

MESSAGE FROM THE CHAIR



Greetings from the Geology Department! We enjoy communicating with and receiving email updates from each of you, and love to receive e-mail updates (geology@byui.edu). After an update makes its rounds through the department we commonly will find ourselves reminiscing with each

other about the past and sharing our excitement about the positive things that are happening in your lives.

The Department is alive and well. You'll be pleased to know that your legacy of department camaraderie continues and that our students continue to compete successfully in finding quality internships, jobs, and graduate programs.

The most significant current change for our department is the university's remaking of the general education program. The new program is called 'Foundations'. As part of it, students take three science courses: a 'Foundations in Science' course and two 'Issues in the Sciences' courses. The dept. is developing four of the eight 'Issues' courses. Next fall will be the last time Geol 101, 102, & 104 are taught. That will mark a historic transition for the department. These changes are keeping us very busy.

In December of last year, Glenn Embree retired. Thankfully, he continues to be very involved in the department and university, so we are able to continue to enjoy his wisdom and friendship. In January of this year, Julie Willis joined the faculty. Her disciplinary

focus is neotectonics and numerical modeling. She's a great addition to the department. Roger Hoggan and his wife will complete their service as mission presidents in the Belen, Brazil mission this summer. It will be fun to see them again. Steve Hansen and his wife continue to serve in the Washington, D.C. temple. Ed Williams and his wife continue to serve at the university. He participated in Expedition this summer and is teaching a course this fall. We enjoy the opportunity to continue to interact with Ed and Arlene.

On campus, the massive construction projects continue. The first phase of the Manwaring Center reconstruction is done. A very nice new bookstore opened in that space this fall. The new bookstore sits in what used to be open space between the MC and the library, just north of where the bowling alley and Tomasito's used to be. The outer structure for the massive, 15,000-seat auditorium and connected multi-purpose space is up. This building is located just west of the MC and south of the Hart bldg. The MC and assembly hall construction will be completed in 2010. The most exciting change 'on' campus is the addition of the Rexburg Temple, which is located across the street from the SE corner of campus. We've been able to enjoy it for almost a year now. It overflows with students and members of the community.

As you can see, the department is continuing to grow and develop. We thank you for your legacy and encourage you to keep us posted on what is happening in your lives. In addition, we hope that you'll take the chance to make connections with current students and look for opportunities to continue to support the work of the department.

-Dan Moore



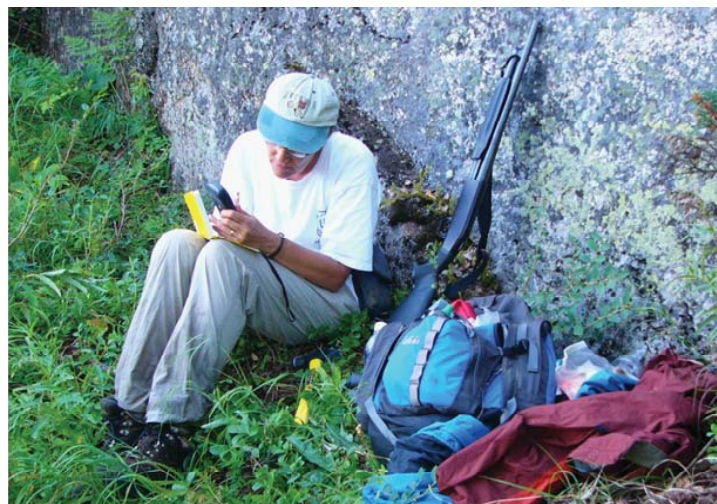
NEW FACULTY MEMBER: JULIE WILLIS



When I was in high school, plate tectonics was emerging from the dusty realm of pure research to the forefront of popular scientific thought. The idea completely captured me and I read every geology article in the magazines and books to which my parents subscribed. I found geology so interesting that I thought people did it as fun hobby; I couldn't imagine it as a career option. I took geology 111 at BYU "just for fun" and learned that lots of people do geology for a career. So I dropped out of my first major (pre-med) and joined the geology department where I could go camping and think about tectonics rather than dissections. I completed both my Bachelors' and Masters' degrees in geology at BYU where I worked with Dr. Lehi Hintze as an undergraduate student and Dr. Myron Best as a graduate student. My time at BYU was punctuated by an LDS mission to New Zealand, several oil company internships and a one semester teaching stint at Idaho State University. I enjoyed teaching more than correlating well logs and looking at seismic data so I decided to head down the academic trail. My goal of getting a PhD was derailed with my marriage to Grant Willis, a fellow geology major at BYU who promised me that someday he'd help me get my PhD. Grant and I have three children; Tyler who is studying communications at UVU, Emily who is studying history at BYU-Provo, and Jacob who is a freshman at Madison High School. True to his word; a few years ago, Grant encouraged me to start graduate school at the University of Utah. Returning to school after a nearly 20 year hiatus was a daunting but exhilarating experience. Under the direction of Dr. Ron Bruhn, I began studying tectonic geomorphology using new tools like remote sensing, GIS, low-temperature thermochronology, and numerical

