Department of

GEOLOGY

Alumni Newsletter | Fall 2009

Dr. Boris Lau

Dr. Daniel Peppe

Dr. Jay Pulliam

FEATURING

Our Newest Faculty Members

BAYLOR
UNIVERSITY

MESSAGE FROM THE CHAIR

Review of the 2008-2009 Academic Year for the Geology Department

Pictured above: Dr. Steven G. Driese, Chairman

Pictured right: Welcome Picnic 2008

This Year's Geology Newsletter Theme: New faculty members and lab construction

During this academic year the Geology Department reaped the rewards of successful searches for three separate faculty positions: Dr. Jay Pulliam joined the Department in August of 2008, Dr. Boris Lau began his faculty appointment in January of 2009, and Dr. Dan Peppe will begin with Baylor Geology in August of 2009! Each of these new faculty members is engaged in planning for construction of their new research laboratories (Seismology, Nanoparticle research, and Paleomagnetism/Paleobotany, respectively). We now have a new stable isotope laboratory with a state-of-the-art mass spectrometer permitting us to analyze C, O, N, and H isotope ratios, located in BSB B408 (see Dr. Steve Dworkin's article). And in September of 2008 we began to occupy the newly constructed Carlile Geology Research Building that is (almost) attached to the Baylor Sciences Building. Another exciting development is that the Baylor Geological Society (BGS) has returned to the Department after a long hiatus (more to follow)!

And of course we look forward to seeing all of you alumni again at the Annual Geology Alumni Homecoming event on Friday evening, October 23rd, 2009, from 7:00-9:00 PM in the 4th floor clocktower (room E401) of the Baylor Sciences Building, and around the elevators at the Geology end of the 4th floor. Come visit with former faculty, classmates, and staff, with food and beverages provided!

Administrative, Faculty, and Staff Changes

After intensive national searches conducted in the fall of 2007 and spring of 2008, we successfully hired one new tenured and two new tenure-track faculty members in Geology. The Department is now approved to search for a new faculty line in Organic Geochemistry or Paleoclimatology Modeling as part of the Major Strategic Proposal (MSP) in Terrestial Paleoclimatology, as well as approval to hire a full-time Ph.D.-level technician and Research Scientist to manage the new stable isotope laboratory, which was also funded in the MSP. The Department is currently searching for a ½ time lecturer in GIS in conjunction with an ongoing staff search for a position in the Center for Spatial Research (CSR). Dr. Stacy Atchley continues to serve as Associate Chair of the Department.

Fellowship Events

The annual late summer Welcome Picnic was held in August of 2008 in the backyard at Steve and Marylaine Driese's home in McGregor. The Geology Alumni Homecoming Event with food and refreshments was hosted by the Geology Department

Allison and Don Greene with Dr. Tom Goforth at the 2009 Spaghetti Supper

in the Baylor Sciences Building on Halloween night, 2008 (see photographs of some "strange visitors" to Homecoming later in the newsletter). Steve and Marylaine Driese held their annual Christmas Party for faculty and staff in December of 2008 at their home. And the Geology Department held its annual "Geology Spaghetti Supper" event at the new Baylor University Faculty Center on the Baylor University campus in February of 2009 for faculty, staff, graduate and undergraduate students, and their spouses and children – a new twist this year was that we were joined by Geology Advisory Board members.

Development Efforts and Geology Alumni Events

The Baylor Geology Board of Advisors held a business meeting in the afternoon, prior to the Geology Alumni Homecoming Event in October of 2008. The Board met to talk about ways in which Board members can work with the Department and the Development Office to identify specific needs and to initiate and conduct special fund-raising projects. Everyone was also concerned that interest in the Advisory Board seemed to be lagging, and that something needed to be done to renew that interest and provide a sense of purpose and direction. Although initially another Alumni Event in Houston was planned, because of all the post-hurricane damage to Houston and uncertainty about alumni and friends with damaged homes, the Department elected not to hold a Baylor Geology Alumni event at the GSA Annual Meeting in early October of 2008.

The Geology Advisory Board met in February of 2009 and elected Robert Springer as Chair. They discussed taking on fund-raising for the Geology Resource Endowment Fund, a fund that was originally established in 1998 by the Geology Advisory Board to assist the Department in providing essential resources to faculty and students, but which was (and still is) significantly under-funded. The initial goal of the Fund was to bring it to $150,000, distributing to the Department roughly $7,500 annually to support this need. Currently, the Fund contains $26,000, but if we come together we can get it up to the original goal within the next few years. This Fund helps to provide online periodicals, scientific journals, reports and bulletins that are needed to keep the Geology Department up to date in the latest research and development. I am appreciative that at that February meeting the Advisory Board members present contributed funds sufficient to exceed the $25,000 minimum threshold for the Endowment to start generating spendable earnings.

Related to concerns about lagging interest in Advisory Board and other Alumni activities, Dr. Stacy Atchley, working with Baylor Geology AAPG Student Chapter President Jason Mintz and other chapter members, re-established the Baylor Geological Society (BGS). This student group, which is to be commended for their herculean efforts, organized two thematic events scheduled around the February 2009 Spaghetti Supper: 1) a student faculty research symposium that showcased Baylor Geology research to the Department and alumni, and 2) a field trip to Brownwood, TX, emphasizing stratigraphy, paleontology, and depositional environments of Middle Pennsylvanian rocks at the Lake Brownwood spillway, which Dr. Atchley's undergraduate Stratigraphy class and his graduate Depositional Systems class had jointly studied in the spring of 2008. The students produced a first-class guidebook and about 50 participants attended, including Geology Advisory Board members Jim Bain, Art and Sue Lynn Bishop, Dr. Matt Pranter, Josh Talbert, and Joe Whiteside and wife Ana Maria. A professional Baylor photographer captured the event, photographs of which are now featured on the new Geology Department website. A BGS Symposium and Field Trip theme of "Central Texas Geomorphology and Geoarchaeology" in honor of Dr. O.T. Hayward is currently being organized for the spring semester of 2010, so stay tuned for further information regarding scheduling of these events.

Two major gifts were given in 2008-2009. One gift from Dr. Ken Carlile and his wife Celia was made to establish the Thomas W. Goforth Paleomagnetic Laboratory for Dr. Dan Peppe. This gift will be used to purchase the magnetometer, which is the base instrument about which the lab will be constructed. Mr. and Mrs. Connie Hudson also established the O.T. Hayward Excellence Fund which will be used to support bringing world-class researchers to the Geology Department and Baylor University to give talks on their research and to interact with faculty and students. The first inaugural speaker is Dr. David Montgomery, a world-renowned geomorphologist and Professor at the University of Washington, and a 2008 recipient of a MacArthur Genius Award, will give the first Hayward series lecture on October 5-6, 2009. At this event we hope to recognize both Dr. Hayward as well as the Hudsons for making this possible. Many other gifts were received throughout the course of the academic year, and I cannot express how grateful I am to Baylor alumni for their continued generous support of the Geology Department – without you we would not be able to do all the things that we do!

A mineral collection was donated to the Geology Department in 2008 through a bequest from the estate of Mr. Samuel L. Murphy. This collection of more than 5,000 specimens is being used by our Geology Department to benefit the faculty, students and visitors of Baylor University. The Geology Department held a first-ever gem and mineral sale on "Diadeloso Thursday" in April of 2009, which was coordinated by Dr. Don Parker and was very well-attended. The proceeds from that sale will be used to purchase high-quality mineral specimen cabinets for display on the 4th floor foyer (outside the elevators) of the very best of the mineral specimens for visitors to enjoy – it is our hope that with these displays it will become apparent to students and visitors that this is the "Geology" portion of the Baylor Sciences Building.

Graduate Program

The Department successfully recruited 7 new students (4 M.S. and 3 Ph.D.) in the fall semester of 2008, 8 new graduate students for entry in the fall of 2009 (2 Ph.D. and 6 M.S. students), and 2 new Ph.D. students for entry in the spring of 2010. Of the 23 graduate students in the program during the 2008-2009 academic year the Department had 15 students supported as Graduate Teaching Assistants, plus 5 students supported on externally funded research grants. With the addition of the fall semester 2009 crop the graduate student body will be approximately 50% Ph.D. and 50% M.S. students. All of our 2008-2009 M.S. graduates secured employment in the oil and gas industry or in the environmental and engineering geology sectors. In spite of national and global economic woes there is still very strong demand for our M.S. and Ph.D. students in high-paying jobs! Three Ph.D. students defended and completed their dissertations: Dr. Sikiru Amidu (summer 2008), Dr. Julia Kahmann-Robinson (fall 2008), and Dr. Aaron J. Shunk (spring 2009); this appears to be a new record for the Geology Department and attests to the growing success of its Ph.D. program. Geology Ph.D. candidates/graduates published 6 research papers in peer-reviewed journals and 1 of the Ph.D. dissertation proposals was later submitted as a grant proposal to the National Science Foundation. There were also 9 M.S. graduates during this same time period (including summer of 2009), which attests to the continued vitality of the Master's Thesis program as a terminal professional degree. Dr. Steve Dworkin continues to manage the graduate program as Geology Graduate Program Director (GPD).

Undergraduate Program

The enrollments in Geology major courses such as mineralogy, paleontology, structural geology, petrology and stratigraphy were skewed this year, with some much higher compared to the past academic year – this was mainly an artifact of one faculty member (Dr. Parker) being awarded a sabbatical leave for a semester, which required juggling teaching schedules for majors courses. We have seen real overall growth in our numbers of B.S. majors in Geology (currently 70.) Another measure of growth is that the summer field camp course in 2008 had 10 students, and in 2009 will have 16 students! This is approaching the physical limits of how many students we can teach in the field geology course in one session in the summer. The number of students majoring in Geophysics (B.S.) has been relatively low but shows signs of recent increases (to 3 students). Numbers of majors in both the B.A. in Geography and Earth Sciences are both currently low (2 and 1, respectively). Graduation rates have been averaging 6-10 students per year. Six Baylor Geology undergraduate students are currently engaged

in Senior Thesis projects under the direction of faculty members. Three undergraduate geology field assistants supported by the James W. Dixon Undergraduate Field Assistant award helped graduate students in the summer of 2008, and three more will be helping graduate students in the summer of 2009 as well. Dr. Rena Bonem continues to manage the undergraduate program as Geology undergraduate Program Director (UGPD) and she and Dr. Yelderman advise all students each semester for coursework.

Ms. Sharon Browning, as Geology laboratory coordinator, has been involved in revision and consolidation of the current large number of introductory course laboratories offered in Geology and Earth Science in order to streamline lab course preparations and still maintain student satisfaction with our freshman courses. The labs for the GEO 1408 Earth Science course received her primary attention this past year.

Research Productivity

Research accomplishments for the Geology Department for the 2008 calendar year included **20** publications in peer-reviewed journals, 2 peer-reviewed electronic documents, and several professional reports. There were 22 professional presentations and 12 additional invited presentations, and circa $1M in external funding. There are also 8 peer-reviewed journal articles for 2009 already published, accepted or in press as of May, 2009. Journals in which articles by Baylor Geology faculty were published include:

Bulletin of Canadian Petroleum Geology, Bulletin of Volcanology, Chinese Science Bulletin, Environmental &Engineering Geoscience, Geological Society of America Bulletin, Geophysics, Geosphere, Hydrological Sciences Journal, Journal of Biogeography, Journal of Geology, Journal of Hydrology, Journal of Paleolimnology, Journal of Sedimentary Research, Journal of Volcanology and Geothermal Research, Palaeo³ (Palaeogeography Palaeoclimatology Palaeoecology), Plains Anthropologist, Quaternary Research, Quaternary Science Reviews, Soil Science Society of America Special Publications, and Water Resources Research.

Many Baylor Geology faculty members, in addition to publishing their research, have secured external funding to support their research programs. Drs. Stacy Atchley and Lee Nordt continued with a Petroleum Research Fund (PRF) grant to study the sequence-stratigraphy and paleoclimatology in Triassic paleosol-bearing alluvial successions. And Drs. Peter Allen and John Dunbar completed several funded projects involving studies of fluvial erosion and sediment deposition in reservoirs in central Texas. Dr. Steve Driese continued with a National Science Foundation (NSF) grant to study the mineral siderite in soils and its use in paleoclimate studies in paleosols. Dr. Driese also received two new NSF grants to study Texas Vertisols and late Pleistocene-Holocene paleoclimates recorded in floodplain deposits in the southeastern US. Steve Dworkin and Dr. Stacy Atchley received support from the oil and gas industry (EnCana Oil and Gas (USA), Inc., and Husky Energy, Inc., respectively) for applied petroleum studies research. Dr. John Dunbar continues to be supported on a US Department of Energy (DOE) research grant to use resistivity methods to survey the Gulf of Mexico for gas hydrates. Dr. Jordan Feng continues on an NSF grant to reconstruct climate for the past 50,000 years in central Asia. Dr. Jay Pulliam brought in several very large NSF grants involving Baylor University, UT-Austin and a host of other academic institutions comprising seismological consortia, with studies that include investigating the structure of the Rio Grande Rift and the Puerto Rican trench. Dr. Joe Yelderman received several new research grants from the Texas Commission on Environmental Quality for wetland and wastewater research. The department continues to increase graduate student (especially Ph.D.) mentorship, publishing in peer-reviewed journals, giving professional presentations, and securing external funding as part of an ongoing effort to increase its visibility at a national level. (For a complete summary see the Geology Department 2008-2009 Research Report available on the Geology Department's website)

Guest Lecturers for Geology 5050 Colloquium Series

The Geology 5050 Colloquium Series held a regular schedule of talks held at 3:30 PM in room E231 on Friday afternoons, with a 3:00 PM reception prior to each guest lecture in the 4th floor clock tower. The Department budget continued to support funding for up to 4 to 5 far-away (airfares) speakers each semester, in an effort to increase Department visibility

at a national level and to expose Geology students to researchers from across the country. With the addition of the new O.T. Hayward Excellence Fund we will be able to invite an additional world-class speaker each semester, starting in the fall of 2009.

Notable out-of-town guest speakers in the fall semester of 2008 included Dr. Terrence Quinn (UT-Austin), Dr. Kam-biu Liu (Louisiana State Univ.), Dr. Matthew Schmidt (Texas A & M Univ.), Dr. Lonnie Thompson (the Ohio State University, co-sponsored as Vice Provost for Research and College of Arts & Sciences Distinguished Lecturer), Dr. Ann Chin (Univ. of Oregon), Dr. Harvey Weiss (Yale University, co-sponsored by Geology and Anthropology/Archaeology Departments), Dr. Yongsong Huang (Brown Univ.), and Dr. John van Wagoner (Exxon-Mobil). Dr. Jordan Feng coordinated this paleoclimatologically-oriented Geo 5050 seminar series, which was excellent.

Notable out-of-town guest speakers in the spring semester of 2009 included Drs. Lawrence Lawver, Harm van Avendonk, and Matthew Hornbach (all from UT-Austin), Dr. Ben Surplus (Trinity Univ.), Dr. Alberto Lopez-Venegas (USGS), Dr. David Ferrill (Southwest Research Institute), Dr. Yingjie Yang (Univ. of Colorado), Dr. Nathan Sheldon (Univ. of Michigan), Dr. Jolante van Wijk (Los Alamos National Lab), and Dr. Kevin Mickus (Missouri State Univ.). Dr. Jay Pulliam coordinated this seismologically-oriented Geo 5050 seminar series, which was excellent.

