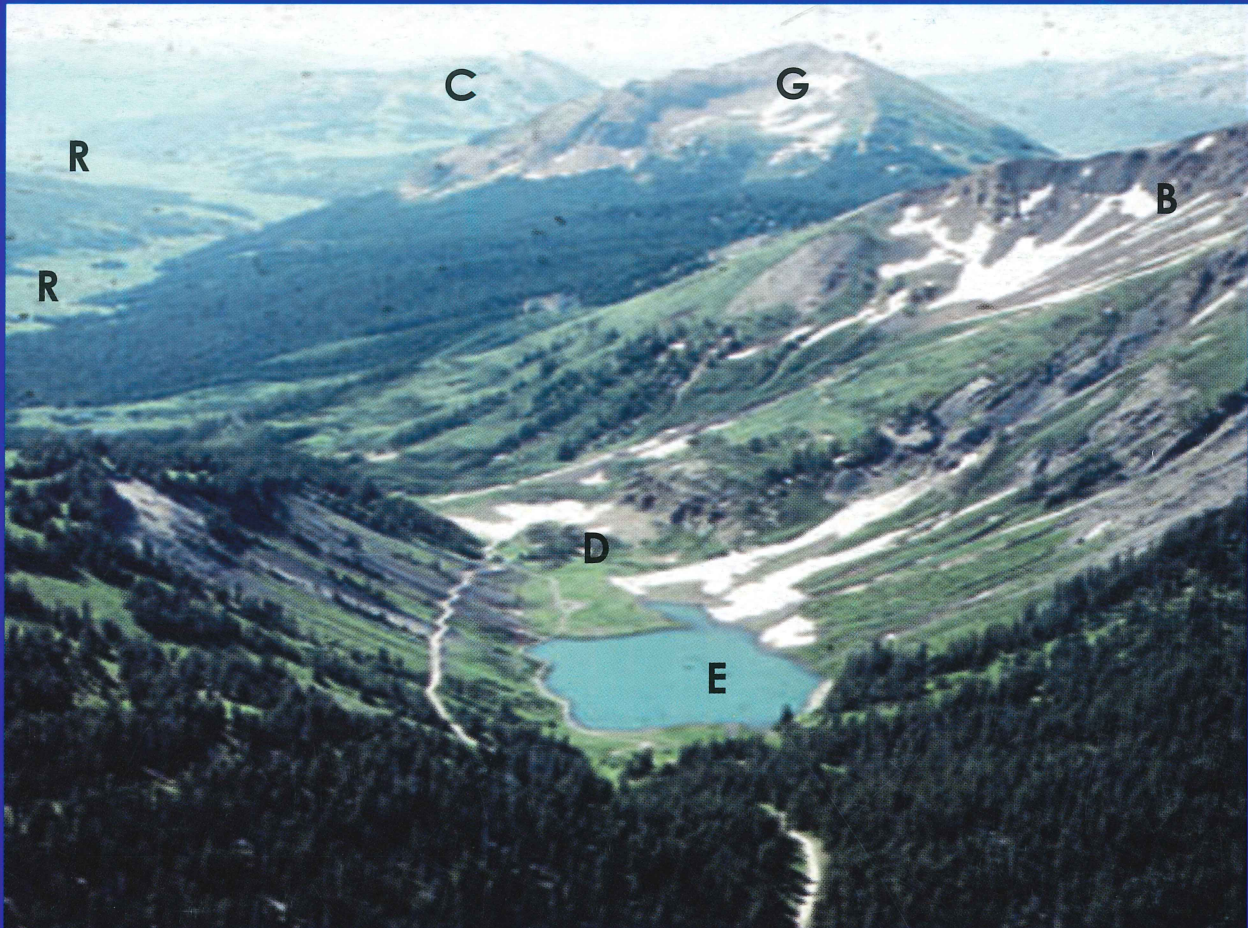


Department of
Geological Sciences
Newsletter



www.uky.edu/AS/Geology/

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- Student News

The Round Up —

If you have been to our Colorado field camp, you have probably seen this area before, but from a different vantage point. This is Emerald Lake viewed from the air looking southeast above Elko Park. Emerald Lake is a tarn lake that occupies a u-shaped valley near the cirque that defines the headwaters of East River. The lake sits in a small basin gouged out by ice in the soft, Cretaceous Mancos Shale. The ridge or “cyclopean step” that dams the basin is formed in the Cretaceous Dakota Sandstone. Both units in the area are mineralized and mildly contact metamorphosed by a series of dikes and sills related to the Gothic Mountain laccolith. E- Emerald Lake; D-Dakota ridge or step; B-Mt. Baldy (Mancos Shale supported by dikes and sills); G-Gothic Mountain laccolith; C-Crested Butte laccolith; and R-East River valley. Photo by F. Ettensohn

UK UNIVERSITY OF KENTUCKY
College of Arts and Sciences

Department of Geological Sciences

Letter From the Chair

In this same column last year I talked briefly with you about helping out with some of our department funds. The accompanying picture of students wading in a carbonate tidal flat in the Bahamas is an example of the type of learning activity that we could support more frequently from departmental funds. I know from my own experience as a student that although I thought I had an "understanding" of how carbonate tidal flats were deposited from readings and lectures, it was not until I actually experienced a tidal flat, like these students are doing, that I really gained a true understanding of tidal-flat sedimentation.

Similarly, there are so many aspects of geology that require an experiential or hands-on, field-related approach for complete understanding and later mental manipulation. More contributions to the Haynes Field-Trip Fund would help us make that a more frequent reality.

We would also like to attract more students into our field of study, but more and more commonly, students need some help in the form of scholarships to proceed beyond the introductory level. A fully endowed Hagan Scholarship Fund would go a long way to help us fund some of those students.

Whether it is supporting field activities, undergraduate scholarships, undergraduate and graduate research, our seminar series, or departmental equipment and maintenance needs, we have funds to help (see back page of the *Roundup*) and very real needs for support beyond our small college operating budget.

Last year this column showed the same graph with five funds, two of which are fully endowed. Although the other three have shown some modest growth since last



Students wading in a carbonate tidal flat in the Bahamas.

year, we would encourage you to think about contributing to the Hagan Fund, GeoFund, or the Haynes Field-Trip Fund in order to bring those to useable levels.

Last year, we reconstituted our Alumni Advisory Board, and this year we have developed new strategic and development plans that will help us restructure some of our funds for more effective use. With this information in hand, the board has agreed to help us in communicating our mission and activities to the alumni as a whole and to help us in pursuing alumni and industry support so that we can have additional resources for scholarships, fellowships, field equipment, more distant field travel, and student research support. We appreciate very much all the contributions that the alumni have made thus far. Thanks to contributions in the last six years, we have built some major funding resources including the Ferm and Rast-Holbrook

funds, which have gone a long way in helping the department meet critical needs. But there are still other needs, and with the new Alumni Advisory Board, we hope that you will once again help us in meeting as many of those needs as possible.

