New College of Science Dean Appointed

Utah State University Trustee Professor and internationally-renowned ecologist, James MacMahon, returned as Dean of the College of Science, a position he previously held at the University for nearly 11 years.

The announcement was made September 18, 2009. “I am honored to be asked to serve as Dean of Science for a university that has been my academic home for nearly 38 years,” said MacMahon. MacMahon joined USU in 1971 and has served the university in a variety of academic and administrative capacities. After heading the Biology Department from 1985-1989, he assumed the deanship of the College of Science until July 2000, when he was appointed vice president for university advancement.

MacMahon currently serves as director of the USU Ecology Center and chairs the board of directors of the National Ecological Observatory Network (“NEON”).

In 1994, MacMahon received the Distinguished Service Award from the Utah Academy of Art, Science and Letters. He was awarded the first Governor’s Medal for Excellence in Science and Technology in 1987. He won the Wynne Thorne Research Award in 1988, and in 2002, he received USU’s Leone Leadership Award.

MacMahon succeeds Mary Hubbard as Dean of the College of Science.

Melissa Jackson, 2010 College of Science Valedictorian

Melissa Jackson was named the 2010 College of Science Valedictorian—an honor with historical relevance in that this is the first time a geology student has been the Valedictorian for the College of Science.

Melissa came to USU from Salt Lake City as a Presidential Scholar. During her freshman year, she began work in the new Luminescence Laboratory and worked for four years on various projects, including her Senior Honors Thesis relating to constraining the age of Utah’s most famous rock art (Barrier Canyon Style) using luminescence dating.

Melissa completed the Geoarchaeology emphasis within the Geology Major and has been an undergraduate teacher. She helped author and peer review journal articles during her sophomore and junior years.

Melissa received a prestigious National Science Foundation Graduate Fellowship which will fully fund her PhD work at Aberystwyth University in Wales starting this fall. Melissa will work toward developing a protocol to extend the age range of OSL dating using loess deposits from Alaska and China.
Transitions in the Department

After ten years of service, John Shervais will step down as Geology Department Head and return to teaching and research. John came to USU from the University of South Carolina. During his tenure, the Department has seen many changes and improvements. John was instrumental in writing and seeing the PhD program approved. Due to John’s efforts, there has been a significant increase in the Department’s analytical lab infrastructure, with new ICP-MS, X-ray diffraction system, and XRF whole rock system. In addition, John led the effort to start the OSL lab and has hired three new faculty during the last decade. The Department Advisory Board was established, which provides important advice and support for the Department. John will focus his post-Department Head efforts on the Snake River Plain drilling project as well as his work on ophilites and mafic igneous rocks.

College of Science Dean James MacMahon named Dave Liddell the new Department Head, effective July 1, 2010. Dave came to USU in 1982 from the University of New Orleans and has served in many capacities during his time here. Dave’s teaching and research have focused on modern and ancient carbonate environments, paleoecology, and karst and cave studies. He has been the Graduate Program Director since 2000 and Associate Department Head since 2006.

A Farewell Note From The Outgoing Department Head

Greetings!

This academic year (2009-2010) marks my tenth year as Department Head of Geology at Utah State University. It has been a long and interesting journey, but like all journeys, it must, at some point, come to an end.

Last spring I decided it was in the best interests of the Geology Department and the College for me to step down as Department Head at the end of the academic year (June 2010). This will allow me to pursue my ongoing research interests, which involve several large international and national proposals. It will also give others a chance to serve the Department and University and take a more active role providing leadership for the coming decades. I was very pleased to see Dave Liddell appointed as the new Head. Dave has a proven record of academic leadership in the Department, serving as Graduate Advisor for the last 10 years and more recently as Associate Department Head.

During my tenure as Head, the Geology Department has made significant strides toward our goal of becoming a first-class, research-oriented department while maintaining our traditional strengths in field-based geology, our Masters program, and undergraduate education. We have added a PhD program in Geology, new degree programs in Applied Environmental Geosciences, and expanded our role in distance education. Our external funding has grown significantly over this time, and we now publish more peer-reviewed papers in national and international journals than ever. We have managed, even in bad economic times, to hire top notch new faculty and to retain our existing faculty. We have also made significant strides in developments that have led to strengthening of our instrumentation and lab facilities. And finally, office staff – Marsha Hunt as Business Administrator and Jean Daddow as Staff Assistant – are outstanding; their efforts truly make our Department function, and they have been a pleasure to work with.

It has been my honor to serve as Department Head for the last 10 years and to see the progress we have made during that time. I look forward to my transition back into the faculty and to the new challenges that lie ahead.

