



# Department of Geology

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

## Bickford Honored with 2009 Alumni Achievement Award

**D**r. Marion E. Bickford was selected by faculty members to receive the 2009 Alumni Achievement Award, honoring Dr. Bickford's distinguished contributions to geology as both a researcher and an educator. His illustrious career spans nearly five decades and exemplifies the Department of Geology's core missions of education, research, and public engagement.



As a child growing up in Memphis, Tennessee, Bickford was always interested in chemistry and by the time his family moved to Minnesota in 1943, there was little doubt that he would find his career path in the sciences. Following high school graduation, Bickford attended Carleton College on scholarship, where he majored in chemistry until the second semester of his sophomore year, when he found himself questioning whether or not laboratory work was the right fit for him. Ironically, after changing his major to geology, he discovered that what interested him most was the chemistry of natural materials and he soon returned to the lab, this time with the assurance of his passion for rocks and minerals.

After graduating from Carleton in 1954, Bickford spent a summer studying the Minnesota Iron Ranges and then enlisted in the U.S. Army. After serving his country for three years, Bickford applied for graduate school and was offered a fellowship at the University of Illinois, where he began his graduate studies in 1957. Under the direction of the late Carleton A. Chapman, Bickford focus his M.S. and Ph.D. studies on the petrology of gabbros in coastal Maine. His dissertation eventually led to a paper on the subject that was published in the *Journal of Geology* in 1963.

Upon receiving his Ph.D., Bickford took a position at San Fernando Valley State College (now California State University at Northridge), where he taught for three years. During this time,

*(continued on page 3)*

## Research Award Named for Alum



**T**he Sedimentary Geology and Structure and Tectonics Divisions of the Geological Society of America recently announced the new Stephen E. Laubach Research in Structural Diagenesis Award, named for Illinois alum, Dr. Stephen Laubach (PhD '86).

The award aims to promote research combining structural geology and diagenesis, and curriculum development in structural diagenesis. The award also addresses the rapidly growing recognition that fracturing, cement precipitation and dissolution, evolving rock mechanical properties and other structural diagenetic processes can govern recovery of resources and sequestration of material in deeply buried, diagenetically altered and fractured sedimentary rocks. To help promote the cross disciplinary emphasis of this annual award, the Sedimentary Geology and Structural Geology & Tectonics Divisions have been designated to jointly select the recipient.

*(continued on page 3)*



Back at the Eidsvoll flagstone quarry, Saetra Nappe of the Norwegian Caledonides

## GREETINGS

### Letter From The Head

— Our performance has been excellent —

In the midst of unprecedented financial difficulty faced by the State and the University of Illinois, I write to assure you that as a world-class institution of higher learning, our campus is simply too outstanding to fail. The performance of our Department also has been equally excellent.

Which two campuses received the largest amounts of funding from the National Science Foundation in the past few years? If you are thinking of some well-known private institutions or other elite public-assisted universities, here is a clue: Think Orange and Blue. To this end, expenditure of external grants in our Department averaged over \$200,000 per FTE (full-time equivalent) faculty last year. Our instructional activities are just as successful, reaching about 10,000 students per year total in all the courses offered. Some of the most popular Geology courses now take place at the Foellinger Auditorium. Furthermore, we generate more instructional units per teaching staff (including teaching assistants) than just about any other department in the College of Liberal Arts and Sciences.

Like most other geosciences departments in the country, our one vulnerability lies in the small size of

faculty and majors, even though 60 majors is a respectable number among peer programs in geosciences. With the formation of the School of Earth, Society and Environment three years ago, we are making good progress in size, as an independent major under the auspice of the School now has grown to about 150 majors and 50 minors, effectively increasing the footprint of each of the three departments under the School by 50 majors.

Many measures of austerity are taking place on campus. One that greatly impacts just about every unit, including our Department, is a voluntary program for retirement of faculty and separation of staff. The current estimate is that the College as a whole, there will be a reduction of 10% in faculty by fall of 2011. Last fall, our Department was authorized to make a new hire in Global Change Geology but a hiring freeze at the beginning of this year put the search process on hold. Nonetheless, we are promised that hiring of this position will resume, as soon as the temporary freeze is over, without another round of competition (only 14 out of 65 proposals were approved by the College last fall.)

Dr. Ruth Watkins, current Dean of the College of Liberal Arts and Sciences, and her predecessor, repeatedly pointed out at public occasions that aside from our performance in teaching and research, strong support from you—our alumni and friends—sets us apart. This is to your credit and a reflection of your own success in various endeavors, and your continual financial contributions and being steadfast advocates for the Department and the University. On

behalf of everyone in the Department, our hats off to you! We need your support more than ever in this financial crisis.

One recent visitor, lecturing for the RIDGE distinguished lecture series, commented that as everyone “circles the wagon,” the morale in the Department is very high – something being reflected by various reports in this issue. Highlights include the appointment of Prof. Jay Bass as the President of COMPRES (Consortium for Materials Properties Research in Earth Sciences) and Prof. Craig Bethke as a Faculty Associate at the Center for Advanced Study on campus and the Allen Cox Fellow at Stanford University where he plans to spend his sabbatical starting fall of 2010. Congratulations, Jay and Craig! In addition, to prepare for the arrival of the USArray component of the EarthScope national initiative—the largest project ever in geosciences—to the mid-continent, Prof. Steve Marshak convened a national workshop at the Illini Union in April. About 50 scientists participated in two days of planning to unveil the subsurface geology of the North American platform. Please enjoy reading this issue, stay in touch, and visit us, in person or on-line, whenever you have a chance.

Best wishes,  
Wang-Ping Chen

*Year in Review* is published once a year by the Department of Geology, University of Illinois Urbana-Champaign, to highlight the activities and accomplishments within our department and feature news from our alumni and friends.

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## Students and Faculty Named 'Excellent' Instructors

**T**wenty Department of Geology instructors were named to the University's List of Teachers Ranked as Excellent by Their Students for the spring, summer, and fall 2009 semesters.

Faculty and academic professionals appearing on this list include Stephen Altaner, Jim Best, Craig Bethke, Chu-Yung Chen, Bruce Fouke, Tom Johnson, Ann Long, Steve Marshak, and Michael Stewart.

Graduate students Gideon Bartov, Mirona Chirienco, Samantha Dwyer, Jessica Hellwig, Meijuan Jiang, Matt Kyrias, Stephanie Mager, Philip Miller, Eric Obrock, Mara Orescanin, and Mauricio Perillo were named to the list for their work as teaching assistants in the Department.

Six instructors received the highest ranking of "outstanding." During the spring semester, this ranking was earned by Mara Orescanin (Geology 208). In the

fall, Stephen Altaner (Geology 110), Craig Bethke (Geology 470), Bruce Fouke (Geology 390, 415, 515) Jessica Hellwig (Geology 107), and Stephanie Mager (Geology 411) earned top honors.

Rankings are released every semester and are based on student evaluations maintained by the Center for Teaching Excellence on the Illinois campus.

## Bickford Honored with 2009 Alumni Achievement Award

*(continued from page 1)*

he began a research relationship with Professor George W. Weatherill, a pioneer in geochronology and isotope geochemistry, who had just built a lab at UCLA. From 1963 to 1964, Bickford worked full-time at UCLA as a post-doctoral researcher in Weatherill's lab. He credits this experience as a foundation for his future investigations into the history and evolution of the earth's continental crust.

