Dennis Newell is the new low temperature geochemist in the Department of Geology! His research interests and background are diverse, but broadly speaking, he researches the geochemical interactions between fluids and rocks in the crust, particularly at tectonically-active regions of the Earth. He is interested in the origins and history of those fluids, their link to fault zones, magmatism and the seismic cycle, and how they interact with and impact groundwater quality. In addition to research on fluid-rock interaction in active mountain belts, he also works on environmental and energy geoscience problems, such as unconventional fuels, geothermal energy and the geologic sequestration of carbon dioxide. Dennis is looking forward to starting some new and exciting research projects here in Utah, and to offering a variety of undergraduate and graduate courses in geochemistry. Plans for graduate courses include teaching aqueous geochemistry, stable isotope geochemistry and leading a range of seminar-style courses on cutting edge geochemical topics of interest to the current student body. (continued on page 2)

Jim Evans Receives National Teaching Honor

Professor James Evans was the 2013 recipient of the American Association of Petroleum Geologists Foundation Professorial Award.

Evans is the second recipient of the newly established honor that recognizes university professors for “excellence in the teaching of natural resources in the earth sciences.”

“In surveys, our students consistently identify Jim as the most highly regarded advisor in our department,” says Dave Liddell, Department Head. “He funds his students’ research projects, but, more importantly, he provides them with encouragement and unlimited quantities of his time.”

Evans has been with the department since 1987. He teaches a diversity of courses, including upper-division geology courses, introductory and honors courses, Geology Field Camp and graduate offerings. He has also led two groups of students who have participated in the Imperial Barrel Award competition, which is a joint AAPT/AAPG Foundation program.

An article on Evans was published in the July issue of the AAPG EXPLORER.
New Faculty Member, Dennis Newell, continued

Prior to moving to USU, Dennis did his postdoctoral work and several years as a research scientist at Los Alamos National Laboratory in New Mexico.

His work there was experimental in nature, simulating rock-fluid geochemical reactions at pressures and temperatures relevant to the geologic conditions of carbon sequestration, enhanced geothermal systems, and unconventional fuel development. For his doctorate, he attended the University of New Mexico in Albuquerque researching the geochemistry and geomicrobiology of CO2-rich mineral springs in the southwestern U.S. and in the Everest region of Tibet. His Master’s work at Colorado State University focused on the sedimentary geochemistry and fluvial architecture of the Morrison Formation in western Colorado, and he started his journey as a geologist during his BS at New Mexico Tech in Socorro, NM. In addition to academic and research training, he also has 10+ years of professional experience as an environmental geologist gained between degrees.

Dennis says, “Being a geologist is really a way of life, and I attribute my early interests in rocks and big mountains to growing up in the southwestern U.S. and the outdoor lifestyle that my parents encouraged. In my spare time I enjoy mountain biking, mountain climbing, fly-fishing, Nordic skiing and chasing after our four dogs.”
Project Hotspot

Project Hotspot: the Snake River Scientific/Geothermal Drilling project, ended officially on 30 June 2013. This $7.3M project, which drilled 3 deep test wells in southern Idaho, was funded by DOE, ICDF, the USAF, and university cost share. Hotspot supported five graduate students at USU (Katie Potter, James Kessler, Marlon Jean, Chris Sant and Thomas Freeman) who did a great job, not just on their thesis projects, but also contributed long shifts at the drill sites. At its peak, Hotspot employed about a dozen staff geologists and technicians (most of whom were recent BS graduates from USU or USU undergraduates), who rotated between the drill sites and core lab built for this project in the Art Barn and worked long hours. Jim Evans and Tom Lachmar were also crucial to this project.

The project was a success both as a scientific research endeavor, producing a wealth of knowledge about the volcanic history of the Yellowstone hotspot track, and as a geothermal endeavor, finding an electric grade geothermal resource at Mountain Home Air Force Base. We are now compiling our final reports and hope to respond to a new proposal request this coming Fall.

Alexis Ault to Join Faculty Fall 2014

I am excited to join the department in August 2014 as a new Assistant Professor in geochronology, thermochronology, and continental tectonics. My research integrates field observations with innovative chronologic tools to investigate surface and crustal processes in both active orogenic and cratonic settings. I grew up in Williamsburg, VA and obtained my bachelor’s degree from Wellesley College, majoring in both geology and political science. One of my first research experiences involved serving as a geology field assistant in remote northern Saskatchewan for two consecutive summers. I worked in a spectacular exposure of deep crustal rocks called the Snowbird Tectonic Zone, which provided insight into deformation and metamorphic processes in the lower crust. My honor’s thesis combined geologic mapping and high-precision U-Pb geochronology done at MIT to characterize and constrain the timing of sedimentation and volcanism in the southern part of the Boston Basin, MA. These undergraduate field and research experiences laid the foundation for my desire to pursue graduate work and a career in the geosciences.

I then moved to Albuquerque, NM for my MSc degree. My MSc research integrated fieldwork, petrology, geochemistry, and fluid-inclusion analysis to explore fluid-rock reactions and resulting feedbacks between deformation and metamorphism in mid-crustal rocks exposed in the central Alps. I also used paleomagnetism to evaluate the timing of faulting on a major strike-slip fault zone in north-central New Mexico. Following the completion of my MSc in 2007, I moved to Boulder, CO to pursue my PhD. My PhD research focused on interaction of surface, deep crustal, and mantle processes in cratonic regions. I used apatite (U-Th)/He thermochronology to resolve the surface history of the Slave craton in the northwestern Canadian shield. I also combined field observations with automated mineralogical analysis and a new U-Pb geochronology approach to locate and date mafic dike zircons as small as 5 microns in mafic dikes in the northwestern Wyoming craton.

I am presently a National Science Foundation Postdoctoral Fellow at the University of Arizona, Tucson. My postdoctoral research involves two different research avenues. First, I am reconstructing the surface history of ancient rocks exposed on Baffin Island in the eastern Canadian Arctic using apatite (U-Th)/He, apatite fission track, and zircon (U-Th)/He thermochronometry. I had the opportunity in the summer of 2010 to fly around Baffin Island in a helicopter and collect rock samples. Coupling of thermochronology data from these samples with independent geologic constraints resolves spatio-temporal patterns of burial and unroofing across the island in unprecedented detail and helps establish links between surface processes and near-field plate boundary activity. Secondly, I also have been using Fe-oxide (U-Th)/He geo- and thermochronology to constrain fluid flow, mineralization, and exhumation/deformation in the shallow crust through a series of studies in the western United States. Fe-oxides are ubiquitous in near-surface environments, and I hope to use this new dating technique in the future to constrain the timing of brittle deformation in locations such as the Wasatch Front.

I am looking forward to becoming a part of the USU Geology department and to involving both undergraduate and graduate students in my research. I am also an endurance mountain biker and can’t wait to hit the trails in the Bear River and Wasatch Mountains!
USU Professors Find New Lake Bonneville Answers

Geology professor Susanne Janecke and emeritus professor Bob Oaks, Jr. have been researching the question: “What caused Lake Bonneville to lose more than 1150 cubic miles of water in approximately one year?”

