

R O U N D U P
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Department of Geological Sciences
University of Kentucky

LETTER FROM THE CHAIRMAN

This has been an outstanding year in faculty recruiting! First, we offered the position in low-temperature geochemistry to Ford Cochran, and he accepted. Ford brings outstanding credentials, as well as a most appropriate mix of research interests to the Department. To keep management distinct, our recruiting process in hydrogeology operated a few weeks behind the geochemistry search. Shortly after Ford accepted our offer in geochemistry, we offered the hydrogeology position to Alan Fryar, and he accepted. Alan has outstanding credentials, and his interests are a perfect match for Department needs. Alan's interests in water chemistry merge with Ford's, and Alan's interests extend to physical hydrogeology, as well. They give us a strong team in water resources, and they have already established working relationships both in and outside the Department. Meanwhile, Rick Pitino had recruited Ron Mercer, who may or may not be as important to the basketball team as Ford and Alan are to us. Now if Bill Curry can just recruit Tim Couch. . .

This issue of the Round Up contains something different. As part of the Department Centennial, Bill Brown prepared a history of field geology at UK. This is an outstanding description, and we wanted to share it with all of the alumni. I'm sure that several of us will be relieved to discover that Bill has omitted some stories! On behalf of the Department, and especially the field-camp alumni, I want to thank Bill for providing this history for this issue of the Round Up.

Among the items that have been under discussion in the Advisory Board is the need for a fund-raising drive for the Department. Our University budget is progressively more strained to provide the things that alumni took for granted when they were students. For example, the Department has a "fleet" (six is a fleet?) of vehicles that provide transportation for field courses, the summer camp, and class field trips. Operation costs continue to be paid from the Department (University funds) budget, but we have no provision to buy replacement vehicles (and three of our six are on their last legs). In the past, vehicles have been bought from special funds within the College of Arts and Sciences or the University, but funds are no longer available from those sources. Income from an endowed fund could be the solution to this problem. We are concerned that a special fund-raising campaign not detract from contributions to our existing special funds as described elsewhere in the Round Up. For example, the McFarlan Fund supports student research and student travel, and we want very much to continue and increase that support. The Advisory Board is working with a faculty committee to establish a plan for fund raising, and you will be hearing about that plan soon.

The regular Department external review was conducted during the past year, and we received positive comments on many aspects of our program. The review also identified some problems, some of which we already recognized, and we are working on those items this year. We hope to make this a Department of which all alumni can be proud, and part of the Department's reputation rests on its alumni. We're in this together. We look forward to hearing from you and seeing you at the 1996 Alumni Week-End.

Bill Thomas

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THE HISTORY OF FIELD GEOLOGY AT THE UNIVERSITY OF KENTUCKY

By William Randall Brown

Strong emphasis on field geology may not have begun with Dr. A. C. McFarlan, but he certainly maintained this emphasis during the 40 or so years that he was Head of the Department of Geology. Field geology was practiced not only in the summer but also in Saturday field classes throughout the year. Every student was required to take at least one year of Saturday field, but Dr. Mac saw to it that most took more than one. On days completely unfit for field work students stayed indoors and did Engineer Mountain map problems. I can recall Dr. Mac standing in subfreezing weather on the Miller Hall porch, looking out into the blowing snow, suggesting that maybe we should stay in this day, and the students saying, "Oh no, Dr. Mac, it's a great day for the field." Those Engineer Mountain problems were real bears!

For many years under Dr. McFarlan, Saturday field consisted of one semester of stratigraphic section measuring and elementary mapping in the unfaulted rocks around Frankfort, followed by one or more semesters of more advanced mapping in the faulted rocks around Burdette Knob, Bryantsville-Camp Nelson, or Sulphur Well. Later mapping was done in the Spears-Valley View area. For many years, in addition to this, everyone took a semester of plane-table mapping, taught variously by Drs. Nelson, Brown, Jacobsen, or Roberts.