John Shervais –

A Greeting From the Incoming Department Head

On the first of July I took over the reins of the Department of Geology from John Shervais, who has heroically led the Department for the last ten years. I am excited and honored to do so. During the transition I have been helped immensely by John, by Marsha Hunt and Jean Daddow in the main office, by Joel Pederson, who has agreed to take over the challenging role of Graduate Program Director, and by Tom Lachmar who has selflessly agreed to be the Undergraduate Advisor. Our Alumni Advisory Board has been strongly supportive. Managing the Department is truly a team effort!

Despite the budget crisis that USU has been subjected to over the last few years, the Department of Geology is in surprisingly good shape. We have recently added one new faculty member, Tammy Rittenour, and have managed to retain our existing excellent faculty. Due to an increase in faculty research funding and
strong support from the Jones and Browning Foundations, we have greatly expanded our analytical capabilities. The incoming group of graduate students for Fall 2010 is outstanding and will be our largest cohort so far. Our relatively new PhD program has also taken off, and we will have eight PhD students in the Department in the fall. Exciting new possibilities exist with the merger of USU and the College of Eastern Utah in Price. I foresee strengthening our paleontology program and having a base for field work in the Mesozoic of the San Rafael Swell area. The expansion of USU-Vernal may result in additional faculty for the Department, as well. In this era of increasing distance delivery of courses, we will have USU geology faculty and students based at several campuses, coming together for weekend or pre-semester field trips.

When I look back at the students, alumni, faculty and staff of the Department of Geology that I have known over the last thirty years, I am deeply struck by a sense of family. Please stop by to visit with your USU family when you have the chance to!

Dave Liddell

Mary Hubbard Helps Students Study Abroad

Mary Hubbard, Dean of the College of Science and Professor of Geology at USU since July 2007, was appointed in 2009 to serve as the Vice Provost for Global Engagement. In this position she will improve international relations and increase global awareness on campus. Her goal is to help more students participate in study abroad programs and to create opportunities for scholarships and to develop international programs in teaching and research for Utah State University.

Mary is a structural geologist and metamorphic petrologist who has traveled much of the world pursuing her career. Mary’s field research includes extensive work in Senegal, New Zealand, France, Pakistan, Nepal and Norway. Her doctoral research included the Himalayas of Nepal. She also completed a post doctoral fellowship that included studies in Pakistan, Switzerland and France.

USU Geologists Receive $4.64 M Grant

John Shervais is Principal Investigator and Jim Evans, Co-Principal Investigator on a recently awarded Recovery Act grant of $4.64M. They will lead the way in a geothermal drilling project which will provide student work and research opportunities. The two-year project, “Snake River Geothermal Drilling Project–Innovative Approaches to Geothermal Exploration” includes collaborators from Boise State University, University of Alberta, Canada, Southern Methodist University, the International Continental Drilling Program, Potsdam, Germany, and the U.S. Geological Survey.

“Geothermal Energy is an ideal complement to solar and wind energy, each of which provides intermittent sources of power,” Dr. Shervais stated. “The project creates extraordinary hands-on learning projects for students and paves the way for larger, continuing geothermal research projects for USU.”
Sabbatical Visitors

The Department has hosted three sabbatical visitors in the last two years. Sabbaticals are extended periods of leave from a professor’s home institution which allows them to focus on teaching and research efforts, to learn new concepts, and to foster new collaborations. At the host department, students benefit from lectures and interactions with people with different areas of expertise and backgrounds.

During the 2008-2009 academic year, Dr. Beth McMillan from the University of Arkansas, Little Rock, was in residence. Her areas of expertise are in clastic sedimentology and geomorphology. She uses multidisciplinary techniques, including GIS, Remote Sensing, and traditional field methods, to better understand the patterns of sedimentation and geomorphic evolution, especially in southern Wyoming.

In 2009-2010, the department hosted Dr. Asma Al-Farraj Al-Ketbi from the United Arab Emirates (UAE) and Dr. Haakon Fossen, from the University of Bergen, Norway.

Dr. Al-Ketbi is a Fulbright Scholar and worked with Tammy Rittenour to learn OSL dating. Al-Ketbi plans to establish a similar lab in her home country, which would be the first of its kind in the Middle East.

Dr. Fossen is a structural geologist whose work focuses on brittle deformation and fault processes. He is also the author of a new geology textbook titled “Structural Geology” which our undergraduate structure class test-drove for its first use in the U.S.

NSF Career Grant

Tony Lowry, Assistant Professor of geophysics in the Department, received an NSF CAREER grant to support his work on the structure of the lithosphere in the Rocky Mountains and the nature of flow in rocks. NSF CAREER grants are a prestigious award made to promising young scientists to develop their research and teaching programs. The grants particularly focus on the integration of teaching and research, and provide five years of support.