Janecke explains, “For roughly a thousand years, Lake Bonneville flowed steadily into a river at the outlet point without lowering the lake depth. Then something drastic must have happened to produce the catastrophic Bonneville flood.”

Their research began when Janecke observed a meander belt in northern Cache Valley. “Previous documented outflow points of the lake had been recorded much farther north than our findings,” said Janecke. This information led them to investigate the potential impact and meaning of the southern outflow point of Lake Bonneville.

Oaks and Janecke made digital elevation models and detailed topographic profiles of the landscape in northern Cache Valley. They discovered a new fault along the northeastern edge of Cache Valley in Idaho and named it the Riverdale fault.

The Riverdale fault has been active in the last 20,000 years. Using cross-cutting relationships to understand the fault activity, Janecke and Oaks found the fault to have ruptured about the same time as the Bonneville flood. Janecke hypothesized that an earthquake on the Riverdale fault would have had a large enough impact to trigger the Bonneville flood. They both agree that more research is needed to prove their theory.

Janecke and Oaks’ research spanned a period of ten years and was published in Geosphere. Oaks and Janecke will continue to research the Riverdale fault and will continue to involve geology undergraduate students.

Ken Carpenter Busy at USU Eastern Prehistoric Museum!

Ken Carpenter, director and curator of USU Eastern Prehistoric Museum, continues to make the news. This spring was the unveiling of Peloroplites cedrimontanus, one of the largest armored dinosaurs ever found. Its name means “armored monster from the Cedar Mountain,” in reference to the formation from which the bones were found. Peloroplites adds to a growing number of ankylosaur dinosaurs from Utah.

“There are more species of ankylosaurs in Utah than in any other state,” said Carpenter. Only Mongolia and China have more.

The dinosaur, from the Early Cretaceous period, was discovered in the Cedar Mountain Formation south of Price, at the north end of the San Rafael Swell. It was a four-legged, slow moving titan that weighed around five tons. Peloroplites was an herbivore, and its body was encased in armor bones for protection against large predators. The armor includes long spines along the sides of the body.

Paleontologists are currently studying several other dinosaur skeletons that were found at the same site, including one with a long neck and long arms as well as bones from a flying reptile.

New Genus of Ancient Marine Reptile Uncovered

A whole new genus and species of marine reptile was identified by Carpenter and two of his colleagues, Bruce Schumacher and Michael Everhart. After five decades of mistaken identity, the team named the 25-foot leviathan Megacephalosaurus eulerti, meaning “Eulert’s great-headed reptile.”

“It has a huge skull—almost five feet long with big, bone-crushing teeth,” Carpenter said. That would make the individual about 30 feet long. The discovery of this giant is presented in an article in the Journal of Vertebrate Paleontology, coauthored by Carpenter.
New Geology Museum Opens Its Doors

The Geology Museum, which was mentioned in the last newsletter, is finally a reality. It has been a long undertaking, starting with the theft of specimens from our hall displays, their eventual recovery by the USU Police Department and identifying a central place to house the collections. The undergraduate computer room was shifted from G203 to G207, and G203 was painted and newly carpeted. A.J. Knight, Shawna Olsen and Michael Strange tackled the huge task of moving 16 heavy display cases and their contents into the new museum space. Michael has created awesome educational displays on everything from meteorites to dinosaurs. Susanne Janecke created an exhibit on structural geology. Paul Jamison and Tyson Hunter donated many beautiful fossil specimens from the Green River Formation. The USU Eastern Museum in Price loaned dinosaur material for our displays. The next time you are in Logan, please stop by and take a look! (Or, visit us on our website at http://geology.usu.edu/htm/geology-museum.)
Ben Burger

This past year, I have spent a lot of time in the field with students working on locating climatic shifts during the Eocene Epoch, and documenting how these climatic events affected the mammalian communities living here in Utah, as well as southwestern Wyoming. Working with students, a number of fossil localities within the Uinta Basin Duchesne River Formation as well as in the Washakie Formation of Southern Wyoming were located, producing small mammals such as fossil rabbits (Mytonolagus), rodents (Protopteryx), but also large rhino-sized mammals, such as the bronothere (Diplacodon). Rock samples for carbon isotope analysis were collected, in the hope of identifying a global warming event in the rock record of Utah (the Middle Eocene Climate Optimum) that occurred 40 million years ago and was first identified from ocean sediment cores drilled off the coast of Antarctica and now confirmed at numerous global sites. The question is whether this global event caused a turnover of mammal species that occurred in Utah which separates the Uintan and Duchesean North American Land Mammal Ages. I have also been teaching a graduate level course in Paleontology and Paleocology.

Carol Dehler

Carol is on sabbatical leave for one year (2013-2014) and will be living in Santa Barbara, California and doing field research in Death Valley.

Jim Evans

Many efforts have come to fruition this year. Due to the ARRA funding that started in 2009, a number of students are finishing their projects and moving on with life. Rebekah Wood [MS] defended in the spring, and is working at the Utah Geological Survey; by the time you read this, Dave Richey [MS] and Mitch Prante [PhD] will have defended and started jobs with Anadarko and Shell, respectively. Dave examined the structure and mineralization of the Iron Wash fault, on the eastern flank of the San Rafael Swell, and Mitch examined a variety of fault structures that have evidence for seismic slip. Mitch also developed a clever, low-cost method to digitally scan and quantify the nature of outcrops, and pushed the envelope in terms of studying slip surfaces. Students soon to defend include Elizabeth Petrie and James Kessler [PhD], and Santiago Flores [MS]. Liz has examined the nature of seals, and how they might fail, and James is examining the structures in core from project Hotspot. James spent time at Doug Schmitt’s rock mechanics lab this winter and did internships at Golder in Seattle, Oxy in Bakersfield, and EnCana in Dallas. Santiago is examining the structure and alteration at a reservoir – seal interface along the eastern San Rafael Swell and did a summer internship at Chesapeake, in Oklahoma City. Leslie Clayton continues on a similar topic where small faults cut into the seal.

The winding down of the ARRA-funded work entails writing up the results and developing new work. Due to the amazing quality of the current students and their support in many ways, this has been a pretty pleasurable job. We are aiming to take the work on reservoir-seal problems and faulting into the realm of induced seismicity where, with folks at New Mexico Tech, Los Alamos and Sandia National labs, we hope to determine if the hydrogeologic conditions under deep waste injections may, or may not, induce earthquakes. Other accomplishments for the year was a 3rd place finish at the AAPG – IBA Rocky Mountain regional competition [the first place winner went on to win it all], and some new teaching ideas implemented in Petroleum and Structure. We are also working on renovating some space in the building, so if you stop by, we can show you some of the upgrades.

Michelle Fleck

At the Price Campus, we continue to offer several sections of GEO 1010 Introduction to Geology as a Physical Science General Education course. During the 2012-2013 year, we also offered three sections of USU 1360 “Planet Earth” for the first time as a face-to-face course in Price. Sixteen students enrolled in GEO 1110-1115 Physical Geology & Lab during the Fall of 2012, and those students enjoyed four field trips: Arches National Park, Big & Little Cottonwood Canyons in the Wasatch Mountains, the San Rafael Swell, and the Gordon Creek dikes west of Price.