Acquisition of New Teaching and Research Equipment

We acquired, and have now set up, a new stable isotope laboratory in BSB B408 containing a Thermo-Electron gas-source stable isotope mass spectrometer that will be shared by faculty and students in Geology, Biology, Environmental Sciences, and Archeology/Anthropology. The instrument was secured with assistance of the Vice Provost for Research Office (Dr. Truell Hyde). Measurement of $\delta^{13}C$, $\delta^{18}O$, $\delta^{15}N$, and δD in solids and other natural materials is essential to many in the Geology Department, but especially to the Terrestrial Paleoclimatology program. Several geochemistry courses will use the instrument for teaching, and students and faculty will no longer need to drive to other labs to use their facilities, or send samples to commercial labs. Dr. Steve Dworkin is the initial director of this laboratory, but we have been approved to conduct a search for a Baylor University-supported instrumentation technician for this lab during the 2010 budget year.

We are especially grateful for the financial help of Ken and Celia Carlile in setting up the Thomas W. Goforth Paleomagnetic Laboratory for Dr. Daniel Peppe, which requires a special shielded room and expensive demagnetizing instrumentation to accompany the magnetometer, which has been ordered and will require up to 1 year to assemble. Dr. Boris Lau is also in need of additional research equipment for his new nanoparticle laboratory, as well as Dr. Jay Pulliam in assembling his seismological laboratory with "real-time" streaming of data to be displayed in a series of flat-screen monitors. We still have a Geology "wish-list" for equipment items ranging from $1K to $400K, and we welcome alumni support at all levels in our attempts to modernize the Department's equipment base.

Completion of a New Hydrology Laboratory for Dr. Peter Allen

A new hydrology laboratory was constructed for Dr. Peter Allen in the 4th floor C-wing (also known as "the water wing") of the Baylor Sciences Building. Dr. Allen previously had no access to a laboratory in the Baylor Sciences Building; however, funds were made available for construction of this lab through a major strategic proposal (MSP) for enhancement of the Center for Reservoir and Aquatic Systems Research (CRASR) approved by Baylor University in August of 2007. The area adjacent to the lab also includes office space for graduate students.

Construction Plans for a New Geophysics Laboratory for Dr. Jay Pulliam

Designs for plans have been submitted for a new geophysics laboratory to be shared by Drs. Jay Pulliam and John Dunbar and located in the E wing of the 4th floor of the BSB. The lab will consist of a wall with one giant flat screen panel, plus 20 smaller flat-screens, with seismological data streaming in from various monitoring stations. There will be a server

plus 6-8 work stations in which students and faculty can work with data. A portion of the lab will also include a reception and media area, and also work areas for building or repairing geophysical equipment.

Completion of a New Nanoparticle Laboratory for Dr. Boris Lau

Dr. Lau's new lab is a wet-lab for bench-top nanoparticle experiments located in the C wing of the 4th floor of the BSB (next to Dr. Allen's new lab). The area adjacent to the lab also includes office space for graduate students.

Construction Plans for a New Paleomagnetism and Paleobotany Laboratory for Dr. Dan Peppe

Dr. Peppe's planned new lab, which is to be located in the last remaining space in the E wing of the 4th floor of the BSB, is best described as a room within a room (within a room) with 2 (or 3) layers of magnetic shielding designed to keep out the earth's magnetic field; the magnetometer will be located in the center of all the magnetic shielding for measuring different components of magnetic signatures of rocks and sediments for chronostratigraphic correlation. A portion of the lab will also be used for preparation of paleomagnetic and paleobotanical samples. The area adjacent to the lab will also include office space for graduate students.

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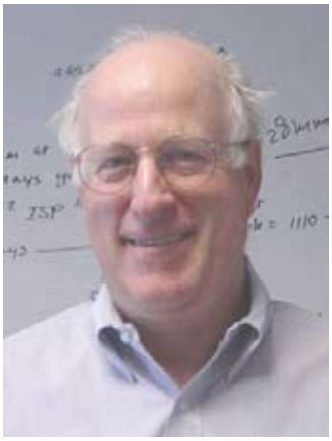
Dr. Peter Allen

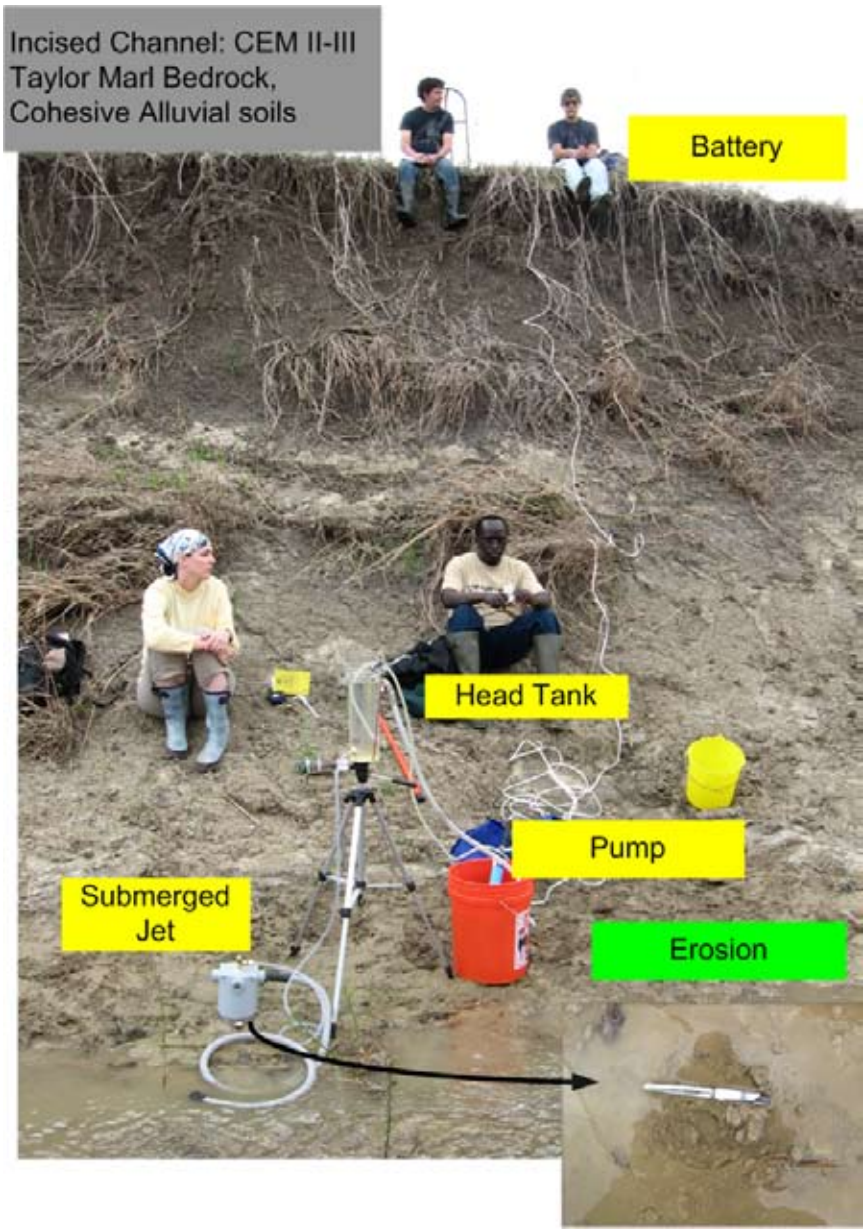


Well, the years seem to go by quickly… got a 30 year pin… and it seems like yesterday we were camping under a clear moonlit sky on the summer field course just outside of St. George Utah, when at 2AM, the sprinklers came on and soaked everyone… ah yes…

Anyhow, snapping back to recent work, I have been doing a lot of outside lectures it seems. I gave a short course in at the Blacklands Research Facility in Temple to City Engineers and Planners on "Working with Streams and Erosion Hazard Zones". Then, this month a Continuing Education Short Course on "Stream Stability Assessment for Engineers and Planners" in Dallas at Halff Engineers. Stream erosion continues to mount as Texas urbanizes. The solution prior to urbanization appears to be detention (small dams), and forcing homeowners to set back from the eroding streams. Following urbanization, the solutions to preventing homes from falling in the streams all involve a lot of money or about fifty dollars a square foot of stream bank. So, people are beginning to pay more attention to the problem. Austin has spent upwards of 20-30 million so far on stream problems with no end in sight. I would say the Metroplex is of a similar magnitude.

On the research front I have been working with students to perfect a more portable submerged jet testing device which actually gives rates of erosion for concentrated flow erosion such as streams and gullies. The test can be performed in the field or lab. We use this test in conjunction with a computer model Jeff Arnold, Bill Komar, and I designed which allows engineers to predict how rapidly the streams will erode with changes in watershed land use. We just finished the beta version this month and presented it to practicing engineers for testing. We hope to release the final version nationally by the end of the summer. The Lake Whitney project is finally coming to an end and fellow researcher Dr. Joseph White and students are modeling salinity changes in the reservoir with the SWAT model

and QUAL2E. Salinity is a major deterrent in water availability in Texas and such efforts will be used in future evaluation of reservoir function and water regulation throughout the State. John Dunbar and I did some work involving a paper and presentation (John) on high resolution sub-bottom profiling of a man made lake (Lake Caroline) in Irving, Texas. The resolution was so good we could pick out the amount of sediment in the lake since its creation but also landslides that had occurred after the lake was filled. The landslides were in the Eagle Ford Shale. John did some subsequent numerical modeling of the features and proved that long term water penetration into the overconsolidated shale was probably responsible for the failure. More recently we met with EPA Region 6 and talked about future modeling of stream channel stability for cities which would allow cities to predict at what development levels streams would begin to have stability problems or be impaired biologically.



I have had the pleasure of watching Dave Coffman complete his work on a watershed in Lewisville where he assessed the rate and cause of stream erosion in the area of outcropping Woodbine sandy terrain. He successfully defended and graduated this Spring. Matt Schreiner is not far behind with his work on projecting stream setbacks in urbanizing watershed with GIS technologies and the Channel Evolution Model. Matt compared Lidar and DEM's data using GIS methodologies to ascertain how many homes in cites fall within Hazard zones for stream erosion. Hazard zones were estimated by prediction of stream downcutting and widening with urbanization. Matt is now employed at EXXON in Houston and will finish up here shortly. Joseph Sang, a new PhD. student from Kenya has arrived and is completing coursework and will take his oral exams in the fall. This summer, John Dunbar and I plan to accompany Joseph to the field in Oklahoma where we are going to assess reservoir sedimentation and erosion of the Mid Continent Drought which we feel is captured in a PL-566 dam built in 1950. He will model this as part of his dissertation work. John and I have just completed some similar work on drought sedimentation in Texas in Brady. We are going to Kansas in the fall to present two papers on our efforts in this area to a National USDA Watersheds Conference appropriately titled from "Dust Bowl to Mud Bowl."

On the home front, Sarah is in Dallas with our two grandchildren, Maggie is a Pediatric Nurse Practitioner in San Francisco, and Annabel is finishing up this summer at the University of Colorado in Boulder with plans of a job or graduate school or something like that. And, the best for last, Peggy and I just celebrated our 30th. My best to all!

FROM THE PROFESSORS

Dr. Stacy Atchley

The Fall semester of 2010 marks my 15th anniversary as a Baylor faculty member. My time in Waco has improved with each year. I've had great students to work with, a generous university to work for, co-workers that I enjoy spending time with, and a wife and 2 daughters that are doing a great job raising me. Life is good and I anticipate will get even better.

I spent Summer of 2008 working with Nate Ball and Luke Hunt on an enhanced oil recovery project in the Cretaceous Doe Creek Member of the Kaskapau Formation at Valhalla Field, Alberta. This proved to be the largest study that the Applied Petroleum Studies program has completed to date... Over 500 total wells in the dataset, and 120 of these had core. Nate and Luke did a fantastic job, and we were able to complete the project (including documentation and presentation) within the required 8 weeks... Whew! During the Fall 2008 semester I spent my non-teaching time drafting a manuscript from this study that is currently in review for publication within the Bulletin of the American Association of Petroleum Geologists. Perhaps by the time you read this newsletter the paper will be in press. Also by the time you read this newsletter Luke will be working full-time for Husky Energy in Calgary, and Nate for Nexen in Dallas.

During the Spring 2009 semester I taught my standard undergraduate Sedimentology/Stratigraphy course along with Petroleum Geology. Any former students of these courses are aware of what they involve... Nothing has changed. Many trips to the field with my undergrad sed/strat class, and many hours in the lab for my petroleum geology class. All in an effort to provide the next crop of geologists. As I look forward to Summer 2009, I plan to do several weeks of field work divided between an ongoing project within the Triassic Chinle Formation at Petrified Forest National Park, and a new project within the Pennsylvanian and Permian of southeastern Utah. More specifically, the latter project will be based upon outcrop exposures along canyon walls of the San Juan River near Mexican Hat, Utah. Former graduates of my Advanced Sequence Stratigraphy field course will have fond memories of their time along Honaker Trail. Steve Dworkin and I will be visiting this section along with a comparable section exposed within the nearby Raplee Anticline. My summer only gets busier after the field work is completed. At the end of May, my family and I depart for a 2-week tour of the British Isles, France and Holland. I've been promising Janelle a major trip for many years, and now have the opportunity to deliver. We're all really looking forward to the adventure. Upon our return from Europe in mid-June, I'll then be in Waco until mid-July at which time I'll depart for a 3-week assignment with Husky Energy in Calgary... Summer just isn't a summer without a trip to Calgary. While with Husky I'll be teaching a 1-week short-course, and then will work with them for 2 weeks jump-starting an enhanced oil recovery project. Upon my return to Waco on August 3 (or so), I then promptly depart on August 8 for a 1-week trip with my oldest daughter Dallas (and a cadre of church friends) to whitewater raft the Arkansas River and hike a 14,000+ peak or two in the Buena Vista, Colorado area. Once we return to Waco from this trip, then I hunker down to start the Fall semester. All said, we continue to live a rich and blessed life.

The Atchley Family on vacation

Dr. Rena Bonem

This has been another record year for undergraduate enrollment in geology. The current count of Geology, Geophysics, Geography and Earth Science majors is now at 70 (last year it approached 50 and I was surprised, but 70 is a new record with 14 of those as new freshman this fall. We have typically had one or two incoming freshmen, even during the early 80's. The number grows daily right now, but I think there are about 65 undergraduates pursuing a B.S. in Geology. At the same time, there are fewer Earth Science (1) and Geography majors (1). Geophysics at 4 majors is also increasing slowly and many students seem to be coming in with the skills necessary to handle the program. Major courses in paleontology and rocks and rock forming minerals have about 25 students each this fall. The number of undergraduate majors coming in has resulted in Joe Yelderman helping out with advisement using the new Unified Advisement System.

Last year was a very busy year with some very full classes (World Oceans and Invertebrate Paleontology in the fall and World Oceans and Historical/Earth through Time in the spring). Since GSA was in Houston, we were able to see several Baylor alumni though many were still cleaning up from Hurricane Ike. Hopefully, we will see more of our former students in Portland this fall (Paulette gets to go and help with the booth which will give me time to be in GSA Foundation Development Committee meetings). Because we participated in the SERC and AGI sponsored program at GSA in Denver on Undergraduate Recruitment and Retention in the Geosciences, we were selected as a pilot school to get new recruitment packets from AGI (including the DVD on Why Earth Science that is linked to our web site). Isaac Westfield completed his M. S. last summer and will be entering the Ph. D. program at UNC this fall. Adam Damman has started his M.S. program and plans to work on the biostratigraphy of the Austin Chalk near Lorena with Vince Cronin's students.