-Frank Ettensohn, Chair

2005 Degrees

BACHELOR OF SCIENCE

Eric Dew
Bruce Hatcher
Bradford Luckett
Chad Parish
Carolyn Ramsey
Rachael Von Mann
Matthew Zimmerer
Chris Cayton (2004)
Adam Holt (2004)
Timothy Nelson (2004)
Tommy Poole (2004)
Adam Smith (2004)
David Vance (2004)
Elise Venard (2004)

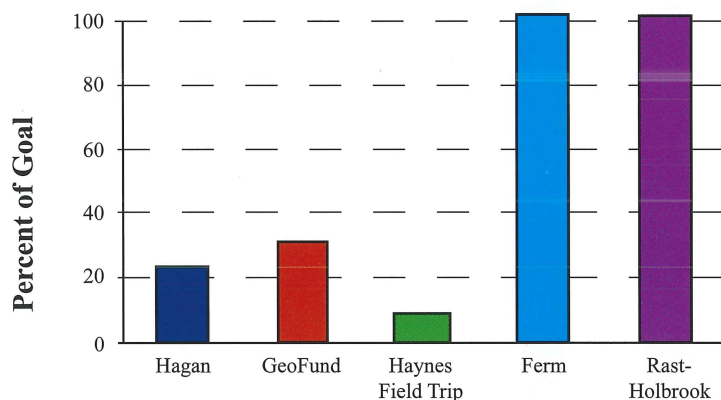
MASTER OF SCIENCE

Bill Reid

DOCTOR OF PHILOSOPHY

Thomas Becker

Geological Sciences Fund Status 2005



Faculty Happenings: what's going on?



Alan Fryar, Associate Professor

The past year has been less exotic for me than the previous year (when I traveled to India), but seemingly no less busy.

I was fortunate to recruit two new graduate students as research assistants last fall. Josh Sexton, who received his B.S. in geology from Radford University in 2002, is developing a GIS-based, stratigraphic framework model of the Paducah Gaseous Diffusion Plant and vicinity. This project, which is funded by the U.S. Department of Energy, incorporates outcrop mapping and logs from hundreds of geotechnical borings and wells in the area. Josh is a third-generation well-driller and worked for a consulting firm in Virginia before coming to UK. James Ward, who received his M.S. in geology from Sul Ross State University in 2004, is studying pathogen transport through the Blue Hole Spring karst ground-water basin in Woodford County. This research, which is funded by the state through the UK College of Agriculture, builds upon previous studies by M.S. students Todd McFarland and Tom Reed. James is from a west Texas ranching family and has worked as a consultant for a county ground-water conservation district, among other jobs.

My other students are doing well. Danita LaSage, who graduated in August, 2004, was promoted to assistant professor (tenure-track) at EKV. Todd Aseltine, another Ph.D. student, has returned to his home town of Toledo to teach chemistry and earth science at his former high school. Tom Reed took a job with the Louisville office of AMEC, an international consulting firm. Both Todd and Tom hope to defend within the coming year. Abhijit Mukherjee advanced to Ph.D. candidacy and returned to West Bengal during summer 2005 to complete his final round of field work.

From June through August, 2005, I

hosted Professor Lahcen Benaabidate, a Fulbright Scholar from the Faculté des Sciences et Techniques Fés-Saïss, Fez, Morocco. In addition to working with me on a study of thermal springs in Morocco, Lahcen went into the field with my students and KGS hydrogeologists; he met with other faculty and staff at UK; he gave the first talk in our fall 2005 Rast-Holbrook seminar series; and he generally became immersed in American culture. I plan to visit him in Morocco next May.

Paul Howell, Associate Professor

Each spring the department leads a field trip to an exotic geological destination for the benefit of our students. We leave the day after UK commencement exercises - and so far in the past decade not a single graduating senior has missed the start of the trip. In May, 2005, we left Lexington with a full load - three department vehicles, one faculty (me), 6 grad students and 15 undergrads, with shovels, machetes and bug spray destined for the coastal barrier islands of Georgia and South Carolina. This was a "soft rock" trip: modern depositional environments as analogs for detrital sandstones and shales of the Appalachian basin.

We cut our feet on oyster bars in the macrotidal marshes behind Sapelo Island, Georgia and basked in the evening breezes at the beach. At low tide we ventured a kilometer out on the exposed ebb-tidal delta and trenched the dunes and megaripples we found there, mapping the tidal current directions. At high tide we explored the washover fans and eolian environments higher on the beach, and trenched those too, examining in three dimensions the patterns of sedimentation and cross-bedding.

We camped in a beautiful grove of old live oak trees about 200 meters from the waves lapping on the shore. Beach erosion is minimal at Sapelo, but we also spent two nights at Hunting Island, SC, where severe erosion has caused old park facilities to become building heaps right on the beach, as 3-5 meters of erosion take place each year.

On the way back from Sapelo, we stopped

at the Laurel River Lake spillway outcrop and other exposures of Pennsylvanian detritals to look at ancient examples of the various cross-bedding and bedforms we had just seen. Many of my students had visited these outcrops earlier in GLY 450 (Sedimentary Geology), but it wasn't until they'd been to the beach and come back that they could say, "OH! Now I get it!"

These end-of-year field trips have been a highlight since the early 1990s and alumni support to help defray their cost for the students is MUCH appreciated. We have generally been able to subsidize and keep the costs in line so that almost no student feels unable to attend due to expense. Other trips of the past decade have included the Adirondacks and New England, Canada (Grenville and Superior provinces), and two trips for the Mississippi delta and geology of the French Quarter.

We plan to expand the range of these trips by booking flights early as a group and trying some more exotic locations. We're looking at a possible Owens Valley, California, trip for this spring. If any alums have favorite field-trip thoughts or suggestions, send them to Paul Howell or Dave Moecher (we have led most of these trips), and if you can afford to send an extra contribution to help us defray these field trip costs (especially with rising fuel costs), our students will benefit that much more.

Late breaking news: Two of our field trips in the past six years have visited Louisiana to study modern delta and coastal environments and the effects of rapid subsidence on coastal management. Each trip, we spent time in New Orleans with Dr. Mark Kulp (M.S. 1995, Ph.D. 2000) of the University of New Orleans and examined closely the levees protecting the city from flooding. It was a sobering experience to watch the flooding of New Orleans from breaches in these very levees where we had stood mere months before. Mark and his UNO crew survived the flooding and have re-established the Coastal Research group outside of Baton Rouge where they continue their valuable contributions to our understanding of the coastal environments of Louisiana.