Susanne Janecke

Hi friends and alumni of the Geology Department. Our community is so close knit that most of you may have already heard that we lost our wonderful 15 year-old daughter Karen F.J. Evans in February to a mental illness. The help and great support of our students, colleagues, staff, and alumni (plus family and friends) made this very difficult time more
Susanne Janecke (continued)
bearable, and we thank you all for your many large and small efforts, kind thoughts and support. Liz Petrie, Mitch Prante, and Dave Richey stepped in to teach Structural Geology and advise the IBA team for Jim for several weeks, and we really appreciated all the nice cards, emails, and vast flower arrangements and plants sent from the department and USU friends. The road to a new normal will surely take another year or so, and we are lucky that our work of teaching and learning about our earth help on the road to healing. We find that extra exercise and more field work suit us especially well right now. The geology department was awesome, and we, our families, and friends were/are so impressed and appreciative of you.

On the geology front, I taught a fun neotectonics and hazards project at field camp along the Wasatch fault near Willard, Utah. If our field camp students were in charge of making setbacks and restricting development along the Wasatch front, there would be fewer casualties and much less damage—with little housing allowed in active geologic zones. Steve Thornock successfully defended his thesis about mutually interfering and active strike slip faults in the greater San Andreas fault system. His new job in Dallas is going well, and the thesis will be in the library soon. Dan Markowski is my first student to work on the NE side of the Salton Trough, and one of our most exciting finds is the discovery that the southernmost few kilometers of the San Andreas fault are buried under Pleistocene sediment. The fault was deactivated there and stepped east to a new position about 1-1.5 Ma. Next field season’s top task is to locate the brand new trace of the San Andreas fault that must have formed during this major reorganization.

Tom Lachmar
I am still teaching ground water geology every fall semester and techniques of ground water investigations every other spring semester. Now that Dennis Newell has been hired to replace Pete as our department’s geochemist, I alternate teaching physical geology with him in fall semesters and with Joel in spring semesters, so I only teach it twice every two years. As you may remember, I’m also the undergraduate advisor, so that takes up quite a bit of my time, too.

Both of my two most recent graduate students have found gainful employment. Thomas Freeman returned to Florida where he’s working as a hydrogeologist. Hannah McDonough is employed by GeoEngineers in their Tacoma, Washington office. Thomas defended his thesis at the end of April, and Hannah’s thesis is nearly ready to defend.

Other than Thomas and Hannah, I’ve had contact with two of my other former graduate students during the past year. Tom Nelson left Bio-West here in Logan to work for the Sullivan International Group, another environmental consulting firm, in Culpeper, VA. Kevin Randall left GeoEngineers in Spokane, WA to accept a position with Campbell Scientific here in Logan. Both Tom and Kevin have recently had the results of their thesis research published.

For those of you whom I’ve left out, please contact me and let me know how and what you’re doing. As always, I wish each and every one of you all the best in both your professional and personal lives.

Blair Larsen
During the last year I have been busy teaching Planet Earth, Introduction to Geology, and Natural Disasters to non-majors. I also serve on the board of Science Unwrapped - a free, monthly presentation series, open to the public and hosted by USU’s College of Science. This past year, the geology department was involved in presenting several presentations, including “Science Un-Raptor: Dinosaurs” by Ben Burger and “Nature’s Ancient Stories.” In my spare time, I host ‘Fresh Folk’ - a segment of Utah Public Radio dedicated to folk music which airs every Saturday evening.

Dave Liddell
Despite the time constraints imposed by being Department Head I still manage to get out and look at rocks on occasion. Heidi Pearce completed her Plan B thesis on the Ordovician Garden City Formation bioherms in December. Ryan Jensen defended his MS thesis on the sequence stratigraphy of the Cambrian Bloomington Formation this summer. Kirsten Bahr is collecting some of the last data needed for her thesis on the structural and lithologic controls on cave formation in the Tony Grove area. Undergraduate Michael Strange has completed his project on soft-bodied preservation in the Cambrian Spence Shale and is now turning his attention to the soft-bodied preservation of arthropods in the Cretaceous Frontier Formation of Wyoming. Undergraduate Kenny Kehoe has just embarked upon a project looking at the sequence stratigraphy of the Ordovician Garden
Dave Liddell (continued)

City Formation. Finally, I am very pleased to announce that Colter Davis (BS 2009) has returned to USU to work on a Master’s project with me this Fall – something to do with Lower Paleozoic marine carbonates, fossils and sea level.

My wife, Saundra, and I have been enjoying kayaking and road biking this summer, along with (too infrequent) camping trips to Wyoming. Our daughter Jessica has completed two Master’s Degrees at Tulane (Social Work and Public Health) and is now in Ethiopia working for USAID. We look forward to seeing her upon her return in December. Daughters Katie and Allison are both students at the U of U. (Why is it that there are no Aggies in this family?)

Tony Lowry

After promotion to Associate Professor this past year, I took a (Logan-based) sabbatical to catch up on an ever-growing backlog of research commitments. Current research efforts in the Geophysics group are spread (thinly!) between three projects: one aimed at understanding ductile flow properties of the US lithosphere using EarthScope seismic and geodetic data, a second continuing to examine GPS postseismic deformation in the Andaman Islands following the 2004 Sumatra-Andaman earthquake, and a new project aimed at improved seismic imaging of the US midcontinent, with a goal of better understanding the origins of the stable core of North America and deciphering its gravity and magnetic anomalies.

Eric Beard defended his MS thesis on a new method to measure shoreline heights from elevation data in July 2012, adding 45 new measurements to existing data sampling, and is now at Shell in Pittsburgh. Lisa Seunarine is currently putting the finishing touches on her study of lower crustal flow from isostatic relationships of deep mass to topography. Xiaofei Ma, who entered the geophysics program as a PhD candidate last year, is getting intriguing results from his seismic imaging of US crustal structure at more than 3000 US-Array and other sites in the US. Other research results in the past year include efforts to characterize lithospheric and asthenospheric contributions to western US topography, and development of a preliminary approach to estimating ductile flow rheology using isostatic analysis. The latter suggests that modern Cordilleran deformation is controlled by composition and water as much as by temperature, with exciting implications for seismic hazard and the nuts-and-bolts of orogenesis. Two new students, Dan Knapp and Brian Hestetune, joined the group in August. And, we’re looking forward to the arrival of Ravi Kanda and his family, a newly-hired postdoctoral fellow. Ravi received his PhD at Cal-Tech and is currently finishing up a post-doctoral position at National Taiwan University.

Personal highlights from this past year included a trip to the European Geosciences Union meeting in Vienna to give an invited talk on lithospheric flow rheology, followed by a two-week trip to the National Geophysical Research Institute in Hyderabad (India) to visit Ashutosh Chamoli (a recent Indo-US Science and Technology Transfer Fellow here at the department). There Ashutosh and I completed a paper examining widespread transient deformation events in the Basin and Range province, and we cemented plans to collaborate on a GPS deformation project in his home state of Himachal Pradesh (Himalaya).

