

THE COLLEGE OF arts&sciences

earth & environmental sciences

2009 DEPARTMENT NEWSLETTER



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Letter from the Department Chair



partment, and the earth science community

It would have been difficult for anybody to fill Bill Thomas' shoes as chair after his distinguished career. Bill chose to "step up" to the faculty ranks during his final year at the university before his retirement. We thank him for his years of dedication and contributions to the university, the department, and the earth science community

In retrospect, it seems like Professor Sue Rimmer and I did a "diversity swap". Dr. Rimmer went to Southern Illinois University Carbondale, where I came from a couple of years ago. Sue was on the faculty here for over two decades and performed several other administrative roles in the university. A number of her students are finishing this year and she is visiting from time to time. She will be missed by many people in the UK community.

The College of Arts and Sciences has a new dean at the helm, Professor Mark Kornbluh, a digital humanist (you will have to look that up) and a Professor of History. Dean Kornbluh has a wealth of ideas for improving education, research and funding for the college. And we are trying to keep up with these developments and improve the profile of the department in the university and the state.

We are also very happy to welcome our newest member of the faculty, Dr. Christopher Romanek, a stable isotope geochemist. Dr. Romanek joined the department in August as an associate professor. He comes to us from University of Georgia and Savannah River Ecological Laboratory. Dr. Romanek's laboratory renovation is nearly finished and we hope that he can soon continue his outstanding career at University of Kentucky.

We have also been joined by Dr. Stephanie Schwabe, as a lecturer. Dr. Schwabe is a biogeochemist and an explorer of underwater caves in many parts of the world. Look up www.blueholes.org for some exciting footage of her adventures.

We are forging new relationships with the Kentucky Geological Survey, the Center for Applied Energy Research, and Tracy Farmer Institute for the Sustainability and the Environment. Several scientists in these organizations contribute to the department through

teaching and advising graduate and undergraduate students.

Amidst the state funding woes of the university, the EES Alumni Board ran a very successful fund-raising campaign for the Brown-McFarlan Fund and we were able to obtain the state match for through the Research Challenge Trust Fund. Scholarships from this endowment support graduate student research and presentations at meetings. The Brown-McFarlan Endowment is now on a sound footing thanks to this year's funding drive. Hats off to the Alumni Board and all of you for making this a success!

Although the research productivity per faculty member in EES is high, our numbers have dwindled due to two years of state funding difficulties. The department has developed a hiring plan to extricate us from this situation and we hope that the university administration will continue to support us in our efforts to once again become a viable department. One important outcome of this renewed effort is that we now have one new search for a faculty position approved (in sedimentary geology/sedimentation and tectonics/basin analysis). Many of you have helped in this endeavor to make this possible. Thanks a lot!

It was very nice meeting alumni during the Alumni Weekend festivities, the highlight of which was the Rast-Holbrook Alumni Weekend Lecture by the Kentucky Secretary for Energy and Environment, Dr. Len Peters. Dr. Peters delivered his lecture on the future of energy in Kentucky to a packed audience in the Young Library Auditorium. The other highlight of the weekend was the Distinguished EES Alumni Award to Dr. Sam Boggs, presented at the College of Arts & Science Hall of Fame Dinner. These events have given us a lot of visibility on the campus. We are hearing back positive things about the department from all quarters!

Faculty positions and research funding; scholarships to supplement TA/RA funding in order to attract good graduate students (the current salaries have now fallen significantly below the national averages); and the Rast-Holbrook Seminar remain priority funding-goals for the department. We know that with the hard work of faculty and staff in the department and your continuing encouragement, we will reach these goals sooner than anyone can imagine!

Sincerely,

Tiku Ravat, Chair
Department of Earth & Environmental Sciences

A note from the Newsletter Editor...

The 2009 Newsletter is half the size of last years due to financial belt tightening in the College of Arts and Sciences. The College covered the design, editing, and publication of the Newsletter in 2006 through 2008. This year, yours truly is the "editor", and the Department is the publisher! Unfortunately, we couldn't include all the usual articles and news about alumni, faculty and students. However, thanks to the internet, alumni and friends can read more about the Department at our website:

www.as.uky.edu/ees

or

www.as.uky.edu/geology

You'll find an expanded version of the Newsletter that includes faculty news and a Field Camp Retrospective.

The College of Arts & Sciences now maintains our website. This is a huge responsibility that used to be shouldered by Sue Rimmer. Being the "webmaster" is not a job for faculty or students, as they have teaching, research and service responsibilities. However, the internet is our primary graduate student recruiting tool, and our web site is the "face" of the department. It is literally a full time job to design, build, and keep a web page updated. Fortunately, the College of Arts & Sciences now has a full time staff of web designers who work with us in maintaining an updated web site. As always, we are open to suggestions for content. If you have an interesting story or simply want to update us on a personal development, please, don't hesitate to send it as an email or in snail mail. Our contact information is included in the right panel.