Retirements and Farewells

After 33 years of service, Pete Kolesar retired in May, 2008. Pete and Mary V. Kolesar and sons, Matt and Michael, moved to Logan in 1974 from UC Riverside. Teaching a wide spectrum of classes, from introductory classes, the infamous geochemistry class, X-Ray diffraction, clays, etc., Pete earned a reputation as a patient, hard-working, and dedicated teacher and mentor. In recognition of his service, former students of Pete established the Kolesar Scholarship Fund.

Don Fiesinger retired in May of 2009. After receiving a PhD in Geology from the University of Calgary, Don and his wife, Janet, moved to Logan in 1976. Don taught mineralogy, petrology, and ore deposits. In 1982, he replaced Clyde Hardy as Department Head, serving in that capacity for 17 years. In 1999, he became the Associate Dean of the College of Science, and in 2002 was named Dean of the College of Science, stepping down in 2008.

Don’s dedication to USU was widely recognized by many across the University. Don oversaw the renovation of the former Plant Sciences building, now the Geology Building, on the northeast corner of the main quad, the hiring of new faculty, the development of strong graduate teaching and research efforts, and numerous new development initiatives.

When asked what they plan to do in their retirement, the Kolesars and the Fiesingers replied, “whatever we want to.” Both plan on traveling to see family and friends.

Sue Morgan, lecturer in the Geology Department, responded to the “call of the wild” and in the spring of 2010 moved to Alaska along with her husband, John, and her 22 sled dogs. Sue competed in Alaska’s historic Iditarod Trail Sled Dog Race in 2006 and 2008, a gruelling 1,150 miles long. A native of Chicago, Sue lived in Alaska before leaving to attend Utah State, where she earned her Master’s degree in Geology. Sue continues to teach geology courses through USU’s Distance Education. Sue completed the 2008 Iditarod, elevating her to hero status in Alaska.

Lori Hirschi, former Office Manager for the Department, left the University and moved to Three Forks, Montana in February 2009 where she married Dan Haynes. Lori and Dan are busy constructing a new home that will accommodate them and their four cats.

DOE National Energy Technology Laboratory Grant

Jim Evans was awarded a $300,000 carbon capture and storage (CCS) research grant beginning June 1, 2010. In this four-year project, Dr. Evans and students will examine naturally-occurring, carbon dioxide-charged systems in southeastern Utah for characteristics required for CCS systems.
The Snake River Geothermal Drilling Project is up and running. Drilling has begun on ‘Project Hotspot,’ the stimulus-funded geothermal drilling and research project headed by John Shervais on Idaho’s Yellowstone-Snake River Plain. For a daily update on the project and to view the ‘photo of the day,’ go to http://www.facebook.com/pages/Project-Hotspot-Yellowstone-Snake-River-Plain/144194715624402?ref=ts

The Utah State University Geology Department along with our colleagues at Central Washington University will be hosting the 2011 Joint Rocky Mountain-Cordilleran Geological Society of America Section Meeting here in Logan.

The meeting will highlight the dynamic research taking place at USU and at other schools, government agencies, and industries in the region.

Technical sessions will include those on the Snake River Plain and Yellowstone Hotspot, faulting in the West, landslide hazards, river restoration, Neoproterozoic successions, Lake Bonneville, the hydrogeology of western basins, and more.

Field trips will be a highlight, as always! Field trip excursions will include trips to the Owyee Mountains, the karst of the Bear River Range, active faults of Nevada, and a variety of sites in southern Idaho and northern Utah.

**Save the date!**

May 18-20, 2011, and plan for pre- and post meeting field trips to be announced. There will be some great sessions, and lots of geofun. We will welcome alumni and friends who want to attend, lead or participate in field trips, and who want to visit.

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**Great Honor — Rare Opportunity**

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Carol Dehler

It is greening up here in Utah, so we are all excited to get out in the field. For starters, I took the “Earth through Time” class to Arches and Canyonlands National Parks, as well as Goblin Valley. The students surfed the geology of the San Rafael Swell and romped amongst the goblins under a full moon. We have quite a few new majors this year, and it has been fun getting to know them.

Mentoring graduate and undergraduate students has been very rewarding. I am happy to report that six graduate students have graduated under my supervision, and they are all employed as geologists (yeah!). A recently finished undergraduate, Katie (Kirkham) Anderson, and I are currently writing up her research before she heads to graduate school.

Two NSF-funded projects are keeping me and my students busy. One project addresses the timing and paleogeography of the rifting Cordilleran margin in late Neoproterozoic and early Cambrian time. This involves continued work in the Uinta Mountains but has expanded to include many amazing Neoproterozoic-Cambrian successions in the Deep Creek, Sheep Rock, Wasatch, Wah Wah, and Bannock ranges as well as Fremont and Antelope islands. Another NSF project involves a petrographic and geochemical study of quartzite bedrock units and related artifacts in the Gunnison Basin of Colorado to try to understand the behavior of paleo-Indians.