Dennis Newell

My first semester at USU was a busy one with getting settled in Logan, finding my warm, down jacket, and preparing to teach a new course. Starting a new job at a new institution is always a steep learning curve, and I thank Jean and Marsha in the geology office for their patience in teaching me everything from using the copy machine to purchasing instruments for my new lab. I taught an upper division geochemistry course to our juniors, seniors, and a couple of graduate students. This was a great class that included two students from our Vernal campus and was a excellent chance to get to know some of our students and their interests.

Research wise, I spent a good part of the spring and summer developing a new geochemistry research lab here in the Geology building. In addition to some basic space renovations, I will be installing a light stable isotope laboratory that will initially give us the ability to measure stable isotopes of oxygen, hydrogen and carbon in water, gases and carbonate rocks. With time, this capability will expand to include other solids, liquids and biological materials and other stable isotopes including those of sulfur and nitrogen. The lab will be geared toward teaching and research, and I will encourage both undergraduate and graduate students to get some hands-on training on basic geochemical techniques and stable isotope analysis. I hope to have this lab up and running by sometime in the early fall.

I have also been getting out to see some of the local geology that northern Utah has to offer and am brainstorming about a number of new research directions for my students and myself. Speaking of students, I have a new graduate student starting this fall.
Dennis Newell (continued)

Trevor Atkinson, who did his BS in geology at BYU-Idaho, will be doing a master’s with me on geochemical topics related to geothermal energy exploration and development. I also have had the pleasure to help mentor Elizabeth (Lily) Horne on her undergraduate research project looking at carbonate vein growth in faults related to a natural CO2 reservoir south of Green River, Utah. I am actively working on some existing research projects on geologic carbon sequestration with my colleagues from Los Alamos National Laboratory. I plan to keep this collaboration a strong one and develop new research and student opportunities on applied research problems that are the mission of the national laboratories. Finally, this summer I started a new research project and collaboration with Dr. Micah Jessup from University of Tennessee, Knoxville and Dr. Colin Shaw from Montana State University. We worked in the Cordillera Blanca of Peru along a 200 km long normal fault that is related to the uplift of some of the highest peaks in South America. My colleagues are structural geologists interested in the timing and style of deformation. I am interested in the isotope geochemistry of the numerous thermal springs along this fault to understand what role deeply circulated fluids and possibly mantle volatiles have in the uplift of these mountains. Samples from this research trip will be some of the first to be analyzed in the new Stable Isotope Lab in our department.

Joel Pederson

Joel has joined his wife, Carol Dehler, on sabbatical in sunny Santa Barbara for one year. He will report back next year!

Tammy Rittenour

The last couple years have been fun, exciting and productive for me as I have moved toward my tenure review later this year. I have had several students working with me in Southern Utah on my Arroyo Project, funded by a NSF CAREER Award in 2011. Work toward this project began with Michelle Summa-Nelson (MS 2009, now at the USU Luminescence Lab) in Kanab Creek and Anne Hayden-Lesmeister (MS 2011, now a PhD student at University of Southern Illinois) in the upper Escalante River. Currently funded under the Arroyo Project CAREER grant are Will Huff (MS-Fall 2013, working at Chevron), Kerry Riley (PhD-in progress) and Kirk Townsend (first-year PhD student and Presidential Scholar). Activities have also included NSF-funded research with Cianna Wyschnytsky (MS 2013, now a PhD student at Queen Mary University of London) and colleagues from Idaho State University and University of Queensland-Australia looking at the timing of glacial advances in the Southern Alps of New Zealand and the Olympic Mountains of Washington. Research has also included work with Eric Allen (MS 2012, now a Hydrologic Tech at the USGS Columbia Environmental Research Center) who used tree-ring records from the Bear River Range to reconstruct past hydro-climatic variability in Logan River, which was part of the larger WADR Project (Wasatch Dendroclimatology Research). Other active projects include investigating fluvial response to glaciation and sea level change in Corsica, western Mediterranean with Emilee Skyles (MS-in progress, now a well-site Geologist for Softrock Geological Services), response of alluvial fans and hillslope sediment supply to glacial-interglacial climate change in the Lost River Range, ID, and reconstructing aridity from sand dune activity in the eastern Snake River Plain (Heidi Pearce-BS 2009, MS 2011).

John Shervais

It has been a long and tumultuous year for me since our last newsletter. Project Hotspot, my scientific and geothermal research project in southern Idaho, funded by DOE, the International Continental Drilling Program, and the US Air Force, has been winding down. Drilling and logging operations are complete, and we are “on time and on budget,” many thanks to Project Manager Nina Glaittli. So far we have published 11 papers on this project in the Geothermal Resource Council Transactions, and another in Scientific Drilling journal. Additional papers are in press on SRP basalts. We are now focused on completing the science investigations, and on writing the final report for DOE.

I have also been continuing my research in California on subduction zone dynamics. My colleagues and I have published 3 papers on serpentine mélangé and subduction initiation over the last year, as well as a new method for calculating subduction zone fluid flux to the mantle wedge using laser ablation ICP-MS data for fluid-mobile element concentrations.

Last May, while conducting field studies in the southern Coast Ranges, I shattered my right shoulder in a fall. The injury required partial shoulder replacement surgery, and much of this last year has been focused on intensive physical therapy to regain the use of my right arm. I have since led a couple of field trips and taught a section of summer field, so I am now ready to get back into field work.
Recent Publications


Tammy Rittenour and Michelle Summa. “Application of OSL dating to middle to late Holocene arroyo sediments in Kanab Creek, Southern Utah, USA.” Quaternary Geochronology, 10:2012.


Ken Carpenter excavating a giant fossil clam
A Special Thanks to All Those Who Make Our Programs Possible

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Dave Leppert  
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A. Thomas Williams  
Lorelyn Wright

The Geology Department at USU greatly benefits from the generosity of its alumni, friends, and supporting companies. All of our programs are greatly enriched by these donations. If you would like to donate to the USU Geology Department, please go to:
http://geology.usu.edu/htm/giving-to-usu

Field Camp 2013 led by Carol Dehler (not shown)

Front row left to right: Sean Ingersoll, Micah Mortenson, Phillip Rael, James Evans (professor), Ben Lang.  
Standing left to right: Susanne Janecke (professor), Matt Rahmeyer, Ben LaRiviere, Thomas Walker, Jake Stephenson, Andrew Bayles, Cody Watkins, Garrett Brinkerhoff, John Burt, Tara Hansen, Taron Wood, Jason Beach, Andy Jochems (TA), Todd Netto.
Kirsten Bahr Goes “Underground” for Her MS Research

Kirsten Bahr, MS student, is going underground into caves in the Tony Grove area of Cache County. For her research, she is studying the structural and lithological influences on karst systems. Kirsten discovered her interest in cave research after a caving field trip with Dave Liddell, a lifelong cave enthusiast and Kirsten’s advisor. Kirsten’s work includes documenting features and forces at work in several caves in the Bear River Mountains. “I’m trying to study how the folds, fractures and rock type influence cave formation,” said Kirsten. Her research has taken her into the depths of dozens of the hundred or so alpine caves in a four-square-mile area of Cache County.