In those earlier days of mapping, land owners

were less touchy about your going on their land, and we climbed fences and wandered about at will, generally not even bothering to ask permission. This made everything much easier and more fun than now; also there were no marijuana growers to worry about. It was by no means all work either. Mapping was over by mid-afternoon, in plenty of time for a rough and tumble touch football game. One day near Frankfort a bunch of us, including present State Geologist Don Haney, had a real knock-down, fall-down, post-lunch hockey game with a beer can on a small frozen pond.

Until 1947, there was no fixed summer field-camp site; but traveling-camp trips were taken to areas of particular geologic interest throughout the United States and even parts of Canada. Records are skimpy, but remnants of old photo wall plaques show that in 1934 Dr. McFarlan took a group as far as Yorktown, Virginia. In 1935, he took students to Alabama, Georgia, and Tennessee. In 1936, he and Dave Young took them to Sudbury and Thetford, Canada. In 1937, it was to Oklahoma, Arkansas, and Texas. In 1938, it was to the Black Hills of South Dakota. In 1939, it was to New England and Quebec, and in 1940, it was to Yellowstone and the Tetons of Wyoming and Rocky Mountain National Park of Colorado. In 1941, the last until after World War II, it was to Colorado, New Mexico, Arkansas, and Texas.

Following World War II, in 1946, A.C. McFarlan, Vin Nelson, and I took a group to the Black Hills of

South Dakota. It was a memorable trip with all those young war vets. We camped anywhere we could find space, water, and firewood. Dr. Mac knew all of the famous fossil localities and collecting was great. At nights we were entertained by Cedric Lewis and Paul Parker playing "officer and enlisted man." Paul, the enlisted man, would crawl into the tent pleading, "Captain, may I have a drink of water?" Cedric would draw his belt and begin whipping Paul. "Get out, you are dripping blood on my floor. You may have a drink after the officers have had their baths, if there is any water left."

In 1947, summer field was a combination of a traveling camp and a fixed camp near Wytheville, Virginia. Drs. McFarlan and Nelson ran the camp in Virginia; I went with the group as far as Birmingham, Alabama. There we camped in a parking lot which, unbeknown to Dr. McFarlan, but to the delight of the students, belonged to a night club. At the nearby Bessamer iron mine, we rode an ore car down an incline into the mine, lying down in the red hematite dust. My tan jacket bore the red stains until it was discarded years later.

After the success of the camp in Virginia, Dr. McFarlan decided that the place for Kentucky to have a camp was in Colorado. When Bill MacQuown, who had done his PhD dissertation in the White River uplift of Colorado, suggested the Schofield Park-Marble area, it was decided that that would be the place. So in early June, 1948, Dr. and Mrs. McFarlan in the department pickup truck, and Clem Bruce, J.O. (Jim) Lewis, Jake Napier, and I in a World War II Jeep set out for the west. It was a cool raw June and the four of us in the open Jeep practically froze driving across the Great Plains. We camped anywhere we could, including at least one junk yard.

At Colorado Springs, we took the cogwheel train to the top of Pikes Peak. On the way up we flatlanders kept admiring the beautiful "white birch" trees - until some disgruntled westerner informed us that they were not birch but aspen trees. At the summit, Clem Bruce and I climbed into the top of one of the great cirques cut into the granite, only to hear a call in the distance of "Last train down". We ran up the hundreds of feet to the train and collapsed on the floor. Flatlanders should not try to run up hill at 14,000 feet.

Continuing westward, we crossed the Continental Divide at Monarch Pass and soon thrilled at the sight of our first sage brush, although no one knew what it was except Jake Napier. From Gunnison we left the hardtop for the then dirt road northward to Crested Butte. The "Butte" at that time was an active coal-mining company town, and a spur railroad connected

it with the main line at Gunnison. The only modern building in town was the company store. All other buildings, except for the white-painted Church, were weathered a drab unpainted brown.