Record low water on the Paluxy has resulted in mapping work by Mike O'Brian from Texas Parks and Wildlife and James Farlow (IUPUFW) on the trackways supported by the National Park Service. That work will be aided by stratigraphic reinterpretation (based on several new exposures) by Chris Gotcher for his M. S. thesis. Chris Breed will be looking

Photo by Julia Sankey with Rena Bonem, Mike O'Brian - Texas Parks and Wildlife, and Chris Gotcher. In the background is the site of excavation of R. T. Bird's trackway from the late 1930's. Chris is working on revising the stratigraphy of the track-bearing beds using new localities that have been exposed in the last 20 years.

at weathering rates of track sites since the park was established in the late 60's based on photographs from Texas State Parks and Wildlife files as a part of his B. S. thesis. Other Baylor students may also be involved in assisting Mike O'Brian with various aspects of the work at Dinosaur Valley State Park.

On a personal note, my dachshund pack is still stable at 6 (3 of which are over age 10). Lucy was headed to Nationals in agility this fall, but kidney failure slowed her down, so Tess is catching up have done very well with agility (but Lucy has won lots of agility ribbons and now has 20 titles to Tess's 7). I am still on the boards for Central Texas Dachshund Rescue, Waco Agility Group, and Small Paws Over Texas Agility as well as being on the GSA Foundation Development Committee. My house is a disaster right now!

As always, I look forward to seeing those who have not been around Baylor lately and hope that all of you will be able to come and visit us soon.

Dr. Bonem and her dachshund pack at Christmas last year

Dr. W.G. (Bill) Brown

I am still "legally blind" as I have no vision to the left side. Consequently, I run into lots of things with my left shoulder: door frames, restaurant doors, and people walking in my left side. I struggle to write on the computer because I cannot see all of the icons. Luckily, I can increase the size of the font to read other peoples' e-mails.

Claretta and I both reached our 75th birthday in July – doesn't seem possible! I can get around a bit on my electri-Trike. I haven't gotten to Baylor with it yet, but I made it 7 miles to the McGregor Airport in one hour.

Our daughter, Pam, drove us to Tulsa, OK in July in order to attend the wedding of our eldest Grandson, Jason Gates (Cheryl's first born child). Jason is 26 years old and is a physician's assistant in a hospital in Tulsa, OK. His wife is Brittani Guy also of Tulsa. I am looking forward to my first Great Grandson somewhere in the future.

Sharon Browning

This past year has seen lots of changes for me at Baylor. We have come to a consensus on how we are consolidating our freshman labs, with the goal of providing the best learning experience possible for the students. I am looking forward to implementing it this year. On a personal note, my daughter is now 12 and will be going into the 7th grade this year. I cannot believe how fast children grow! She already knows what kind of car she wants when she turns 16 (a yellow bug)! I continue to enjoy working at Baylor and look forward to what the future brings.

Dr. Vince Cronin

The Baylor Geology Department maintained a seismograph station called BUTX at a site near China Springs for several years. The W.M. Keck Seismological Observatory was operated by Professor Tom Goforth until 1994, when technical issues and noise from expanding development in the area compromised the effectiveness of the station. I had helped Keith Sverdrup maintain a seismograph station at the University of Wisconsin-Milwaukee since 1988, so I was interested in re-establishing a seismograph station for Baylor when I moved here in 2002. The USGS considered adding an upgraded BUTX to the Advanced National Seismograph System to address a spatial gap in their network, but lack of funding appeared to doom that plan. With the advent of the EarthScope Project, I lobbied for a permanent reference station near Waco. Long-story short, USArray reference station WHTX near Lake Whitney came online in February of 2009. Jay Pulliam had separately proposed making a station near Abilene part of the EarthScope reference network, so Baylor is now associated with two of the USArray reference stations. For more information about these stations and to see some of the data they produce, go to http://www.baylor.edu/csr/index.php?id=61978

Last summer, Dave Coffman and Stephanie Capello wandered around west-central Texas to find sites for 21 seismograph stations that will be part of the EarthScope Transportable Array network. The WHTX site was established by Capello and Coffman. Each of the 21 sites had to be located within ~15 km of a given latitude and longitude, and be a set distance away from rail lines, highways, petroleum transmission lines, major electrical transmission lines, rivers, hydroelectric power plants, industrial sources of vibration, and so on. Finding a friendly property owner willing to have a seismograph station plunked on their land was also a challenge. They performed their responsibilities so very well that EarthScope asked them to help train the teams of workers tasked with establishing new EarthScope TA sites in the eastern US. They represented themselves and Baylor very, very well indeed. Dave now works for the USGS, and Stephanie works for a private consulting firm.

I will have three MS students working with me as of Fall 2009. Dan Lancaster comes to us from Brigham Young University in Idaho -- Mark Millard's alma mater. He has an initial interest in applying the seismo-lineament analysis method (SLAM), perhaps to identify the surface trace of the fault that produced the M6 earthquake near Wells, Nevada, on 21 February 2008. Ryan Lindsay is using geodetic GPS data from the EarthScope Plate Boundary Observatory, as well as earthquake data and SLAM,

FROM THE PROFESSORS
Dr. Vince Cronin (cont.)

to improve understanding of seismogenic faulting near Lake Tahoe, California and Nevada. His poster describing this research interest was judged 3rd best at the AAPG/SEG Spring Student Expo, University of Oklahoma, in March 2009. Stephen Secrest is working on a set of normal faults exposed in the Lehigh Quarry, along Highway 84 just southwest of Waco. In addition to mapping the faults, he is examining the calcite fabric within the fault zone to describe shear-sense indicators that may be useful in the analysis of other faults. Stephen's research is funded in part by a grant from the Gulf Coast Association of Geological Societies. All three of these MS candidates intend to pursue careers in petroleum geoscience.

Much more information about our activities, research, publications and recent structural-geologist alumni can be accessed via the web at http://bearspace.baylor.edu/Vince_Cronin/www/index.htm SLAM is explained in the following article -- Cronin, V.S., Millard, M., Seidman, L, and Bayliss, B., 2008, The Seismo-Lineament Analysis Method (SLAM), A Reconnaissance Tool to Help Find Seismogenic Faults: Environmental and Engineering Geology, v. 14, no. 3, p. 199-219. Available via GeoScience World at http://eeg.geoscienceworld.org/cgi/content/abstract/14/3/199

FROM THE PROFESSORS
Dr. Steve Driese

I continued serving as Chair of the Geology Department. Although the spring semester of 2008 turned out to be an administrative "bear" (three faculty searches, on top of the normal administrative load, plus coordinating planning for construction of the new Carlile Geology Research Building), the fall semester of 2008 and spring semester of 2009 were, relatively speaking, much more quiet. It is really great seeing the Department grow by addition of three new faculty members (Drs. Jay Pulliam, Boris Lau and Dan Peppe). I was also installed as President of SEPM (the Society for Sedimentary Geology) at the June 2009 AAPG-SEPM Annual Meeting in Denver, and will have much additional travels during the coming year in conjunction with this service.

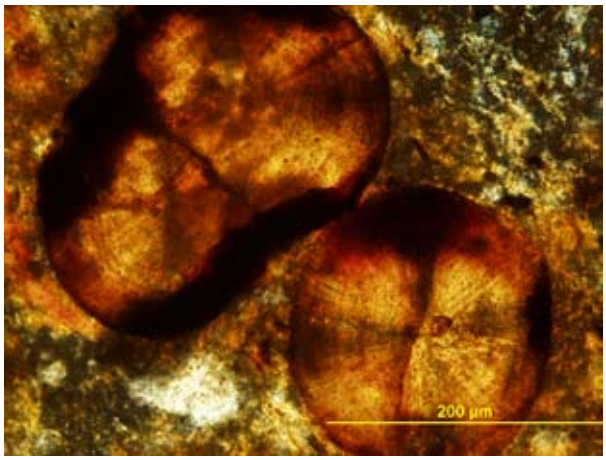
In the fall semester of 2008 I taught the Geo 5340 Paleopedology course to 5 students, and I also taught the graduate Seminar on Grant Proposal-Writing to 6 students. In the spring semester of 2009 I had my usual Geo 43C1 Senior Capstone Colloquium course, which had 4 students, and each prepared a poster display for the annual Undergraduate Research Scholars Day (URSA) event held in the Ken and Celia Carlile Atrium of the Baylor Sciences Building. In the spring I also taught GEO 5339 Sandstone Petrology to 6 students, who were especially dedicated and put in a lot of microscope time!

I continued supervising four Ph.D. students and two B.S. Senior Thesis students. Julia Kahmann-Robinson defended her Ph.D. dissertation and was my first Baylor Ph.D. student, receiving her degree in December of 2008. She is currently in a "holding pattern" awaiting news of her husband's possible acceptance into medical school at Texas A & M. Aaron Shunk

was my second Baylor Ph.D. student, who defended his dissertation and his degree was conferred in May of 2009. Aaron will be working for Shell Oil in Houston, TX starting in May of 2009. Ph.D. student Deb Jennings is still off-campus working for Core Labs in Houston and continuing to try to finish her Ph.D. I spent a week in the field during the summer of 2008 with Ph.D. student Jason Mintz, who is engaged in studies of Middle Devonian forests and paleosols in the Catskill succession of upstate New York. The scenery and geology were spectacular and the cool temperatures and ice-cold streams were a pleasant change from Waco summers! In the fall of 2008 I also began co-direction (with Lee Nordt) of Ph.D. student Gary Stinchcomb's dissertation research on paleoclimatic evidence of Holocene rapid climate change and floodplain deposition in the Mid-Atlantic region (Delaware Water Gap, PA). Gary is integrating paleosol and geoarchaeological approaches in a way that should prove very interesting. Alex Dixon completed his B.S. Geology Senior Thesis investigations of Morrison Fm. paleosols and a fluvial sandstone and conglomerate succession in Utah in the fall semester of 2008 and hopes to go to on to graduate school. B.S. Geology student Colby Wright first served as a James W. Dixon Undergraduate Field Assistant in the summer of 2008 for Jason Mintz, and has begun (spring semester, 2009) a Senior Thesis on quantifying pedogenic clays in Middle Devonian paleosols in the Catskill succession as related to time of soil formation. Lastly, Lauren Michel is a new Ph.D. student starting at Baylor in the fall semester of 2009, having completed her M.S. research with Dr. Neil Tabor at SMU. Her Ph.D. project at Baylor has not yet been defined.

Jason Mintz and Colby Wright examining Middle Devonian rocks while wading along Plattekill Creek in the Catskill Mountains of upstate NY during the summer of 2008

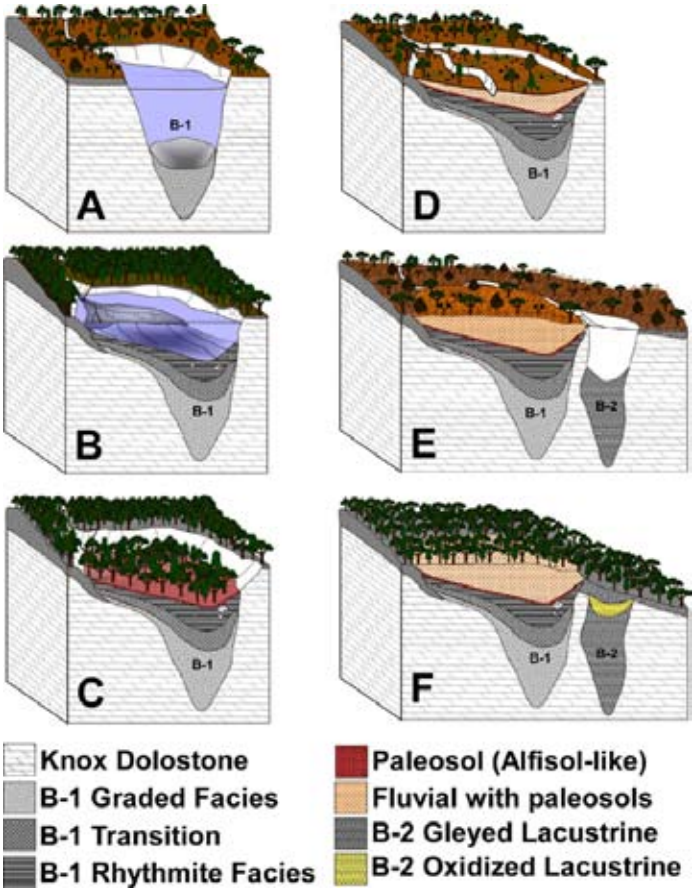
My own research continues to focus on interdisciplinary paleoclimate and paleolandscape reconstructions using fossil soils, or paleosols, as well as conducting studies of modern soil systems (especially Vertisols) to develop climate proxies and analogs of ancient soils. In 2008 I published 4 refereed journal articles and have 3 papers accepted or in press for 2009. I presented 3 papers, as either an author or co-author, at the 2008 Geological Society of America Annual Meeting in Houston, and was author or co-author of 4 additional papers. I continue working on an NSF grant proposal (with Drs. Greg Ludvigson and Luis González from the University of Kansas Geology Department) on paleoclimate reconstructions and modern calibrations using pedogenic sphaerosiderite, and also submitted



Pedogenic sphaerosiderite formed in floodplain soils contaminated by coal tar and creosote near Chattanooga, TN

2 new NSF grant proposals in 2009. I continue to work on the paleoclimate records of floodplain soils in the southeastern US with Drs. Zheng-Hua Li and David Finklestein (University of Tennessee Department of Earth and Planetary Sciences) and Dr. Sally Horn (University of Tennessee Department of Geography), which we just found out is to be funded by NSF! My paleoclimate studies of Kenyan soils and Quaternary paleosols continue slowly with Dr. Gail Ashley (Rutgers University Department of Geological Sciences). I am very excited about a new collaborative project with Lee Nordt, Dr. Mike Waters (TAMU Anthropology), Dr. Tom Hallmark (TAMU Soil and Crop Sciences) and Dr. Zheng-Hua Li (Tennessee Earth and Planetary Sciences) on a possible pre-Clovis archaeological site near Salado, TX. My interests in Precambrian paleoweathering systems continues with a joint project with Mark Jirsa at the Minnesota Geological Survey on a 2.7 Ga paleoweathering surface exposed in the Boundary Waters Canoe Wilderness Area that includes tonalities and metabasalts. I continue to serve my profession by reviewing submitted manuscripts for many of the sedimentary and soils journals, and am an Associate Editor for the journal *PALAIOS*. I reviewed grant proposals for the National Science Foundation and the Petroleum Research Fund and continue to serve on the Editorial Board of *Sedimentary Geology*.