Cave research is not easy. Hypothermia is a constant concern since the temperature inside the caves remain about 34º F. year-round. Other hazards include slipping or falling. Even a minor injury deep inside a cave can lead to a long and dangerous extraction. Because of the hazards in caving, Kirsten always uses the buddy system. She and her team have been as deep as 800 feet and often descended 200 feet or more on ropes.

Kirsten is also been looking at how water flows through the cave systems by putting a non-toxic dye in streams disappearing into caves and seeing where the colored water shows up in springs.

IBA 2013 Competition News

The 2013 USU IBA team, led by Santiago Flores, and with team members Xiaofei Ma, David Jenkins, Elizabeth Horne, and David Parslow placed 3rd in the Rocky Mountain section competition held at the University of Denver, March 2013. Their research centered on Onshore Hydrocarbon Prospects in the Dutch North Sea. The students worked with coaches Liz Petrie, Mitch Prante and Dave Richey, and Faculty Mentor Jim Evans to develop and present a complete analysis of the region.

Michael Strange Develops New Technique to Study Hyolitha

Geology undergraduate, Michael Strange, is studying the mollusk-like marine creature called Hyolitha that roamed the shallow waters of Cache Valley during the Cambrian. Using digital photography, Michael developed a new technique called False Color Treatment or “FCT” to interpret soft-tissue preservation. In Michael’s images, soft tissue appears as a light brown color. He then uses a graphics editing program to convert the soft tissue color to bright red, which makes it easier to see and interpret.

Michael’s FCT process has uncovered a new finding about hyoliths: masses of soft tissue, not visible in any other known images of the creatures, surround the ends of the helens (the two appendages that protrude from the opening of the hyolith’s shell). “I suspect this tissue might be remnants of the animals’ respiratory organs,” says Michael. Many of the fossils that Michael is studying were collected by him in the Spence Shale, a part of the Langston Formation, in the Wellsville Mountains. Michael presented his research at the Utah Conference on Undergraduate Research (UCUR) at Utah State University on Feb. 22, 2013. Faculty Mentor: Dave Liddell.
Undergraduate Student Showcase

Arthur “A.J.” Knight and Dallas Nutt presented their undergraduate research findings at the 2013 Student Showcase on April 11, 2013 in the Taggart Student Center on the USU campus. Their poster was titled “Linking liquefied sediment to a paleoearthquake along the East Cache fault.” The Student Showcase is an annual symposium to showcase outstanding work done by students on research, scholarly, and creative projects. Faculty mentor: Susanne Janecke.

Undergraduate Research Presentations

College of Science student researchers ascended Salt Lake City’s Capitol Hill Thursday, Jan. 31, 2013 to share their efforts and discoveries with Utah legislators and visitors. Stationed with their posters in the Capitol rotunda were Brennan Young and Michael Strange from the Geology Department. Utah’s Research on Capitol Hill is an annual event.

Brennan Young’s poster was titled “Hydrogeochemistry, Geothermometry and Structural Setting of Thermal Springs in Northern Utah and Southeastern Idaho.” Brennan also presented his research at the Utah Conference on Undergraduate Research (UCUR 2013) at USU on Feb. 22, 2013. Brennan will do his graduate work at the University of Utah beginning Fall 2013. Faculty mentor: Jim Evans.

Michael Strange’s poster at Capitol Hill was titled “Paleobiology of Some Middle Cambrian Animals from Northern Utah and a New Technique for the Interpretation of Soft-Tissue Fossils.” Michael also did an oral presentation of his research at the National Conference on Undergraduate Research (NCUR) at the University of Wisconsin—La Crosse on April 11-13, 2013. Michael is a native of North Logan, Utah and plans to pursue graduate studies in paleobiology after graduation in 2014. Faculty mentor: Dave Liddell.

Ben LaRiviere also participated in the Utah Conference on Undergraduate Research (UCUR 2013). His poster was titled: “Paleoenvironmental reconstruction of the Snake River plain: Sedimentological analysis of the Kimama core, HotSpot Drilling Program.” Faculty mentor: Tammy Rittenour.

USU Geology Club

Keep up with the geology club activities by going to their website at https://sites.google.com/site/usugeologyclub/

Geology club T-Shirts will be coming soon! To request an order form, email the club at utahstate.geoclub@gmail.com or check the club website for sizes and designs.

The USU Geology Club also has rock, mineral and fossil sets and other great gift ideas available for sale.
Department Student Awards and Scholarships

Graduate Awards:

Outstanding PhD Researcher Awards went to Mitch Prante and Dawn Hayes. Mitch’s work was on the development of melting related to faulting and the nature of highly polished faults. Mitch defended summer 2013 and is working for Shell Oil. His advisor was Jim Evans. Dawn Hayes examined Proterozoic trace fossils and sedimentology in the Proterozoic rocks of Antelope Island and the Uinta Mountains and is working for Anadarko Petroleum in Houston. Her advisor was Carol Dehler.

The Outstanding MS Researcher Award went to Dave Richey. Dave examined the structure and paleohydrology of the Iron Wash fault, with implications for seal failure in reservoirs. Dave completed his MS degree in 2013 and is now working for Anadarko Petroleum in Denver. Dave’s advisor was Jim Evans.

The Peter McKillop Fellowship went to Faye Geiger, of Moab, Utah. After working in the mining business in Spanish Valley and owning a cake shop in Moab, Faye will work on the geomorphic signature of the development of the graben east of the Colorado River. Joel Pederson is her advisor.

The Outstanding Teaching Assistant Award went to Rebekah Wood. Rebekah recently defended her master’s thesis on the nature of the thermal waters and faulting at Aqua Caliente Springs, California, and is currently working at the Utah Geological Survey. Her advisor was Jim Evans.

Beryl & Tura Springer Memorial Scholarships went to Kirsten Bahr, Natalie Bursztyn, and Cianna Wyshnytzky. Kirsten is an MS student examining the development of karst in the Bear River Range with Dave Liddell. Natalie hails from Canada and is developing and examining the effectiveness of multimedia virtual field trips, and the development of the Colorado River knickpoints with Joel Pederson. In her spare time Natalie is a member of the Junction City Roller Dolls. Cianna completed her MS degree. She examined glacial chronologies in Washington and New Zealand with Tammy Rittenour. She has accepted a doctoral fellowship to study at Queen Mary’s University, in England.

J. Stewart Williams Awards went to Faye Geiger and Larry Tackett. Larry is a graduate student at the USU - Uintah Basin campus in Vernal and is studying the deposition of the Phosphoria Formation and is advised by Ben Burger at our Uinta Basin campus.

Benchmark Society Grants were awarded to James Kessler and Katie Potter to assist in the completion of their PhD degrees. James is working on core, borehole geophysics, and rock mechanics of fractures in the Project Hotspot core, Idaho. James’ advisor is Jim Evans. Katie is completing her work on the petrology of basalt from the Project Hotspot core and also evaluating the drainage patterns that existed in the past five million years in eastern Idaho based on detrital zircon analyses. Katie’s advisor is John Shervais.