In the family arena, Joel and I are watching our son, Zane, grow. He is four years old now and, of course, loves dinosaurs.

James (Jim) Evans

The past few years have been a blur. For the 2008-2009 academic year we were on sabbatical at the University of Wisconsin. We enjoyed living in Madison, though the winter was pretty harsh, and we learned a lot. I wrote a few papers, learned how to do some cool SEM techniques, and wrote a few proposals. We were also closer to family, and it was fun to visit brothers, nieces and nephews, and to visit my mom. Her health declined rapidly in the fall of 2008, and she died before Christmas. I was very glad that we were close to her home (relative to Logan). Work progresses well. We continue work on exhumed fault zones in crystalline rocks, with applications to seismic processes; fractured sandstone projects with application to tight-gas sandstone production, and a new effort [really a renewal of some of our old work] of CO2–fluid-rock interactions, with emphasis on top seal questions. As has been the case since I first arrived, I benefit from the great work of great students. Much of the recent fault work has focused on the San Andreas Fault and faults in southern California. Two new students will examine fault-related melt rocks and deep hydrothermal rocks, and we look forward to our Fall graduate student trip to the central coastal California area. The funding stream has been pretty strong, so we have a large group of students for Fall 2010. I continue to teach structure, mechanics, and now teach petroleum every other year. New for Fall 2010 will be a junior-senior level general education class on energy, which should keep me on my toes. As always, we love hearing from our former students via facebook, email, and gasp! personal visits, we keep in touch with many students.

Susanne Janecke

I am wrapping up a great couple years in 2008 to 2010. Our year-long sabbatical leave in Madison, Wisconsin was extremely enjoyable, educational, fun, and enriching for my science. It was also very, very cold, and we endured the winter in a poorly insulated house. New avenues of research resulted from this time away and include exploring the origin and effects of crustal flow in metamorphic core complex, Eocene mountain building, large river systems and their dispersal patterns. I also worked on the Baja-North American plate boundary and am close to having that figured out with the collaboration of Chuck DeMets, from the University of Wisconsin. We are able to show that the roughly 1500 km long transtensional boundary from the tip of Baja north to the Big Bend in the San Andreas fault shifted from a more northerly relative motion to more westerly plate motion about 1.5 Ma. The shift is slight, only a few degrees, but the geologic consequences were huge. Dave Forand did a super job with two beefy thesis topics. Dave is now in the oil patch and working for Chevron in Midland, Texas. Lake Bonneville is taking up some time and that project is also nearing completion. Bob Oaks and I “just” need to revise our single long manuscript into two shorter ones. Reviews were fairly positive to our heretical ideas.

Being back home has been terrific too. After all, there is no place like home, and the geology here is not too shabby. An enthusiastic group of students in Geologic Image Analysis (formerly just called Photogeology) are about to finish processing their first Landsat scene and interpret some of the geologic relationships in their scene. We learned to use GeoMapapp to create digital elevation models, to overlay geophysical maps and to calculate volumes of rocks. All the earthquakes of the last year provided fodder for our Image Analysis, and we figured out that the north end of the Chili rupture was stopped by a subducting hot spot track, that Haiti started and stopped at extensional bends in the transform fault, and that the recent Randolph, UT M=4.9 earthquake could have nucleated on a low angle normal fault. I am now really certain that there are too many great rocks to study and too little time. I hope you are well and able to unravel the puzzle that is the earth.
Tom Lachmar

I still teach ground water and physical geology every fall, but I alternate teaching techniques of ground water investigations with physical geology in the winter/spring because I’m teaching Pete Kolesar’s geochemistry class every winter/spring.

With Joel Pederson replacing Dave Liddell as the Graduate Program Director, I’ll be the new Undergraduate Advisor, a role Joel has filled capably since Pete retired (we really miss Pete!).

Paul Inkenbrandt defended his thesis this semester and is employed by the Utah Geological Survey. Tom Nelson defended his thesis last semester, and works for BioWest. Kevin Randall now works for GeoEngineers in Spokane. Kevin’s new son, Aric, is named after Aric Olsen, who works for Carlson Professional Services in Minnesota.

Jason Heath is now married and is finishing his PhD at New Mexico Tech and also working as a student intern at Sandia Labs. Neil Burke still works for Bill Loughlin, and Keri Murch still works for Environmental Resolutions in California. Keri is now married and has a child. Barry Myers still lives in Newton but now commutes to Pocatello, where he works for the Bureau of Land Management. Mike Robinson is currently living in Missoula, but I don’t know what he’s doing. Alan (V.) Jones now works for JM Waller and Associates, and Gregg Hadlock still works for the Department of Defense.