We will print a hard copy and deliver the annual Newsletter via surface mail as long as our budget permits.

Thanks to all of you! Best wishes for 2010!

Sincerely - Dave Moecher, Associate Professor
(and now Newsletter Editor)

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Stay connected...

You can keep track of Department events, the Rast-Holbrook seminar schedule, our contact information, and alumni events via the Department web page:

www.as.uky.edu/ees

...and keep in touch!

Please let us know if your address or contact information change. Send a note to, email, or call George White, the department Administrative Assistant:

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Mr. George White, EES Staff Assistant

COVER PHOTO: UK Geology students sitting on the rim of the San Juan River canyon at Goodenecks State Park, Utah; Geology Field Camp 2009 (photo J.D. Stucker).

Department News

2008-2009 Degrees*

Undergraduate Degrees

B.A.

Matt Burton
Austin Clark
Jordan Drew (Magna Cum Laude, Dept. Honors)
Joshua Dahl
Scott Frazier
Angelina Gordon
Daniel Hedges (Cum Laude, Dept. Honors)
Jason Lambert
Allison Richardson (Cum Laude)
Lindsay Wagenblast

B.S.

Nathan Hendren
Nathan Landrum
Bryan Loudon
Anthony Paschall
Jessica Rosenberg (Magna Cum Laude, Dept. Honors)
Neil Russell
James Stucker (Summa Cum Laude, Dept. Honors)

Graduate Degrees

Master of Science

Elizabeth Dodson: "Structural Geology of the Transylvania fault zone in Bedford County, Pennsylvania" (Bill Thomas)

Timothy O'Brien: "Bedrock mapping of the Winchendon (1:25000) quadrangle (MA-NH): Evidence for discontinuous deformation along the Bronson Hill-Central Maine boundary zone" (Dave Moecher)

Brian Scott: "Variation in C/P ratios in Devonian-Mississippian marine shales: Testing the productivity-anoxia feedback model" (Sue Rimmer)

Tripathi Ganesh: "Use of surface geophysical techniques to locate a karst conduit in the Cane Run-Royal Spring Basin, Kentucky" (Alan Fryar)

Kathryn Adank Ward: "Influence of matrix geochemistry on "Phytophthora" occurrence on the reforested mine lands in Appalachia" (Alan Fryar)

Cora Anderson Blits: "Integrated geophysical imaging of subsurface geologic conditions across a contaminant plume, McCracken County, Kentucky" (Ed Woolery)

Carrie Kidd: "Subsurface characterization and sequence stratigraphy of the Pride Mountain Formation, Hartselle Sandstone, Floyd/Neal Shale and Bangor Limestone in the Black Warrior Basin, Alabama and Mississippi" (Bill Thomas)

Sarah Mardon Shearer: "Evaluation of coalbed methane and carbon dioxide sequestration potential in the Western Kentucky Coalfield" (Jim Hower)

Jonathan McIntyre: "An evaluation of earthquake ground-motion site effects at two sites underlain by deep soils in western Kentucky" (Ed Woolery)

Lehne Slater: "The petrography of ancient organic matter in kerogen weathering profiles" (Sue Rimmer)

Doctor of Philosophy

John Allen: "Paleogeographic reconstruction of the St. Lawrence Promontory, western Newfoundland" (Bill Thomas)

Ken Macpherson: "Long period ground motions in the Upper Mississippi Embayment from finite-fault, finite-difference simulations" (Ed Woolery)

Jennifer Klein O'Keefe: "Paleogene mirelands of the Upper Mississippi Embayment, western Kentucky: (Jim Hower, Alan Fryar)

*Degrees officially posted in calendar years 2008 and 2009 at the time of publication of the newsletter

Student Awards

Pirtle Outstanding Senior Scholarship: Antonia Hansen

Glenn Rice Memorial Tuition Scholarship: Rachel Hatch

Sigma Gamma Epsilon Tarr Award: Jordan Drew

KY Section AIPG Student Award: Rachel Hatch

Outstanding T.A. Award: Lehne Slater



Above: Lehn Slater (right) receives the Outstanding TA Award from Profs. Frank Ettensohn (left) and Tiku Ravat (center)

Department News

Renovation of Research Labs in Slone Building

During the past summer, second floor of the Slone Building was again the site of major renovations. Last summer, we willingly put up with sounds of demolition for the renovation of teaching labs. The sounds of demolition can be annoying, but those are good sounds—they mean progress! The newest renovations to Slone Bldg. relate to the arrival of Dr. Christopher Romanek on campus as a new faculty member in the Department of Earth and Environmental Sciences. Chris is the first faculty member hired by UK as part of the new Provost-based initiative to establish a major environmental research institute on campus (Tracey Farmer Institute for Sustainability and the Environment). [See Chris's article at right.]