My family and I enjoyed a 1-week vacation in June last summer to the beach at Port Aransas with the Nordt family. We also made a driving trip in November to see family in Atlanta, Chattanooga, with another trip in April 2009 to see family in Knoxville. We are planning a 1-week vacation this summer to Maine to wet our toes in ice cold water and eat lobsters. Marylaine continues her part-time job as archivist for McLennan Community College, and is now the editor/publisher of the Quarterly Bulletin of the Central Texas Genealogical Society, where she often sees Harold and Dorcas Beaver. As a member of the McLennan County Cemetery Interest Group she loves visiting old, forgotten cemeteries in McLennan County and recording and mapping graves. Mary Catherine has graduated from the 11th grade at Midway High School, is doing well in her pre-AP courses and went to the Texas state swim finals with 4 other students from Midway in February of 2009! Deciding on Colleges to attend is now competing for her attention, and she is still thinking about journalism as a possible major with UT-Austin a favorite, but also considering some northeastern universities. Our oldest son Nathan successfully passed his oral exams for the Ph.D. program in Philosophy at the University of Kansas, and is now ABD (all but dissertation). Our younger son Trevor still lives in Knoxville and works for a mortgage company there, however, he has aspirations of continuing graduate work in photojournalism. Steve and Marylaine continue to be dedicated Lady Bears' season basketball fans, though Steve digressed this past year and attended some Men's games as well. They also enjoy singing together at Sunday services with the chancel choir at First Presbyterian Church.



Conceptual model for evolution of two Tertiary sinkhole-lake systems at the Gray Fossil Site in northeastern TN (from Shunk et al., 2009).

Journal Publications

Kahmann, J.A., and Driese, S.G., 2008, Paleopedology and geochemistry of Late Mississippian (Chesterian) Pennington Formation paleosols at Pound Gap, Kentucky, USA: Implications for high-frequency climate variations: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 259, p. 357-381.

Driese, S.G., Li, Z.-H., and McKay, L.D., 2008, Evidence for multiple, episodic, mid-Holocene Hypsithermal recorded in two soil profiles along an alluvial floodplain catena, southeastern Tennessee, USA: *Quaternary Research*, v. 69, p. 276-291.

Driese, S.G., and Medaris, L.G., 2008, Evidence for biological and hydrological controls on the development of a Paleoproterozoic paleoweathering profile in the Baraboo Range, Wisconsin, USA: *Journal of Sedimentary Research*, v. 78, p. 443-457.

Kahmann, J.A., Seaman, J., III, and Driese, S.G., 2008, Evaluating trace elements as paleoclimate indicators: multivariate statistical analysis of Late Mississippian Pennington Formation paleosols, Kentucky, USA: *Journal of Geology*, v. 116, p. 254-268.

Shunk, A.J., Driese, S.G., and Dunbar, J.A., 2009, Late Tertiary paleoclimatic interpretation from lacustrine rhythmites in the Gray Fossil Site, northeastern Tennessee, USA: (*Journal of Paleolimnology*), DOI 10.1007/s10933-008-9244-0.

Shunk, A.J., Driese, S.G., Farlow, J.O., Zavada, M., and Zobaa, M.K., 2009, Late Neogene paleoclimate and paleoenvironment reconstructions from the Pipe Creek Sinkhole, Indiana, USA: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 274, p. 173-184.

Encyclopedia Articles

Driese, S.G., 2009, Paleosols, pre-Quaternary, *in* Gornitz, V. (ed.), *Encyclopedia of Paleoclimatology and Ancient Environments*: New York, Kluwer Academic Publishers, p. 748-751.

Presentations

Sankey, J.T., S. Atchley, L. Nordt, S. Dworkin, S. Driese, 2008, Dinosaur and Paleosol Change across the Campanian-Maastrichtian (Late Cretaceous), Big Bend National Park, Texas. California Paleontology (Cal Paleo) Annual Meeting, California State University, Stanislaus, Turlock, California, April 19, 2008, PaleoBios, University of California Press

(Nordt, L.C., and Driese, S.G., 2008, Hydropedological properties of a Vertisol climosequence along the Coast Prairie of Texas: 1st International Conference on Hydropedology convened at Penn State University, July, 2008.

Driese, S.G., and Nordt, L.C., 2008, Critical Zone studies of soils and weathering: Implications for interpreting climate and landscapes of the past: Overview: Invited talk for GSA Pardee Session at joint GSA-SSSA National Meeting in Houston, TX.

Nordt, L.C., and Driese, S.G., 2008, Geochemical trends along a modern Vertisol climosequence applied to vertic-paleosols as proxy for physical-chemical colloidal properties and pedogenic interpretations: Invited talk for GSA Pardee Session at joint GSA-SSSA National Meeting in Houston, TX.

Shunk, A.J., Driese, S.G., 2008, Multiple proxy evidence from paleosols for abrupt Late Neogene warming at the Gray Fossil site, northeastern TN, USA: joint GSA-SSSA National Meeting in Houston, TX.

Driese, S.G., 2008, "Micromorphology of floodplain soils at the Buttermilk Creek Archaeological Site near Salado, Bell County, Texas": talk presented at 45th Annual Soil Survey and Land Resource Workshop in College Station, TX, February 7, 2008.

Driese, S.G., 2008, Applications of soil micromorphology, pedology and geochemistry to interpreting a possible pre-Clovis (13-17 kyr) archaeological site at Buttermilk Creek, Bell County, Texas: talk presented as 16th Kansas Geological Survey Stratigraphic Research Seminar in Lawrence, KS, November 11, 2008.

FROM THE PROFESSORS

Dr. John Dunbar

This year John Dunbar put the old adage, "if at first you do not succeed, try, try again", to the test. Last year (June 2008), John went on a research cruise to Mississippi Canyon Block 118, Gulf of Mexico to test his new seafloor resistivity instrument for exploring for methane hydrates. Unfortunately, during the initial deployment of the instrument, sharks bit off 200 m of the 500 m long electrode array and no data could be collected. Undaunted, John is back in 2009 for another try. At this writing (June 2009), John and graduate student Alan Gunnell have boarded the RV Pelican (pictured right) for a second cruise to Mississippi Canyon. After spending the 2008-2009 academic year repairing and improving the seafloor instrument, the new system has been expanded from 28 to 56 electrodes. The 500 meter long, shark-attracting electrode array has been replaced with a 1 kilometer long array. This time the end of the array will be weighted with a length of chain to help it sink quickly to the bottom, to avoid the sharks. If the sharks do not bite and the experiment is a success, John and Alan will use the resistivity data to map the distribution of hydrate beneath methane vents at the site.

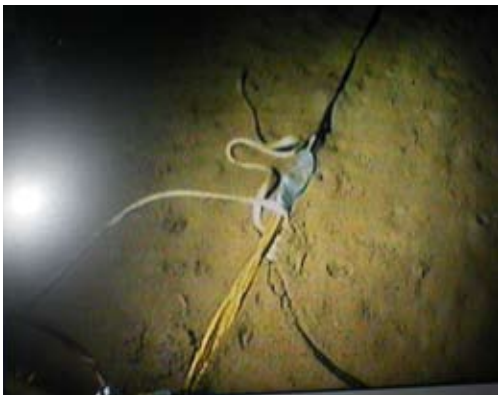


Photo taken by the ROV of the resistivity cable stretched out

After the research cruise, John plans to travel to western Oklahoma with Peter Allen and graduate student Joseph Sang to conduct a sediment survey of a flood control reservoir. This is part of an ongoing study of to determine how the great 1950s drought influenced erosion rates. Conditions during the great drought were most severe in western Oklahoma and central Texas since the late 1600s. The results of surveys of flood control reservoirs in McCulloch County, Texas (now in review at the Journal of Water Resources Research) indicate that rangeland erosion rates in the region were 35 times higher during the 1950s drought than under the relatively drought-free conditions since the drought. The data from Oklahoma will be used to test this result and to further quantify how severe drought influences upland erosion rates.

On the home front, John's daughter Tamura is 16 years old and will enter the 11th grade at Vanguard College Preparatory School in the fall. She continues to love reading and anxiously awaits the release of the next Harry Potter movie this summer. She is looking forward to volunteering, learning to drive (yikes!), and going camping in Colorado this summer.

John's wife, Anna, who is a 1978 Baylor Graduate, continues her job as the Regional Director of the Waco office of the Texas Commission on Environmental Quality. With the expected growth of the Central Texas population over the next decade, will come environmental challenges. Anna doesn't expect the work in the Waco region will slow down anytime soon. She is also working towards certification as a Texas Master Naturalist and continues to be an active board member of Keep Waco Beautiful.

FROM THE PROFESSORS

Dr. Steve Dworkin

This past year I have been engaged with the installation of the new stable isotope mass spectrometer (pictured below). This involved building the new lab, going to Ottawa to take training courses on the instrument, and working closely with the engineer during installation. The process of installation spanned the entire spring semester which is why I have not been seen in the hallways as much as usual.

My four senior thesis students all graduated this year. Jenny Seitz and Gabby Keaton worked on climate reconstructions across the K/T boundary in Big Bend, while Amy Fitzpatrick and Lisa Turpin worked on aspects of the Chinle Formation in the Petrified Forest National Park. Jana Edwards has been working on the organic geochemistry of the Barnett Shale for her Masters thesis, and she will defend her thesis shortly. Stephen Clark is making good progress on his Masters thesis that focuses on the character and abundance of organic matter in the Cretaceous section of central Texas and he should finish by the end of the summer. Scott Douglas has just completed his first year as a Masters student and he is investigating the depositional setting of a portion of the Norphlet Formation.

At the end of the spring semester I traveled with Stacy Atchley and my wife Sandy to Mexican Hat, Utah where we hauled huge samples of Pennsylvanian limestones out of the entrenched meanders of the San Juan River. Then we proceeded on to the Petrified Forest and met up with Lee Nordt where we spent about 2 weeks measuring section and describing paleosols of the Chinle Formation. We should finish up with the field work on this project after one more visit. Sandy and I then went home for 3 days before heading out for the first half of field camp. We are now back home enjoying the blistering hot Texas summer – but it is nice to be home with the dogs.

Steve and Sandy at Carlsbad Caverns

Doing fieldwork with Stacy Atchley in Utah

FROM THE PROFESSORS

Dr. Zhaodong (Jordan) Feng

In the Chinese Loess Plateau, 2008, with Chinese geologists)

I promised last year (May 2, 2008) that I will let you know the level of my 2008-proposal success in next annual letter (2009). It turns out that my 2008 was not any better than my 2007. All of three submitted NSF proposals were declined. However, there are still hopes in resubmissions.

High-resolution Reconstruction of Holocene Bioclimatic Changes in the core area of the Central Asian Arid Zone plans to produce high-resolution paleoclimatic proxy records from a series of lake cores to be taken from eastern Kazakhstan, northwestern Xinjiang (China), and western Mongolia. We plan to collect a large number of surface samples along climatic and ecological gradients and develop bioclimatic transfer functions using multiple proxies (pollen, compound-specific isotopic compositions, and δ13C of organic matter). We will then apply these transfer functions to lake-sediment stratigraphies to reconstruct the bioclimatic changes of the last 10,000 years. Our approach involves a combination of geophysical proxies (magnetic granulometry and grain size), geochemical proxies ($\delta^{13}C$ of organic matter, $\delta^{13}C$ and $\delta^{18}O$ of carbonate, compound-specific isotopic composition), and geobiological proxies. The proposal was actually well ranked and the revised version was resubmitted (2009) to P2C2 Program upon their request after the first submission (2008) was declined.

Mid-Holocene Bioclimatic Changes in the Central Plain of China and Their Cultural Implications aims at placing the dramatic cultural events occurring at ~4000 cal yr BP in the Central Plain into temporal (Mid- and Late-Holocene) and spatial (the Yellow River Basin and the middle and lower reaches of the Yangtze River Basin) contexts by (1) establishing high-resolution and well-dated multi-proxy sequences of bioclimatic changes in the Central Plain of China, (2) refining the chronologies of the bioclimatic changes for the period from 6000 to 3500 yr ^{14}C yr BP in order to better constrain the ages of the ~4000 cal yr BP events that were reported in those recently-published sequences in the Yellow River Basin, and (3) geomorphologically substantiating and chronologically constraining the widely-reported flooding-strata evidence (at ~4000 yr BP) in the lower reach of the Yellow River Basin and in the middle and lower reaches of the Yangtze River Basin. This project is expected not only to provide high-resolution and well-dated sequences of bioclimatic changes for better deciphering the cultural development in China, but also to provide badly-needed regional paleo-bioclimatic evidence for comprehending the large-scale mechanisms controlling the Mid-Holocene climate changes. It was relatively well ranked by NSF Geography Program and encouraged to be submitted to "Dynamics of Nature-Human Coupled Systems" Program (next deadline: November

15 of 2009) if a well-qualified archaeologist can be involved.

Reconstructing the Temporal and Spatial Patterns of MIS 3 Bioclimatic Changes from Eolian and Lacustrine Sequences in the Chinese Loess Plateau seeks to reconstruct the specific temperature/precipitation conditions that characterize the MIS 3 climate in the Plateau. This study is also designed to test the applicability of those widely-used climatic proxies in the loess-paleosol sequences and to check the consistency of paleoclimate records between eolian and lacustrine sequences. This study will improve our understanding of the forcing factors that contributed to the widely-reported abnormal or unique MIS 3 climates in the Tibetan Plateau and in the hyperarid northwestern China and will also provide solid regional evidence for comprehending the large-scale mechanisms controlling or modulating MIS 3 climate changes. It was not well ranked and we plan to approach MIS 3 issues from a different angle: Bioclimatic Responses to D-O Oscillations during MIS 3 in the Transitional Zone between East Asian Monsoon-dominated Area and Westerlies-dominated Area. We plan to submit the revised proposal either on February 15 or July 15 of 2010.

As I stated in last letter, I have been having some hard times in proving my ability of delivering teaching at Baylor. First, I seemed to have problems in attracting students in my EARTH SCIENCE (GEO-1408) teaching although students' evaluations were fine. Also, I seemed to have overwhelmed some of the students in my EARTH SYSTEM SCIENCE teaching (GEO-5389). However, my teaching of **Global Climatic and Environmental Changes** (2008 fall) greatly encouraged my confidence. For the first time I felt that engaged undergraduate-teaching can be emotionally rewarding! I developed and taught the course and lab exercises and witnessed the excellence of good students. Among eight students (I was told that the small size of class was most likely due to too-late announcement), one was probably an average student and another one seemed to have trouble with my accented English in the beginning, but the rest (six students) were absolutely the best I have ever had in the past 14 years of my American teaching. Although there is still room for improvement (e.g., developing better labs on Ecology and Hydrology and improving my knowledge on Environmental Economics), I tried my best and I felt that I did what I could as a teacher. During teaching this course, besides teaching the students the knowledge, I felt that I was on mission to train future leaders and thinkers for developing strategies to sustain our civilization.

In Germany, 1999, with British geologists

In UlaaBaatar, Mongolia working on a lake core obtained from Mongolian-Russian border with Mongolian geologists

With Kazakhstan colleagues in western Kazakhstan sampling loess-paleosol sequences

Daily Life Report: (1) I recently resumed my daily routine of swimming after 5 month hiatus, (2) I failed again (6th or 7th try) in quitting drinking coffee, (3) my first daughter, Xueyan Feng, recently (2009 March) changed her job from CiTi Group to JP Morgan, (4) my second daughter, Shirley Feng, is admitted to Baylor Business School (majoring in Finance and Economics).