Robert Q. Oaks, Jr. Graduate Student Citizenship Awards went to Dave Richey, Elizabeth Petrie, and Mitch Prante, for their outstanding work in helping with teaching of undergraduate courses during the Spring, 2013 semester. Liz is working on her PhD with Jim Evans.

Kim Robeson Travel Grants for research went to Natalie Bursztyn, Kerry Riley, Santiago Flores, and undergraduate David Jenkins. Natalie will use the funding to support a research river trip along the Colorado River. Kerry is an aspiring geomorphologist who grew up in West Virginia, where she became fascinated with how moving water shapes the surface of the Earth. She will use the funding to work on her PhD, which focuses on deciphering intrinsic versus extrinsic controls on arroyo dynamics in the Grand Staircase region of the Colorado Plateau, Southern Utah. She is working with Tammy Rittenour. Santiago hails from New Mexico, and his proposal helped fund the AAPG - IBA team travel to Denver. He is working on his MS thesis with Jim Evans. David Jenkins is an undergraduate and will use the funding to study the nature of polished fault surfaces in Nevada.
Department Student Awards and Scholarships (continued)

**Undergraduate Awards:**

*John M. Branch Memorial Scholarships* were awarded to **David Parslow** and **Cody Watkins**. David is from Monroe, Utah and plans to graduate in 2014. He is currently employed as a furniture maker and is a core analyst in the Department. Cody is from Vernal, Utah and enjoys outdoor activities such as sports (especially soccer), camping, hunting, fishing, four-wheeling, riding horses, hiking, and spending time with family. Cody used the scholarship towards summer field camp and fall tuition.

*Graymont Corporation Scholarships* were awarded to **Andrew Bayles** of Preston, Idaho, and **Garrett Brinkerhoff** of Vernal, Utah. Garrett loves canyoneering and is working with **Carol Dehler** on the Upper Middle Ordovician Swan Peak Formation. They are using carbon and oxygen isotopes, detrital zircons, litho- and sequence-stratigraphic correlation, petrology, and petrography to determine paleogeography, paleoclimatology, and provenance of the unit. Andrew enjoys geology and doing art projects, and like almost all of the undergraduate geology students, is working his way through college.

*Clyde T. Hardy Field Camp Scholarships* were awarded to **Tara Hansen**, **Ben LaRiviere**, and **Cody Watkins**. Tara is originally from Fresno, California, and will graduate May 2014. Ben is from North Waterboro, Maine and graduated in Summer 2013. Cody, from Vernal, Utah will graduate May 2014.

*Peter Kolesar Scholarships* were awarded to **Tara Hansen** and **Shawna Olsen**. Shawna was born in Payson, Utah and grew up in Casper, Wyoming. She worked in a preschool in Logan that allowed her a unique opportunity to teach children about the geology of the earth, as well as rocks and minerals. She is currently working, most capably, as the department’s lab technician.

The **David Rider Scholarship** was awarded to **Lauren Olsen** who said, “I could not be more thrilled at the opportunity to make my lifelong dream of becoming a geologist a reality. I would like to thank all of the people who have made this possible and helped me reach this point in my life.”

The **Thomas Riemondy Scholarship and the Fiesinger Department Award** went to **Elizabeth Horne**. Elizabeth will graduate in December 2013 and was the Geology Club President. She also received a Conoco-Phillips scholarship to attend Indiana University field camp.

The **Outstanding Graduating Senior** is **Micah Mortensen**. Micah is from Ogden, Utah and is looking forward to employment in any geology-related field, hopefully, with the BLM or in environmental consulting. The best part of his college career was definitely being in the Department of Geology. The students and faculty have all become great friends.

The **Questar Scholarships**, awarded via the College of Science, went to **Justin Oakson**, of Price, Utah, **Isaac Allred**, from Centerville, Utah, and **Alex Barker**, from Willard, Utah. Justin is a geology major with a minor in Spanish. Isaac is a physics major with minors in geology and Chinese. Alex is pursuing a degree in physics with minors in geology and computer science.

*Many of these awards are made possible by the generosity of our alumni, friends, and supporting companies. Thank-you for your continued support! If you would like to donate to the USU Geology Department, please go to: http://geology.usu.edu/htm/giving-to-usu.*
Department Awards and Scholarships (continued)

*External Awards:*

In addition to the awards available through the Department, our students are active in research and scholarship applications outside of the department. These awards include:

- **2013 Geological Society of America Research Grant** to Kerry Riley for her PhD work on arroyo cutting and Katherine Potter for her PhD work.

- **ExxonMobil Graduate Research Grant** to James Kessler for his work on the petrophysical analyses of rocks in the Project Hotspot borehole.

- **AAPG Student Research Grant and ExxonMobil Recruiting Grant** to Dave Richey for his work on fluid flow and structure of the Iron Wash Fault, in the San Rafael Swell, Utah.

- **The Rocky Mountain section of the AAPG** awarded $1000 to the USU student chapter of the AAPG.

- **Utah State University 2013 SURCO Grants** (Summer Undergraduate Research and Creative Opportunities) were awarded to Garrett Brinkerhoff for research on the Swan Peak Formation, and to Isaac Allred for geophysics research.

- **URCO Grants** (Undergraduate Research and Creative Opportunities) were awarded to Elizabeth Horne, for her work on stable isotope analyses of carbonate veins associated with fluid-charged faults and to Michael Strange for work on soft-bodied fossils in the Cretaceous Frontier Formation.

- **A 2013 College of Science Mini-Grant** was awarded to Michael Strange for work on the paleoecology and paleogeography of the Middle Cambrian Spence Shale Member of the Langston Formation of Northern Utah and Southern Idaho.

- **A Los Alamos National Lab Summer Applied Geophysics Experience award** went to Isaac Allred, who is majoring in physics and minoring in geology. His research focused on archaeological applications of ground-penetrating radar (GPR).

- **A Utah Geological Association Summer Field Camp Scholarship** to Dallas Nutt. Dallas served two tours of active duty with the Marines in Iraq and is originally from Fielding, Utah. With A.J. Knight from Price, Utah, he is working with Susanne Janecke and Bob Oaks to decipher the paleoseismicity recorded in the newly excavated outcrop of deformed Lake Bonneville deposits at the mouth of Green Canyon.

Undergraduate, Isaac Allred, received the **2013 GSA/ExxonMobil Bighorn Basin Field Award.** This Award is a one-week field seminar that offers students and faculty members a chance to receive a high-quality educational experience in the spectacular Bighorn Basin of north central Wyoming, USA. The seminar focuses on multidisciplinary integrated basin analysis, and it enables awardees to study exposures of individual hydrocarbon system play elements, such as source, seal, reservoir, and structure, within a prolific hydrocarbon basin.