More Faculty Happenings

INVITED TO CHINA

Frank Ettensohn, Chair

About three years ago, the Department of Geological Sciences hosted a visiting scholar, Professor Chuanheng Zhang from the China University of Geosciences, who worked in the department for about five months.

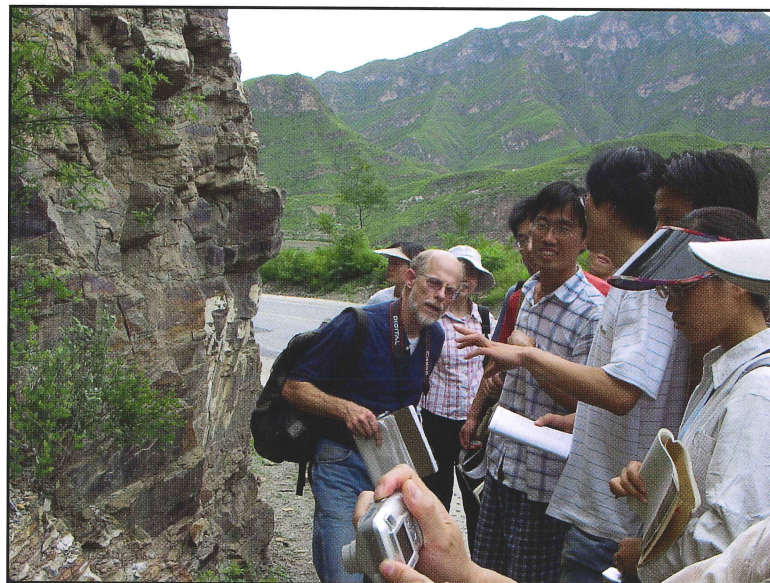
His arrival was an auspicious one because most of his baggage, containing his field notes and money, was lost in Los Angeles on his way to Lexington. To make matters worse, he was caught in Lexington during a very severe ice storm, when nearly everything in town was closed for more than a week.

He initially came to study the influence of tectonics on stratigraphy, but without his notes and sections, he was able to do very little, so he sat in on several classes.

I thought that these experiences might sour him on anything having to do with the U.S., but several months after returning to China, he managed to get a government grant to support undergraduate teaching during Summer 2005. Liking what he saw in one of my undergraduate classes, he invited me to spend the summer teaching at his university. I later learned that having visiting professors teach graduate students at his institution was a common practice, but that bringing in a foreigner to teach freshmen in English was an experiment. They had apparently tried to do this before, but had been turned down by everyone they asked.

I was asked to teach introductory geology to a group of about 50 freshmen, who had been specially chosen for their ability to understand English, and class began two days after I arrived. The students' English abilities were quite varied, ranging from almost no understanding of what I said to about 80% understanding. My son Marc also went with me and went to every class. He turned out to be an important asset, as he was asked to help the students with their English, and the students more easily approached him with questions than they did me. In fact, it seems that asking questions during class is discouraged.

The lecture hall was thoroughly modern, except that it lacked air conditioning, and



Dr. Ettensohn shows his graduate students clastic tidal sequences in the Neoproterozoic Xiamaling Formation, Yesanpo region, Hebei Province.

Beijing has a hot, humid climate in the summer, very much like that of Lexington.

About a month later, I was asked to teach a graduate course in stratigraphy to 15 students. Of the two courses, I think that I was better understood by the freshmen than by the graduate students. Even though I only had 50 students in the undergraduate class, the lecture hall was always filled with more than 100 people, as people would come just to hear me speak English. It seems that knowing English is very important for success in many professional fields in China; and the better your English is, the higher you are able to go in the system. Even if I had not been successful in teaching geology, I always felt that I could fall back on teaching English.

It was a busy time for my Chinese hosts, and so Marc and I were pretty much left to our own means. Like most professionals in Beijing, we had a two-room flat and made it around campus and adjacent parts of Beijing on bicycle. For more distant parts of Beijing we had to rely on buses, which is an entirely different experience. Learning which bus goes where is a real chore when you don't speak or read the language. A female graduate student, whom we met on our first day, was a real help in getting us started, because she took us many places the first time. Fortunately, the bus numbers were in Arabic numerals! Buses were almost always packed, so we rarely found seats, but no matter how full the bus was, there was always room to pack more people on board! Riding buses was not something that we looked forward to, but these were

the kind of issues that occupied most of our time in Beijing—in other words, how do you live from day to day when you don't speak or read the language?

Except for some outliers of Permian and Mesozoic volcanics and volcanoclastics in northwestern Beijing, Beijing is mostly located on Holocene alluvial sediments. To see other rocks anywhere near Beijing required travel, either by train or car. After one eight-hour train trip west of Beijing to Datong, we spent two days examining Mesozoic clastics as models for hydrocarbon reservoirs. Interestingly, once we got to Datong we had to hire a taxi to take us into the field. When lunch time came, we had to hop into our taxi, which



Marc Ettensohn, Professor Linzhi Gao, China Academy of Geosciences, Dr. Ettensohn and a peasant farmer meet near the mountain village of Heyao while looking at possible seismites and molar-tooth structures in the Neoproterozoic Heyao Formation, Henan Province.

More Faculty Happenings

was with us all day, and try to find a good restaurant at which to eat; it wasn't always easy. They don't seem to believe in taking sack lunches to the field.

I really liked to travel by train, because one could see so much of the countryside from the window while in transit, and it was a real treat to see places other than Beijing. Getting in and out of the crowded train stations, however, was something else, and in Datong we drew cheers of approval from Chinese bystanders as we jumped fences and turnstiles to reach our train on time. Most of the Chinese are shorter than we are and don't have the long legs necessary to jump four-foot fences.

On four other trips outside of Beijing to Henan and Hebei provinces, we went to examine the Mesoproterozoic and Neoproterozoic carbonates that are so common in east-central China. There are up to 20,000 m of these carbonates, probably deposited in a subsiding-rift-type setting. Most of the carbonates were deposited in very shallow, open-marine to peritidal settings, and though they were dolomitized, sedimentary and stromatolitic structures were generally preserved in exquisite detail. The sequence also contained seismites, paleosols, and redbeds, and my Chinese hosts were particularly interested in my expertise in seismites and paleosols. I also pointed out the presence of meter-scale parasequences and fourth-order sequences throughout these carbonate sequences. I was surprised at how well preserved these Precambrian sequences were and how much carbonate had been deposited at a time when there were no calcareous, shell-producing invertebrates. This is a possibly fruitful area for research, and I will probably go back several more times to work with my Chinese hosts on many problems.