We pitched camp in a field at the edge of town, only to find that the field was also occupied by a not-too-friendly bull which made life scary for us all night. Next day we looked up Cliff Chapell, the regional forest ranger, and told him of our plans to camp in Schofield Park. "Impossible," he said, "the pass is filled with a 60-foot snow slide." This was actually fortunate, because the Park, at 10,000 feet, is too high and too difficult of access to make a satisfactory camp. So Cliff took us up Cement Creek and a site, which we found later to be on the major "camp" fault, was chosen. It was also one of the coldest spots in the valley, and none of our group was prepared for the intense chill of camping at 9,000 feet.

After a few days, I left the camp to return to Kentucky to work for The California Company in east Kentucky, but shortly thereafter Vin Nelson arrived with 35 more students. It was a good summer, but no one claimed that having the advance-party students do the cooking for the camp was a good idea, especially with only open fire and Coleman stoves to cook on. Thereafter, cooks were hired.

In later years, the location of the camp in Cement Creek Valley was changed several times. All early locations were on the north side of the creek along the road. This meant that early each summer hundreds of cattle were driven through camp on their way to the uplands. This brought clouds of dust; and everyone was awed and concerned about the huge bulls, but they actually caused few problems. Finally a bridge was built across the creek, concrete slabs were laid for the cook and administration tents, steel beds were acquired, and other improvements were made. Also there were fewer upset stomachs after they started chlorinating Cement Creek water used for drinking. At one point Dr. Nelson got a crude shower erected; but most bathing continued to be a quick splash in the frigid Cement Creek or a trip down to the "hot springs," better known as the "snake pit". There you only shivered a bit as you plopped into the pool, warily watching the water snakes slithering away!

Dr. McFarlan, accompanied by Mrs. McFarlan, continued to direct camp in Colorado from 1948 through 1965. Dr. Irving (Bud) Fisher was director in 1966. Dr. Vincent Nelson then took over direction from 1967 through 1976. Dr. Frank Etness, who had been with Dr. Nelson in 1976, served as camp director in Colorado from 1977 through 1981, and

also in '84, '85, '92, '93, and '95. Numerous others also taught in Colorado along with the directors, including: Vin Nelson (1948-51, '53), John Stokley (1949, '51), Irving (Bud) Fisher (1952, '56, '58, '65, '66), Wm. R. (Bill) Brown (1950, '54, '68, '84, briefly in 1976), Frank Walker of the Kentucky Geological Survey (1955, '57), Irwin Lyons (1961-64), Tom Wilcox from Vanderbilt University and later Western Carolina University (1966, '69, '74, '75), William (Bill) Blackburn (1968), John Thrailkill (1970), Perry Wigley from Eastern Kentucky University (1971), Mel Smith from Tennessee Tech (1972), Ralph Langenheim from the University of Illinois (1977-79), Sharon Lewis from Eastern Kentucky University (1980, '81), and Nick Evans from VPI and the Virginia Division of Mineral Resources (1984, '85).

In 1982 and 1983, the departmental camp, under the direction of Dr. Nicholas Rast, was in New Brunswick, Canada. The first month, half the students worked out of St. John and lived in the Gymnasium at the University of New Brunswick, St. John branch; the other half worked from a campground to the west on the shore of the Bay of Fundy. The second month, the location of the groups was reversed. In 1982, Drs. Etensohn, Fisher, Brown, and Blackburn each taught one month. The next year, the camp was also in New Brunswick and was run by Drs. Rast and Blackburn with the help of some grad students. Except for an occasional meal in town, the staff and students prepared their own meals.

In many ways, the camp in New Brunswick was a great experience for both faculty and students because of such things as Proterozoic stromatolites and the diversity of the geology. Some of the geology, as on Green Head Island, however, is too complex or poorly exposed for beginning mappers. An unfortunate incident the first year was the stoning of a department van in town, apparently by some locals who were unhappy that students at the beach were dating local girls. The windshield and all windows were demolished. The uninvolved group in town suffered the resulting problems.