Following his time in Weatherill's lab, Bickford accepted a position at the University of Kansas, where he taught and carried out research for twenty-five years. Along with Dr. W.R. Van Schmus, a fellow former student of Weatherill's lab, Bickford built the Isotope Geochemistry Laboratory, where the pair carried out numerous joint research projects, including a notable study of the buried crystalline basement rocks of the mid-continent area.

In 1990, Bickford joined the Department of Geology at Syracuse University as a professor and chairman, where he continued teaching and researching until his "retirement" in

1997. Not quite ready to leave his research behind, Bickford has remained working at Syracuse four days a week and has recently completed studies of zircons from Adirondack anorthosites and their implications for petrogenesis and tectonic setting.

Besides teaching and researching, Bickford has also served as the editor of the journal *Geology* and is currently in his fifth year as the science editor for the Geological Society of America. He has received numerous awards and accolades during his impressive professional career, including the Chancellor's Award for Excellence in Teaching from the University of Syracuse in 1997 and the GSA Distinguished Service Award in 2008.

He feels most proud, however, of his fifty-five year long marriage to his wife Betsy and his children and grandchildren. Dr. Bickford visited the University of Illinois on April 30th to receive the Alumni Award and give a seminar.

## Research Award Named for Alum

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Graduate students as well as post-graduate and faculty scholars in this emerging field are eligible to submit proposals. The award will be presented yearly during the GSA Annual Meeting in alternating SGD and SG&T awards ceremonies beginning this year with the SG&T awards ceremony in Denver. The deadline for proposals is July 1, 2010. Dr. Laubach is currently a Senior Research Scientist at the Bureau of Economic Geology, University of Texas at Austin, and was recently a speaker in the Geology Department Colloquium. He is also organizing several upcoming international conferences in the United Kingdom at the end of this year, including The Geology of Unconventional Gas Plays, October 4-7, and Advances on Carbonate Exploration, November 4-5.

Laubach was also recently elected to a two-year term as editor of the *AAPG Bulletin*.

# Traveling to Field Camp — A Learning Opportunity!



At Black Canyon of the Gunnison National Park, students observe metamorphosed basement that was intruded by Proterozoic granitic rocks and overlain by Mesozoic sedimentary formations, all uplifted by the Laramide orogeny. From left to right: Luke O'Sadnick, Ian Dennehy, Diane Cheung, Ryan Quinn, Seth Chiles, and Amanda Peter, our TA.

by Lecturer Michael Stewart

Over the past few years, the field camp students have enjoyed a spring field trip across South Dakota and Wyoming on their way to the Wasatch-Uinta Field Camp based in Park City, Utah. Along the way, I've led the students to a number of classic locations including the Badlands, Black Hills, Bighorn Mountains, the Absaroka Range, and Yellowstone largely with the generous support provided by Ed (BS '56) and Alison Franklin. But it's no secret that Wyoming is barely out of winter by early June, and in the past our students have set-up camp under rather trying conditions including thunderstorms at Devils Tower, knee-deep snow atop the Bighorns, and a blizzard that closed the Loop Road in Yellowstone. So we were

hopeful of good weather when this past year Dr. Norb Cygan (BS '54, MS '56, PhD '62) invited the students to head south through Colorado and stop at Dinosaur Ridge and Red Rocks Park outside of Morrison.

With the hope of better camping conditions, we tripped across Nebraska into Colorado and then on into Utah. This new route was great preparation for field camp, for it exposed the students to relevant stratigraphy, some dinosaur paleontology, and some truly excellent national parks. Norb kindly guided our tour of Red Rocks and Dinosaur Ridge, providing the students with an in-depth introduction to the flatirons of Red Rocks Park, the fossils of Dinosaur Ridge, and a Uranium roll-front in the Dakota sandstone.

From the Denver area, the field trip headed over the Front Range, camped on Southpark, traversed the Sawatch Range, camped along the Gunnison River at the head of Black Canyon, traversed the San Juan Volcanic Field and the classic sequence of Paleozoic through Mesozoic strata exposed along the drive from Ouray to Durango where we spilled out onto the Colorado Plateau. From Durango, we went on to visit Mesa Verde, Canyonlands, and Arches National Parks. The weather, though initially not any warmer than Wyoming, was a bit more tame—sleet, but no snow outside of Denver and rain, but no lightning, on the Front Range. Once we hit Durango, however, the sun came out to stay and we were in shorts and t-shirts until we



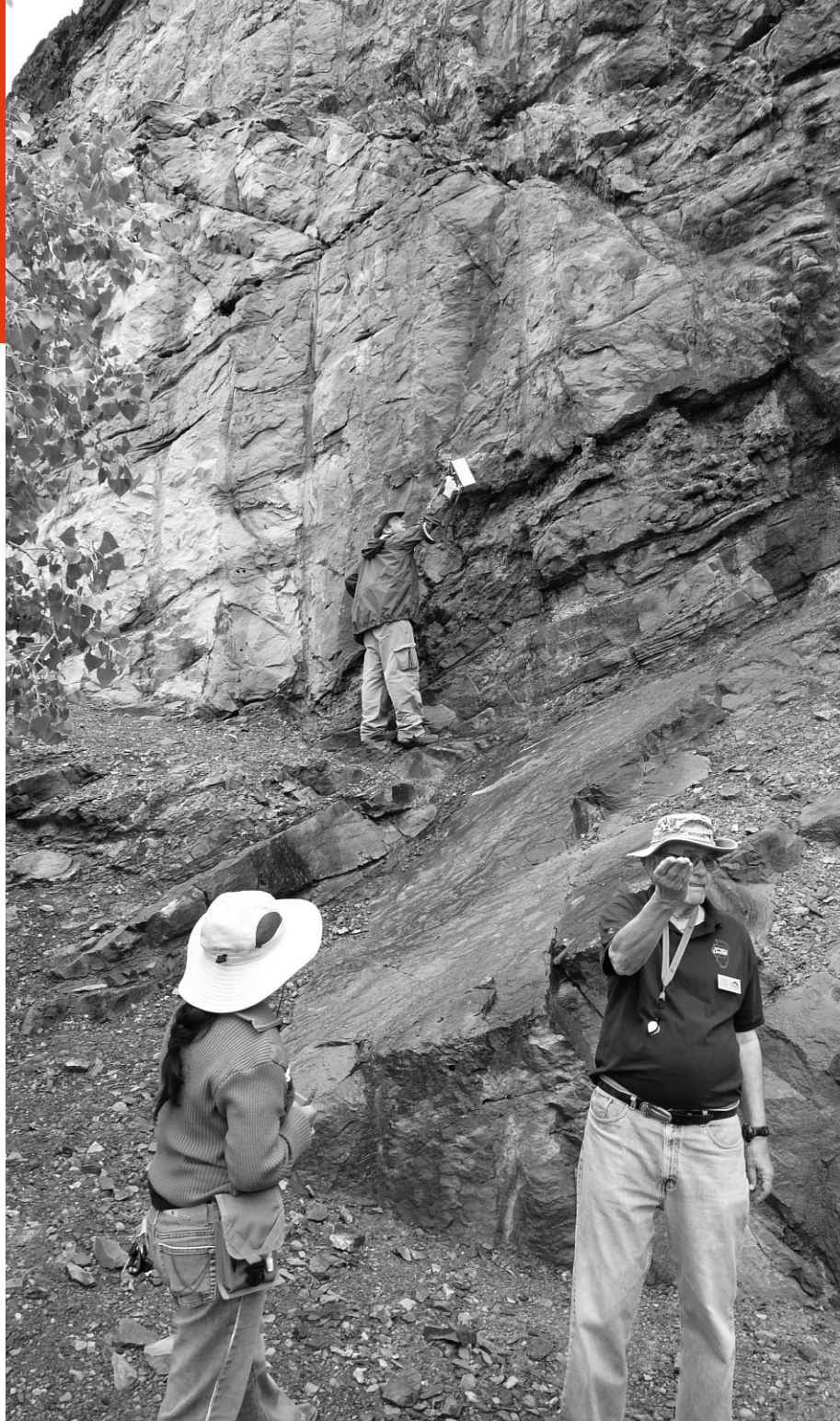
## Bass Leads COMPRES

**P**rofessor Jay Bass is the new president of COMPRES (Consortium for Materials Properties Research in Earth Sciences). He assumed his duties on January 1, 2010.