I’ve also kept in contact with Adrian Miner, who is pursuing a Master’s degree at Texas A&M, and Alan Gunnell, who is finishing up his Master’s at Baylor.

Dave Liddell

This newsletter finds me in good health and spirits (although perhaps I should have a psych evaluation – please refer to message from the incoming department head!). My daughter, Jessica, graduated from Reef College with a Psychology BA last spring and is currently traveling the world. I will be meeting her shortly in Kathmandu for a month of trekking and visiting temples in Nepal and Tibet.

I have continued to be blessed with great undergraduate and graduate students. Lynsie Daley (USU BS 2010) has just completed a senior thesis on the petrology of the Cambrian Bloomington Formation. Kirsten Bahr is currently working on an undergraduate research project integrating the Tony Grove caves into a GIS framework. Eva Lyon is finishing up her MS thesis on the biostratigraphy of the Cambrian Spence Shale, building upon the sequence stratigraphy framework developed by Scott Wright (USU MS 1999). Eva has been helped greatly in her work by former USU students and Cambrian aficionados Paul Jamison (USU BS 1982) and Glade Gunther. Heidi Pearce (USU BS 2010) will begin her MS work this summer on the paleoecology and sequence stratigraphy of microbial “reefs” in the Ordovician Garden City (moving up in the section a bit). We will be working with BYU-Idaho professor Forrest Gahn on the Garden City project. Finally, Ryan Jensen (USU BS 2010) will start his MS work on the Cambrian Bloomington Formation in the fall.

The first in what we hope to be a series of articles on the sequence stratigraphy and paleoecology of the Cambrian Wheeler and Marjum Formations in western Utah has finally come out (Palaeo “cubed”, 2009). Following articles will build upon MS theses by Loren Schneider (USU MS 2000), Liz (Langenburg) Petrie (USU MS 2003) and Doug Smith (USU MS 2007).

Tony Lowry

My first four years in Logan has absolutely flown by, but the geophysics program is beginning to take shape with courses established in Applied Geophysics, Geodynamics, Inverse Theory and Geodesy/Crustal Deformation (with plans to add seismology and signal analysis to the mix somewhere down the line). And, we all had a great time on our Fall 2009 field trip to examine (geo-, bio-, and hydro-!) dynamical processes of volcanism and faulting in the Snake River Plain, Hebgen Lake, Yellowstone and the Tetons. Funding is looking rosy, with NSF projects to study GPS deformation of the Rio Grande Rift and Andaman/Nicobar Islands since the 2004 great earthquake, plus an NSF Career grant to develop new methods for in situ measurement of lithospheric strength and rheology (with an eye toward better understanding the whole of the earthquake cycle). Early results from the Career grant, using a combination of EarthScope seismic array data, gravity and heat flow measurements, hint at some (somewhat) surprising controls on lithospheric deformation processes that may help to explain the spatial distribution of Cordilleran mountain building, rifting and earthquakes. My research thus far has been aided by the efforts of four undergraduate students (Alan Gunnell, Tamara Jeppson, Hans Anderson and Jared Romero), and three bright MS students will arrive in Fall 2010.

My wife, Jackie, and I have our hands full with Emma (who just turned five) and Aidan (now two years old). Both love reading books, hiking about and picking up rocks and fossils (much to their mother’s chagrin).

Graduate field trip to Southern California, March 2008. Sponsored in part by Anadarko Petroleum Corp.
Joel Pederson

The past couple years have brought several changes to the geomorph program here in Geology. First, it has included the start of the USU Optical Luminescence Laboratory. Having this Quaternary geochron lab has changed many things. **Dr. Tammy Rittenour** now doubles in the Department’s **geomorph** program and as the lab director. Most of our now larger group of geomorph students undertake OSL dating in their thesis research and spend time having cool lab experiences to go along with field work. These last few years have seen a pulse of excellent graduate and undergraduate students here—doing geomorph research focused on the canyon drainages, uplift, and erosion of the Interior West. One of those geomorph students, **Melissa Jackson**, is highlighted elsewhere in this newsletter. The students now also benefit from a significantly improved and remodeled geomorph lab-corner here on the first floor—you should stop by and check it out!

Personally, I’ve had a large research contract dominate much of my time in the past couple of years. The good news is that it is to work on dirt in the Grand Canyon. The bad news is nearly everything else about it. I also have been undergraduate advisor/director for the past 2-3 years since Pete retired. That has also taken some time, but it is great to have more regular contact with our majors and see our Department grow over the past few years.

Carol and I have a son, Zane, who is now 4 years old, and we are still living in the log cabin outside of Richmond with llamas, chickens and the rest. It is all deeply inconvenient, but worth it!