The renovation on second floor first required remodeling of lab and office space on the first floor to accommodate Prof. Alan Fryar. Once that space was ready, Alan's lab and equipment were moved from second to first floor. Then the demolition began in earnest! Half the north side of second floor of Slone was gutted to make room for a state-of-the-art stable isotope geochemistry lab that will provide research and office space for Prof. Romanek and his research group.



Above: Pete Idestein and Prof. Chris Romanek (seated) in the new stable isotope lab.

The laboratory will eventually house four gas source stable isotope ratio mass spectrometers and peripheral devices for analyzing all light stable isotopes of H, C, O, N, and S in rocks, water, biological materials, gases....basically anything!

New Faculty

Chris Romanek

Hello to everyone from a new arrival in the Department of Earth and Environmental Sciences at UK! The last few months have been busy for me, making the transition to a new university setting and getting settled in Lexington, but it has been a thoroughly enjoyable experience. Everyone has been simply fantastic welcoming Suzette and me to our new home.

I arrived at UK after spending ~15 years in the Department of Geology at the University of Georgia, although I was physically located on DOE's Savannah River Site (SRS). While at the SRS, I applied my skills in stable isotope geochemistry to help solve environmental and ecological problems resulting from the generation and processing of nuclear materials for the nation's needs. Before that, I was a National Research Council Post-doctoral associate at NASA's Johnson Space Center, where I studied the geochemistry of Precambrian rocks and meteorites, including those thought to originate from the planet Mars.

I received my Ph.D. from Texas A&M University, a M.S. from the University of Florida (am I allowed to say that here?), and my B.S. from Furman University, all in geology. Most of my time has been spent getting our new stable isotope laboratory up and running. This facility, which is among the best in the country, will be devoted to studying the stable isotope composition of all terrestrial (and extraterrestrial) things. Recent projects include the growth and isotope analysis of carbonate and sulfate minerals as analogues for materials that may exist on the surface of Mars (NASA funding), analyzing the stable isotope composition of fossil shells as paleo-environmental and paleo-climatological indicators (NSF funding), studying the geomicrobiology of hot springs in Nevada and Kamchatka, Russia to better understand how life may have first emerged on Earth (see www.exploratorium.edu/kamchatka for a great overview of our recent work), and the development of novel analytical techniques to measure the stable isotope composition of materials in the field under real-time and in situ conditions (DOE funding). The department and the University have graciously contributed to the development of the laboratory and I thank them profusely for their efforts. I look forward to teaching courses in stable isotope and aqueous geochemistry in the department, and I wish to help grow the already fine reputation of the geology program at UK, so.... stay tuned for exciting research projects that will be emerging the department as our students take advantage of the new opportunities that will be available to them in the future.

Department News

New Lecturer

Dr. Stephanie (Steffi) Schwabe



I received a B.A. in Geology from the College of Charleston in 1990, a MSc from Mississippi State in 1992, and a Ph.D. in Biogeochemistry from the University of Bristol, UK in 1999. I then earned a law degree (J.D. with focus in International Environmental Law) from the University of Queensland, Australia in 2003, and was admitted to the Queensland Bar, both as a Barrister and Mediator the same year. A native of Charleston

South Carolina, I have more than 25 years of scuba diving experience, primarily in the Bahamas, where I carry out most of my research on modern karst systems. I am the founder and director of the Rob Palmer Blue Holes Foundation, in honor of my late husband. I have served as a consultant on environmental issues, in particular in protection of sensitive modern cave systems in the Bahamas. I have worked hard in protecting the "blue holes" of the Bahamas. My various adventures are described in a book entitled, "Women of Discovery: A Celebration of Intrepid Women Who Explored the World" and in another book, "The Third Man Factor," which describes near death experiences of explorers. I recently finished writing a book entitled "Living in Darkness: A Women's Scientific and Exploratory Adventures into the Black and Blue Holes of the Bahamas", published by Greyhound Press. My work and adventures have been recorded by Discovery, Discovery Animal Planet, German and French National Television, World of Wonder and by an Australian Production, Beyond BBC on a series called, 'Oceans.' I just recently finished working with NHK Japan Television generating a science film project on the geological story of how the Bahama Island formed including the underwater caves of the Bahamas.