“In the past decade, COMPRES made available cutting-edge facilities to the mineral physics community and enabled interdisciplinary collaborations. We are excited that under Jay’s leadership, the Department and the campus will be part of a leading effort in shaping the study of geo-materials for years to come,” said Department Head Wang-Ping Chen.

Bass took over the position from Professor Robert Liebermann of Stony Brook University, who has agreed to stay on as past president until the 2010 Annual Meeting in June to cooperate in this transition. Liebermann had served in the position since 2003.

Quentin Williams, chair of the Executive Committee of COMPRES, made the announcement on November 30, 2009. In his announcement he said, “Jay has contributed extensively to COMPRES through his thoughtful and forward-looking leadership in the past, having served with distinction on the COMPRES Executive Committee from 2003 to 2008, as the initial President of the organization in 2002, and as one of the original architects of the organization...It is with this mix of new opportunities, past successes and future challenges that we look forward to Jay’s experienced leadership in taking COMPRES into its second decade.”



reached field camp on the Wasatch Front. With several days of experience under their hammers, the students were ready to attack the challenge of mapping, stratigraphic analysis, and structural study that they would face for the next six weeks at the Wasatch-Uinta Camp, under the supervision of Illinois alum, Dr. Kurt Burmeister (PhD ‘05), who serves as field camp director.

*Norb Cygan explains a uranium roll front in road cut west of Denver. Ryan Quinn is on the outcrop and Diane Cheung is in the foreground.*

# Stembach Named Goldwater Scholar

In March 2010, junior Kamil Stelmach was named a Goldwater Scholar by The Barry M. Goldwater Scholarship and Excellence in Education Foundation. The Foundation awarded 278 scholarships for the 2010–2011 academic year to undergraduate sophomores and juniors from the United States.

Stelmach is an active undergraduate member of the lab research group lead by Professor Bruce Fouke. He is majoring in biology, chemistry, and astronomy, and intends to pursue a Ph.D. in evolutionary biology or geochemistry. He would like to conduct research in geochemistry and evolutionary biology as a professor or as a research scientist working for NASA.

“I feel really lucky and thankful. Receiving the scholarship was an honor I could not hope to get without the help and support of Dr. Bruce Fouke and Dr. Rob Sanford from the Department of Geology and Dr. John Cheeseman from the School of Integrative Biology,” said Stelmach.

The Goldwater Scholars were selected on the basis of academic merit from a field of 1,111 mathematics, science, and engineering students who were nominated by the faculties of colleges and universities nationwide. The one- and two-year scholarships will

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cover the cost of tuition, fees, books, and room and board up to a maximum of \$7,500 per year. Stelmach’s research in Fouke’s lab played a major role in receiving this award. Stelmach has worked with Fouke’s lab group to run a controlled laboratory experiment to evaluate the role of microbiota on CaCO<sub>3</sub> biomineralization. The experimental device is called the in situ kinetic apparatus (ISKA), which was originally built for deployment in Yellowstone and has now been modified for use in our campus laboratories.

“Stelmach has conducted parallel controlled experiments utilizing two Sulfurihydrogenebium-associated microbial isolates that we previously obtained from Mammoth Hot Springs,” said Fouke. “Both microorganisms are excellent representatives of the Aquificales microbial community, which is directly involved in aragonite nucleation based on our 16S rRNA gene sequence analyses as well as preliminary metagenomic analyses. We currently have metagenomic analyses of these microbes in progress, which will per-

mit Kamil to identify genes coding for key proteins.”

Stelmach is the second undergraduate member of Fouke’s research group to receive a Goldwater Scholarship. In 2000, Dr. David Fike, now an assistant professor at Washington University in St. Louis, received the award.

“Kamil is an extremely dedicated and capable student. Kamil has been involved in all aspects of this work, from the painstaking construction and mechanical modification of the ISKA, to developing experimental design, conducting aqueous geochemistry, collecting and analyzing travertine deposition using optical and chemical methods, and the microbial work,” said Fouke.

The scholarship program honoring Senator Barry M.

Goldwater was designed to foster and encourage outstanding students to pursue careers in the fields of mathematics, the natural sciences, and engineering. The Goldwater Scholarship is the premier undergraduate award of its type in these fields.

In its twenty-four-year history, the Foundation has awarded 6,079 scholarships worth approximately fifty-eight million dollars.

“KAMIL IS AN EXTREMELY DEDICATED AND CAPABLE STUDENT. KAMIL HAS BEEN INVOLVED IN ALL ASPECTS OF THIS WORK, FROM THE PAINSTAKING CONSTRUCTION AND MECHANICAL MODIFICATION OF THE ISKA, TO DEVELOPING EXPERIMENTAL DESIGN, CONDUCTING AQUEOUS GEOCHEMISTRY, COLLECTING AND ANALYZING TRAVERTINE DEPOSITION USING OPTICAL AND CHEMICAL METHODS, AND THE MICROBIAL WORK.”

## Degrees Conferred in 2009-2010

### Bachelor of Science Degrees

#### May 2009

Erin Brittany Daun  
Samantha E. Dwyer  
Mari Ruth Gordon  
Jason K. Hong  
Kayla Renae Ireland  
Douglas John Landgraf  
Andrew Thomas Migacz  
Donald J. Nowak  
Danielle Victoria Postula  
Kristin M. Read  
Kurt Douglas Ruhnke  
Kurt James Schlein  
Mark Smith  
Nicholas P. Whitcomb

#### August 2009

Seth Donn Chiles

#### December 2009

Shun Heng Chan  
Michael A Haywood  
Anchelle M. Lomibao  
Ryan Joel Quinn  
Justin Andrew Rosenblume

#### May 2010

Daniel Cukierski  
Ian Dennehy  
Samantha Goldberg  
Sara Hahn  
Jeffrey Oehlerking  
Andrew Ostendorf  
Jacob Porter  
Megan Scott  
Krysta Theobald  
Erik VanDusen  
Rochelle Winkler-Groschen

### Master of Science Degrees

#### May 2009

Vineeth Madhavan, *The Interplay of Climate and Landscape Evolution Along the Western Ghats of India*

Holly Vescogni, *Microbial Biomarker: Mineralogy, Crystal Fabric and Chemistry of Calcium Carbonate Mineralization*

Amanda Raddatz, *Natural Reduction of Hexavalent Chromium in an Oxidic Basalt Aquifer: Evidence from Concentration and Isotope Analysis*