FROM THE PROFESSORS

Dr. Don Greene

Life on Don's farm is a never-ending commitment to physical labor, and rainy-day projects that reach completion measured in years. Don started a major building project recently that has given him a great deal of satisfaction. Be sure to read this newsletter in 2010 for a complete description of the project along with photos! Don's wife, Alison, recently retired from her teaching position in the Family & Consumer Sciences Department. This does not mean a life of leisure, however, with twin granddaughter commitments, and volunteer service at the new Hillcrest Hospital. Life is fulfilling, but tough for eldest daughter Meredith; handling twin "terrible twos" while also working full time as an urban planner in Austin. The Greene's youngest daughter, Adriel, is currently pursuing her master's degree in Museum Studies at Baylor University. The photograph below was taken at Lemur Island, Cameron Park Zoo, with "Poppop" Greene and twin granddaughters Macy and Hanna.

Don worked in a variety of community service projects during 2009. This past spring, Don taught a short course in behalf of the Baylor Institute for Learning in Retirement. Sponsored by the Baylor Alumni Association, the course was entitled The Climate Question: Past, Present, and Future. The course was co-taught by our visiting research scholar **Dr. Julia Sankey** from California State University. During 2009, both Julia and Don were actively engaged in an extensive study of the climate change question. As most readers are aware, climate change (global warming) is a broad topic with an unfortunate contribution of non-scientific opinion. The purpose of this study was to find the science in the literature, and seek a realistic perspective on the significance of each contributing factor. The short course not only provided the spur for Don and Julia to study the question, but also have an opportunity to share discovery with the larger community. Although Don and Julia experienced divergence of opinion, both agreed that the climate change question is far more complicated than the simplistic correlation between carbon dioxide and global temperature. In particular, Don found that solar activity is a far better predictor of climate change than is carbon dioxide.

Don also continued his community service in behalf of the State of Texas and the Texas Department of Transportation. As a member of the Citizens Committee for the Trans-Texas Corridor, Don logged over 1500 miles in travel to Austin. In addition, he fulfilled committee responsibilities through independent study, interviews, research, writing and editing a final report (http://keeptexasmoving.com/index.php/i-35-charges) that was submitted to the Texas Transportation Commission.

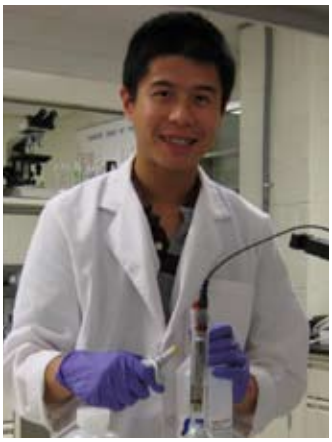
In short, Texas is a dynamic state that will experience unprecedented growth in population and movement of freight. Texas may total 50 million citizens within the next 20 years, and our committee urged proactive

Dr. Don Greene (cont.)

development of a high-speed commuter rail service (see accompanying photo of a prototype). Freight traffic will grow at an even faster rate than population for two unique reasons. The center of gravity of United States population is northeast of Texas. Accordingly, overland freight movement from Latin America will inevitably route through Texas. Secondly, the widening of the Panama Canal will be completed by 2012. Within a few years an estimated 40% of Pacific Ocean container traffic will route through the Canal instead of terminating at California ports. Again, Texas will be dramatically affected as the Mississippi delta is too shallow to accommodate the draft of these immense container ships while the Port of Houston is the only deep water facility in the Gulf of Mexico. One visioning solution is known as the "rail pipeline" in which individual containers will travel along a rail corridor via solar-powered induction motors.

FROM THE PROFESSORS

Dr. Boris Lau



Water is needed in all aspects of life, and it is becoming an increasingly scarce and fluctuating resource. While the overriding needs to ensure adequate clean water for drinking, hygiene, and sanitation are of paramount importance, they nonetheless need to be balanced with consideration of the water demands due to growth in population, economy, urbanization, energy use, and climate change. Innovative uses of natural supplies and new technologies are necessary to meet current and future water demands.

For instance, it is exciting to learn that Baylor is actively involving in local water issues here in Texas. Some of these issues are currently receiving national attention. For example, I had the privilege to visit the John Bunker Sands Wetland Center in May. Together with North Texas Municipal Water District, they are conducting the world's largest wetland treatment for indirect water reuse. In order to meet the increasing water demand by the Dallas metroplex, this raw water supply project is introducing water from the Trinity River's East Fork into a 1,840 acres man-made wetland for purification. Up to 100 million gallons per day of treated water from the wetland can be piped 40 miles to the north end of Lavon Lake. This is a great place that provides many opportunities for Baylor to perform research, teaching, and outreach.

Non-conventional water resources such as reclaimed water are being considered for cooling of power plants. Have you thought about this when you walk by the cooling tower on campus? This is an example demonstrating the link between energy and water. While improving water productivity, the use of graywater creates a different environment in cooling towers that might change the growth, survival, and transport of Legionella, which is an airborne pathogen that can be life threatening for immunocompromised individuals. When considering these alternative water strategies, I want to capture and quantify the

associated changes in systems dynamics that can compromise water quality. The knowledge gained in these cases would support sustainable decision making by guiding policy makers to establish water quality standards for different use requirements.

Being a teacher is a tremendous responsibility and challenge that requires dedication and enthusiasm. My first semester of teaching has been rewarding as well as challenging. I have taught an introductory geology course (environmental geology). Students were exposed to some of the global environmental issues that are affecting all of us: energy, water, and climate change. For example, at the beginning of the semester, many students expressed their concerns to me about the taste of Waco tap water. I created a lecture that engaged them in quantifying the energy cost in switching from surface water to groundwater (as a way to potentially solve the taste and odor problem). By the end of the lecture, students developed an appreciation of how energy and water problems are tied together and what geoscientists can offer to solve these problems. Through the use of sustainability as the overarching theme of the course, I am working towards my goal of equipping students with the tools to learn actively and think critically. Rather than solely transmitting facts, I am trying to teach them how to be critical thinkers, to always question the world around them, and to develop the different skill sets to answer those questions. To spark their desire to learn, have tried to help my students to become aware of their contributions to this world and how they can impact this world.

Dr. Boris Lau (cont.)

Pictures taken at the Goldschmidt geochemistry conference (June 22-26) in Davos, Switzerland

FROM THE PROFESSORS

Dr. Lee Nordt

Steve Ahr received a $15,000 doctoral dissertation enhancement grant from the National Science Foundation to continue his work on an Alfisol climosequence in Texas. This work has implications for modern soil/climate relations, the modern analog approach to paleosols and climates, and preservation potentials of the archaeological record. Holly Meier is now reconstructing the late Quaternary fluvial history of Owl Creek at Fort Hood, Texas using Optically stimulated luminescence dating. I am helping with Aislyn Trendell's research at Petrified National Forest (with Stacy Atchley) and Gary Stinchcomb's late Holocene fluvial work in Pennsylvania (with Steve Driese). Steve Driese and I attended a hydropedology conference on the critical zone in July of 2008 at Penn State University. We have a

manuscript in review as an outcome of that conference in *Hydrology and Earth Systems Science* tracking wetness conditions along a Vertisol climosequence. Steve and I hosted a Pardee Symposium in Houston on the critical zone and modern-ancient soil analogs at the fall, 2008 GSA meeting. We are also working on what may the first documentation of a pre-Clovis archaeological site (in central Texas no less) with a research team from Texas A&M University.

Stacy Atchley, Steve Dworkin and I continue to make progress with our work at Petrified Forest National Park in Arizona working on the paleoenvironments along a continuous vertical section throughout the park for the late Triassic (over 1000 feet thus far!). I also am pursuing the possibility of using modern colloidal analytical techniques on paleosols in the rock record that if successful, could alter our methodological approach to studying ancient landscapes.

Garrison has finished his third year at Mary Hardin Baylor playing on the golf team, and taking a few courses along the way. Garrison's team won conference this spring and as a consequence they traveled to nationals at Port St. Lucie, Florida. Our family made a vacation out of the event. Garrison played well, even though the team did not place. I am even more proud of him as Academic All Conference for the second year in a row.

Kaylee successfully completed her sophomore year in high school and is now driving, much to our dismay. No wrecks or tickets thus far, which is a surprising success story. Kaylee played on the Junior Varsity volleyball team at Midway and played club volleyball in the spring. She also volunteers at Providence hospital in the summers, works with the Midway ISD after school program called PEP, and participates in the Waco Symphony Belles.

Kathy still enjoys working as outpatient surgery admitting nurse at Providence Hospital. She had a lot to do with the planning of our new house, and what was required for the move to the Riverside subdivision. We finally have a nice yard and subdivision facilities that we hope to enjoy once we are unpacked. No more moves in the near future! I look forward to seeing you all during Homecoming Weeekend.

Publications

Forman, S., **Nordt**, L., Gomez, J., Pierson, J. (in press). Late Holocene dune migration on the south Texas sand sheet. *Geomorphology*

Nordt, L. (in press). Late Quaternary fluvial landscape evolution of the Rio Casas Grandes and San Pedro: Implications for the archaeological record. In *Late Archaic Cerros de Trincheras Sites of Chihuahua, Mexico*, R. Hard and R. Roney (eds.). University of Utah Press.

Nordt, L., von Fischer, J., and Tieszen, L. (2008). Coherent changes in relative C_4 plant productivity and climate during the late Quaternary in the North American Great Plains. *Quaternary Science Reviews* 27:1600-1611.

Cleveland, D., **Nordt**, L., Dworkin, S. and Atchley, S. (2008). Pedogenic carbonate isotopes as evidence for extreme climate events and biotic crisis near the Triassic-Jurassic boundary. *Geological Society of America Bulletin* 120:408-415.

Presentations, Lectures, and Other Scholarly/Creative Activities

Driese, S. and **Nordt**, L. (2008). Critical Zone Studies of Soils and Weathering: Implications for Interpreting Climate and Landscapes of the Past: Overview. Geological Society of America Annual Meeting, Houston (October).

Nordt, L. and Driese, S. (2008). Geochemical Trends along a Modern Vertisol Climosequence Applied to Vertic-Paleosols as Proxy for Physical-Chemical Colloidal Properties and Pedogenic Interpretations. Geological Society of America Annual Meeting, Houston. (October) (invited)

Nordt, L. and Driese, S. (2008). Hydrological Properties of a Vertisol Climosequence: Coast Prairie of Texas. First International Hydropedology Conference at Penn State University. (July) (invited)

Seitz, J., Dworkin, S. **Nordt**, L., Atchley, S. (2008). Temporal trends in mineral Assemblages and abundances from paleosols that span the Cretaceous-Tertiary boundary, Big Bend, Texas. Geological Society of America Annual Meeting, Houston. (October)

Keaton, G., Dworkin, S., **Nordt**, L., Atchley, S. (2008). Grain-size distribution and organic matter content from paleosols that span the Cretaceous-Tertiary

Dr. Lee Nordt (cont.)

boundary, Big Bend, Texas. Geological Society of America Annual Meeting, Houston. (October)

Driese, S., **Nordt**, L., Waters, M., Hallmark, C. (2008). Micromorphology of floodplain soils at the Buttermilk Creek Archaeological Site near Salado, Bell County, Texas. Soil Survey and Landuse Workshop, College Station. (February)

Grants, Contracts, Patents, Software Copyrights

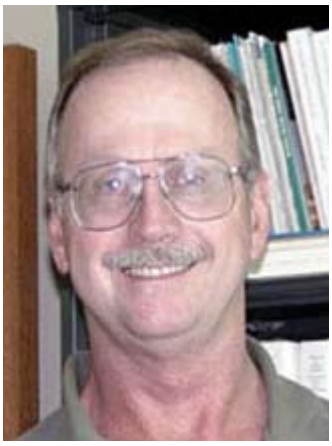
Atchley, S. and **Nordt**, L. (2007). The interrelationship of sequence stratigraphy, paleoclimatology, and terrestrial ichnology in Triassic paleosol-bearing alluvial successions, Moenkopi and Chinle Formations, southwestern United States. Petroleum Research Fund (continuation, $80,000).

Nordt, L. and Ahr, S. Doctoral dissertation improvement grant, "Determining the age and origin of the Texas sandy mantle: implications for archaeological integrity in upland settings", National Science Foundation. (AWARDED $15,000)

Nordt, L. (2008). Development of a new dating technique for alluvial deposits containing archaeological materials: a case study from the Fort Hood Military Reservation, Texas, Department of Defense. (submitted, $54,000)

FROM THE PROFESSORS

Dr. Don Parker



Once again, Don taught half of the Geology Field Camp in Summer 2008, this time in northern New Mexico, as well as in Durango and Buena Vista, Colorado. Everything went well, except that one student developed a condition that required hospitalization in Salida; she had to be left there to be picked up by Steve Dworkin after the faculty exchange in Denver. Fortunately, the student was able to make a full recovery.

Afterwards, Don enjoyed the opportunity of a Fall Sabbatical in Fall 2008, during which time he spent about a month in Oregon, collecting samples for analysis in the Three Sisters region of the Central Oregon Cascades. He particularly enjoyed hiking expeditions to the Tam MacArthur Rim and Broken Top regions.

Back on campus, Don worked with Ph.D. student Daniel Wegert in setting up analytical routines for the new Rigaku X-ray fluorescence machine. Altogether, about 100 whole rock major and trace element rock analyses were completed in the fall; these were drawn from Don's sampling expedition, as well as those of Wegert and senior thesis student David Edlin. In Spring 2009, while teaching Analytical Geochemistry, Don worked with four graduate students in expanding the capabilities of the X-ray lab in analysis of paleosol and sedimentary

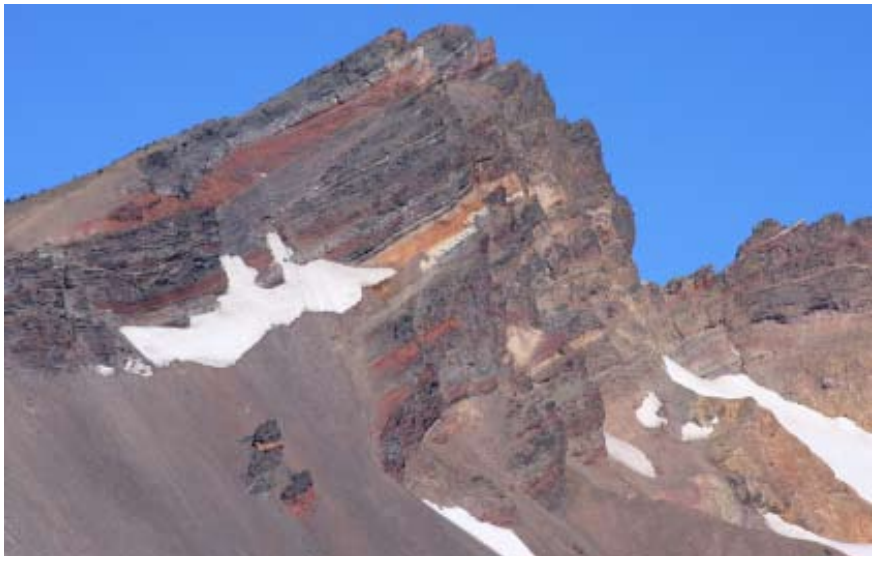
Don at Lava Butte, Oregon

rock samples. At other times, Don became obsessed with photographing a spectacular small hawk, which perched outside Rena Bonem's office.

In the Fall, Becky and Don traveled to Fort Carson, Colorado to welcome back their son, Travis, from a year's deployment as a Military Policeman in Baghdad. Travis' unit spent their tour supporting Iraqi police. Travis was also able to spend most of November at home in Round Rock with his parents. Cimarron, their daughter, was glad to see her brother while enjoying her Junior year at Round Rock High School.