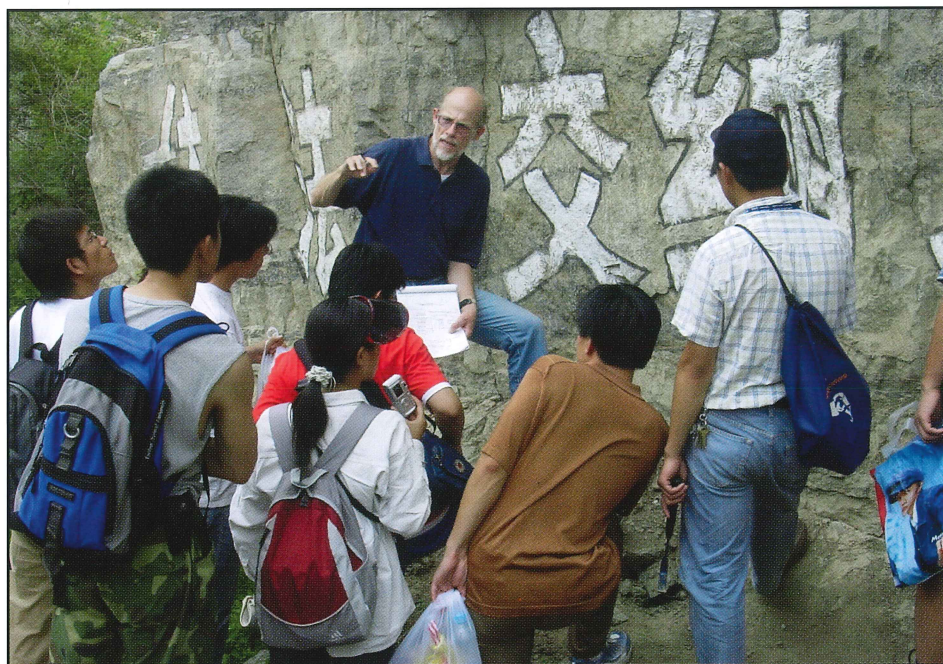
By the last month of the trip, I was almost continually sick with a bad head cold and some sort of gastro-intestinal bug. My hosts were quick to treat me with Chinese herbal medicines, which took away the symptoms unbelievably fast, but the problems always reappeared a few days later. These problems all came to a quick end on the last week of our trip abroad when I went to Russia to present a paper on Devonian black shales at an international conference on the Devonian. We spent much of that week in the city of Novosibirsk, where the conference was

held, and in my old friend Volodia's dacha in the Gorno Altai Mountains of southern Siberia. The change to cooler weather, one four-hour trip to the banya that seemed to burn out, beat out, and wash out any bugs in my system, and a change to a more western dietary fare, very quickly cured all the ailments acquired in China. After a ten-year absence from Siberia, it was good to see old friends, visit old haunts, and see even more varied geology in an area that apparently experienced nearly continuous episodes of Ediacaran to Triassic convergence.

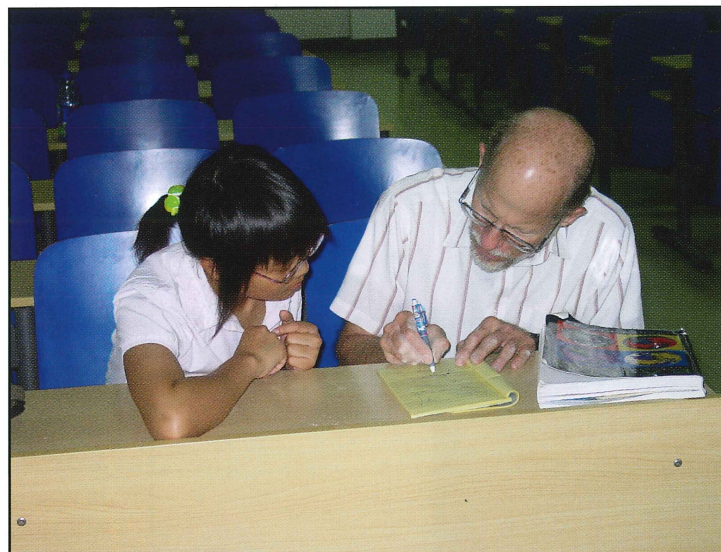
Although life in Beijing provided some "down" moments, I will never forget the

hospitality of my Chinese hosts and the interest and enthusiasm of my Chinese students. I think that the experiences have caused me and my son to grow a lot, and I come back as a better geologist with more to offer my Kentucky students.

And by the way, having gone through customs in Los Angeles and nearly missing my flight because of it, I now understand why my Chinese friend lost his baggage in Los Angeles!



Dr. Ettensohn talks to his graduate class about carbonate peritidal sequences in the Mesoproterozoic Wumishan Formation, Yesanpo, Hebei Province.



Dr. Ettensohn works with a Chinese freshman Geology major at the China University of Geosciences in Beijing.

More Faculty Happenings

Edward W. Woolery, Assistant Professor

The Seismic Lab welcomed incoming graduate students David Vance and James Whitt during the past year. We were also fortunate to have two undergraduate research assistants, Cora Anderson and Andrew Lynch, as well as one post-doctoral scholar, Dongxia Wang. These individuals were crucial to our ongoing cooperative (with the Ky. Geological Survey) seismic hazards research in the northern Mississippi Embayment and the lower Wabash Valley fault system. In addition to our long-term research interests, a small NSF seed grant enabled us to establish a new frontier in our research program this year with the Lanzhou Institute of Seismology in China. Although several research priorities have been recognized in this joint venture, the UK Seismic Lab is primarily focused on the location and assessment of neotectonic structures in urban environments. The active faults along the northwestern edge of the Tibetan Plateau present a considerable hazard to the population centers of northwestern China, and as part of the mitigation efforts, the Chinese government is inviting Western researchers to participate in their assessment. We conducted field reconnaissance surveys in the capital city of the Gansu Province, Lanzhou, during June of this past summer (see picture below). The work resulted in the successful imaging of an active fault in an urban area and constituted the first high-resolution S-wave reflection survey to be conducted in China. These impressive initial results have allowed us to agree to a student exchange program over the next few years. Scholarly activity has resulted this year in two published, peer-reviewed journal articles and six conference abstracts. Although his field support will be missed in the lab, we are proud of new graduate Mr. William Reid.



UK researchers successfully demonstrated high-resolution seismic S-wave reflection techniques to their Chinese colleagues during field investigations in Gansu Province this past summer.