**Tammy Rittenour**

**Tammy Rittenour**, assistant professor, is the newest faculty member in the Geology Department. Tammy is the Director of the hugely successful USU Luminescence Lab at Innovation Campus. Since its inception in 2007, the USU Optical Luminescence Lab has operated on its own revenue from OSL analysis and has partially supported 3 MS students, a part-time undergraduate laboratory technician, and partial salary for Tammy Rittenour. In addition to overseeing the operation of the USU Luminescence Lab, Tammy has developed a diverse research program at USU and has received over $260,000 in grants since 2008. Funded research projects include: a) the study of the response of the Golo River in Corsica to climate change, b) a dendroclimatology project within the Bear River Range Northern Utah designed to reconstruct drought variability within the region, c) studies of the linkages between arroyo formation and climate change within the Escalante and Kanab River drainages of southern Utah, and d) a study of the influence of climate and glaciation on the timing of alluvial fan deposition within the Lost River Range of Idaho.

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Geo 4500 (Ig/Met)
Field Trip to Twin Falls, ID

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**John Shervais**

This last year has brought huge changes to my research program and my life. First and foremost, I am no longer Department Head. I am now free to focus on teaching and research, my students, and real life. Second, my proposal to the Department of Energy to research “innovative methods of exploration for geothermal resources” in the wake of the Yellowstone hotspot was successful, which means I am busier than ever ramping up for our drilling campaign and coordinating the many students and co-investigators associated with this project. We will have three PhD students and two MS students supported directly by this project, plus many undergraduates and even some recent graduates who will help sit the wells and log core throughout the fall and winter. This project is exploratory in nature, but we hope to document significant new geothermal resources in an area that has not yet seen its development for power production. I have also been pursuing research on mass flux in subduction zones, using upper mantle rocks from ophiolites that formed in forearc regions to document melt extraction and fluid enrichments in the mantle wedge of subduction zones. This work has already resulted in several papers in major journals and will form a significant part of my first USU PhD student’s dissertation research.

As part of our push to develop the department’s analytical capabilities, this spring we purchased an “Inductively-Coupled Plasma – Mass Spectrometer” (ICP-MS) with an automated 213 nm laser ablation system. This instrument, funded by generous donations from the Browning Foundation, the Dean of Science, and the Vice-President for Research, is capable of analyzing minerals, rocks, and liquids for trace elements with parts per billion detection limits. This instrument will complement our existing X-ray fluorescence and X-ray diffraction instruments, and adds significantly to our research capabilities in hydrology, petrology, and mineralogy.
# Congratulations to Our Recent Graduates!

### Recent Graduate Students and Their Theses

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<th>Fall 2009-Summer 2010</th>
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<tr>
<td>Neil Carpenter</td>
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<td>Tyrell Clines</td>
<td>Elise Dearden</td>
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<td>Larry (Will) Kennick</td>
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<td>Kathleen Anderson</td>
<td>Colter Davis</td>
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<td>Jaclyn Hall Twitchell</td>
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<td>Doug Standart</td>
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**Caroline A. Myer**—Sedimentology, Stratigraphy, and Organic Geochemistry of the Red Pine Shale, Uinta Mountains, Utah: A Prograding Deltaic System in a Mid-Neoproterozoic Interior Seaway.

**Thaddeus A. Nicholls**—Decadal-Scale Changes on Coral Reefs in Quintana Roo, Mexico.

**Meagan R. DeRaps**—The Pliocene/Pleistocene Evolution of the Western Snake River Plain Near Grand View, Idaho.


**Daniel J. Rybczynski**—Correlation, Paleoecography, and Provenance of the Neoproterozoic Eastern Uinta Mountain Group, Goslin Mountain Area, Northeastern Utah.

**Dave Forand**—Examinaton of Deformatkon in Crystalline Rock from Strike-Slip Faults in Two Locations, Southern CA.


**Scott J. Friedman**—Evolution of the Lower Cretaceous Chi-feng Half-Graben Basins, Inner Mongolia, China.


**Jonathan E. Harvey**—Reconciling Holocene Alluvial Records in Buckskin Wash, Southern Utah.

**Michelle C. Summa**—Geologic Mapping, Alluvial Stratigraphy, and Optically Stimulated Luminescence Dating of the Kanab Creek Area, Southern Utah.

**Blair Larsen**—Using Real-World Data as a Basis for Problem-Based Learning: Investigating Preservation Biases of Fish in Fossil Butte National Monument.

**Tom Nelson**—Feasibility of Extending an Artificial Salmon Spawning Stream, Marx Creek Near Hyder, Alaska.

**Andy Brehm**—Re-evaluation of the Jesse Ewing Canyon Formation: Implications for neoproterozoic Paleogeography and Tectonic Setting in Northeastern Utah.