In Spring 2009, Don was co-author with ex-students John White and Minghua Ren in a compelling paper on Pantelleria Volcano, Italy. Don also presented two papers at the regional GSA meeting in Plano, Texas. Don is looking forward to teaching Field Camp again in 2009, this time largely in Red Lodge, Montana. Don also hopes to present some of the Oregon work at the upcoming Portland GSA meeting.

Sparrowhawk (viewed from 4th Floor Science Building)



Broken Top Volcano, Central Oregon

Tam MacArthur Rim, Central Oregon

Becky and Travis Parker at Fort Carson, Colorado

FROM THE PROFESSORS

Dr. Daniel Peppe

The past year has been exciting for me both academically and personally. In fact, as I write this newsletter contribution I am preparing for my next big adventure in 2009 - moving to Waco and beginning my work at Baylor. I have been anticipating my start at Baylor for over a year now, and am pleased to report that I have made significant achievements in my research program during this time. I have also been fortunate enough to make my first "round the world" trip while presenting and conducting my research. I am excited to keep this momentum going when I arrive at Baylor in August.

During the 2008-2009 academic year I have been making great progress investigating the relationship between leaf characteristics and climate as a National Science Foundation (NSF) funded post-doctoral researcher at Wesleyan University. My colleagues and I have collected leaves from 95 sites around the world, bringing us closer to understanding the relationship between the size and shape of angiosperm leaves and changes in temperature and precipitation. We are using these data to develop a predictive model that can be applied to fossil plant assemblages to more accurately and reliably estimate ancient climates. As of now, this research has resulted in one paper currently in review. We anticipate that several more interesting publications will come from our analyses. In the past year I presented this research at two major US universities and at the Smithsonian institution. The results have been well received, and I am excited about the future implications of our research.

Last year was also very positive for my ongoing project in Kenya, focused on interpreting the paleoecology of Miocene fossil assemblages (~15-20 ma). In late 2008 our research group, which includes scientists from universities in the US, South Africa, and Germany, received 3 years of funding from NSF. After our very successful pre-NSF field season, we are anxious to intensify our research program. We plan to continue to make important contributions to our knowledge of hominoid evolution by more fully characterizing the paleoecology and paleoenvironments of the Miocene in East Africa. We recently published a paper re-interpreting the stratigraphic position and age of an important fossil-bearing geological formation in the Journal of Human Evolution based on the results of our field season in 2007 (Peppe et al., 2009).

I have also continued pursuing my research on Paleocene plant communities (65.5 – 58 ma) in North Dakota and Montana using fossil leaves to estimate temperatures through the interval. I am currently working with researchers from Yale University to develop models for latitudinal temperature gradients through time, and to examine how the changes in temperature gradients may have affected global temperatures. The results of this research will give scientists added insight into past and present terrestrial ecosystems. I presented the preliminary results of my research at several international conferences last year.

This summer I am advising two undergraduate students from Yale University and Wesleyan University. Both students are working with me on data

Future geologists on Mfangano Island, Kenya.

from my ongoing projects in Kenya, North Dakota, and Montana. They will be using paleomagnetism and paleobotany to answer questions about ancient environments. It will be a good opportunity for both of them to learn state of the art methods and gain valuable research experience. We hope to present the results of their studies at conferences this fall.

This past April I visited Waco to meet with architects to begin planning the Thomas W. Goforth Paleomagnetism Laboratory. The lab planning meetings were very productive, and lab construction is expected to be completed early next year. Thanks to the generous donation of Baylor Geology Department alumni Dr. Ken Carlile, we recently purchased a state-of-the-art magnetometer from 2G Enterprises that will be installed as soon as the laboratory construction is completed. When finished, this instrument, combined with other specialized equipment, will make the laboratory one of only a few in the world with its scientific capability. I am looking forward to finalizing the construction plans this fall, and getting the lab off to a productive start.

While in Waco, my wife, Sholly, and I also did some house hunting and found a great place in Woodway that we will be moving into in August. In early 2009 we spent three weeks in New Zealand and Fiji, visiting both herbariums and beaches. Sholly worked as my assistant in New Zealand helping me photograph leaves for my research project at Wesleyan. After our work, we spent a few days hiking, kayaking, and driving around New Zealand's south island, then headed to Fiji for some time relaxing and snorkeling. Both of us are excited for our move and look forward to meeting you at upcoming alumni events.

Dan and Sholly and Fox Glacier in New Zealand

Publications

Peppe, D.J., Evans, D.A.D., and Smirnov, A.V., 2009, Magnetostratigraphy of the Ludlow Member of the Fort Union Formation (Lower Paleocene) of the Williston Basin in North Dakota: Geological Society of America Bulletin, v. 121, p. 65-79.

Peppe, D.J., Hickey, L.J., Miller, I., Green, W., 2008, A preliminary investigation of the Aspen Shale flora (Albian, Wyoming, USA): a floral catalog: Peabody Museum of Natural History Bulletin, v. 49, p. 181-208.

Peppe, D.J., McNulty, K., Harcourt-Smith, W., Dunsworth, H., Cote, S., Van Couvering, J.A., 2009, Stratigraphic interpretation of the Kulu Formation (Early Miocene, Rusinga Island, Kenya) and its implication for primate evolution: Journal of Human Evolution.

Presentations

Peppe, D.J. and Royer, D.L., 2009, Digital leaf physiognomy: using leaf size and shape to reconstruct ancient climates: Leaf Summit Working Group Conference.

Peppe, D.J. and Brandon, M.T., 2009, Paleo botanical evidence for warm tropical conditions in the Early Paleogene: Climate and Biotic Events of the Early Paleogene International Conference, v. 56, p. 447-461.

Peppe, D.J. and Hickey, L.J., 2008, Unexpected patterns of floral diversity and heterogeneity in the earliest Paleocene of the North Rocky Mountains and Great Plains: Abstracts with Programs – Geological Society of America, 40 (6): 323.

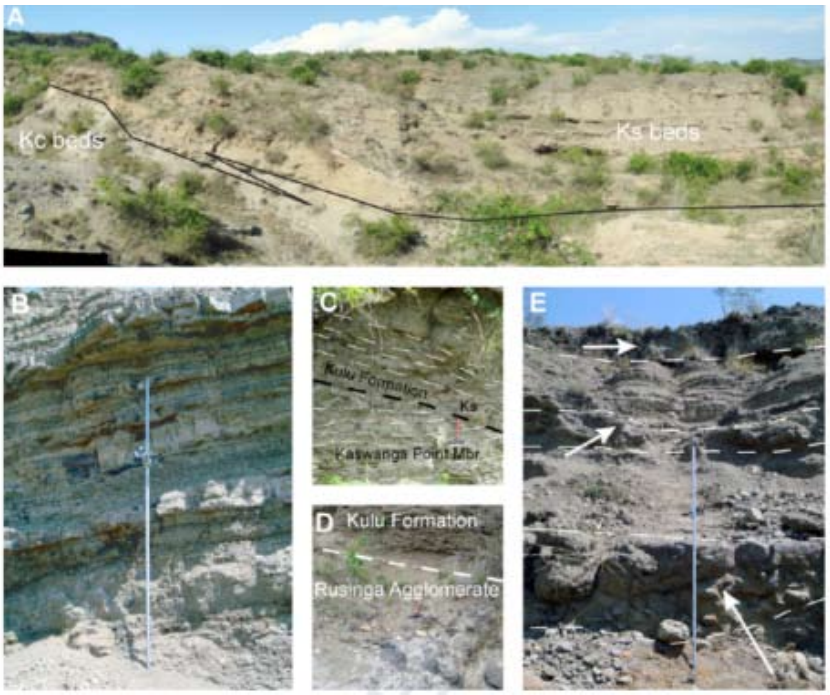
Dr. Daniel Peppe (cont.)

Miller, I., Brandon, M., Johnson, K.R., Peppe, D., Dunn, R., and Ellis, B., Paleobotanical estimates of Laramide relief in the Western Interior of North America: Abstracts with Programs – Geological Society of America, 40 (6): 323.

Bowring, S.A., Johnson, K.R., Clyde, W., Ramezani, J., Miller, I., and Peppe, D., 2008, A Paleocene timescale for the Rocky Mountains: status and potential: Abstracts with Programs – Geological Society of America, 40 (6): 322.

Royer, D.L., Peppe, D.J., Cariglino, B., Wilf, P. Johnson, K. Iglesias, A., Digital leaf physiognomy: a multivariate technique for reconstructing climate from fossil leaves: Abstracts with Programs – Geological Society of America, 40 (6): 100.

Figure from Peppe et al., 2009, Journal of Human Evolution showing the stratigraphic contacts and bedding of the Miocene-aged Kulu Formation on Rusinga Island.



Peppe, D.J. and Hickey, L.J., 2008, Plant community response to mass extinction and climate changes in the Paleocene Williston Basin of North Dakota, USA: International Organization of Paleobotany Conference.

FROM THE PROFESSORS

Dr. Jay Pulliam

Last year was my first at Baylor and I am happy to report that, from my point of view, it was a great beginning. I am pleased to be a member of this community and have a chance to contribute to it. Last Fall I taught a graduate seminar on Continental Rifting and I was highly impressed by the students' interest, enthusiasm, and willingness to contribute their thoughts and ideas to a discussion. It was the first semester of graduate school for each of those students and they didn't have a great deal of experience reading, distilling, critiquing, or presenting original research articles but they plunged in and produced a very professional set of review papers on the Rio Grande Rift by the end of the semester. It occurred to me that this sort of lively and open discourse is likely to be a hallmark of Baylor Geology Department because of its relatively small size and friendly atmosphere. I see this as a real strong point about Baylor Geology.

In the Spring I taught an introductory course in Seismology which, I believe, the students found challenging but ultimately worthwhile. I also coordinated the department's regular

(GEO 5050) seminar series in the Spring, which offered a heavy dose of geophysics and tectonics. I tried to bring in people who are working in fields into which I believe Baylor should grow, so that when a discussion of future expansion comes about we will have common reference points to draw upon.

My research program was largely, but not completely, held in check by delays in setting up my lab at Baylor. I have a major field project underway in New Mexico and west Texas (SIEDCAR: Seismic Investigation of Edge-Driven Convection Associated with the Rio Grande Rift) and put a huge amount of effort into writing two proposals, plus a pre-proposal, for another major project to study the Texas Continent-Ocean Boundary—the transition from the relatively unstretched continental crust of the Edwards Plateau across the Gulf Coastal Plain to oceanic crust, wherever it may be.

The SIEDCAR deployment was the most demanding and largest such project I have directed. We incorporated eight high school science teachers, two undergrads, four grad students, one postdoc, two PIs, plus two members of the NSF-supported EarthScope facility in Socorro, NM. Together we installed 70 broadband seismographs in less than two months, which is an extraordinary achievement. These instruments will stay in place for two years—until July 2010—to record earthquakes from around the world. We will use these data to construct images of the crust and uppermost mantle beneath the eastern flank of the Rio Grande Rift to determine whether edge-driven convection is, in fact, a significant real-world phenomenon.

I also received new funding to develop techniques for modeling the crust and upper mantle beneath the Middle East, in support of nuclear explosion monitoring efforts by the National Nuclear Security Agency and the Air Force Research Laboratory. I recruited two new graduate students to Baylor and was awarded Baylor's Centennial Professorship for 2009-10 in recognition of a project I am pursuing in the Andaman Sea at the northern terminus of fault rupture during the huge Sumatra earthquake of December 26, 2004, which caused a devastating tsunami.

Over the summer I will work with three Baylor graduate students, an undergrad geophysics major, a high school student who is interested in geology as a possible major in college, and several high school science teachers to analyze seismic data from our 2005 and 2007 ocean bottom seismograph deployments near Puerto Rico and from the SIEDCAR deployment.
All in all, it was an exciting and rewarding year—I hope the coming year goes as well. I invite all of you to stop by if you visit Baylor to see what we're doing here and give me a chance to meet you.

Members of the SIEDCAR deployment crew. From left (kneeling): Jay Pulliam (Baylor University), Mary Myrick (teacher, El Paso), Francine Myrick (undergrad, El Paso), Alison Mote (teacher, Austin), Holland Theis (teacher, Tatum), Willie Zamora (PASSCAL). From left (standing): Michael Arratia (teacher, Rio Grande City), David Boyd (teacher, Dallas), Craig Weart (teacher, Weslaco), Joseph Dowdy (undergrad, Cornell College), Selina Ohman (teacher, El Paso), Tim Dillon (teacher, El Paso), Derry Webb (technician, PASSCAL), Marcos Alvarez(deputy director of PASSCAL), Greg Chavez (technician, PASSCAL).

FROM THE PROFESSORS

Dr. Julia Sankey

Dr. Julia Sankey, Associate Professor at California State University, Stanislaus (Turlock, CA) was on sabbatical at Baylor's Geology Department.

I've had a great year here in the Geology Department at Baylor University. Almost two years ago I was planning my sabbatical application for my university. I knew three things: 1) I wanted to rent my house in CA and take an entire year off to get research and papers done; 2) I wanted a quiet place to work and preferably within reach of Big Bend National Park, where I do field work, and 3) wanted to take my horse and dog with me! I emailed Steve Driese, Chair of the Geology Department, and asked if I could spend my sabbatical here, and he said yes. We had previously done field work in Big Bend, along with Stacy Atchley, Lee Nordt, and Steve Dworkin, and I had become interested in learning more about their specialties of paleosols and isotopes. I had also visited Baylor a couple of times to give seminars to the department. Still, I did not know what to expect, but I did know I needed a long, long break. This is my sixth year at CSU Stanislaus, I had received tenure after four years, was chair of our program my last two semesters, but due to our heavy teaching load, I was very burned out.

The year has flown by. The faculty, staff, students have been very warm and welcoming. It was especially nice to have other newbies around, like Jay Pulliam, and such friendly graduate students. And, I'll never forget Joe Yelderman coming into my office during the fall semester and complaining that I wasn't getting in early enough in the morning! I will miss everyone when I finally pack up and head back to CA at the end of July. I still have three more months to finish up projects, but here are the highlights so far.

Fall Semester: I arrived in early August, with Lizzie, my beagle, after an intense summer back home teaching a class, writing grant proposals, and moving stuff into storage, and getting my house ready for rental. We settled into our apartment near campus and sweated out the month. The big day came when my horse, Mali, finally arrived at the end of the month via a professional horse shipper. She moved into a pasture with two alpacas (who she was terrified of) at MCC's Highlander Ranch and we've happily run all over the ranch this year (with a few falls by me).

At Baylor, I sat in on three graduate geology classes in fall: Steve Driese's Paleopedology and Grant Writing and Steve Dworkin's isotope geochemistry, and learned a lot, not only about the material and ideas for applications to my research, but good ideas for teaching. I finished and submitted a paper on our Big Bend work, visited UT Austin's vertebrate paleontology collections and colleagues a half dozen times, attended GSA in Houston, submitted a pre-proposal to the National Geographic Society (it was approved), reviewed several manuscripts for journals, and was nominated to be my university's Outstanding Research Professor (didn't win; darn!).

A personal highlight for me in fall was getting to meet the famous glaciologist, Dr. Lonnie Thompson from Ohio State University who was here at Baylor to give lectures on his research on glaciers and climate change. I was lucky enough to go out to dinner with him and several others during his visit. He's one of the people responsible for Al Gore's movie, An Inconvenient Truth. This reminds me what a great experience the department seminar series has been this year also/

December: I spent two very productive weeks of field work in Big Bend with my friend and colleague, Dr. Nick Longrich (University of Calgary and soon to be a post-doc at Yale). We found and collected Late Cretaceous

vertebrate fossils from new sites and worked on papers. It was a great trip with some new dinosaur discoveries that we are writing up now. My mom also joined me in Big Bend for a week; she had been my field assistant there when I was graduate school!

