



UNIVERSITY OF
ARKANSAS

Department of Geosciences

Geology, Geography, and Earth Science

Summer 2012



Welcome Dr. Chris Liner!

The Maurice F. Storm Endowed Chair in Petroleum Geology exists thanks to a gift from alumnus Maurice Storm. The first scholar to hold the Storm Chair is professor Christopher Liner, a 1978 graduate of our department.

"The university has a long and distinguished history in the geological sciences and is poised for growth due to outstanding support by alumni such as Maurice F. Storm," said Liner. "In addition, the university administration has approved and promoted a new geosciences Ph.D. program. All of this significant effort mirrors the past and future importance of energy, fossil fuels and environmental stewardship in the state of Arkansas. I welcome the challenge of further developing petroleum geoscience at the University of Arkansas."

Liner has worked for Conoco, Golden Geophysical and Saudi Aramco. He has also served as an industry consultant for various companies in countries around the world. He has taught at the University of Tulsa and the University of Houston. While at Tulsa and Houston, Liner developed more than a dozen courses ranging from freshman-level survey classes to advanced graduate topics. Nine students have completed doctoral degrees under his tutelage.

Liner has authored scores of journal articles and two books, with a third in progress. He has presented his research at dozens of conferences around the world. He is the author of the *Seismos* column in the geophysics journal, *The Leading Edge* and maintains the *Seismos* blog, examining the history and culture of geophysics.

Liner is a member of the Society of Exploration Geophysicists, AGU, AAPG, the Seismological Society of America and the European Academy of Sciences. He has served as 1999-2001 Editor of the journal *Geophysics* and is currently on a 30-stop world tour delivering the 2012 Society of Exploration Geophysicists Distinguished Instructor Short Course.

Liner earned a MS in geophysics from the University of Tulsa (1980) and his PhD in geophysics from the Colorado School of Mines (1989).



Welcome Dr. Celina Suarez!

"This is a fascinating time to be at the University of Arkansas," said Suarez. "Between the discovery of dinosaur tracks in the state and the department's new Ph.D. program, we're all going to stay very busy."

Suarez has published several peer-reviewed articles and has presented her research at more than a dozen conferences around the country. Her unique research has landed her an appearance on a Discovery-Science Channel special to discuss her role in the discovery of a new dinosaur, *Falcarius utahensis*. She was also featured on an episode of the television show *Dirty Jobs* to showcase the physically demanding nature of paleontological research on a dig site. She was described by the show's host as a "cardiovascular machine with a giant brain and an insatiable level of curiosity."

Suarez, along with her identical twin sister, made history while working on a dig in 2004. They discovered a collection of bones that contained fossils from a previously unknown species of raptor. The new dinosaur species was named *Geminiraptor suarezorum* in honor of the twin researchers.

Suarez comes to Arkansas from Boise State University where she has been conducting research as part of a two-year NSF postdoctoral fellowship. She is a member of the Paleontological Society, GSA, the Association for Women Geoscientists, the Society for the Advancement of Chicanos and Native Americans in Sciences and AGU. She earned a BS from Trinity University in San Antonio, Texas (2003), MS in geology from Temple University in Philadelphia (2005) and her PhD in geology from the University of Kansas (2010).



Welcome Dr. Matt Covington!

Dr. Covington, UA Alum, studies karst hydrology and geomorphology as well as glacial hydrology. He has applied his foundation in physics to the understanding of landforms, their history and the dynamics that create them, and to the study of water flow and transport in groundwater systems. He has conducted projects examining flow conditions and erosion in cave streams at the Karst Research Institute in Slovenia as a NSF International Research Fellow. Previously, he was a NSF Earth Sciences Postdoctoral Fellow researching transport and heat flow through karst aquifers at the University of Minnesota-Twin Cities.

Covington's publication record includes nine peer-reviewed articles with more in preparation. He has presented his research at a dozen conferences around the world and has given invited lectures at Louisiana State University, Technische Universität Dresden in Germany, and Université de Neuchâtel in Switzerland.