#### August 2009

Mara Orescanin, *An Experimental Study of the Dynamics Governing Supersonic Volcanic Jets: Mount St. Helens, May 18, 1980*

#### October 2009

Nathan Webb, *An Investigation of the Origin of the Ridged Drift of the Lower Kaskaskia Basin, Southwestern Illinois*

#### May 2010

Miriona Chirienco, *Interpretations of Paleoclimate and Speleogenesis from Speleothems in Donnehue's Cave, Indiana*

Jared T. Freiburg, *The Timing, Composition, and Source of Subsurface Diagenetic Waters Responsible for Sulfide and Carbonate Mineralization in Solution Cavities of the Ordovician Galena Group Limestone, North Aurora, Illinois, USA*

Jessica Hellwig, *The Interaction of Climate, Tectonics, and Topography in the Olympic Mountains of Washington State: The Influence of Erosion on Tectonic Steady-State and the Synthesis of the Alpine Glacial History*

Carly Hill, *Density Banding in Coral Skeletons: Abiotic and Biotic Response to Increased Sea Surface Temperature*

Matthew Phillip Kyrias, *Monitoring Dissolved Gases and Ions in Groundwater Using an In Situ Sampling Technique*

Jessica Palmer, *The Flow Structure of Interacting Barchan Dunes*

Justine Petras, *Genesis and Sedimentation of an Ice-Walled Lake Plain, Northeastern Illinois*

Derik Strattan, *Gene Expression of Dissimilatory Sulfite Reductase in *Desulfovibrio Vulgaris* as a Marker for the Rate of Sulfate Reduction in Natural Systems*

Karen Wong, *Under the auspices of the Teaching of Earth Science Program*

### Doctor of Philosophy Degrees

#### May 2009

Zhaohui Yang, *Seismic Studies on the East African Rift System and the Tibetan Plateau: Implications for the Rheology of Lithosphere and the Evolution of Rifts in Continents*

Bin Chen, *Nature and Dynamics of Earth and Planetary Cores from High-Pressure Properties of Iron-Rich Alloys*

# Dam Sites, Subways, and Bomb Shelters

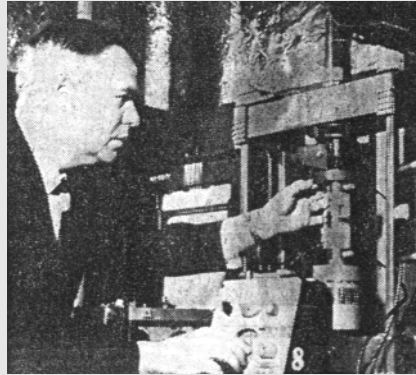
by Ralph L. Langenheim

*Editor's Note: "Windows into the Past" is a regular feature of the Year in Review contributed by Professor Emeritus Ralph L. Langenheim. Ralph's writing represents a long-serving faculty member's recollections and his perspectives of the Department's past.*

**B**efore 1955, our engineering geology program consisted of one introductory course called "Geology for Engineers" and advanced courses and research bearing on problems of drilling and water flooding which served geology students seeking careers in the oil industry and engineering students who wanted a minor. Don Deere's joint appointment in the Geology and Civil Engineering Departments initiated instruction and research in geology applied to support tunneling, dam building and design, and the construction of large underground spaces.

Deere obtained his BS in mining engineering at Iowa State College (now Iowa State University) in 1943, took his MS in geology at the University of Colorado in 1949, and completed his graduate studies with a Ph.D. in civil engineering at the University of Illinois in 1955. Between 1943 and 1944 he served as a junior mining engineer with the Phelps Dodge Corporation in Arizona. From 1944 to 1947 he was a mining engineer in the exploration department of the Potash Company of America in southeastern New Mexico. From 1947 to 1951 he served on the faculty of the Department of Civil Engineering at the University of Puerto Rico at Mayaguez, rising to the headship in 1949-50.

In 1955, Deere accepted a joint appointment at Illinois as an associate professor in the Departments of Geology



Don Deere conducting compression tests on rock samples from the New York World Trade Center foundation site.

and Civil Engineering, joining a program in geotechnical engineering that was on its way to preminent stature. As he worded it in the title to one of his professional publications, his mission was to "put the 'Geo' in Geotechnical Engineering," and, in both departments, to supervise graduate research, and organize and teach a graduate course in rock mechanics.

He also taught graduate courses in engineering geology and in soil mechanics. In 1956, he taught undergraduate mineralogy in the Geology Department and, in 1960, was a staff member at the Geology Field Camp in Sheridan, Wyoming. Deere supervised nine doctoral students in the Geology Department: Paul Heim, 1963 (jointly with Paul Shaffer); Reginald Hugh Grice, 1974; Franklin D. Patton, 1977; Richard F. Coon, 1968; Andrew H. Merritt, 1968; George F. Pindar, 1968; Owen White, 1971; James C. Gamble, 1971; and Brian J. Sinclair, 1972.

He also advised the following MS candidates: Paul Kratz, 1964; Nolan Mitchell, 1965; Sergio N. A. DeBrito, 1970; Richard Van Ryswyk, 1972; and Sohrab Shayani, 1972. Ronald Heuer, who completed a MS mapping in Chiapas, Mexico as part of a paleontological—stratigraphic program, transferred to Deere's geotechnical program in civil engineering for his PhD. In addition, Deere advised civil engineering graduate students.

Deere published more than fifty technical and research publications on engineering geology, rock mechanics, dam foundations and tunnels. He is the coauthor, with John Duncliff, of *Judgment in Geotechnical Engineering: Professional Legacy of Ralph B. Peck*, published by John Wiley and Sons in 1984.

In addition to teaching and supervising graduate students in geotechnical engineering at Illinois, Deere was a hyperactive consultant and advisor on major engineering works all over the world. He advised the New York Port Authority in regard to foundations for the World Trade Center's Twin Towers. He also helped the Department of Defense evaluate Cheyenne Mountain as a host for the large underground cavity needed to protect NORAD's headquarters. For more than twenty years, he advised and consulted on construction of the Washington D. C. metro system. Trans-Manche Link sought his advice on digging the cross-channel tunnel and Fenix and Scisson, along with the Atomic Energy Commission, used him in designing underground openings for atomic bomb tests.

In addition he consulted on many large hydroelectric projects in Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Egypt, Greece, Hong Kong, Israel, Mexico, Panama, Peru, Rhodesia, Turkey, Venezuela, and New Zealand. Deere's enthusiasm for consulting was made apparent by the world map on the wall of his home office, on which each job was memorialized by a pin marking the site.





## Around the Department

Deere has been honored multiple times for his work. Deere is one of the few elected to both the National Academy of Science (1971) and the National Academy of Engineering (1966), groups that honor the most prestigious scholars in their respective fields. More exotically, he is a member of the Argentine National Academy of Sciences. In 1983, he was honored by The Moles, an organization of individuals who work in heavy construction, for outstanding achievement in construction. In 1990, he was awarded the Rock Mechanics Award by the Society of Mining Engineers and was also honored by the Beavers, a group concerned with dam construction, who gave him their annual award.

In 1971, he served as Chairman of the U. S. National Committee on Tunneling Technology. President Reagan appointed Deere to a four year term (1989-1991) as chairman of the newly created Nuclear Waste Review Board. He was on the first board of directors of the International Society for Rock Mechanics, was president of their Commission on Standardization of Field Laboratory Testing of Rock, and, also, served as president of the Society.