**Erin Tainer**—High-resolution Alluvial Chronostratigraphy at Archeological Sites in Eastern Grand Canyon, Arizona

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**PhD Student Researcher of the Year**

PhD student, Kelly Bradbury, was named the 2010 PhD Student Researcher of the year for the College of Science. Kelly examines rocks and borehole geophysical data from the region across the San Andreas Fault over a depth range of about 2-3.5 km. The samples and data come from the San Andreas Fault at Depth [SAFOD] project, and her work provides insight into the nature of deformation processes, geochemistry of fault zones, and their geophysical signatures. She is working with Jim Evans and anticipates a late 2010 or early 2011 completion. Kelly has received support for her work from a wide range of sources, many of which she has sought personally, including the Society of Exploration Geophysics, DOSECC, and the McKillop scholarship in the department.
Awards and Scholarships

Spring 2010
Outstanding Grad Researcher
Marlon Jean
Chris Tressler

Outstanding Grad TA
Dawn Hayes

Outstanding Graduation Senior
Melissa Jackson

Clyde T. Hardy Memorial
Todd Parr
Ryan Jensen

Donald W. Fiesinger Award
Heidi Pearce

Peter T. Kolesar Scholarship
Nicole Parr

David Rider Scholarship
Nathan Giles

Graymont Scholarship
Layne Morris

Peter T. McKillop Scholarship
Heidi Pearce

Questar
Neil Carpenter
Robyn Krohn
Brennan Young

J.S. Williams Graduate Fellowship
Dawn Hyes
Emilee Skyles

Beryl O. & Tura H. Springer Memorial Scholarship
Robyn Krohn

Spring 2009
Outstanding Grad Researcher
Jon Harvey
Dan Rybczynski

Outstanding Grad TA
Eva Lyon

Outstanding Graduating Senior
Tamara Jeppson
Hans Anderson

Donald W. Fiesinger Award
Colter Davis

Peter T. Kolesar Scholarship
Heidi Pearce

Thomas Riemondy Scholarship
Doug Standart

Graymont Scholarship
Katie Kirkham Anderson
Elliot Musgrove

Peter T. McKillop Scholarship
Kelly Bradbury

Utah Geological Association
Heidi Pearce
Karl Lowry

Clyde T. Hardy Memorial
Elyse Dearden
Alain Gunell
Michael Keller

Beryl O. & Tura H. Springer Memorial Scholarship
Elliot Musgrove

Spring 2008
Outstanding Graduating Senior
Devin Peterson

Donald W. Fiesinger Award
Elyse Dearden

David Rider Memorial
Heidi Pearce

John M. Branch Memorial
Hans Anderson

Peter T. Kolesar Scholarship
Alan Gunell

Clyde T. Hardy Memorial
Elyse Dearden
Alain Gunell
Michael Keller
Brady Utley
Eric Winslow

Graymont Scholarship
Elliot Musgrove

Outstanding TA
Dan Rybczynski

Researcher of the Year
Ben Belgarde

Peter T. McKillop Scholarship
Kelly Bradbury

J. Stewart Williams Research
Meagan DeRaps
Jonathan Harvey

URS Scholarship
Quinn Walker

Goldwater Research
Tamara Jeppson

Geological Society of America
Meagan DeRaps
Jonathan Harvey
Michelle Summa

Howard Award
Jonathan Harvey

Exxon Mobil Geoscience Grant
Michelle Summa
David Forand

DOSECC
Kelly Bradbury

Beryl O. & Tura H. Springer Memorial Scholarship
Melissa Jackson

Competition News

In April 2009, Melissa Jackson helped her team qualify for the National Collegiate Soils Contest after placing second in the Northwest Regional Soils Competition. In the national competition, which was held at Texas Tech University, she and her team placed fourth out of 24 teams.

In April 2009, Jonathan Bingham was one of three tied for second place in the poster awards at the USU Spring Runoff Conference.
News From Our Alumni

Kellen (BS 2007) and Sarah Springer (MS 2007) had a baby boy September 17, 2009. They named him Jasper. Kellen and Sarah currently reside in Houston, TX where Sarah is employed with Chevron-Texaco.

Ryan Jensen (BS 2010), married Annika Humiston on May 9, 2009. Ryan will continue his geology studies as a graduate student at USU working with Dave Liddell.

Mark (BS 1996) and Karen (MS 1996) Miller moved to Washington. Mark is doing Pharmaceutical Sales for Alcon Labs and Karen does water resources consulting and owns her own firm with Mark. The firm is called M2 Resource Consulting.