Before coming to UK this year, I taught Geology, Environmental Geology, and Environmental Science and Policy at the College of Charleston for five years, and taught Geological Oceanography, Environmental Geology, History of Climate Change, and Environmental Law and Policy at the School of Peace and Justice at the University of San Diego. At UK I will teach a wide range of introductory classes, including Environmental Geology, Earthquakes and Volcanoes, Oceanography, and Historical Geology.

New Staff

Pete Idstein



I started as the Academic Laboratory Coordinator in the Department in August of 2008. I received my M.S. in Geology from Eastern Kentucky University in 1992. I have spent nearly 20 years doing Karst Hydrogeology consulting (Ewers Water Consultants) working on projects throughout North America and in Puerto Rico. I have kept close ties to ECU and spent one

year (2007-2008) as a Visiting Assistant Professor after having taught many times as a part time instructor. Classes taught include Physical Geology, Physical Geography, Environmental Geology, Hydrology, Paleontology and Stratigraphy, a class of Introduction to Caves and Karst and team teaching a Graduate class in Karst Hydrogeology. I began working on a Ph.D. in the mid 1990's in a joint program between UK and ECU and will return to this pursuit with additional courses in the Spring Semester.

Shortly after starting as Academic Laboratory Coordinator I was working on getting the newly renovated teaching labs located on second floor of the Slone Building put together for the start of classes. These rooms have been a great improvement over the facilities that I remember from the mid 1990's. Updating some of the lab exercises has been one of many duties and I hope to bring some fresh approaches and continue introducing some new exercises in the intro classes. For nearly a year I have been involved in coordinating major renovations of research lab space; the Hydro lab has been moved to renovated space on the first floor that had been the rock cutting lab years ago, and then Harry Rowe's lab. After demolition on the second floor, a new lab is taking shape for stable isotope geochemistry lab; the lab is nearly complete (see photo on p. 5). Many of the cabinets that came from the renovation space were reused in other lab spaces within the department resulting in benefits to nearly everyone. I have submitted a proposal to the Donovan Trust to replace the lockers on the first floor of Slone with new display cases so we can improve the look of the department.

Update from the Alumni Board Chair



Greetings fellow UK Geology alumni! This year marks the fifth year for me as a member and Chairwoman of the Geology Alumni Advisory Board and I am happy to say that it has been a very successful year. Our fundraising goal for 2009

was fully endowing the Brown-McFarlan Fund. With an initial amount of about \$34,000 in the fund and a short window of opportunity to take advantage of matching state funds, our alumni were well up to the challenge. The Brown-McFarlan fund is now fully endowed (approximately \$170,000 will be the amount of the final endowment)), which will provide a more reliable source of graduate student funding in the Department than yearly contributions. My deepest appreciation and thanks to all of you who contributed your time, money, and expertise toward making this goal a reality.

Our fall alumni weekend was held this year in Lexington and honored Dr. Sam Boggs, Jr. as the Distinguished Alumni Awardee for 2009. Geology alumni were well represented at all the events including the College of Arts & Sciences Hall of Fame dinner, our Thursday symposium with KY Secretary of Energy Dr. Len Peters, and the tailgating and football game on Saturday. In addition to this event, alumni receptions were held this year in Louisville, KY and Boulder, CO.

We will continue to post alumni events and initiatives on the Department's web site (www.as.uky.edu/ees, click on Alumni and Giving link).

On a final, but very important note I would like to encourage anyone who is interested in making a hands-on contribution to the Department to consider joining the Geology Alumni Advisory Board. We are always in need of new ideas and an energetic and enthusiastic attitude to help us plan events, host local receptions, contact other alumni, etc., etc. If you are interested, please contact Elizabeth Haynes at lizhaynes1@me.com or by phone (720) 281-3673.

Best wishes and GO CATS!

Elizabeth A. Haynes (M.S., 2000), Chair
Department of Earth & Environmental Sciences
Alumni Advisory Board

Recent Contributions (10/08-11/09)

We greatly appreciate the support of our generous alumni, the alumni board members who provided extra energy to help us reach our goal, and their employers who supported the Department in the past year!

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Support Opportunities

Your support of the UK Department of Earth & Environmental Sciences helps provide opportunities for our outstanding undergraduate and graduate students. All contributions to the Department are tax deductible.

Rast-Holbrook Fund

Supports the department seminar program, an opportunity for students to interact with researchers outside the department

GEOFund

Supports general departmental needs

Wallace Hagan Scholarship Fund

Supports undergraduate scholarships

Glenn Rice Memorial Fund

Supports undergraduate tuition scholarships

Haynes Field-Trip Scholarship Fund

Supports student travel on field trips

Development Fund

Provides additional resources for graduate student recruitment

Geology Support Fund

Supports initiatives for long-term quality of the department

You may use the on-line donation process at:

https://giveto.uky.edu/AS_p/as.htm

Or you may send donations directly to the department:

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