Ana Carmo, Assistant Professor

Recently I have developed two new introductory undergraduate courses that I hope will attract students interested in learning the basics of Earth's biogeochemical processes. The first one is entitled *Habitable Planet: An Introduction to Earth System Science* (GLY 210), which was first taught this spring. GLY 210 explores aspects of Earth's early evolutionary changes that have influenced the development of life and provides a basic understanding of the chemical and physical interactions as well as feedback mechanisms that contribute to regulate Earth's long-term climate.

The second course is entitled, *Earth As A Young Planet: What Can Rocks Tell Us About Early Life?* This course is part of the Freshman Discovery Seminar Program and is being taught this fall. Some of the topics discussed in GLY 210 are also discussed here as both courses deal with life's early evolution on Earth. However, we also discuss the geological and geochemical aspects of the relatively new field of astrobiology and the search for signs of microbial life elsewhere in the universe. Additionally we are discussing the controversial "Snowball Earth," the late Precambrian glaciation that may have extended well into low latitudes and its implications on the evolution of life on Earth. These are hot topics in geology today.

In the research front, we welcome Jayeeta Niyogi, a new graduate student who has just joined the Organic Geochemistry group (we are now three, including myself and Tao Sun another graduate student). Jayeeta comes from India to pursue a master's degree in the US. She comes at a good time when the newly established Organic Geochemistry Laboratory has been fully operational in the Slone Research Building for just over a year.

Bruce R. Moore

The highlight of the year was presenting a paper at the International Geological Congress in Florence, Italy. An excellent meeting, with Frank Ettensohn of UK and Randy Keller of University of Texas El Paso, and former UK faculty member of 1970's also attending. Continuing to work closely with alumni Mike Reed, Greg Maynor, Dennis Swager and Dan Wells on my airborne microfracture system in continental US. Also working on other projects in Alaska, Australia and West Africa and particularly Louisiana and Texas.

KEEPING IN TOUCH WITH THE FAMILY

Elizabeth A. Haynes
M.S., '00

It occurred to me very recently that I often take my family and friends for granted. Their love and friendship is something that I depend upon and don't acknowledge often enough; yet they are always supportive of me and always available when I need help or advice. It seems that it is only when misfortune strikes that we realize how important those people are to us. This past week misfortune on a grand scale struck many of our alumni 'family' who live and work in the New Orleans area, Louisiana and Mississippi.

I vaguely remember a hurricane warning for the Gulf Coast the weekend before the storm hit, but it was so far away from my home in Colorado that I really didn't give it much thought. After the hurricane struck, I realized how many friends I had in that area of the country. Fellow alums who are now living and working there and students I had taught as a teaching assistant that were now graduate students at places like Tulane and University of

New Orleans. Trying to contact them by phone or email was impossible. All communications, all direct contact with them was severed. It was only through other alumni around the country, those that saw or talked to my friends, that was I able to find that they were safe and away from any harm.

This connection with our alumni family is an important one in many ways. It reminds us of past school-day friendships and of those that have continued to this day. It provides us with opportunities to grow and change in our interactions with alumni whose career paths have differed from ours and provides the means to change our own career paths through the network that is the geological sciences alumni community. It also gives us an opportunity to directly help future alums (current students) realize their dreams of becoming geologists and to graduate with fond memories of their time in the department.

With these thoughts in mind, the Alumni Advisory Board for the Department of Geological Sciences has begun the task of improving communications among

the department, the students and alumni. Starting with our annual newsletter, the *Round Up*, it will inform you of the current status of board projects and the initiation of new ones. Additional newsworthy and timely information will be sent occasionally throughout the year. Annual events will be planned to encourage alumni, student and faculty interaction. In addition, beginning this year, an annual Distinguished Alumni Award will be granted to an exceptional alumnus who has contributed significantly to the geological community and/or to the geology alumni community. It is our hope that the Alumni Advisory Board becomes a voice for the alumni community. We will personally contact many of you with the intention of renewing alumni ties and of broadening our base of experience and advice. We welcome and encourage contributions and suggestions from you at any time. Best of luck to all of you and look forward to hearing from you soon!

Elizabeth A. Haynes is chair of the department's Alumni Advisory Board and a doctoral student in geochemistry at Colorado School of Mines.

GEOLOGICAL SCIENCES ALUMNI ADVISORY BOARD UPDATE

The Geological Sciences Alumni Advisory Board had a very successful and productive second meeting this past June. The meeting was held in the historic Bingham-Davis House of the UK Gaines Center and was followed by an after-meeting social that was well attended by Board members, faculty and students of the department. The main goal of our summer meeting was to finalize both short- and long-term projects that complement the Board's mission to advise and aid the department. Our long-term goal is to help the department discover the developmental opportunities available to it and reinforce the ties between the department and its alumni.

To this end, the board, department and College of Arts and Sciences are working together to maximize returns available from endowed and discretionary funds. After careful consideration of the intent of the funds and regulations regarding their use, the board and department have

suggested combining complementary funds to maximize return on investment and to increase money available for annual department use. Some funds will be consolidated to allow more efficient management. In addition, future requests for donations will involve specific goals (i.e., the funding of a field trip to the Cascades or endowment of a particular scholarship fund) so that alumni will know where donations are most needed.

The board's short-term project involves the initiation of an annual Distinguished Alumni Award. The award is given to an outstanding alumnus/alumna of the department who has contributed significantly to the geological sciences community and/or to the well being of the students, alums, and department. The recipient of this year's award is Dr. William A. Thomas (B.S. '56; M.S. '57) whose impressive career has spanned 50 years in the geological sciences producing more than 150 journal articles, numerous

field guides and maps and presentations at distinguished meetings around the world. His many graduate students have gone on to provide valuable contributions in a wide variety of geologic careers. A special alumni reception in honor of Dr. Thomas was held at the annual Geological Society of America meeting this October in Salt Lake City, Utah.

A highlight of the June board meeting was a visit by the dean of the College of Arts and Sciences, Dr. Steven Hoch. The board projects were discussed, and Dean Hoch was able to provide some excellent advice on how to realize our goals. The dean was very enthusiastic and encouraged the board to continue with its work. In addition to the dean's personal involvement, he has also made available the services of the College's Development Office to aid the department in realizing its strategic goals.

Alumni News

Leonard E. Wood (B.S., '52, M.S., '57)

Long since retired (88) from my fun years in West Texas, Venezuela and Libya in the oil side of geology. Spent a short time with the USGS in Washington, then ran environmental programs for ARPA in SE Asia and the Federal Highway Administration in Washington. Now there is time to occasionally pound rocks in the Blue Ridge.

