Maacama fault zone in the northern California coast range at the 2007 GSA meeting in Denver.

**Dean Seaton**, BS 1979

**Dewey Shanholtzer**, BS 1977

**Andrew Sherman**, BS 1997

**Jennifer Shives**, BS 2005, is working on her graduate degree in Geology at CSUB.

**Frank Slinkard**, BS 1977

**Ronald Smith**, BS 1994

**Timothy Smith**, BS 1994

**Marty Smithey**, BS 1983

**David Stanton**, BS 1977

**Daniel Steward**, BS 1992, MS 1997, is now a geologist with Noble Petroleum in Houston doing deep-water exploration/production in the gulf.

**George Stewart**, BS 1978

**Steve Story**, BS 1977

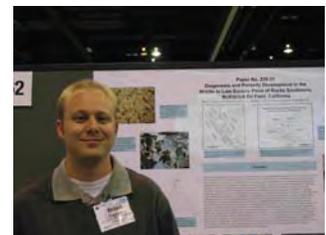
**Patricia Stubblefield**, BS 1973

**Robert Swartz**, BS 1992, MS 1995 - after working for the California Department of Water Resources for many years, he is now a senior project manager for the Sacramento Groundwater Authority.

**Brian Taylor**, BS

2003, MS 2007, presented his thesis work on diagenesis and porosity development in the middle to late

Eocene Point of Rocks sandstone in the McKittrick oil field at the 2007 annual meeting of the GSA in Denver.



**Don Terndrup**, BS 1981

**Brett Thompsett**, BS 1997, last we heard worked as a Baker Hughes as directional drilling specialist. Scott was also one of the founding members of Mento Buru, Bakersfield's home-grown Ska band.

**Kent Thompson**, BS 1978

**Michael Thompson**, BS 1997

**Myron Tiede**, BS 1991

**Michael Toland**, BS 1982

**David Umali**, BS 1997, works for AERA Energy in Bakersfield

**Joel Waldrum**, BS 1973

**Jonathan Walker**, BA 2005, teaches science at North High School in Bakersfield also pursues his professional photography work.

**Michael Walters**, BS 1975

**Eric Wardlaw**, BS 1991

**Robert Wells**, BS 1978

**Matthew Woessner**, BS 1989, last we heard, Matt teaches high school science in northern Kern County

**Jeffrey Wussow**, BS 2002

**G Young**, BS 1974

**Mladen "Sam" Zic**, MS 2001, recently had his thesis research published in a fine paper in the journal *Geology*.



*CSUB Geology future alumni (aka current students) and faculty on the fall 2007 Friends of the Pleistocene trip to the Manix Basin of the Mojave River.*

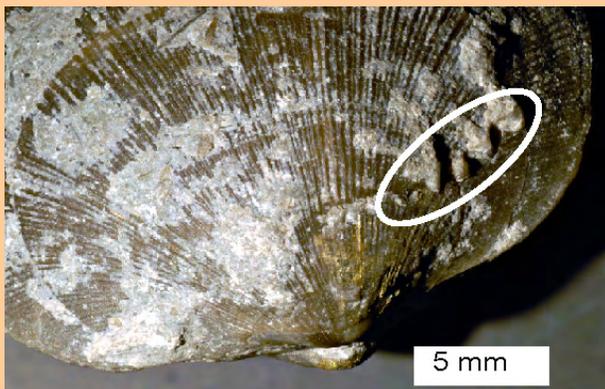
## STEVE MITCHELL FOSSIL COLLECTION

When **Dr. Steve Mitchell** retired, he bequeathed the Geology Department a sizable collection of his research fossils. **Dr. Chris Schneider**, a paleontologist who worked for us for one year as a lecturer, and **Dr. Lindsey Leighton**, a professor of paleontology at San Diego State University, reviewed the collection. They found that the collection has extraordinary scientific value and contains many specimens that are irreplaceable because the locations where they were collected have since been destroyed by construction and other development. They strongly urged us to re-organize the collection and make it available to the broader scientific community.

Chris writes:

*The maintenance of this collection is critical because of the rarity of these fossils in other fossil repositories worldwide and the scientific importance of these specimens. Particularly, the localities of many of the specimens no longer exist; they now are destroyed by housing complexes and other structures. Many of these rare collections are second only to the University of Michigan Paleontology Museum Devonian Period fossil collections; worldwide, no other collection of Michigan fossils from the Devonian Period can compare with the collections of the University of Michigan or the CSUB Mitchell fossil collection, in terms of size, extent, and quality of specimens. The importance of the Devonian portion collection is also exhibited in the nature of the specimens themselves. Rather than simply representing single specimens of brachiopods and snails, this collection also is special in that it houses fossils that contain direct evidence of fossil interactions, mainly scars from predator attacks on fossil specimens and the complicated relationships of the encrusting organisms attached to fossil shells. Although many other fossil collections of the same age show similar interactions, this collection is extraordinary in that it contains a high quality of preservation of these interactions. Although the Devonian Period fossils from Michigan in the Mitchell collection are spectacular in their scientific value, the remaining collection may be of equal value. So far, initial cataloguing efforts and my research have only encompassed the Devonian collection; however, I noted in my perusal of the rest of the collection some very special fossils, such as several from the world-famous and highly restricted Burgess Shale, and some from the Permian Glass Mountains, also closed to collection.*

Chris and Lindsey have developed a plan to curate the collection and to make it available to the scientific public at large. They estimate that the total cost for new cabinets, specimen trays, development of an online data base, and student assistants to work on this would be \$25,000. They developed a step-by-step plan so this work can begin with a small amount of funding and continue and be completed as we procure more funding. Chris has volunteered to oversee this task if we can raise the money. **Please consider donating to this worthy project.** Below is a description of a cool first result from Chris' and Lindsey's work with the collection. It is significant enough that they are preparing a manuscript for the journal *Science* about these findings!



### ***Mitchell Collection – Exciting Brand-New Research:***

*For decades, paleontologists have studied predation scars, or traces that remain after unsuccessful attacks by predators, in Paleozoic brachiopods. Until now, the identities of the predators causing these scars have only been inferred. In the Mitchell collection of CSU Bakersfield, L. Leighton and C. Schneider have discovered the remains of phyllocarid arthropod mouthparts embedded in a brachiopod shell, complete with a zig-zag predation scar. This unique find will have far-reaching impacts on the study of interactions between Devonian predators and their prey.*

# Donations

If you want to donate to the department, please fill in the form below and send it with your check to

**California State University, Bakersfield**  
**Department of Geology**  
**62 SCI**  
**9001 Stockdale Highway**  
**Bakersfield, CA 93311**

Please make your check payable to **Geology Department Trust Account MX083** and indicate if you want your donation to go to one of the specific causes listed below.

Name: \_\_\_\_\_

Affiliation (if applicable): \_\_\_\_\_

Address: \_\_\_\_\_

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Email: \_\_\_\_\_

Please indicate the amount you want to donate:

\$50    \$100    \$200    \$500    \$1,000    Other \_\_\_\_\_

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

- Student Scholarships (will be added to the existing CE Strange Scholarship Fund)**
- Undergraduate Student Research**
- Curation of the Mitchell Fossil Collection**
- Unrestricted**

**Thank You!**



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