At the end of Spring Semester 1971, Deere resigned from the University of Illinois faculty in order to “devote all of his time to consulting in engineering geology and rock mechanics.” In 1972, he became an affiliated professor of geology and civil engineering at the University of Florida, joining former University of Illinois Professors Mike Wahl and Jim Eades and Instructor Robert Pierce in what, on occasion, was facetiously referred to as, U. of I. Gainesville! Alberto Nieto-Pescetto, succeeded him at Illinois.

*I am indebted to Don Deere and Alberto Nieto for their interest and insights. Thanks are also due to Steven Hurst for greatly improving poorly photocopied illustrations. Information for the essay was mostly gathered from University of Illinois Archives and the newsletters of the Geology and Civil Engineering Departments.*

**Jay Bass** was elected a fellow of the American Geophysical Union in 2009. AGU membership exceeds 50,000 and annually, less than 0.5% of the members can be elected as Fellows.

**Susan Kieffer** was appointed to the National Research Council Board on Science Education. The National Research Council is the operating arm of the Academies of Science and Engineering, and the Institute of Medicine.

The **Annual Research Review**, now a joint event in the School of Earth, Society and Environment, took place on Feb. 27, 2009 at the Ballroom of the Alice Campbell Alumni Center. Isotech Laboratories Inc. of Champaign, IL is a major sponsor of this event.

**Jie Li** was named a Helen Corley Petit Scholar in LAS for “outstanding achievement in both teaching and scholarship.”

**Susan Kieffer** gave the Shoemaker Lecture at the 2009 fall AGU meeting on “Enceladus: Oasis or Ice Ball?”

About fifty geologists and geophysicists from around the country attended a two-day **EarthScope Workshop** at the Illini Union in April, 2010. The workshop, sponsored by the National Science Foundation and coordinated by **Stephen Marshak**, was designed to stimulate discussion of new research to take advantage of the broadband seismometers (the USArray) to be set up in the Midcontinent region during 2011 and 2012, as part of the multi-year EarthScope program. The instrumentation will provide a unique opportunity to image the interior of Earth and, hopefully, gain insight into the structure of the continental lithosphere.

In the winter of 2009-10, **Jieyuan (Jerry) Ning**, a professor of geophysics at the School of Earth and Planetary Sciences, Peking University, People's Republic of China, spent two months in the Department to conduct collaborative research. Dr. Ying also spent one year as a visiting scholar in the Department in the 1990s. This time, however, he brought along three graduate students from Peking: **Jing Liu, Kai Tao,**

and **Chunquan Yu**, setting a new mode for extensive visits between Peking and Illinois.

During August 26-28, 2009, a high-level delegation from Hanoi University of Science (HUS), Vietnam, observed several lectures and laboratory sessions in the Department and reached a memorandum of understanding for collaboration in instruction and curriculum development with the Department. The delegation was lead by **Dr. Bui Duy Cam**, Rector (Provost) and was comprised of the following members: **Dr. Nguyen Van Vuong**, Dean of the Faculty of Geology; **Dr. Do Minh Duc**, Vice-Dean of the Faculty of Geology; and **Mr. Phan Duy Nga**, Director of the Department of International Relations. Since that time, the HUS has sent seven other faculty members to visit the Department.

On August 13, 2009, a delegation of deans and faculty members from the **Beijing University of Aeronautics and Astronautics** visited the campus and received a briefing from the Department. During this briefing, members of the Department emphasized our connections with the private sector and alumni.

In June of 2009, **Wang-Ping Chen** concluded his three-year term on the Advisory Council of COMPRES (Consortium for Materials Properties Research in Earth Sciences).

Starting the summer of 2009, students of the Summer Field Camp now visit Dinosaur Ridge, an education and outreach facility near Denver, and are hosted by **Dr. Norb Cygan** (BS '54, MS '56, PhD '62). Dr. Cygan also hosted a trip to the Dinosaur Ridge on June 8, 2009 which was attended by special guest Ms. Natalie Handley, who retired as an officer of the U of I Foundation in July 2009. She took an active role in the fundraising efforts of the Department's GeoThrust Committee and is now retiring from the University after many years of service. Patrick Hayes, an advancement officer of the College of Liberal Arts and Sciences, and Wang-Ping Chen also joined the trip.

In November 2009, **George Devries Klein**, Professor Emeritus, published his memoir, “Rocknocker: A Geologist's Memoir.” ([www.ccbpublishing.com/gdklein.html](http://www.ccbpublishing.com/gdklein.html)).

## Obituaries

Dalias A. Price (AB '37, MS '38) died October 3, 2009 at the age of 96.

**Harmon E. Eveland** (BS '47, MS '48, PhD '50) died May 9, 2009 at the age of 85. He founded the geology department at Lamar University in 1951 and continued as Chair until his retirement in 1983, at which time he was named professor emeritus.

**Jack A. Glendening** (BS '48) died August 26, 2009 at the age of 85. He was a petroleum geologist who explored in North Africa, Venezuela, Australia, and North America. An expert in photomosaic geomorphology, his studies contributed to the Prudhoe Bay discovery well in the North Slope of Alaska.

**Wilson G. Harris, Jr.** (BS '48) died September 11, 2009 at the age of 87. He was a petroleum geologist.

**Ronald L. Norris** (BS '48) died on June 27, 2009 at the age of 88. He worked as a petroleum geologist at Chester Oil Company. He was also a consulting geologist for the Kentucky Geological Survey and Har-Ken Oil.

His most notable achievement is the discovery of the New Hebbardville Oil Field in 1978.

**Robert M. Davison** (BS '49) died October 25, 2009 at the age of 84.

**Gene D. Wilson** (MS '54) died January 9, 2009 at the age of 84. After earning his degree, he worked for Standard Oil, where he led the effort to use aerial photography for oil exploration. In 1960, he started Gene D. Wilson and Associates Photogeologists, an oil exploration consulting company.

**Russell B. Lennon** (MS '57) died on January 9, 2009 at the age of 79. He was a production geologist with Shell Oil, and developed oil and gas fields throughout the United States for 33 years.

**John R. Rogers** (MS '59) died January 28, 2009 at the age of 73. He worked for Texaco, Inc. and later for Brown Engineering Corp. and Chrysler Corp. in Huntsville, Alabama where he worked on research projects related to the early stages of lunar exploration.

**Charles E. Pflum** (BS '60) died on July 18, 2009 at the age of 76. He went on to earn a master's degree in oceanography and went to work for Humble Oil Company as a micropaleontologist. He then took a position with Exxon, where he stayed for 30 years.

**Ralph G. Maertz** (BS '64) died on November 9, 2009 at the age of 77. He worked as a petroleum geologist and founded his own consulting firm, Devonian Development, in 1981.

**Margaret "Peggy" Henderson**, widow of the late professor emeritus Don Henderson, died December 28, 2009 at the age of 88, in Urbana, Illinois. Department Head, Wang-Ping Chen said, "Peggy was involved with many departmental activities and we'll miss her dearly."

**No further information available:**

William G. Lang (BS '48)

Wayne E. Moore (BS '46)

James A. Savage (BS '50)

John E. Stone (MS '58, PhD '60)

William L. Vineyard (BS '49, MS '50)

**1960s**

**John Tubb** (PhD '63) has been named the 2009-2010 president-elect of the Houston Geological Society, the largest local geological society in the world with a membership of nearly 4,400.