Ravi Kanda (M.S., '03)

I'm in my second year of Ph.D. in Geophysics at Caltech. My research will focus on understanding subduction zone earthquake cycles in terms of heterogeneous geological modeling combined with GPS and seismic data from Japan. My current website is located at www.gps.caltech.edu/~rkanda.

Nancy Dawers (B.S., '84)

I've been a faculty member at Tulane University since fall of 2000. Currently teaching intro geology, structural geology and subsurface geology... also keeping busy with five graduate students.

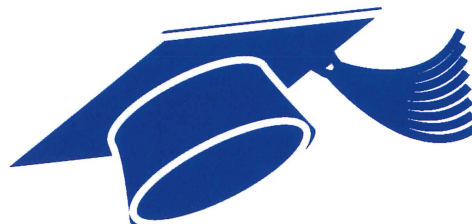
Douglas R. Gouzie (B.S., '81, Ph.D., '86)

My quick update - after about six years with the Centers for Disease Control, I considered some other opportunities to branch out more and travel less (for work). Trying a few things for about a year led me to an opportunity to work with the California Water Boards (part of Calif. EPA), where I spent four years developing watershed evaluations and management plans for the Central Coast Region (Pacific Ocean to coastal mountains, Santa Barbara to Santa Cruz - including Monterey Bay). Although a nice opportunity (and owning a house 700' from the Pacific in Pismo Beach,

CA), I decided to return to teaching when an opportunity arose for a Karst Systems Geologist at Missouri State University. So I'm now in Springfield, MO - which between the karst and the size of the town (about 160,000 city limits, 250,000 county) -reminds me very much of Lexington in the late 70s and early 80s (except we don't have Keeneland).

Steve Elder (B.S., '85)

I was in field camp in 1985. I'll never forget the wonderful time we had out in Colorado. After graduating, I went on to get a master's in business and then went to work for Ashland Oil. It turns out that I got more into business than the field sciences. For the past two years now I have been working as Director of Dealer Development for CLARK Material Handling Company here in Lexington. I am married with two boys, age 10 and 8.



Tom Griswold (M.S., '70, PhD, '78)

Back in government after 15 years in the private sector—in the Commissioner's Office - Department for Environmental Protection. Moved to 5 acres in Jessamine County. Just celebrated 6 years of marriage to Debbie -life is sweet!

William T. Stoeckinger (MS., '57)

Living in semi-retirement in Bartlesville, OK, the former headquarters of Philips Petroleum, and a luxury community with plenty of things to do, including fishing. I am still independent and chasing gas

from shallow coals throughout NE Oklahoma and Eastern Kansas, but new prospects are scarce. I get back to Lexington often and marvel at the explosion of both traffic and housing. Sleepy old Lexington is gone forever. Will be looking for lunch pals this summer in Lexington. I'm buying.

Julie Wood (Kasl) (M.S., '01)

I am currently working as a project manager for Hinkle Environmental in Lexington. I have worked for Hinkle for 3 1/2 years. I decided I want to be an earth science teacher, so I am going back to school part-time this fall at ECU to obtain my teaching degree.

Alma Paty (M.S., '84)

Life in Washington is hectic but interesting. I am still managing the American Coal Foundation (www.teachcoal.org) and working on dispersing Vanderbilt's collections. Finally toured the Grand Canyon this summer, and am negotiating some museum work in the Philippines!

Chris Hettinger (B.S., '98)

I'm beginning my year-long military stint out in the desert of Southwest Asia. It's hot...real hot...imagine going to the oven to get your pizza and there is no pie when you open the door. Anyway, I get to do my duty out here and that is what matters. I was hoping to find some country rock, but that's imported as well. I haven't been able to get any GQ's of the area...they are guarded by THE petroleum company out here. The people are nice, but can't drive worth a lick.



Thomas Honored with Distinguished Alumni Award

S. Mardon, D. Moecher and E. Haynes

Dr. William (Bill) A. Thomas, the James S.

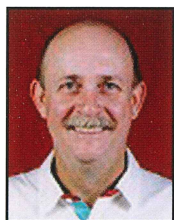
Hudnall Professor of Geology, has been awarded the 2005 Department of Geological Sciences Distinguished Alumni Award. Bill has led a remarkably productive and distinguished academic career that has been a 50-year journey away from and back to his home state. A native of McKee, Ky., Bill began his scientific career at UK (B.S. '56, M.S. '57) and moved on to Virginia Tech for the Ph.D. ('60). Following a stint as an exploration geologist with Chevron Oil Company ('59-'63), he began an academic career that has included professorships at Birmingham-Southern College, Queens College of the CUNY, Georgia State University and the University of Alabama, before returning to UK as department chair in 1991.

Bill is an internationally renowned geologist, faculty member and alumnus of the department. His impressive list of accomplishments include presentations at more than 40 universities and at more than 100 international and national professional meetings including lectures in Spain, Canada, China, Argentina, Germany, Scotland, Switzerland, Uruguay and New Zealand. He has authored hundreds of professional research papers and at least 20 published geological field guides and was co-editor of the Appalachian-Ouachita volume of the comprehensive work on North American Geology (The Decade of North American Geology series).

The central theme of Dr. Thomas' research is the plate tectonic evolution of the North American continent. A seminal 1977

paper (cited at least 175 times since its publication) explained the control that the shape of the rifted continental margin (as it developed approximately 540 million years ago) had on the subsequent evolution of the Appalachian mountain belt. This groundbreaking model accounted for the sinuous nature of the Appalachians that puzzled geologists for a century. Dr. Thomas' unraveling of the geologic evolution of eastern North America led him to another continent, South America, and specifically Argentina. Bill proposed the maverick hypothesis (published in *Science* in 1996) that a fragment of North America rifted away and collided with the South American continental margin at a time when the two continents had remarkably different configurations than they do today. This hypothesis has garnered much attention and precipitated considerable debate.

Dr. Thomas has been honored with many professional awards, including the Burnum Distinguished Faculty Award (U. of Alabama), the Distinguished Service Award from the Geological Society of America (GSA) and the Alabama Geological Society's Distinguished Service Award. As the current president of the Geological Society of America (the oldest professional association for geologists in North America), Bill is making an effort to improve communication between geologists and the public with two new publication ventures for the Geological Society of America: *Geosphere* and *GeoScience World*. While at UK, he has revived the Department of Geological Sciences alumni advisory board, served as a past member and organized fundraising efforts for the department.



Gary Jacobs M.S. '83; Ph.D. '86

I left UK in 1986 to join Chevron Corporation as a petroleum geologist and fortunately for my creditors, I am still employed by the company. Chevron has undergone many changes since I began, including buying Gulf Oil, Tenneco, Texaco and Unocal. We are the second largest

U.S. oil company and number four in the world. The industry as a whole has undergone many changes, and petroleum geology and geophysics have played the leading role in developing and advancing new techniques and technologies to find and develop natural resources. The advanced technologies we use today in the earth sciences are remarkable. It takes considerable intellectual flexibility and continuous learning to stay competitive.