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**The Utah State University Student Chapter of AAPG**

The USU AAPG Student Chapter is a relatively young organization with 18 members consisting of geoscientists with diverse backgrounds and varying degrees of experience. The purpose of the organization is to extend co-educational opportunities to students in a professional environment. Recent opportunities have included support towards travel to industry sponsored events such as the AAPG Rocky Mountain Section Regional Meeting, the AAPG Spring Break Expo, the Imperial Barrel Award, and various short courses hosted by industry professionals. It is the chapter’s goal to continue to support opportunities that will expand our students’ skill sets, preparing them for life after graduation.
Congratulations to Our Recent Graduates!

Recent Graduate Students and Their Theses

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<th>Summer 2012</th>
<th>Fall 2012</th>
<th>Spring 2013</th>
<th>Summer 2013</th>
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<tbody>
<tr>
<td>Aaron Knudsen</td>
<td>Crystal Jones</td>
<td>Layne Morris</td>
<td>Ben LaRiviere</td>
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<td>Brett Merkley</td>
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<td>Matt Rahmeyer</td>
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**D. Corey Barton** (2011) — Determining CO2 Storage Potential: Characterization of Seal Integrity and Reservoir Failure in Exposed Analogs. (Major Professor: James Evans).

**Eva Lyon** (2011) — The Interrelationship Between the Bio- and Sequence Stratigraphy of the Middle Cambrian Spence Shale of Northern Utah and Southern Idaho. (Major Professor: Dave Liddell).

**Christopher Tressler** (2011) — From Hillslopes to Canyons, Studies of Erosion at Differing Time and Spatial Scales Within the Colorado River Drainage. (Major Professor: Joel Pederson).


**Christopher Sant** (2012) — Geothermal Alteration of Basaltic Core from the Snake River Plain, Idaho. (Major Professor: John Shervais).


**Steven Thornock** (2012) — Southward Continuation of the San Jacinto Fault Zone Through and Beneath the Extra and Elmore Ranch Left-Lateral Fault Arrays, Southern California. (Major Professor: Susanne Janecke).


**Dawn Hayes** (2013) — Two Scenes from Utah’s Stratigraphic Record: Neoproterozoic Snowball Earth, Before and After. (Major Professor: Carol Dehler).

**Will Huff** (2013) — A Middle to Late Holocene Record of Arroyo Cut-Fill Events in Kitchen Corral Wash, Southern Utah. (Major Professor: Tammy Rittenour).

**Ryan Jensen** (2013) — Sequence Stratigraphy and Carbon-Isotope Analysis of the Middle Cambrian Bloomington Formation, Northern Utah. (Major Professor: Dave Liddell).

**Andy Jochems** (2013) — Formation, Deformation, and Incision of Colorado River Terraces Upstream of Moab, Utah. (Major Professor: Joel Pederson).


The USU Geology Department’s Advisory Board consists of former students and friends of the Department. Board members represent the following geoscience areas: petroleum industry, mining, secondary education (G6-12), higher education, environmental/engineering geology, and state and federal agencies. Members need not be graduates of Utah State University. The purposes of the Board are to promote the recognition, welfare, and progress of the Department, to encourage financial and other support of the Department, and to advise the Department in matters regarding the status of economic, regulatory, or other factors that impact the department’s teaching and research mission. Specific objectives of the Board are:

- To provide advice and act as an independent consulting body for faculty, students and staff on departmental issues.
- To provide input to the Department from a wide range of groups in an effort to maintain high-quality curricula and degree programs in the Department.
- To inform alumni, friends of the University, and the public about the Department and to promote its work and services.
- Act as an independent voice to communicate with alumni, governmental officials, and industry officials regarding issues that impact the Department.
- To assist in fundraising and development activities, as necessary.

Current Advisory Board Members

- Mark Birch (BS 1984; MS 1989); Golder Associates Inc.
- Melissa Connely (MS 2002); Casper College
- Mark Dubois (BS 1987; MS 1990); Newmont Mining Corporation
- Jim Goddard (BS 1991; MS 1993); Utah Div of Water Rights
- Angela Isaacs (BS 2003; MS 2006); Sinclair Oil & Gas
- Paul Jamison (BS 1982); Logan High School, Jamison Paleontology
- Al Jones (BS 1989; MS 1996); Smiley Creek Lodge
- Dustin Keele (BS 2005, MS 2008); Chevron Phillips Chemical Co.
- Dave Loope (BS 1977); University of Nebraska-Lincoln
- Mike Lowe (MS 1988); Utah Geological Survey
- Craig Nelson (BS 1982; MS 1986); Western GeoLogic
- Stephen Personius (BS 1978); US Geological Survey, Central Region
- Caleb Pollock (BS 1996); Pioneer Natural Resources
- Bob Robison (MS 1987); Graymont Western US Inc.
- Dan Rogers (BS 1982; MS 1987); Amsted Industries Incorporated
- Andy Taylor (MS 2003); Anadarko Petroleum Corporation
Meet the Newest Advisory Board Members:

Mark DuBois
Greetings to all. This week is my 23rd anniversary here at Newmont. I’ve had stints in hydro, permitting, compliance, rec & closure, back to hydro – mostly stuff not learned in school – drilling, well/piezometer construction, transducers, data loggers, and LOTS of paper work.

This week, our baby takes off for college – track scholarship to UNR (NV @ Reno) and wanting to study metallurgy (she also was Valedictorian). Jonathan will be a senior at UNR – major in English (likes to write) and minor in Math and plays rugby for fun. Our oldest got his degree at UNR in Geological Engineering several years ago and is working for a consulting company in Reno.

Diana has done all the heavy lifting – transportation, etc. getting these kids through HS and is looking forward to my retirement, which I keep telling her will be quicker once she gets a job. She was laid off when about 8 mos pregnant with #2 and never looked back.

Angela Isaacs
I am currently living in Salt Lake City and working for Sinclair Oil & Gas. At Sinclair, I focus on the Bakken and other shale or unconventional resource opportunities. I was with Anadarko for 5 years in Denver before purchasing a bike shop in Utah. It is nice to be back in Utah and enjoy the skiing and biking and close proximity to the mountains!

Paul Jamison
I’m back at Logan High School for my third go-around in public education, teaching Earth Science and Biology to 9th and 10th graders. Don’t pity me, I actually love my job on good days. My wife, Michelle, is a microbiologist for Wescor, a medical technology company here in Logan, and our daughter Johanna is a transportation planner for the Utah Transit Authority in Salt Lake City.

I characterize myself as a “rock splitter and snake chaser.” I have a fossil preparation business and I work mostly on the middle Cambrian Spence Shale here in northern Utah. I like to call it the “gift that keeps on giving.” Snake chasing is just an old habit that I can’t seem to break and I legitimize that by teaching kids how to chase snakes too. I’m excited about serving on the Geology Advisory Board!