Spring Semester: In order to have more time for research, I decided to cut back on classes. This semester, I dove into an old research project, on the vertebrates from the latest Cretaceous Hell Creek Formation of North Dakota. This research had been supported by grants from the National Geographic Society and Earthwatch Institute. I wrote a first draft of a paper (Sankey in prep) and submitted an abstract (Sankey in press) for a talk to the North American Paleontological Convention. I also gave three lectures at Louisiana State University, Blinn College-Bryan, and Baylor (Geology Dept. Brown Bag series). And, I submitted an abstract along with several of the Baylor faculty on our Big Bend work (Sankey et al., in press). And, Nick, I, and Darren Tanke (Tyrrell Museum of Paleontology) submitted a manuscript on a new dinosaur from Big Bend.

One of the most enjoyable activities from spring semester was working with two undergraduate geology majors (Haley Wasson and Chris Breed) on a Hell Creek research project. Although incredibly busy with their 'real' classes, we met weekly to discuss their readings and research. They wrote papers and submitted an abstract to the Society of Vertebrate Paleontology annual meeting, which will be held at University of Bristol in the UK in September.

This summer I will continue my work here, and have three trips planned: 1) Presentation at the conferences, Advances in Western Interior Late Cretaceous Paleontology and Geology in St. George Utah; 2) Workshop leader for On the Cutting Edge, a workshop for new faculty in the Geosciences, which will be held at the College of William and Mary in Virginia; and 3) Presentation at the North American Paleontological Convention in Cincinnati, Ohio.

Lastly, I'm greatly impressed with the Geology Department here at Baylor, and I think the alumni should feel very proud of it. Thanks, all the best, and come visit!

Julia@geology.csustan.edu

2009 References

Sankey, J.T. In Preparation. High abundance of sharks in the uppermost Hell Creek Formation, North Dakota: Sea level rise due to the late Maastrichtian Greenhouse Event? 25 pp., 1 table, 5 figures. To be submitted to: *Through the End of the Cretaceous in the Type Locality of the Hell Creek Formation in Montana and Adjacent Areas*, J. Hartman, G. Wilson, J. Horner, and W. Clemens (eds.). Geological Society of America Special Paper.

Longrich, N., **Sankey**, J.T., and Tanke, D. In Review. A new pachycephalosaurid (Dinosauria: Marginocephalia) from the upper Campanian Aguja Formation, Big Bend, Texas. 35 pp, 2 tables, 7 figures. *Zoological Journal of the Linnean Society*.

Wasson, H.; Breed, C., **Sankey**, J. In Review. Paleoecology of Lonchidion selachos from the latest Cretaceous Hell Creek Formation, North Dakota. Society of Vertebrate Paleontology 69th Annual Meeting, University of Bristol, United Kingdom. Journal of Vertebrate Paleontology, Program and Abstracts.

Sankey, J.T. In Press. High abundance of sharks in uppermost Hell Creek Formation, North Dakota: Sea level rise due to the late Maastrichtian Greenhouse Event? Symposium, "Through the End of the Cretaceous in the Type Locality of the Hell Creek Formation in Montana and Adjacent Areas", North American Paleontological Convention, University of Cincinnati, June 21-26, 2009.

Sankey, J.T., Atchley, S.C., Nordt, L.C., Driese, S.G., Dworkin, S.I., Longrich, N., Fricke, H. In Press. A less diverse Late Cretaceous vertebrate fauna in Texas due to warmer and drier paleoclimates: evidence from vertebrates, paleosols, and isotopes. Advances in Western Interior Late Cretaceous Paleontology and Geology. May 22-23, 2009. St. George, Utah.

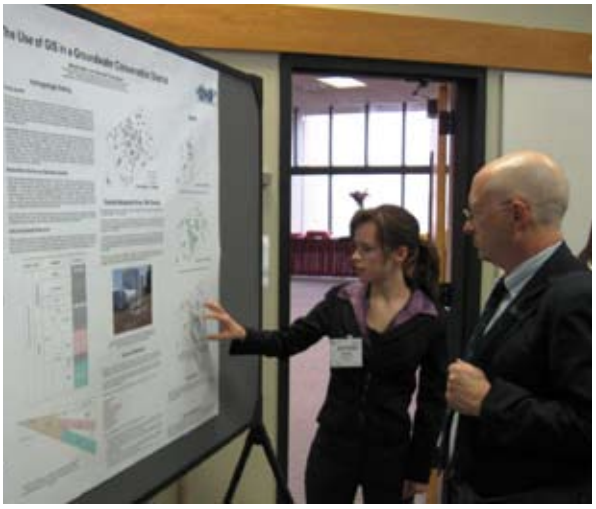
FROM THE PROFESSORS

Dr. Joe Yelderman

The word for this year is ***Grandparent***. When you read this, if all goes well (and we pray it does), Dr. Joe should be the proud grandfather of a granddaughter named Madison Austen White born sometime in August 2009. I am sure photos will be part of next year's newsletter article. The Yeldermans are thrilled to add a new family member in Madison, but are sad they said goodbye to Joe's Mom, Ada Frances, September 4, 2008. They will miss her.

Dr. Joe attended the annual GSA meeting in Houston where he presented a poster co-authored with Bruce Byars and was co-author with two MS students who presented orally; Adam Clapp and Tina Potterton. Dr. Joe also attended the South Central GSA meeting in March 2009, where senior geology student Michelle Diehl presented a poster on her Trinity aquifer work with the McLennan County Groundwater Conservation District (see photo 1). In addition, Dr. Joe received an excellent response to his presentation at the Ground Water summit in Tucson, AZ where the on-line data work with Michelle Diehl and Bruce Byars was requested by representatives from Mexico and Dr Joe was invited to be on a panel at the Groundwater Expo in New Orleans. The final presentation of the year was a study on Graywater Treatment and Climate Change presented at the AWRA Spring Specialty Conference in Anchorage, Alaska (see photo 2) and co-authored with MS student, Nathan Griswell. This study was conducted in the Carlile Research building (see photos 3 and 4).

Senior geology student, Michelle Diehl, presents her poster to Dr. Jack Sharp, University of Texas hydrogeology professor, at the South Central GSA meeting in Dallas.



Dr. Joe and Bruce Byars received plaques from the City of Whitney in appreciation for all their help with water and wastewater projects in and around the city (see photo 5). Dr. Yelderman has been blessed with funded projects several of which were completed this past summer. The completed projects were funded by the Texas Onsite Wastewater Treatment Research Council (TOWTRC) and Dr. Joe presented the results at the Texas Onsite Wastewater Association meeting March 5th in Waco. One project still being conducted is a study of coastal wetlands with Co-PI Dr. Margaret (Maggie) Forbes who is working at Baylor as a Post Doc in the Center for Reservoir and Aquatic Systems Research. MS student Adam Clapp is completing his thesis on the wetland hydrology for this grant and has overcome mosquitos as well as Hurricane Ike (see photos 6 and 7). Dr. Joe continues to enjoy teaching his introductory hydrogeology class (see photo 8) and welcomes new colleague, Dr. Boris Lau, who will add courses in contaminant transport and nannoscience to the hydrogeology program. On top of the academic work highlighted above Dr. Joe served as interim graduate program director for the Environmental Science Department, as director of the Baylor Wastewater Research program and as the Director of the Baylor in Costa Rica Program.

The Yeldermans still live at 706 Woodland West, Woodway, Texas and visitors are always welcome. Dr. Yelderman continues to teach Sunday School at Columbus Avenue Baptist Church. Diane continues to teach Kindergarten at North Waco Elementary. Logan (son #2) will be a senior at Baylor and survived (sort of) acting as SING Chairman for his fraternity (see photo 9). Cal (son #1) attends graduate school in English and Creative Writing at New Mexico Highlands University in Las Vegas, NM. Married daughter, Abigail White, lives in Houston with her husband Jared where she works for Second Baptist Church as the assistant to the pastor for young married couples and Jared works as an auditor for Price-Waterhouse-Coopers.

Alaskan Glacier seen from Resurrection Bay (obviously a Baylor approved field area)

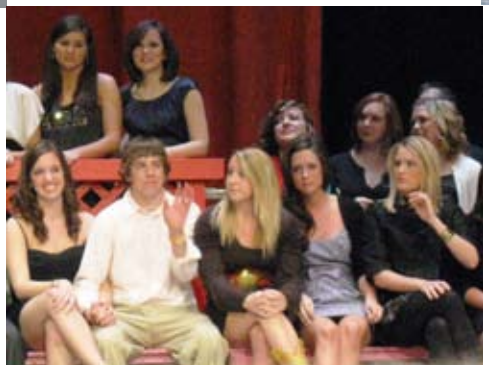
Graywater treatment experiment in the new Carlile Research Building

Graduate student Naoko and Dr. Yelderman sample graywater.

Bruce Byars, CRASR, and Wayne Kunkel, city of Whitney, admire the wier measuring flow at the new surface treatment wetland at the Whitney wastewater treatment plant.

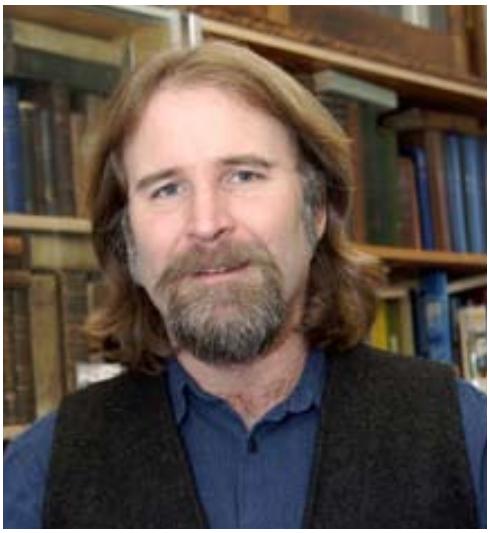
Adam Clapp downloads data from a water level recorder in a coastal wetland where mosquitos are overwhelming

Adam Clapp downloads data from a waterlevel recorder that survived the aftermath of Hurricane Ike.



Hydrogeology class measures baseflow in Salado Creek. (above)

Logan Yelderman seems to enjoy his job as SING chairman for his fraternity (pictured left).



O.T. Hayward Distinguished Lecture

Dr. David Montgomery
October 5, 2009, 7:00-9:00 p.m.
University Wide Lecture
Baylor Sciences Building, D110

October 6, 2009
3:00 p.m.
Departmental Lecture
Baylor Sciences Building, C206

The 2009 Geology Department fall calendar will include the inaugural distinguished lecture to be presented by Dr. David Montgomery, a 2008 MacArthur Fellow, on October 5-6, 2009, honoring the accomplishments of Dr. O.T. Hayward in regional geomorphology. Before the beginning of Dr. Montgomery's lecture we will honor both Dr. Hayward as well as Geology alumnus Connie Hudson whose generosity established the O.T. Hayward Excellence Fund for distinguished speakers.

BIOGRAPHY: David Montgomery is a geomorphologist making fundamental contributions to our understanding of the geophysical forces that determine landscape evolution and of how our use of soils and rivers has shaped civilizations past and present. A prolific and versatile scientist, Montgomery's numerous publications have explored how landslides and glacial erosion influence the height of mountains, how rivers originate and shape the landscape, and how human modification of river channels affects aquatic ecosystems, among other probing questions about the Earth's surface. Unsettling conceived wisdom about environmental change at both the local and global levels, Montgomery's field studies have taken him throughout the Pacific Northwest, his home and research base, to the Himalayas, the Andes, and the canyons of Mars (via data from NASA's Mars Orbiter Laser Altimeter). For one major research program, he investigates the role of sediment and wood debris in altering stream and river channels and develops novel methods for measuring channel stability, anthropogenic disturbances, and conditions conducive to salmon spawning. In King of Fish: The Thousand-Year Run of Salmon (2003), a well-received book on the history of humans' impact on salmon populations, Montgomery broadens the reach of his field studies beyond the scientific community by distilling his findings to support applied research on the ecological management of mountain rivers. His second book, Dirt: The Erosion of Civilizations (2007), chronicles the role of soil in the evolution of ancient and modern societies and offers a number of solutions to contemporary soil degradation worldwide. With a scientist's rigor, a historian's curiosity, and an environmentalist's passion, Montgomery is leading investigations into the ecological consequences of a wide range of Earth surface processes

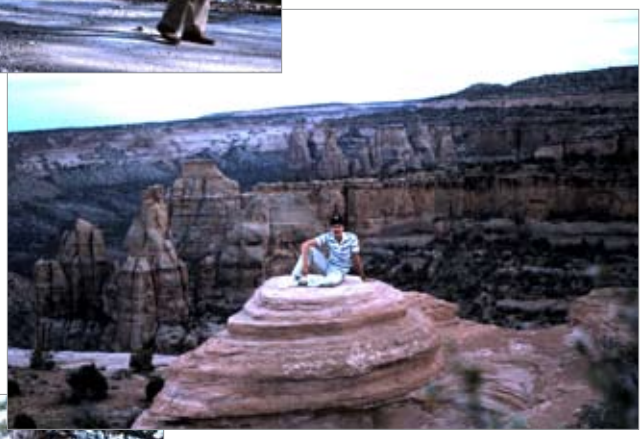
David Montgomery received a B.S. (1984) from Stanford University and a Ph.D. (1991) from the University of California, Berkeley. He has been affiliated with the University of Washington since 1991, where he is currently a professor of geomorphology in the Department of Earth and Space Sciences. His numerous articles have appeared in such journals as Science, Nature, and Proceedings of the National Academy of Sciences USA.