Petroleum geology is divided into two broad endeavors: exploration and development. Exploration is about finding oil and gas; development is about field development and production. My career has been nearly evenly divided between these two types of work. I have worked with many different types of depositional settings including fluvial, deltaic, lacustrine, eolian and carbonates. And I have worked with varied geologic structural terranes: salt domes, extensional, compressional and strike-slip. I've done quite a bit of fieldwork on eolian rocks and spent countless hours on drilling well locations. In 1998 I took advantage of an opportunity to live and work overseas—first in the Middle Eastern country

Alumni Profile

of Qatar and currently in Indonesia. Life as an expatriate can be challenging at times, but it is immensely rewarding in many ways. I spend a lot of time teaching and mentoring young national geologists, which is enjoyable. As you probably know, Indonesia is geologically very active. In the last year alone there have been landslides, volcanic eruptions, earthquakes and tsunamis. Rather than the Weather Channel, we need the Geology Channel.

My stay at UK was time well-invested, and I believe I was well-prepared to enter the business. Visiting and studying the many terrific outcrops and exposures in the region were extremely beneficial, especially helping to develop three-dimensional thinking. The varied curriculum offered broad exposure to important sub-disciplines of earth science, and the library was an excellent resource. And I spent quite a few days at the KGS well sample and core warehouse. The opportunity to work as a graduate teaching assistant has paid some surprising dividends. But most of all and for the most part, we had a faculty that was dedicated to teaching, created an atmosphere of learning and demonstrated a sincere and genuine interest in students, in their education and in preparing them for the future. And we had quite a cast of diverse individuals comprising the student body. I am appreciative to UK and the faculty for the education I received and the doors that consequently opened for me. Last, but certainly not least – GO CATS!

Inaugural Rast-Holbrook Lecture Series a Smashing Success!

2004-2005 was the inaugural year of the Rast-Holbrook Lecture Series. Through the generosity of numerous alumni, this speaker series allowed us to expand the number of outside speakers and to be less constrained by the speaker's proximity to UK. A lecture series is an incredibly enriching experience for students, faculty and staff across the entire UK campus. We view this program as a chance to showcase our own department, as much as it is a chance for students and faculty to hear the latest cutting-edge research across a spectrum of disciplines. The schedule of speakers for the Fall 2005/ Spring 2006 terms can be viewed at the Department's web page www.uky.edu/AS/Geology/dept/events.html. Feel free to attend any lecture and to suggest speakers for future years. Send your suggestions to Professors Alan Fryar or Dave Moecher, seminar coordinators.

Dr. John White, Assistant Professor, ECU: *"Geology of the South Rim Formation, Big Bend National Park, Texas: Petrology, Volcanology, and the Evolution of its Interpretation"*

Dr. Alan Fryar, Associate Professor, UK: *"A Passage to India"*

Dr. Jeffrey Keaton, GSA/AEG Jahns Distinguished Lecturer: *"Engineering Geology Mapping in the Information Technology Age"*

Dr. Barbara Bekins, U.S. Geological Survey, GSA Birdsall-Driess Distinguished Lecturer: *"Hydrogeology and the Weak Nature of Plate Boundary Faults"*

Dr. Greg Springer, Assistant Professor, Ohio U.: *"Caves and Their Potential Use*

in Paleoflood Studies: An Appalachian Perspective"

Dr. Andy Fisher, Professor, UC-Santa Cruz, RIDGE Distinguished Lecturer: *"Large-scale Lateral Fluid Flow within Oceanic Crust and the Importance of Seamounts in Driving Seafloor Circulation on a Global Basis"*

Dr. Scott Samson, Professor, Syracuse, Brown-Canal Lecture: *"Feeling the Heat: What Drives Magmatic Events in the Appalachians and Related Orogens?"*

Dr. Jim Dinger, Kentucky Geological Survey: *"Effects of Longwall Coal Mining on Hydrogeology of the Cumberland Plateau"*

Dr. Ana Carmo, Assistant Professor, UK: *"Biomarkers and Paleoenvironments: Searching for Molecular Records of Photic Zone Anoxia in Appalachian Black Shales"*

Dr. Chuck Bailey, Associate Professor, William and Mary: *"A Tale of Two Shear Zones"*

Dr. Drew Andrews, Kentucky Geological Survey: *"Geologic Controls on the Erosion History of the Kentucky River"*

Dr. Rick Law, Professor, Virginia Tech: *"Internal Flow and Extrusion of the Greater Himalayan Slab, Mount Everest Massif"*

Dr. Jonathan Philips, Professor, UK Department of Geography: *"Instability, Contingency, and the Perfection of Landscapes"*

Dr. David Jennette, AAPG Distinguished Lecturer (co-sponsored with KGS): *"Merging Rocks and Lasers:*

Bringing 3-D Outcrop Geology to the Workstation"

Mr. David Harris, Kentucky Geological Survey: *"Black Gold and Bluegrass: Oil and Gas Plays in Kentucky"*

Mr. Seth Berman, Managing Geophysicist, Fairfield Geophysics: *"State of the Geophysical Processing Industry and Career Prospects"*

Mr. Tom Spalding, Exploration Geologist, Pioneer Natural Resources: *"Geoscience Careers in the Petroleum Industry: Looking into the Crystal Ball for Future Prospects"*

Ms. Cara Kiger, Geologist & Product Specialist, Vector-Seis Input-Output: *"Full-wave Imaging: Better Geologic Understanding from the latest Seismic Technology"*

Dr. Neil Sturchio, Professor, U of Illinois-Chicago: *"Ancient Waters of the Sahara"*

Dr. Lewis Owen, Assistant Professor, U of Cincinnati: *"Glaciation of Tibet and the Himalaya."*

McFarlan Lecture:

Dr. Edward Wolfe, Geologist, U.S. Geological Survey: *"The September 2004 to ??? Eruption of Mount St. Helens and Its Context in the Volcano's Geologic Record"*

Dr. Tim Lyons, Professor, UC-Riverside: *"3.5 Billion Years of Earth History Recorded in the Sulfur and Molybdenum Chemistry of the Ocean"*

Dr. Keith Koper, Assistant Professor, U of St. Louis: *"Forensic Geophysics"*

Dr. Zach Sharp, Professor, U of New Mexico: *"The Global Chlorine Cycle and its Effect*

on Subducted Fluids"

Dr. Mark Kulp, Professor, U of New Orleans: *"Coastal Subsidence in Southern Louisiana and Impact on New Orleans Area"*

Alumni Are Highlight of Spring 2005 Rast-Holbrook Lecture Series

We were fortunate to have four distinguished alumni present talks during the Spring 2005 term. In February we scheduled a series of talks centered on the status of the petroleum industry. The purpose of this theme was to inform our current undergraduate and graduate students of the status of careers in petroleum.