**1970s**

**James W. Castle** (PhD '78) is a professor and program coordinator of the Hydrogeology Graduate Program at Clemson University. In 2009 he was named editor-in-chief of the journal, *Environmental Geosciences*.

**Kathie M. Marsaglia** (BS '79, MS '82) received the Outstanding Faculty Member award from the California State University at Northridge where she is a professor of Geology.

**1980s**

**Snehal Bhagat** (BS '84, MS '88) is a senior geologist at Marshall Miller & Associates in Mission, Kansas.

**1990s**

**Scott Lockert** (BS '90) lives in Seattle and works in the development of ecological

credits that offset environmental liability. He has helped develop Bluefield Holdings Company.

**M. Scott Wilkerson** (PhD '91) received one of three University Professorships at DePauw University. According to the DePauw announcement, "University Professorships are awarded for sustained excellence in teaching, professional development, and service."

**Laura Becker Stevens** (BS '94) is now the Regulatory Coordinator for the New York State Department of Environmental Conservation.

**Tim Paulsen** (PhD '97) and **Christie Demosthenous** (MS '96) welcomed daughter Elanor Rose Paulsen on May 7, 2010. Both Tim and Christie work in the Geology Department at the University of Wisconsin, Oshkosh.

**2000s**

**Judd Tudor** (MS '00) and his wife Hollie Lamb, have a new son, Castor Robert Tudor, born on July 8, 2009. Judd works with Schlumberger in Texas.

Steve Marshak received word that **Chris** (BS '03) and **Jaime Majerczyk** have a son, Miles Steven Majerczyk. He was born May 27, 2009.

**Joannah Metz** (BS '04) is finishing her Ph.D. at Cal Tech, where she works on planetary geology with John Grotzinger. According to her website, "I currently work operations for the Mars Exploration Rovers (MER) and my research involves using data from MER to investigate sedimentology on Mars. I also use images from the HiRISE camera on the Mars Reconnaissance Orbiter to study the structure and stratigraphy of Melas Chasma in Vallis Marineris."

**Tai-Lin (Ellen) Tseng** (PhD '07) joined the Department of Geosciences, National Taiwan University (NTU) as an assistant professor in August of 2009. For over 60 years, NTU never had a geophysics program, but now added Dr. Tseng as the fourth seismologist/geophysicist on the faculty.



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# ANNUAL REPORT FOR 2009

## Faculty

Stephen Altaner (Associate Professor)  
Alison Anders (Assistant Professor)  
Jay Bass (Grim Professor)  
Jim Best (Threet Professor)  
Craig Bethke (Grim Professor)  
Chu-Yung Chen (Associate Professor & Director  
of Educational Affairs for Geology, School of  
Earth, Society & Environment)  
Wang-Ping Chen (Professor and Head)  
Bruce Fouke (Associate Professor)  
Thomas Johnson (Associate Professor)  
Susan Kieffer (Walgreen Professor)  
Jie Li (Assistant Professor)  
Craig Lundstrom (Associate Professor)  
Steve Marshak (Professor & Director, School of  
Earth, Society & Environment)  
Gary Parker (Johnson Professor)  
Xiaodong Song (Professor)

## Department Affiliates

Marcelo Garcia (Seiss Professor, Civil and  
Environmental Engineering)  
Feng Sheng Hu (Professor, Plant Biology)  
Bruce Rhoads (Professor & Head, Geography)

## Academic Staff, Post-Docs, Visiting Staff

Pinaki Chakraborty (Post-Doctoral Research  
Associate)  
Eileen Herrstrom (Teaching Specialist)  
Stephen Hurst (Research  
Programmer/Geologist)  
Ann Long (Teaching Specialist)  
Xinli Lu (Post-Doc Research Associate)  
Daniel Saalfeld (Visiting Research Programmer)  
Rob Sanford (Senior Research Scientist)  
Michael Stewart (Lecturer)  
Jonathan Tomkin (Research Assistant Professor  
& Assoc. Director, School of Earth, Society,  
and Environment)  
Hasan Yavas (Post-Doctoral Research  
Associate)  
Sharon Yeakel (Research Programmer)  
Zhaofeng Zhang (Visiting Scholar)

## Adjunct Faculty

Robert Finley  
Leon R. Follmer  
Hannes Leetaru  
Thomas Phillips  
William Shilts  
Wolfgang Sturhahn  
M. Scott Wilkerson

## Emeritus Faculty

Thomas F. Anderson  
Daniel B. Blake  
Albert V. Carozzi  
Donald L. Graf  
Arthur F. Hagner  
Albert T. Hsui  
George D. Klein  
Ralph Langenheim  
C. John Mann  
Alberto Nieto  
Philip Sandberg

## Library Staff

Lura Joseph (Librarian)  
Sheila McGowan (Library Assistant)  
Diana Walter (Senior Library Specialist)

## Department Support Staff

Julie Dyar (Office Support Specialist)  
Marilyn Whalen (Office Administrator,  
Assistant to the Head)

## Graduate Students

Elizabeth Armstrong  
Gideon Bartov  
Anirban Basu  
Charles Bopp  
Mirona Chirienco  
Samantha Dwyer  
Val Finlayson  
Theodore Flynn  
Jared Freiburg  
Lili Gao  
Jessica Hellwig  
Carly Hill  
Ana Houseal  
Meijuan Jiang  
Matt Kyrias  
Xiaoxiao Li  
Chris Majerczyk  
Phillip Miller  
Eric Obrock  
Jessica Palmer  
Mauricio Perillo  
Justine Petras  
Eric W. Prokocki  
Pragnyadiptra Sen  
Derik Strattan  
Karen Wong  
Zhen Xu  
Jin Zhang  
Jessica Zinger

## COURSES TAUGHT IN 2009

GEOL 100 Planet Earth  
GEOL 101 Introductory Physical Geology  
GEOL 103 Planet Earth QR II  
GEOL 106 Extinction: Dinosaurs to Dodos  
GEOL 107 Physical Geology  
GEOL 110 Exploring Geology in the Field  
GEOL 116 The Planets  
GEOL 117 The Oceans  
GEOL 118 Natural Disasters  
GEOL 143 History of Life  
GEOL 199 Undergraduate Open Seminar  
GEOL 201 History of Geology  
GEOL 208 History of the Earth System  
GEOL 333 Earth Materials and the  
Environment  
GEOL 380 Environmental Geology  
GEOL 390 Individual Study  
GEOL 391 Individual Honors Study  
GEOL 411 Structural Geol and Tectonics  
GEOL 415 Field Geology  
GEOL 417 Geology Field Methods, Western US  
GEOL 432 Mineralogy and Mineral Optics  
GEOL 436 Petrology and Petrography  
GEOL 440 Sedimentology and Stratigraphy  
GEOL 450 Physics of the Earth  
GEOL 451 Methods in Applied Geophysics  
GEOL 460 Geochemistry  
GEOL 470 Introduction to Hydrogeology  
GEOL 481 Earth Systems Modeling  
GEOL 492 Senior Thesis  
GEOL 493 Honors Senior Thesis  
GEOL 497AB Geomicrobiology & Geochemistry  
GEOL 497 ALG/ALU Challenges of Sustainability  
GEOL 497CI Illinois Quaternary History,  
Landscapes and Glacial Processes  
GEOL 511 Advanced Structural Geology  
GEOL 515 Advanced Field Geology  
GEOL 553 Chemistry of Earth's Interior  
GEOL 560 Physical Geochemistry  
GEOL 571 Geochemical Reaction Analysis  
GEOL 579 Isotope Hydrogeology  
GEOL 591 Current Research in Geoscience  
GEOL 593 Advanced Studies in Geology  
GEOL 599 Thesis Research