Dustin Keele
I am currently a petrophysicist with Chevron. I began my career in 2007 as an operations geologist in the Permian basin, working mature oil fields that produce from carbonate reservoirs and the development of unconventional reservoir trends. Later on, I moved into petrophysics and have held multiple positions involving formation evaluation. My current role is with Chevron’s Deepwater Gulf of Mexico business unit, focusing on the exploration and appraisal of the lower Tertiary Wilcox trend. My interests within the field of petrophysics are: improving core analysis results, complete integration of rock and fluid data with log analysis techniques and formation testing data. Outside of the office, I enjoy spending my free time traveling with my girlfriend and can often be found at the gym or going to concerts in and around Houston.

David Loope
I received my BS (’77) from USU and did graduate work at the University of Wyoming, completing my dissertation on the Permian rocks of Canyonlands National Park in 1981. I have taught sedimentology and stratigraphy at the University of Nebraska since 1981. My main research interests involve the geologic history of the Great Plains (especially the Nebraska Sand Hills), and the eolian sandstones of the Colorado Plateau. My wife, Cindy (a Lincoln native), and I have two sons-- Kevin is a doctoral student at Cornell, working on the evolution of social behavior in insects, and Garrison just started grad school at the University of Arizona in Quaternary climate change.
News From Our Alumni

Cody Allen (BS 2011) completed his field camp with ISU during the summer of 2011 and then was able to complete an internship with Monsanto. Cody was assigned to their exploration program, working on the rig collecting and organizing samples and constructing maps using GIS. Cody was asked to return to Monsanto where he had greater responsibilities on the RC drill rig and the core rig. Last fall his duties expanded and he was in charge of an experimental water remediation project, removing selenium from water that had accumulated from mine properties. In January 2013, he was selected to join the Monsanto team as a mine technician. Cody says, “If not for the education received from you fine professors and others, this internship job wouldn’t have been as successful. I valued my time and experience at USU and commend you on a job well done.” On a personal note, Cody and his wife welcomed their first child in December 2011 - a girl they named Taylor Kiniki Allen. The name ‘Kiniki’ was adopted from the Kinkinik Quartzite he found in Idaho during his field camp.

Kristine Stepenosky (formerly Smith, MS 1997) and her husband Doug, along with their three children, Peter, Fred and Katy, stopped by the Geology Department this summer. Kris is currently enjoying farm life on their historic farm in Pennsylvania. Doug works in the environmental insurance industry. Their son Peter is very interested in minerals and identified many of the specimens in the new Geology Museum.

Update from Todd and Nicole Parr (BS 2010): “Just wanted to say thanks for sending us the Geology newsletter! We are glad to see the department doing well. We loved going to school there and feel lucky to have had such great professors!

Todd ended up doing his Masters at NMSU under Tim Lawton. He now works for Apache and we are living in Midland, TX. I worked selling insurance for State Farm while Todd finished school and am now doing the stay at home mom thing. Joe just turned 3 and we are expecting another in March [2013].

We are glad to see that you’re still doing the 2500 trips, they were the best. Hopefully we’ll be able to come visit everyone in the future!”

PhD graduate Marlon Jean (2012) has just been awarded a Humboldt Research Fellowship for Postdoctoral Researchers, a highly prestigious two-year post-doctoral award. He will be working at the Institute for Mineralogy at the University of Hannover, after completing an immersion course in German at Gottingen. He will begin this Fall 2013, and plans to work on samples he collected during his participation in IODP Cruise 345 to the Hess Deep off of Costa Rica in January 2013.

Eric Allen (MS 2013) will be working for USGS, Columbia Environmental Research Center in Columbia, MO.

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You are Cordially Invited . . .

**Geological Society of America**

**Utah Universities Alumni and Friends Reception**

Monday, October 28, 2013
6:00 pm to 8:00 pm

to be held in the Capitol Ballroom #3
Hyatt Regency Denver Convention Center,
Denver, Colorado

Light hors d’oeuvres and cash bar
Chris Sant (MS 2012) has a full-time lecturer position at BYU-Idaho, in Rexburg.

Hannah McDonough (MS anticipated 2013) works for GeoEngineers in their Tacoma office as a staff hydrogeologist on their environmental team. She has been involved with environmental site assessment and remedial investigation projects. Her duties range from groundwater and soil sample collection to data analysis to report compilation. She says that “Geo has taught me a lot about the process of businesses, government, and the working world.”

Brennan Young (BS 2012) is a Master’s student at the UofU, and has already been introduced to his thesis topic. He will be looking into some gypsum veins and stresses involved with the fractures and fluid flow. He chose this project because it looked interesting and brings him back to where he wanted to go at the beginning: structure. “You’ve all helped shape me into who I am now, and I can’t forget your guidance. Thank you again for all that you’ve done to help get me on my feet!”

Holly (BS 1993) and Matt Novak (MS 1993) stopped by to visit this summer along with their girls, Olivia (12) and Lauren (9). Olivia is into competitive dancing (primarily hip hop) and plays the bass violin in the orchestra. Lauren is a runner and is playing electric guitar at one of the School of Rock franchises. Matt and Holly live in Houston and both work for ExxonMobil.

In Memory

Lisle Bruce Lake (BS 1940). “Bruce” Lake passed away on Aug 23, 2012 at the age of 94. He was born in Seattle, Washington and graduated from Ogden High School, Utah in 1936. Bruce graduated from Utah State University in 1940 with a BS in Geology. He served in the army during WWII and the Korean War. He retired from the army after 20 years and had attained the rank of Lt. Colonel. He then returned to Ogden where he had a second 20-year career as a procurement negotiator at Hill Air Force Base. Bruce was an avid golfer and was once the Senior Amateur Champion of Utah. Following retirement, he and his wife, LaVon, moved to St. George, Utah.

Ken Wareham (BS 1992) completed a PhD in Research and Evanula Methodology in 2002. He is now a full Professor at Lewis-Clark State College with a joint appointment in Natural Science and Education. When not teaching, he spends time evaluating MSF programs in science education. In his spare time he enjoys camping and fishing with his family and watching his dogs find birds.

Nate Giles (BS 2013) is employed by Schlumberger as a MWD field specialist and is based out of the Denver office.
Geology 2500 and 4500 field trip to Topaz Mountain, Spring 2013
John Shervais, Instructor

Field Camp 1987
Field Camp 1988
Alan Jones, Ken Wareham and Darin Hinton
Kelly Davis, Liping Zhang, John Mayers
Awards Ceremony 2013

Outstanding PhD Researcher Awards: Dawn Hayes and Mitch Prante

Outstanding MS Researcher Award: Dave Richey

John M Branch Memorial Scholarship: Cody Watkins and David Parslow (not shown)

Beryl & Tura Springer Memorial Scholarship: Cianna Wyshnytzky, Natalie Bursztyn, and Kirsten Bahr

Graymont Corporation Scholarship: Garrett Brinkerhoff and Andrew Bayles

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Robert Q Oaks, Jr Graduate Student Citizenship Award: Mitch Prante, Bob Oaks, Liz Petrie, and Dave Richey

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Outstanding Graduating Senior: Micah Mortensen

Thomas Riemondy Scholarship and the Fiesinger Department Award: Lily Horne

Kim Robeson Travel Grants: Kerry Riley, Santiago Flores, Natalie Bursztyn (not shown) and David Jenkins (not shown)

Digging into the pizza!