In 1986, after a return to Colorado under the direction of Dr. Etensohn in 1984 and 1985, Dr. Greg McHone took a group to Boone, North Carolina, to map in western North Carolina and eastern Tennessee. The group stayed in dormitories at Appalachian State University.

In 1987, Drs. Kieran O'Hara and Greg McHone shared field camp instruction. Dr. O'Hara took the first half, working first with the lower Paleozoic rocks of the Rose Hill oil district of Virginia and Tennessee while camping at Cumberland Gap National Historic

Park. Jim McHugh was camp cook. From Cumberland, the group moved to Big Ridge State Park, Tennessee, where they mapped in the vicinity of the Copper Creek thrust, working in part from canoes along the shores of the reservoir. Next they moved to cabins at Townsend, Tennessee, to study polyphase folding and faulting in the Great Smoky Mountains. The second half of the camp period was under the direction of Dr. McHone with headquarters at Boone, North Carolina, from which mapping was done in the Blue Ridge Mountains.

In 1988 University of Kentucky students joined geology students of Eastern Kentucky University in a field camp in Montana. The next three years and in 1994, the University of Kentucky did not offer nor participate in a summer camp; but field camp was still a requirement, and students enrolled in other geology camps. In 1992, '93, and '95, Dr. Etensohn returned to the Crested Butte area with groups of students; but, instead of camping on Cement Creek, they slept in dormitories at Western Colorado College in Gunnison.

In UK's summer camps major emphasis was placed upon geologic mapping and structural geology; under Dr. Etensohn increased emphasis was given to stratigraphy and its importance in mapping. In Colorado, most Wednesdays and Saturday mornings were given to visiting local places of interest like the West Elk Breccia (which was memorialized in a camp song), mines, different structure and stratigraphy, glacial features, Pennsylvanian reefs, ignimbrites, carbonitites, Ruby Peak dikes, and the Black Canyon of the Gunnison. Saturday afternoons were spent in Gunnison doing shopping and laundry, and for many the Oasis Bar and Grill was THE spot. When Dr. Etensohn became camp director he initiated longer trips from camp, as in 1984 a week was taken to visit Colorado National Monument, Mesa Verde, Goosenecks of the San Juan, Monument Valley, the Grand Canyon, and Zion and Arches National Parks.

It should be mentioned that Colorado, with its rugged terrain and elevations ranging from about 9,000 feet to more than 11,000 and 12,000 feet, readily separated those students who were willing to work from those who were not; it also destroyed the myth that, in strenuous terrain, the women could not keep up with the guys.

Except for a few of the later years in Colorado, the students were transported to and from camp in departmental vehicles, generally preparing meals and camping on the way. In spite of great distances and the large amount of travel involved in the operation of the camps, accidents have been remarkably few. In 1977, however, on a local trip in Colorado, a van full

of students turned over, killing two students and seriously injuring others. The next year, on a trip near Leadville, a driver out of Aspen went to sleep and ran head-on into a camp van and totaled it. Fortunately no one was injured.

Always important in Colorado camps was the camp cook. Funds for food were always limited, and good meals required ingenuity. In this, cooks ranged from excellent to awful. Bud Fisher tells about Fanny, who was camp cook in 1952. She was in her late 60s, "had a face like three rainy days," and was totally unequipped for camp life. Dr. Mac liked coddled eggs for breakfast, but Fanny, like some others, never understood about altitude and cooking time, so the eggs never advanced beyond raw. She fed a ground squirrel and enjoyed taming it. Unfortunately that was the year the boys found an owl nest and brought back a baby owl. They bought meat in town to feed it but ran out. So one of them got a stick, coaxed the squirrel within range and bashed it for owl food. That was the last straw for Fanny, and camp could not end soon enough. All dreaded the trip home, but fortunately, Fanny decided to take the train back.