Covington also works to raise awareness about cave science and preservation by developing numerous presentations for students from elementary school through college ages on cave science and exploration. Covington has participated in numerous cave expeditions all over the world and recently co-led an expedition to Cueva J2 in Mexico.

Covington is a member of the American Geophysical Union and has served on their Hydrology Groundwater Technical Committee since 2010. He is also a member of the Geological Society of America, the National Speleological Society and the Minnesota Ground Water Association.

Covington graduated *summa cum laude* with a BS in physics and a BA in philosophy from the University of Arkansas (2002). He earned a PhD in physics from the University of California-Santa Cruz (2008).



Welcome Dr. Xuan Shi!

Dr. Xuan Shi comes to us from the Georgia Institute of Technology's Center for Geographic Information Systems, where he has conducted research since 2007.

Dr. Shi "has done excellent work with the NSF's Computing in the Cloud and Software Infrastructure for Sustained Innovation projects," said Ralph Davis, professor and chair of the department.

Shi has also been a part of two projects sponsored by the DOE. One study evaluated the potential energy production from tidal streams. A second study on ocean currents along the U.S. coast is ongoing. Shi was also one of the PIs for a research venture through a seed grant from the Centers for Disease Control and Prevention, examining the obesity epidemic in the U.S. He is currently a co-principle investigator for two projects sponsored by the Georgia Department of Natural Resources.

Shi earned a BS in geography from Hubei University in China (1988) and a MS in geography from the Indiana University of Pennsylvania (2001), and a PhD in geography from the University of West Virginia (2007).



The National Groundwater Association has put our department in their list of the top 100 leading hydrogeology programs in North America. More than 400 programs were considered. Their goal is to give prospective groundwater students a list of strong options for pursuing their studies further.



Dr. John Dixon and **Dr. Rex Weeks** were recently recognized by the Asso'd Student Government and Residents Interhall Congress as 2012 Outstanding Faculty Nominees. This is a campus-wide nomination with recognition at an Annual Faculty Appreciation Banquet.



Malcolm Cleaveland published a paper with four co-authors, including student **Daniel Stahle** entitled “*Extended chronology of drought in South Central, Southeastern and West Texas*” in the Texas Water Journal, Dec.

2011. The research was funded by the Guadalupe-Blanco River Authority, and one of their executives, Dr. Todd Votteler, is a co-author. Two of the co-authors, Richard Casteel (a student) and Dr. Jay Banner are from the University of Texas, Austin. It will give water managers a long-term perspective (1500-2011) on the frequency and severity of drought. This is of great interest, in part because of the terrible drought of 2011 that affected all of Texas and some of the neighboring states.



Professors **John Dixon**, **Fang-Zhen Teng** and **Jason Tullis** are on a team of investigators that has had its funding from the National Science Foundation

(NSF) renewed at the Space Center here at the University of Arkansas. This program gives their graduate students a chance to help mentor undergraduates in Space Center research groups. During this summer program, the visiting undergraduates work on peer-reviewed research projects covering subjects like astrobiology, astrophysics, mission design engineering, planetary geology, experimental and computational simulations of planetary conditions, and other related fields. This program, Research Experience for Undergraduates (REU), also serves as a useful recruiting tool for the UA Graduate School as well as our department.



Dr. Greg Dumond, UA Structural Geologist, was an invited early-career participant at the GSA Penrose Conference in Cap de Creus, Spain last summer. The focus was on “Deformation Localization in Rocks: New Advances.” Dr. Dumond met with experts and presented his own research on shear zones, flow of lower crust, and stain localization in the Canadian Shield. The Penrose Conferences were established in 1969 to provide opportunities for the exchange of current information and exciting ideas in geology and related fields and to stimulate and enhance individual and collaborative research.

Student Jobs and Internships.

If you or your corporation want to recruit UA geosciences students for jobs or internships, please contact the department and discuss recruitment opportunities.

GEOSCIENCES PhD - Our department now offers a doctoral program. “This is a milestone for the Geosciences Department,” said Robin Roberts, Dean of the Fulbright College during the department’s annual Spring Scholarship Banquet. “It happened because a visionary team of alumni, faculty and professionals saw a need and met it.”