modeling. I spent several weeks in Alaska packing a shot gun and collecting data via helicopter, light plane, small boat, and foot.

I started my career at BYU-Idaho in January 2008 prior to completing my dissertation. Consequently, I am currently both a student and a faculty member. I will finish writing and defending my dissertation this coming winter semester. I teach Geographic Information Systems (GIS) for Geoscientists and Environmental Geology using a very project-based approach to both. This past semester (Fall 2008), I taught my last Introductory Geology class. In its place I'll teach Natural Disasters (a new Foundations of Science class) and a new integrated science course for elementary school teachers. After I wrap up my dissertation I plan to involve interested geology majors in tectonic geomorphology research in SE Idaho, a region with many unanswered geological questions and a slightly longer field season than Alaska.



Julie doing field work in Alaska with some of her required field gear.

ALUMNI UPDATE: MARK MILLARD

I am currently working as a Petroleum Geologist at Pioneer Natural Resources in Dallas, Tx. I have been working the Edwards Cretaceous Carbonate Trend in South Texas for the past 1 1/2 years. I am currently working on a large regional study looking for statistical relationships between the various geological, geophysical, and engineering aspects of all of

the wells that we have drilled along the trend in the past 3 years. While at Pioneer I have worked on all kinds of projects ranging from prospect generation, interpretation of numerous 3D seismic surveys, petrophysical analysis, gas referencing, core and wireline log acquisition, operations, and reservoir modelling in complex salt dome environments.

Prior to starting at Pioneer I got my MS in Geology at Baylor University in Waco, TX under the Direction of Dr. Vince Cronin. We recently published a paper in Environmental and Engineering Geoscience titled: "The Seismo-Lineament Analysis Method (SLAM): A Reconnaissance Tool to Help Find Seismogenic Faults." It was based on my thesis, and those of two other students that also worked with my professor. We developed methods to identify potentially active faults, and applied those methods to the Santa Monica Mountains in Malibu California.

Three things in particular helped me get into graduate school and the Job that I have today:

First - Writing Classes/Research Papers. Graduate school is centered around 1 thing; Your thesis. If you can't write a good research paper, you won't be able to write a thesis. If you can't write a good essay, cover letter, or resume, then chances are you won't get in.

Second - A lot of effort in the core classes (strat/sed, field camp, structure, etc). Whether you are drilling oil wells in Texas or studying invertebrates in Montana, its all about the rocks.

The depositional system, structural controls, diagenesis, etc., all play a part in every geological problem.

Third - My senior thesis with Dr Clayton and REU experience with USM. Both projects gave me a small taste of what doing research is like, and gave me opportunities to present my results at AAPG and GSA where I was able to meet people who would later help me get into graduate school, and now the job where I am currently employed.

Erica, my wife, is doing very well. She spends her days raising our son Logan who is now 17 months old, and spends many weekends photographing weddings in the Dallas area. We really enjoy living in Dallas. We spend a lot of time at the park, at minor league hockey games, and at my own hockey games (I decided to learn how to play and joined an adult league myself).

ALUMNI UPDATE: DREW COLEMAN (AKA JANES)

After my first internship at ExxonMobil (from Jan to April 2008), I immediately followed with a second internship (May to July 2008). I worked extensively with ArcGIS under ExxonMobil's Upstream Information Technology group. I found the blend of geology and IT very exciting and something I would highly recommend to any of the geology students who find themselves to be a bit of computer nerds.

After internship number two, I returned to Idaho very briefly in order to get married to my best friend from high school. After gallivanting across the world



2008 Bear Creek Slide - Mark Lovell

on the honeymoon (mostly including a trip to Malta), we settled in Cincinnati, where I am now attending the University of Cincinnati as a graduate student of geology under Dr. Arnold Miller.