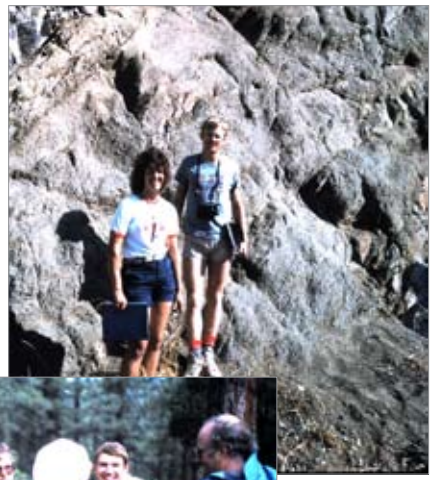
Photos from the February 2009 BGS Field Trip to Brownwood, Texas, emphasizing stratigraphy, paleontology, and depositional environments of Middle Pennsylvanian rocks at the Lake Brownwood spillway. For more information about BGS happenings visit: http://bugeos.blogspot.com

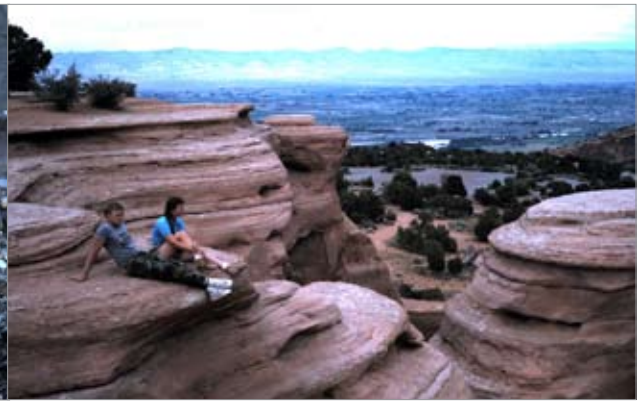
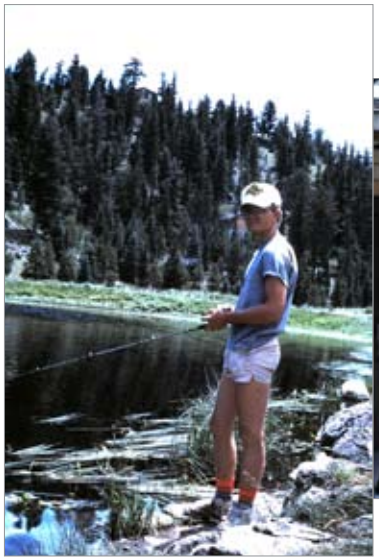
GEOLOGY EVENTS

Blast from the Past

Field Camp 1985





RINKS




BAY LOGY

GEOLOGY EVENTS
Summer Field Camp 2009

Aaron Bryant and Hunter Harlow looking at limestone

Brett Whittman, Clark Osterlund, and Brett Schlichtemeier working

Clark Osterlund and David Edlin at Molas Pass

Field Camp at Dinosaur National Monument

Field Camp group preparing to hike down into the Grand Canyon

Getting ready to begin measuring section in Alamogordo, New Mexico

Measuring section in Alamogordo, New Mexico

Michelle Diehl measuring at White Sands

Rocky Mountain High

Students working on a sand dune project

Working on a mapping project in Cloud Croft, New Mexico

Sandy Dworkin took good care of all of the geology students

GRADUATES AND AWARDS

December 2008 Graduates

Julia Kahmann-Robinson, PhD - Late Mississippian (Chesterian) High Frequency Climate Change in the Pennington Formation at Pound Gap, KY USA

Isaac Westfield , MS – Geochemical Fingerprinting of Sediments on the Pear Tree Bottom Reef, Near Runaway Bay, Jamaica

May 2009 Graduates

Nathaniel Ball, MS – Depositional and Diagenetic Controls on Reservoir Quality and their Petrophysical Predictors within the Upper Cretaceous (Cenomanian) Doe Creek member of the Kaskapau Formation at Valhalla Field, Northwest Alberta

David Coffman, MS – Streambank Erosion Assessment in Noncohesive Channels Using Erosion Pins and Submerged Jet Testing, Dallas/Fort Worth, Texas

Aaron Shunk , PhD – Late Tertiary Paleoclimate and Stratigraphic Records from the Gray Fossil Site (Northesatern TN) and Pipe Creek Sinkhole (North-Central IN)

August 2009 Graduates

Luke Hunt, MS – Sequence stratigraphic and depositional controls on reservoir continuity within the Cretaceous Doe Creek Member of the Kaskapau Formation, Valhalla Field, Alberta, Canada

Jana (Edwards) Klentzman, MS – Geochemical Controls on Productions in the Barnett Shale, Fort Worth Basin

Undergraduate Awards

Gabriela Keeton – 2009 recipient of the Robert T. Hill Award for Academic Excellence in Geology

Gabriela Keeton & Colby Wright – Chosen to represent the Geology Department at the 2009 College of Arts & Sciences Honors Convocation

Hunter Harlow, William Torsch, & Haley Wasson – 2009 recipients of the James Dixon Field Assistant Scholarship

Colby Wright and Gabriela Keeton with Dr. Driese at the Geology Spring Awards Ceremony (pictured above) Colby Wright and Gabriela Keeton with Dr. Driese at the 2009 Honors Convocation (pictured right)

WHERE ARE THEY NOW?

Skip McClellan (63-64) writes: I was a Baylor Geology Major 1963-64. Tom Moore was my roommate back in those days. He and I grew up together in Conroe, Texas. I did not graduate from Baylor, however it was the greatest days of my life and although I went to three other colleges, Baylor was my favorite. We had some great times there. I could write a book about our field trips and our ad hoc discussions in the basement lounge of the old Geology Dept. I can still remember the "World According to Jim Bain". There was also a host of others back then who made up a fairly small group, since there was hardly anyone majoring in Geology back in those days. I can probably dig around and find some pictures you guys might enjoy seeing. Hopefully I will be able to attend the Dr. Hayward Lecture in October.

Joe W. Fandrich (MS, 1969) works at Mesa State College and the Westwater Group Geological Research Facility in Grand Junction, Colorado and is a planetary research geologist specializing in extraterrestrial and terrestrial bolide impacts with emphasis on the PermoTriassic boundary. He and his wife Sherry (also a Baylor graduate, BA in English Education – 1968) have two daughters, Amanda Jo who lives in Fairbanks, Alaska with her husband Jim and daughter, and Molly Marie who lives in Denver, Colorado with husband Adam.

Lloyd Warner (BS, 1981) is married to BU Business Grad Carol (Edgar), 81, and has three children, Stephanie (24, married, A&M Engineer Grad 2006)...David (21, Junior Engineer Major at UT Austin)...Laura (19, Soph. at A&M). Lloyd works for Anadarko, lives in the Champions Area of Houston, survived hurricane Ike, and plans to retire on recently acquired Lake Travis lot in about 5 years or so.

Beth Rinard (BS, 1993 MS, 1995) says things are good in Stephenville. Her tenure took effect last fall at Tarleton State University, and she is chairing a university-level committee. She has a beautiful house that's all ready for her daughter, Semira, and a great group of friends ready to welcome her into the crowd. Beth also has a pool in the back yard and is anticipating some little girl swimming lessons this summer. Her mother is thrilled about her new granddaughter (the first grandkid for her), and is making the trip to Ethiopia with Beth to pick up Semira.

Joshua Turner (BS, 1996) his wife Cheryl and their two kids (2&4) are living in Jakarta, Indonesia, where Josh works as a structural geologist and mentor on the Tangguh Exploration and Development project for BP.

Matt Ables (BS, 2000) started working for the Lower Colorado River Authority in Austin after graduating

WHERE ARE THEY NOW?

from Baylor, and earned his MS in the spring 2008 from Texas State. He and his wife, Anna, currently reside in Sacramento where he works for the German based company Kisters/WISKI as a Project Manager/ Hydrologist. Matt says Anna and I have been able to spend over 5 weeks in Europe, and at least 2 months in Canada since I started in June of 2008. She gets to go most everywhere with me... but managed to miss the -40 degree weather in Edmonton, Alberta last February.

Condolences to the family of **Walter B. Westbrook (BA, 1982)** who passed away March 29th after a battle with colon cancer. He was 50, and was a geologist in Europe, Asia, Africa, and the Middle East, and owned and operated a real estate business.

Condolences to the family of **William E. Strange Jr.** (BS 1954), 75, of Charles Town, W.Va., former chief geodesist of the National Geodetic Survey, who died May 10. "Bill, known as the 'Father of CORS,' will be remembered for his insight and vision of a nationwide system of GPS stations, which established the CORS network we know today," said NGS Director Juliana P. Blackwell. According to a brief autobiography posted to RPLS.com on Jan. 16, 2005,

Strange received a Bachelor of Science in geology from Baylor University in 1954. After a short time working at Convair Aircraft and some graduate work in geophysics, geology and mathematics at Texas A&M and Baylor, he went on to the University of Wisconsin and later the University of Hawaii where he conducted graduate work and taught geophysics with a focus on gravity. In 1965, Strange headed the Gravity Division of the Army Map Service in Washington D.C., before entering the private industry in 1966 where he worked for contractors on NASA programs on satellite geodesy and space geophysics. He joined the National Geodetic Survey in 1974 as chief of the gravity program. One of his jobs was to integrate the satellite Doppler and early VLBI (very long baseline interferometry) and satellite laser work with conventional work into the late 1980's until his retirement, he worked on GPS and its use in a geodetic reference system. His last few years were dedicated to getting CORS underway. Following his retirement in 1998, after more than 30 years as a geophysicist/geodesist, he remained active in the geodetic community. He is remembered as a modest man with an amazing mind. His wife, Dorothy, writes that Bill had a passion for geology and once said "If I had been a rich man with no need to work for a living, I would still have wanted to do this."

Congratulations to...

Sikiru A. Amidu (PhD, 2008) and his wife on the birth of their son, Ismail Abiodun, in September 2008.

Rachel (Bruner) McCarty (BS, 2005) and her husband Dan on the birth of their son, Payne, on November 24, 2008.

Brian Clark (MS, 2000) and his wife Kandra on the birth of their daughter, Kadri, on March 17, 2009.

Beth Rinard (BS, 1993 MS, 1995) on the adoption of her daughter, Semira, in March 2009.

David Cleveland (PhD 2007) and his wife Sara on the birth of their son, Rowan, on August 17, 2009

Joe and Diane Yelderman on the birth of their first grandchild, Madison, on August 23, 2009.

The Geology "Great Paper Airplane Flying Contest" of 1967. You might note that several members of the faculty also participated: Drs. Morales and Hayward and Don Bishop are in the foreground. - Courtesy of Tom Moore

WHERE ARE YOU NOW?

We would love to know! Please complete the form on the back, fold in half, place a stamp, and put it in the mail. We will use this information to update our departmental files. You can also email your information to: Paulette_Penney@baylor.edu.

Also, remember we have the "Geokid" bulletin board in the office with photos of children of Alumni, so send your pictures to Paulette_Penney@baylor.edu.

_____

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PLACE
STAMP
HERE

Baylor University
Department of Geology
One Bear Place #97354
Waco, TX 76798-7354

PERSONAL INFORMATION SHEET
DEPARTMENT OF GEOLOGY

Name: _____ Class: _____

Degree(s): _____

Phone: _____ Email: _____

Mailing Address: _____

_____

Type of Work: _____ Location: _____

Company Name: _____

Family Information: _____

_____

Hobbies: _____

Interests: _____

Spare Time Activities: _____

_____

Would you like to share information in the Homecoming Newsletter Section, "Where Are They Now?" Yes _____ No _____ If yes, write information here: _____

_____

_____

Are you willing to speak to the Department?

Yes ____ No ____ If yes, write topic here: _____

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Suggestions: _____

_____

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You never know who you will run into at Homecoming...

Spice Girls,
2008 Tour

HOMECOMING 09

Please join us!

Friday, October 23, 2009
Geology Department Homecoming 2009 Open House
7:00–9:00 pm | Baylor Sciences Building, E401

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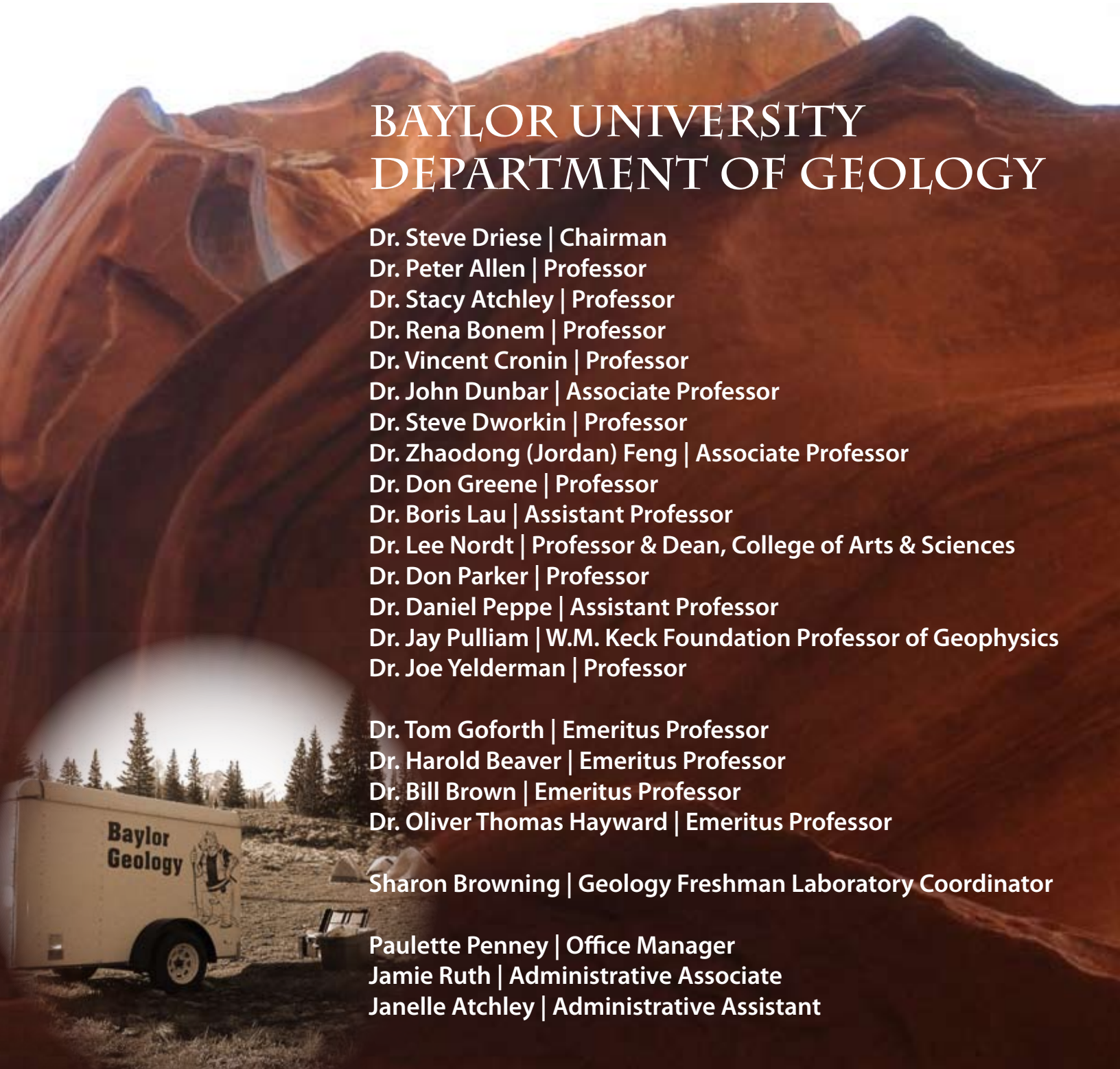

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Dr. Peter Allen | Professor
Dr. Stacy Atchley | Professor
Dr. Rena Bonem | Professor
Dr. Vincent Cronin | Professor
Dr. John Dunbar | Associate Professor
Dr. Steve Dworkin | Professor
Dr. Zhaodong (Jordan) Feng | Associate Professor
Dr. Don Greene | Professor
Dr. Boris Lau | Assistant Professor
Dr. Lee Nordt | Professor & Dean, College of Arts & Sciences
Dr. Don Parker | Professor
Dr. Daniel Peppe | Assistant Professor
Dr. Jay Pulliam | W.M. Keck Foundation Professor of Geophysics
Dr. Joe Yelderman | Professor

Dr. Tom Goforth | Emeritus Professor
Dr. Harold Beaver | Emeritus Professor
Dr. Bill Brown | Emeritus Professor
Dr. Oliver Thomas Hayward | Emeritus Professor

Sharon Browning | Geology Freshman Laboratory Coordinator

Paulette Penney | Office Manager
Jamie Ruth | Administrative Associate
Janelle Atchley | Administrative Assistant