The program was officially established after approval by the Arkansas Board of Higher Education at its meeting on April 27. “Arkansas previously was the only state without a Ph.D. in geosciences,” said Provost Sharon Gaber. We have “now resolved this issue. The university can help address the need for highly specialized geoscience research teams to work on issues in natural resources and energy, rather than sending our top students out of state.”

Scholarly activity, research expenses and graduate enrollment have steadily increased in the geosciences department throughout the past decade. Due to rapid growth in the natural resource sector, highly trained professionals with knowledge, skills and experience are in high demand. The new program will provide doctoral-level training for students in areas needed for these competitive careers. The University of Arkansas provides a unique experience through its Center for Advanced Spatial Technologies and other training opportunities that are unavailable at other schools in the region.

“Industry requires a Ph.D. program to fund significant research,” said Eddie Valek, chair of the geosciences external advisory board and a geoscience manager for Marathon Oil Co. in Houston. “Doctoral level research can be conducted on a broader scale, and address more complex trends and issues. Having this program will help all students, even those not pursuing a Ph.D. Industry will hire more of our geoscience master’s-level graduates and at better terms because of their exposure to this level of research.”

The doctoral program follows a series of advancements within the department of geosciences, including securing over \$2 million to establish an endowed faculty chair and master’s-level graduate assistantships.

Our first student in the PhD program started in August, 2012, Ms. Emma Hu, working via grant resources with Associate Professor FangZhen Teng.

2012 Geosciences External Advisory Board

Eddie Valek, Marathon Oil Company, Chair
Jeff Hall, retired from Devon Energy, Vice-Chair

Douglas ‘Bug’ Bailey, Northrop Grumman-Electronic Systems

Don Castleberry, retired from the National Park Service

Sean Chenoweth, University of Louisiana Monroe

Bill Coffey, Devon Energy

Clayton Yarri Davis, Vitruvian Exploration

Erica Doerr, Northwest Arkansas Community College

Tom Freeman, retired from the University of Missouri Columbia

Damian Friend, Southwestern Energy

Jonathan Gillip, United States Geological Survey

Glen Harrison, retired from Oak Ridge National Laboratory

Gerry Lundy, Hogback Exploration

Shane Matson, Spyglass Energy

Thomas “Mac” McGilvery, ConocoPhillips

John Sharp, Chesapeake Energy Corporation

Ron Snyder, Ceja Corporation

Jane Spellman, FTN Associates

Reginal Spiller, Petro Novus

Maurice Storm, Corvus LLC

Teresa Turk, National Oceanic and Atmospheric Administration

Alex Warmath, Greenfields Energy

John Glynn Williams, retired from Endeavour

William Willis, Weyerhaeuser

Edith Wilson, Rock Whisperer LLC



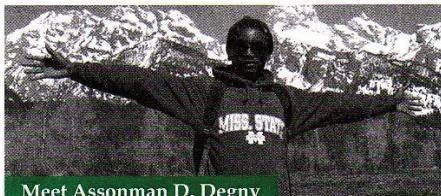
vated apartment complex on Duncan Avenue called Stonehenge until the renovation is complete. You can watch progress being made: http://planning.uark.edu/campus_planning/construction_proj.html

The renovation of Ozark Hall has begun! The construction includes updating the heating and cooling systems and plumbing, remodeling classrooms, installing new windows, and adding another 275-seat auditorium in the construction of a new wing on the south side. The department currently has its main offices in Stone House South on Arkansas Avenue, with some faculty and students housed at a renovated apartment complex on Duncan Avenue called Stonehenge until the renovation is complete.

Goodbye to the old Geology Building!
The photo below shows current construction of a new Science and Engineering Auditorium facility. The old Geology Building and the old Science and Engineering Auditorium were demolished to make way for this construction. It will be opening in Spring 2013.



Excerpted from the spring 2012 issue of *GSA Foundation Update*:



Meet Assonman D. Degny

"I attended a six-week field camp with the University of Arkansas, Fayetteville. We were based in Dillon, Montana for the different mapping projects. Field camp was really exciting, and a good learning experience. I participated in eight different projects through the six weeks, each of them very challenging but providing a tremendous learning experience."