I have found the transition from undergrad to grad a very easy one due to all the opportunities provided to me while at BYU-I. The department here is just as lively and fun as the one back home, and it's been easy to make friends. The faculty is also just as accessible and helpful as I grew accustomed to at BYU-I. I am very grateful to have Arnie as my advisor, as he is not only very knowledgeable, but has a great, easy going personality to boot.

I had applied to five universities, based on my own research as well as guidance from Dr. Gahn and Dr. Little. Of those five I was accepted to 3 with support and 1 without support. I appreciated the help of Dr. Gahn as I made my decision. He took the time to share with me his knowledge of the universities.

While my research topic is still a bit hazy, it is slowly starting to develop. For now, I am starting by examining the expansions and contractions of geographic ranges in bivalves and corals as they progress through the Eocene to the Miocene. It can be seen that the geographic range expands and then contracts, but I am curious whether that shift is done by the individual components (such as the genera) expanding and contracting themselves, or whether the shift occurs through the extinction of some and then the origination of others. I am planning to use the PaleoBiology Database (online) and ArcGIS as the main tools in this process.

I have received an offer for a third internship with ExxonMobil, however, I unfortunately had to

decline it. There is going to be little free time this summer and I would like to use that time to get work done on my thesis so that I am able to complete it within two years. I seem to have good standing with ExxonMobil, however, and expect to receive an offer upon graduation. I believe Stef will be accepting an internship offer with ExxonMobil for this summer, but you will need to get more of the details from her.

So in short, I've done FAR more than I EVER thought with geology. It all started with a 101 class with Dr. Hoggan for lecture and Brother Lovell for lab where I thought to myself "Hey, I think I'll major in geology". I'm very grateful now for that somewhat whimsical decision, but mostly I'm grateful for you good professors who fostered such a healthy department! I feel like at BYU-Idaho I was very well prepared for both my work experiences at ExxonMobil, and my academic experiences at UC. Thank you very much for all your work and dedication!

I hope that all is well in the department, and I hope to cross paths with you fine folks again sometime soon!

STUDENT INTERNSHIPS

Each year our senior students have a variety of internship opportunities where they gain career experience and represent the department and university well. The following is a list of students and where they served as interns over the last year:

Steven Thornock - Pason Systems USA



At the top of Big Windy Peak during Field Camp 2008 - Bill Little

Tyson Forbush - Marigold Mining Corporation
 Matt Cannady - Geosearch Logging
 Christopher Leach - Geosearch Logging
 Brian Cozzens - Idaho Dept. of Environmental
 Quality
 Andrew Smith - Marigold Mining Corporation
 Ryan Hayes - Western Paleontological Laboratories

STUDENT GEOLOGICAL SOCIETY UPDATE

The Geology Society and AAPG student chapter have had an exciting and productive year. We hosted and participated in several activities, events, and field trips. The Geology Society hosted an opening and halloween social, went on a field trip to Cave Falls, Idaho and took a tour of the BYU, Provo Geology department.

The AAPG student chapter attended the Rocky Mountain Rendezvous in Laramie, Wyoming. Members met with companies including; Exxon mobile, Devon Energies, Cabbot Oil and Gas, and others. Many AAPG members, while at Laramie, also attended a short course about the economics of the oil and gas industry hosted by Shell.

For updates and news concerning the society or news on the student chapters of AAPG and NSATA, please visit the Geology Department's website (<http://www.byui.edu/Geology/>)



Andrew and Brooke Smith, Cave Falls, Yellowstone National Park, Idaho.

THE FIRST BYU-I GEOLOGY DEPARTMENT MEGA FIELDTRIP: HAWAII

Thanks to the university's sponsorship at the end of July and the beginning of August ten students, 2 alumni, the department faculty and three of their spouses spent 8 days getting first-hand experience with the active geology of Hawaii. On the Big Island the group saw the active lava flows from Kilauea. The participants took notes, collected samples and images of not just the active flows, but venting at the summit of Kilauea. Outcrops of historical and prehistorical eruptions, including sites of lava tree formation, fissure eruptions, and pit craters were visited.

Field excursions to the black sand and green sand beaches at the southern end of the island were one highlight of the volcanological part of the trip, along with a drive and hike up a parasitic cinder cone on the flanks of Mauna Kea.