## Research Grants Active in 2009

### AIR FORCE

**Wang-Ping Chen**—Frequency-dependent Characteristics of Regional Seismic Phases: Propagation of Pn in Western China

### BRITISH PETROLEUM ENERGY BIOSCIENCES INSTITUTE

**Bruce Fouke**—Microbially Enhanced Hydrocarbon Recovery

### EXXONMOBIL

**Craig Bethke**—Geochemical Reaction Analysis

**Gary Parker**—Testing of Numerical Models of Estuary Morphodynamics

### ILLINOIS BOARD OF HIGHER EDUCATION

**J.H. Tomkin**—The Lifelong Learning In Illinois Project (I-LLINI project)

### INTERNATIONAL GREAT LAKES COMMISSION/US CORPS OF ENGINEERS

**Jim Best**—Combined Multibeam, Echo Sounder and Acoustic Doppler Profiler Mapping of the Upper St Clair River: Morphology, Grain Size, Bedload Transport Paths and Flow Dynamics

### NATIONAL SCIENCE FOUNDATION

**Alison Anders**—Co-Evolution of Orographic Precipitation Patterns and Topography in the Western Ghats, India

**Jay Bass**—Sound Velocities and Elasticity of Deep-Earth Materials at High Pressures and Temperatures

**Jay Bass**—Pressure Scales for Simultaneous High Pressure-Temperature Research with the Diamond Anvil Cell

**Jim Best**—Collaborative Research: A Field and Numerical Study of the Morphology, Flow, Sedimentary Processes, and Stability of Sand-Bed Fluvial Bifurcations

**Jim Best and Bruce Rhoads**—SGER: Fluvial Dynamics of a Large-River Meander Cutoff

**Jim Best, Bruce Fouke, Marcelo Garcia, Gary Parker, and Bruce Rhoads**—Acquisition of a State-of-the-Art Shallow Water Multibeam Echo-sounding System at the University of Illinois Urbana-Champaign

**Jim Best, Ken Christensen, Joanna Austin Greg Elliott, and Marcelo Garcia**—MRI: Development of a Large-Scale Refractive-Index Matched Flow Facility

**Wang-Ping Chen**—Collaborative Research: Lithospheric-Scale Dynamics of Active Mountain Building along the Himalayan-Tibetan Collision Zone

**Wang-Ping Chen**—CSEDI Collaborative Research: A Study of Deep Subduction Integrating Broadband Seismology and Mineral Physics

**Wang-Ping Chen**—Collaborative Research: Imaging the Continental Lithosphere with Earthquake Sources

**Bruce Fouke**—Integration of Expedition Yellowstone with Biocomplexity Studies at Mammoth Hot Springs

**Thomas Johnson**—Collaborative Research: Chromium Isotopes as Redox Indicators-Oxidation and Isotopic Equilibration Experiments

**Thomas Johnson and Craig Lundstrom**—Technical Support for the MC-ICP-MS Laboratory at University of Illinois at Urbana-Champaign

**Craig Lundstrom and Steve Marshak**—Assessing Diffusive Differentiation during Igneous Intrusion using Integrated Theoretical, Experimental and Field Studies

**Craig Lundstrom**—Collaborative Research: Probing Mantle Plumbing beneath Pacific Ridges through Study of the Lamont and Vance Seamount Chains

**Craig Lundstrom**—EAGER: Collaborative Investigations of Isotopic Fractionation by Thermal Diffusion and Thermal Migration

**Gary Parker**—STC: National Center for Earth-surface Dynamics

**J.H. Tomkin**—Glacial Erosion in the Patagonian Andes: Testing the Buzzsaw

**J.H. Tomkin**—WAIS Grounding-Zone Migrations in Eastern Basin, Ross Sea and the LGM Dilemma: New Strategies to Resolve the Style and Timing of Outer Continental Shelf Grounding Events

### NORTHWESTERN UNIVERSITY

**Craig Lundstrom**—<sup>26</sup>Mg Evolution in a Carbonate Aquifer: Technical Testing Agreement

### SCK-CEN (BELGIAN NUCLEAR AUTHORITY)

**Craig Bethke**—Fate and Transport of Radionuclides

### SHELL OIL

**Gary Parker**—Channelized Turbidity Currents

### UNIVERSITY OF ILLINOIS, OFFICE OF THE VICE PRESIDENT FOR PUBLIC ENGAGEMENT

**Bruce Fouke**—SciFlix: A Series of 5-Minute Distance Learning Podcasts Highlighting Scientific Discovery

### U.S. DEPARTMENT OF ENERGY

**Jay Bass**—Aqueous Geochemistry at High Pressure and Temperature

**Craig Bethke and Robert Sanford**—Integrated Field, Laboratory, and Modeling Study of Microbial Activity in Pristine Aquifers

**Bruce Fouke, Robert Sanford, and Stephen Marshak**—Understanding the Impact of CO<sub>2</sub> Injection on the Subsurface Microbial Community in an Illinois Basin CCS reservoir: Integrated Student Training in Geoscience and Geomicrobiology

**Hannes Leetaru and Bruce Fouke**—An Evaluation of the Carbon Sequestration Potential of the Cambro-Ordovician Strata of the Illinois and Michigan Basins

**Robert Sanford**—Growth of *Anaeromyxobacter* and Other Iron Reducing Bacteria (Argonne NL SFA)

### U.S. DEPT. OF ENERGY ENVIRONMENTAL REMEDIATION SCIENCE PROGRAM

**Thomas Johnson**—Chromium Isotopes as Indicators of Hexavalent Chromium Reduction

**Tom Johnson, Craig Lundstrom, and Robert Sanford**—MURMoT: Design and Application of Microbial Uranium Reduction Monitoring Tools

### US GEOLOGICAL SURVEY

**Craig Lundstrom**—Major Earthquakes Recorded by the Initiation and/or Regrowth of Speleothems in Midwestern U.S. Caves

### UNIVERSITY OF BRIGHTON (UK) WITH UK NATURAL ENVIRONMENT RESEARCH COUNCIL

**Jim Best**—Dynamics and Deposits of Braid-Bars in the World's Largest Rivers: Processes, Morphology & Subsurface Sedimentology

### UNIVERSITY OF BIRMINGHAM (UK) WITH UK NATURAL ENVIRONMENT RESEARCH COUNCIL

**Jim Best**—Fluid Dynamics across the Interface in Gravel-Bed Rivers: Quantification and Numerical Modeling of Flow in the Hyporheic Zone

### UNIVERSITY OF DURHAM (UK) WITH UK NATURAL ENVIRONMENT RESEARCH COUNCIL

**Jim Best**—Development of a Combined Lagrangian / Eulerian Approach to Understand Coherent Flow Structures in Gravel-bed Rivers

**Jim Best**—How Does Aquatic Vegetation Modify the Kinematic & Geometric Characteristics of Coherent Flow Structures in Open Channels?