Southwestern's Visit - CNG truck

Monday, April 16, 2012, Southwestern Energy visited our campus. Eric Gross (MS Geology 2007) was one of four Southwestern Energy employees that demonstrated the company's compressed natural gas (CNG) vehicles on campus. They gave a preview of the working environment at Southwestern Energy and let students know what kind of geoscientists Southwestern is looking for in a presentation that included prizes and pizza. Southwestern Energy is active in the exploration of the Fayetteville Shale, among other areas.



Geosciences Advisory board member Jane Spellman proudly displays the GeoHog banner at the Perito Moreno Glacier in Argentina in March, 2012.



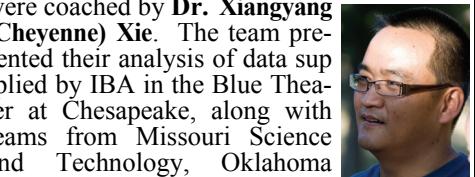
2012 Summer Field Campers at Glacier National Park, Montana. We had record attendance with 49 students, 5 faculty, and 4 graduate teaching assistants.



Geosciences participated in intra-mural softball and netted 3 losses. However our spirit and joy of playing together was noteworthy!

IBA Team

Congratulations to the University of Arkansas' inaugural team for the Imperial Barrel Award (IBA) on placing second at competition on Saturday, March 10, 2012 at the Chesapeake Campus, OKC, OK. Team members (from left to right in photo below) Adam Martin, Will Cains, Greg Buratowski, Paul Minor and Brett Wittman were coached by Dr. Xiangyang (Cheyenne) Xie. The team presented their analysis of data supplied by IBA in the Blue Theater at Chesapeake, along with teams from Missouri Science and Technology, Oklahoma State University and the University of Oklahoma. Judging the contest were Bill Coffey - Devon Exploration in Oklahoma City, David Tschopp - Orion Exploration in Tulsa, and Mark Falk - Chesapeake in Oklahoma City, and the awards were handed out by Tony K. Kolodziej.



Drew Kreman (MS Geology 2010), geologist with Chesapeake at right, visits with our IBA team in Oklahoma City.

American Association of Petroleum Geologists Students

AAPG news

Master of Science Geology students Karen Buckland Mason and Taylor Friesenhahn received national grants toward their thesis research from AAPG.

The AAPG student chapter sponsored a special presentation by alumnus Mac McGilvery about the Arkoma Basin.

For more photos of the Spring Banquet 2012: <http://geosciences.uark.edu>



Top Row: Gerry Lundy, Edith Wilson, Ryan Hutsell, Manny Redifer, Ralph Davis, Robert Liner, Will Cains, Chris Liner, Jack Cole, John G. Williams, Reginal Spiller, Jamie Woolsey, Jonathan Gillip.

Middle Row: Elvis Bello, Luke Martin, Bill and Peg Coffey, Lisa Milligan, Damian Friend, Jane Spellman, Walt Manger, Alex Warmath, Ron Snyder, Teresa Turk, Erica Doerr, Van Brahana, Maurice Storm, Clayton Davis, Ann Gabor, Greg Buratowski.

Front Row: Dina Wood, Eddie Valek, Mac McGilvery, Maurice Storm, Don Castleberry, Peggy Freeman, Steve Milligan, Drew Kreman, Tom Freeman, Jonathan Gillip.

Please consider a contribution to the Geosciences PhD Program.

If considering a major gift and you would like more information, please contact us and we will guide you to the appropriate office.



Department of Geosciences
113 Ozark Hall
University of Arkansas
Fayetteville, AR 72701

NON-PROFIT
US POSTAGE PAID
FAYETTEVILLE, AR
PERMIT NO. 278

SAVE THE DATE!

*October 19-20,
2012*

Third Annual Alumni Fall Weekend

SGE Icebreaker/
Alumni Field Trip
and the Barbecue,
Saturday, October 20
at Ralph's new house!
*Check our Website for
the latest information
as it becomes
available!*