Keri (Murch) Chappell (MS 2003) is the Assistant Project Manager at Environmental Resolutions, Inc., in Petaluma, CA. She is a registered professional geologist in CA, OR, TX and WY and her application is on review in Washington. Keri was married on May 12, 2007 to James Chapell. She and her sweetheart took advantage of the housing market and bought their first house.

Bill Perkins (MS 1979) has moved back from Oklahoma. He is now working for Cimarex Energy in unconventional resources (Woodford Shale).

Jason Kneedy (MS 2006) reports that everything is going well in Oklahoma, where he lives with his wife and three children. His wife is in the nursing program at OSU and keeping busy. Jason works for the Chesapeake Energy Corporation.

Brent Waidmann (BS 2002) has obtained his MS degree from New Mexico State University and also works for the Chesapeake Energy Corporation.

James Eddleman (BS 2001) is with Questar in Tulsa, OK.

In Memory

Don Bickmore (BS 1950). Don Bickmore passed away March, 2010 in Glendale, CA. Don was born in Logan, Utah in 1926 and was a veteran of WWII and the Korean War. Don was a very successful petroleum geologist, working in Oklahoma and Texas, and later as an executive in Calgary, Canada, Houston and in Los Angeles. Don finally retired in 1985. Even after retirement, Don kept active with oil exploration and development in Kansas. Don was always an avid Utah State Supporter.

Craig Forster (Faculty 1987-1990). Craig Forster died in a hiking accident in Zion National Park in 2008. Craig was the first hydrogeology professor in the USU Geology Department and was a collaborator and adjunct faculty for many years. Craig has been described as a wonderful research scientist, educator, mentor, collaborator, musician, and outdoor enthusiast. Craig was born in North Vancouver, British Columbia. He enjoyed wood-carving, cooking and became an accomplished cimbalom and bass player in a Hungarian band. His professional career encompassed groundwater flow in mountainous terrains, carbon dioxide sequestration, and systems modeling of the US-Mexico border and Salt Lake Valley airshed processes. He was appointed Director of the Office of Sustainability at the University of Utah. He is survived by his wife, Bonnie Baty. A special session at the 2010 GSA meeting is dedicated to Craig.

Ann Elder (MS 1992). Ann began her career with the National Park service in 1984 at Fossil Butte National Monument. She then moved to Dinosaur National Monument and served as a Geology Technician, Paleontologist, and Museum Curator. As Curator, Ann conducted a complete inventory of the collection, helped catalog nearly one million cultural and natural history items, and facilitated a web-based exhibit of the park’s fossils. Ann was involved in the discovery and excavation of several new finds in the monument. In July 2008, Ann was selected as Chief of Resource Management for the Colorado National Monument. She died in Grand Junction, CO on March 31, 2009 from complications from emergency surgery.

John Mayers (BS 1992). John Mayers died suddenly on March 30, 2007 from a heart attack. John worked as a Geologist/Paleontologist in the Vernal Field Office of the Bureau of Land Management. John “never saw a rock he didn’t like.” His life was defined by loyalty and compassion. He had a great respect for the environment and was quoted as saying, “Our quest is to see that we are connected to all things, that there is no separation, only in the mind.”
Vincent Jefferies (BS 1997) wrote to Dr. Fiesinger the following: “It's been a busy 11 or so years. After USU, I worked a summer at Kennecott Exploration then went to BYU for my MS. Before graduating in the summer of 2000, I worked for a geotech company called Applied Geotechnical Engineering Consultants. Several months prior to defending my thesis (mapping the Springville Fault using gravity and magnetic methods), I took a job at Dames and Moore just prior to their merger with URS. When they ran out of work for me, I worked for three months as a helper on a Cone Tec rig until I obtained employment as a geologist again at Wasatch Environmental. I was there for 6 years, then in Sept of 2007 I took my current position as a coal mine geologist at Energy West’s Deer Creek Mine. Energy West is owned by Pacificorp, and all of the coal we mine goes to Pacificorp power plants.

Scott Friedman (MS 2009) writes: “In July 2010 I gave my resignation from Chesapeake Energy Corporation. I am excited about the new step in my career but it is with a heavy heart that I leave my friends (family) at Chesapeake. This was a very difficult decision, but ultimately I feel it is the right one. I feel so fortunate for our personal and professional relationships and certainly hope that we can keep those intact through the long haul.” Scott has accepted a position at Noble Energy, Inc. in Denver, CO.

If you would like to update your alumni profile, please go to [http://geology.usu.edu/](http://geology.usu.edu/) and fill out the alumni contact form. We are also looking for photos of fieldtrips while you attended USU to add to our new archive link.
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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-us, or contact Joseph Jenkins, Director of Development for the College of Science [435-797-3510; joseph.jenkins@usu.edu].