# COLLOQUIUM SPEAKERS FOR SPRING AND FALL 2009, SPRING 2010

## Spring 2009

### January 23

Howard Falcon-Lang, Univ. of Bristol (currently at ISGS)  
"Joggins: Ice, Fire and Ancient Forests"

### January 30

Gary Parker, University of Illinois, Geology and Civil and Environmental Engineering  
"Experiments on Turbidity Currents: Flow, Sediment Transport and Bedforms"

### February 6

Surangi Punyasena, University of Illinois, Department of Plant Biology  
"Fossil Pollen and the Paleoclimatic History of Tropical Bolivia"

### February 13

Hersh Gilbert, Purdue University  
"Lithospheric Foundering in Continental Deformation"

### February 20

An Yin, University of California, Los Angeles  
"Formation of the Tibetan Plateau: A Process from Large Intra-Continental Basins to a Wide Orogen"  
*R.E. Grim Lecture*

### February 26

Bill Soderman (MS '60, PhD '62)  
"Rocks Around the Clock and A Million Frequent Flyer Miles"  
*Geology 2008 Alumni Achievement Award Recipient*

### March 6

Goran Ekström, Columbia University  
"Seismological Detection and Analysis of Recent Landslides in Alaska and the Yukon"

### March 13

Mike Leeder, University of East Anglia  
"Basin-Fill Incision, Rio Grande and Gulf of Corinth Rifts: Convergent Response to Climatic and Tectonic Drivers"  
*Threet Lecture in Sedimentary Geology*

### April 3

Fred Phillips, New Mexico Tech  
"The Rio Grande: Too Little Water, Too Much Salt"  
*Glenn and Susan Buckley Lecture in Environmental Geology*

### April 8

David Walker, Columbia University  
*two talks:*  
"A Warp in the Force: Curiously Bent D's of Mo and Pd" and  
"How could the Earth's core leak?"  
*COMPRES Distinguished Lecturer*

### April 8

Jim Fleming, Colby College  
"Historical Perspectives on Climate Change"  
*SESE Colloquium*

### April 10

Jonathan Marcot, University of Illinois Department of Animal Biology  
"Effects of Cenozoic Environmental Change on the Evolution and Fossil Record of Ungulate Mammals"

### April 17

David Fike, Washington University, St. Louis  
"Sulfur Isotope Variability in Microbial Mats: New SIMS-Based Insights into Sulfur Cycling"

### April 24

Devon Burr, University of Tennessee, Knoxville  
"A Dense Population of Young, Inverted, Meandering Channels on Mars: Discoveries and Questions"

### Special Brown Bag Seminars

March 30  
Stefano Mazzoli, University of Naples (Italy)  
"Miocene-Quaternary tectonic evolution and exhumation processes in the southern Apennines (Italy)"

### April 1

Motohiko Murakami, Institute for Study of the Earth's Interior, Okayama University  
"The post-perovskite phase in the D" layer above the core-mantle boundary."

## Fall 2009

### August 28

Troy Shinbrot, Rutgers University  
"Granular Electrostatics"  
*Charles R. Walgreen Lecture in Geophysical Fluid Dynamics*

### September 4

Ginny Catania, University of Texas, Austin  
"Understanding Ice Sheet Change: Towards Improved Prediction"

### September 11

Ken Kemner, Argonne National Lab  
"Investigating Mineral-Metal-Microbe Interactions with Hard X-Ray Radiation"

### September 18

Mike Rowe, University of Iowa  
"Mantle Sources and Magma Evolution: Insights from Melt Inclusion and Mineral Geochemistry"

### September 25

Susan Kieffer, Charles R. Walgreen Professor of Geology, University of Illinois  
"Enceladus, the Tiny, Frigid Satellite of Saturn: Life? No Life? No Conclusion?"

### October 2

Yevgeniy Kontar, Illinois State Geological Survey  
"Hazards Related to Groundwater-Surface Water Interactions"

### October 9

Roberta Rudnick, University of Maryland  
"Recycling of the Deep Lithosphere beneath the North China Craton"  
*R. James Kirkpatrick Lecture*

### October 16

Paul Wignall, University of Leeds  
"Permian Mass Extinctions"  
*Threet Lecture in Sedimentary Geology*

### October 23

Colin Stark, Columbia University  
"Erosion is a Vector: What Makes Lateral Cutting by Landslides and Meandering Rivers so Important?"  
*W. Hilton Johnson Lecture*

### October 30

Matt Huber, Purdue University  
"A Sensitive Earth: Implications of Eocene Climate for Future Greenhouse Projections"

### November 6

Peter McMahon, U.S. Geological Survey  
"Nitrate Concentrations in Regional Aquifer Systems of the United States: A Case of Creeping Normalcy?"  
*Glenn and Susan Buckley Lecture in Environmental Geology*

### November 13

Roger Kasperson, George Perkins Marsh Institute, Clark University  
"Closing the Gap between Science and Practice"  
*A Climate and Society Presentation and SESE Colloquium*

### December 4

Xiaoning (David) Yang, Los Alamos National Laboratory  
"Nuclear-Test-Ban Treaties and Monitoring Seismology"

### Special Brown Bag Seminar

November 4  
Robert W. Von Rhee, (M.S., '77)  
Managing Partner, KVR Energy, Tulsa, OK  
"Introduction to the Oil & Gas Industry"

# HONOR ROLL OF DONORS



## Spring 2010

### January 29

Steve Laubach, Texas Bureau of Economic Geology and UT-Austin  
“Structural Diagenesis”

### January 25

Cin-Ty Lee, Rice University  
“Regulating Continent Growth and Composition by Chemical Weathering”  
*Ralph E. Grim Lecture*

### February 5

Brandon Curry, Illinois State Geological Survey  
“Temporal Constraints on High Sediment Flux of the Lake Michigan Lobe, NE Illinois, during the Last Deglaciation”

### February 19

Dan Whaley, CEO, Climos and Lewis Rothstein, University of Rhode Island  
“Geoengineering Approaches to Countering Climate Change”

### February 26

Mike Blum, Exxon Mobil Upstream Research Company  
“Global Sea-Level Rise, Subsidence, and Sediment Mass Imbalance: The Inevitable Drowning of the Mississippi Delta”  
*Threet Lecture in Sedimentary Geology*

### March 12

Scott Olson, University of Illinois, Department of Civil and Environmental Engineering  
“Snapshots from Haiti: An Engineering Perspective”

### April 2

Bill Seyfried, University of Minnesota  
“Magmatic and Tectonic Effects on the Chemical Evolution of Hydrothermal Vent Fluids at Mid-Ocean Ridges”  
*Ridge 2000 Distinguished Lecture*

### April 9

Bill Shilts, Director, Institute of Natural Resource Sustainability, University of Illinois  
“Geochemistry in Glacial Landscapes”

### April 16

Ed Garnero, Arizona State University  
“Tracking Mantle Chemistry and Dynamics with High Resolution Seismology”  
*Richard L. Hay Lecture in Geology*

### April 23

Nathan Yee, Rutgers  
“Genetics and Geochemistry of Selenium-Respiring Bacteria”  
*Glen and Susan Buckley Lecture in Environmental Geology*

### April 30

Pat Bickford, Syracuse University  
“U-Pb-Hf-O Isotopic Studies of Adirondack Anorthosites: Implications for the Tectonic Setting and Petrogenesis of Massif Anorthosites”  
*Geology 2009 Alumni Achievement Award Recipient and R.E. Grim Lecturer*

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