Coastal and reef processes were also experienced first hand as students and faculty observed life on the reef while snorkeling. An added bonus was a night snorkel with a giant manta ray.

The last three days of the trip were spent on Oahu where the group got to visit the Polynesian Cultural Center and the USS Arizona memorial in addition to seeing more coastal geologic processes.

The experience and knowledge gained by the students and faculty is best summed up by the following thank you letter from one of the student participants, Rebekah Wood:

Dear BYU-Idaho Geology Department:

I would like to thank you for the incredible opportunity of visiting Hawai'i with the Geology faculty and select students. The field trip was certainly the chance of a lifetime, and I feel greatly privileged to have been able to participate. As a group we visited a mixture of historical sites and geological sites on the Big Island and in Oahu. We mainly observed the effects and characteristics of lava and saw its history, from the flows destroying homes and highways to the active lava tube adding to the island along the coastline. I believe the trip helped me in the following areas:

After numerous classes of learning about volcanic activity, I believe seeing an active volcano, hearing the explosions of lava as it hit the ocean, smelling the gases, and feeling the tephra and sulfur dioxide rain on my skin, I gained such a better grasp on how these wonders actually work. I did not have to study the processes from a book because I was actually a witness to the processes. The learning I have from books can never substitute real experience.

In my future career I will have many coworkers and will be exposed to a large assortment of personalities and strengths. From this field trip, I have become better at learning how to balance the personalities. I found the people who were more like myself and more compatible with my own personality, but I still was around the other group members. Though certainly not perfect, I feel as though I have a step up in my work force because I have already begun the path to living with others.

I am not finished with my B.S. in Geology and at times I wonder why I chose this major. Then I remember the field trips and the faculty. In this particular trip I once again discovered the teachers are humans, too. They all reiterated to me that learning is fun! It is power and it is so beneficial to happiness. It was so enjoyable being close with the faculty as we each looked at some part of nature and tried to interpret its history. In the fall, I am confident that I will be more receptive to my teachers simply because I saw them when they were not at work.

Again, thank you very much for giving the students this amazing opportunity to visit the paradise of Hawai'i and allow us to experience how volcanoes work. I enjoyed the chance to see tropical fish in their own environments, too, along with the historical sites we visited. Every bit of knowledge I learn through school or experience helps me to become a better student and hopefully a better employee.

MUSEUM NEWS

Etheridge (1910) famously stated that “A finished museum is a dead museum.” If that is true, our small museum is full of life—literally. Among recent changes is the addition of a 125 gallon Indo-Pacific reef aquarium. It's easy to rationalize adding rocks, minerals, and fossils to a geology museum, but a saltwater aquarium? There are numerous reasons for including such an exhibit. The BYUI Geology Aquarium provides an opportunity for students to observe marine life first-hand. This is particularly useful for our historical geology, oceanography, and paleontology courses. In historical geology and paleontology we spend much time discussing marine invertebrates and the geological record and importance of reefs. In the oceanography course we've learned that only a small number of our students



have been scuba diving or snorkeling, and a surprising number haven't visited the ocean at all! Living in Idaho has obvious disadvantages for studying marine life, but our museum brings a small piece of the reef to campus.

The museum has benefited from other changes



as well. We've gratefully received another large (271 specimen) mineral donation from Keith and Mauna Proctor, who have already donated nearly 600 specimens. Their contributions alone have dramatically improved the aesthetic and educational value of the museum. Additionally, Ben Jordan has installed an incredible fluorescent mineral display, made largely from his private collection. Finally, we've installed a large (8' x 14') mural depicting a Carboniferous forest based on the Manning Canyon Shale. The mural will be accompanied by an exhibit on fossils from the same geologic formation.



The near future will bring additional changes to the museum, including an exhibit on the fossils of the Green River Formation. We're also installing a touch screen monitor that will allow visitors to enter a catalogue number for any specimen on display and discover more about it. Additionally, they will be able to select photographs of the various organisms in the aquarium to learn about their classification, provenance, and ecology.

Although small, we are working hard to make the BYUI Geology Museum educational and inspirational. Not only do we hope to use the museum to support our majors and new Foundations courses, we hope that it will be enjoyed by the broader community—especially by school and scout groups. Moreover, we'd like to invite you to visit our ever-changing museum!

-Forest Gahn

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