The guest speakers were Seth Berman (M.S., '00), Tom Spalding (B.S., '80, M.S., '82) and Cara Kiger (B.S., '96). Most of our students were not alive during the 1970s spike in oil prices and associated surge in industry hiring that started the careers of many more senior alumni.

The fact that there are high paying jobs in an exciting field created a real buzz among the students. We plan on including alumni in future years. We would welcome more alumni speakers. If you are in the petroleum industry, please feel free to volunteer!

Mark Kulp (M.S., '96, Ph.D., '00), currently Assistant Professor of Geology at the University of New Orleans, finished off the speaker series with an exciting description of coastal processes and problems in Louisiana. Mark is actively involved in research relating to reclamation of beaches and wetlands. Ironically, Mark is now one of the thousands of New Orleans refugees whose homes were flooded by Katrina. Mark is fine and in residence at LSU.

Support The Geology Club - Buy A T-Shirt

These long-sleeve navy t-shirts feature the "University of Kentucky Geology" logo on the back and a small offset UK logo on the front in white print. Available for \$21 in sizes S-XXL. For further information or to place an order, contact sahess2@uky.edu or Cora. Anderson@uky.edu.



AIPG-Springer Best Poster Award Winners

Second Place Award, 2005 National Meeting

Dan Brown

Third Place Award, 2005 National Meeting

Marta Clepper

AAPG FOUNDATION GRANT-IN-AID AWARDED TO GEOLOGY STUDENT

The American Association of Petroleum Geologists Foundation announced that Sally Maharaj, a graduate student, will receive an AAPG Grant-in-Aid for her research. The 2005 Grants-in-Aid Program received 303 applications. This year, \$154,975 was awarded to 88 successful applicants. In an effort to further recognize the significance of the work of these students, AAPG requires recipients to submit their abstract online for publication on the AAPG Search and Discovery web site. This provides increased visibility for grant recipients and the AAPG Foundation Grants-in-Aid program.

International Journal of Coal Geology TOP 25 HOTTEST PAPERS

Sarah Mardon, a member of the most recent group of graduate students, worked for Jim Hower at the Center for Applied Energy Research while an undergraduate in Geological Sciences. During that time, she worked on a project funded by the U.S. Geological Survey in which she was part of a research team studying trace-element distributions at power plants and coal mines in Kentucky and Indiana. Her work on this project, and on several others at the CAER, has led to four refereed publications to date, one of them with Sarah as the first author. Two of the papers in the *International Journal of Coal Geology* have been among the journal's top ten "hottest" papers (a measure of the frequency of downloads of electronic copies) and are currently in the top three in frequency of citations in 2005. The number one paper in the latter category is the product of work by another UK Geological Sciences undergrad, Tanaporn "Goe" Sakulpitakphon.

Sarah Hawkins wins TSOP Spackman Award

Sarah Hawkins (M.S. candidate) was selected as the winner of the 2005 Spackman Award by the Society for Organic Petrology for her proposal, "The role of terrestrial organic matter in the Late Devonian-Early Mississippian Appalachian marine basin: Implications for the expansion of land plants, paleo-atmospheric oxygen levels and organic-rich black shale accumulation." The Spackman Award attracts applications from universities around the world and provides \$1000 to be used toward research expenses. Candidates are also encouraged to present their research at a TSOP meeting. Sarah, who is working under the direction of Dr. Sue Rimmer, recently presented her preliminary results at the 2005 TSOP meeting in Louisville, Ky.

From the Desk of the DUS: It's All About Students!

Dave Moecher, Director of Undergraduate Studies

We always hear about how UK is a Carnegie I Research Institution, how the research funding level of UK hits new records each year, and how groundbreaking research is carried out by UK faculty. But we need to keep in mind: the primary reason we are here as faculty is to continually make UK a better place for students, be they undergraduate or graduate. We also hear about the increasing cost of higher education—well, it's true! Things are different than when I was an undergrad ('74-'79). I had a well-paying factory job over the summer and made enough money to pay for tuition (\$300/term!), rent and food, and did not have to hold down a job as a student. Maybe you had a similar experience. Low tuition was mainly a result of higher levels of state support, but times have changed. Not only are well-paying summer jobs rare, but state funding for higher education in Kentucky is now approximately 20%, rather than the 80 to 50% it was in the 1950s, '60s, and '70s. Tuition is now more than 10 times higher (and rising) than it was 30 to 40 years ago, and universities hit students with one fee after another (technology, student center, student health, recreation center, student government). Now more than ever we as alumni of our respective institutions need to find ways to invest in students and help enrich their educational experience. We are very fortunate in the Geology Department at UK to have the Hudnall Field Camp Fund, which provides money to help our students attend field camp. We also have the Pirtle Award that provides a \$1000 scholarship to the outstanding senior. However, we need to expand the award base to include additional merit- and need-based scholarships (see p.2). Working with the Alumni Board, we hope to make this expansion a reality in the next few years. So, when we approach you for financial support, please remember: it's all about the students!

Undergraduate Program Developments: New Course

We will offer a new course, GLY 295 *Orientation to the Geosciences*, starting in Spring 2006. This is a professional development seminar required of all undergraduates. The goal is to give students a better understanding of the breadth of disciplines within the earth and environmental sciences, review career opportunities and assist in development of professional skills. The instructors for the course will be guest speakers from the private and public sector. Many department alumni will be included among the speakers. Please feel free to contact Dave Moecher if you are interested in serving as a speaker.

Recent Contributions

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SPECIAL NEED FUNDS

Brown-McFarlan Fund

Supports student research and travel to present papers and the annual McFarlan Lecture

GEOFund

Supports long-term departmental needs

Geology Development Fund

Supports department programs in teaching and research through improvement of equipment and facilities

Geology Support Fund

Supports department seminar program

Glenn Rice Memorial Fund

Supports senior thesis research

Haynes Field-Trip Support Fund

Supports student travel on field trips

Wallace Hagan Scholarship Fund

Supports undergraduate scholarships

OTHER FUNDS

Hudnall Scholarship Fund

Supports participation in summer field course

J. C. Ferm Graduate Research Fund

Supports graduate student field-related research

Pirtle Scholarship Fund

Supports an undergraduate scholarship for outstanding junior student and graduate fellowships

Rast-Holbrook Fund

Supports department seminars and speakers

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