Ann Mufich of Crested Butte was among the very good cooks. Essie Bruton from Winchester, Kentucky, was a great cook, called everybody "honey" or "sweetheart"; but she hated Cement Creek camp. During a cold rainy spell she burned up her tent and most of her belongings. Contributions from campers, however, probably more than made up for her losses. Another very good cook was Ethel Tinchler from Lexington, who loved the camp but hated bears. One day when one came into camp she climbed up on a picnic table and it took much coaxing to get her down. The supreme cook of the lot, though, was Jerry Lane, a chef formerly from the Hyatt Regency who liked to cook in camps or on trail rides. Each day he listed on his blackboard by the dining tent the menu of things to come, sometimes including such exotic items as raspberry crepes! Some lunches included pastrami on rye.

In contrast to Jerry's meals, however, were the "tube steaks" (sausages) of other years; or the "mong cake" about which the students sang the song, "Please don't bake the mong cake," a dish reported to have something to do with a pregnant ape. Rumor has it that some students supplimented their meager fare with blue grouse or other unfortunate game, killed with rock hammer or rock. One day as the group was leaving camp Dr. Mac said to Vin Nelson, "As you come back through town, don't forget to pick up the stakes." Immediately the word spread, "Tonight we are going to have real steaks." Anticipation, however,

gave way to disappointment when Vin stopped, not at the grocery store, but at the lumber yard to pick up tent stakes.

Lunches were made by student KPs and consisted of sandwiches of peanut butter, cheese or bologna, and an orange or apple. Often the KPs were in a hurry and some peoples' sandwiches were just two slices of bread with nothing in between. To many people, high and dry on the mountain, the peanut butter became too much. One Saturday in the field back in Kentucky, as we sat down for lunch, Louis Ford said, "I looked in the refrigerator for something with which to make a sandwich and all I could find was a jar of peanut butter and a bucket of lard. I made myself two lard sandwiches!"

Food in the supply tent attracted numerous creatures, including abundant chipmunks and ground squirrels, and even occasional bears. Bud Fisher describes problems with the latter in 1966 when he and Tom Wilcox were running camp:

"The bear was a yearling which had been fed at the home sites above camp and was unafraid of people. I was terrified lest he get into the supply tent and destroy our budget. I went to the warden and asked for help, but he said the only trap the state had was in use and he gave me a handful of cherry bombs. Whenever the bear came someone would shout 'BEAR' and we piled out like bees. I tried throwing a cherry bomb at the bear who sat on the hillside watching us. Total failure, it hit a tree and fell short. Tom devised the idea of parking a truck near the water tank where we could see the garbage can and supply tent. He then bought about 60 feet of lamp cord, cut short the fuses of the cherry bomb, put iron wire into the cut fuse ends and spliced them back to the lamp cord which he attached to the truck battery. The theory was that one could sit in the truck until the bear was close, turn on the ignition and BANG. We tried one and it worked, but the iron wire glowed a bit before the explosion. Various one- or two-hour watches were assigned. On the first night I was second watch and the bear showed up in about fifteen minutes. He stuck his head in the garbage can and I turned on the ignition. He backed out quickly, I guessed he saw the glow so I turned off the ignition. He stuck his head back in and when his head and shoulders were in the can I turned the switch and in a few seconds there was a flash of light and a boom. The flash blinded me so that I couldn't see the bear, but I heard him go up the slope as though he were jet propelled. We all congratulated each other on our success and predicted the bear was in the next county by then. The bear was back before I got to sleep, and I have ever since defended the

nervous system of bears as being very tolerant!"

Many funny, and some not so funny, things happened on the way to and from camp and during the camp period. On the way to camp in 1948, the first year in Colorado, the group, which consisted mostly of free-wheeling World War II vets, stopped to camp for the night in Stratton, Colorado. Apparently they became boozed up and stole the town fire engine and drove around the town - after first letting the air out of the police car tires so the police could not give pursuit. When the guys got back to camp and Nelson found out about it, he made them pack up and leave immediately, long before daybreak. In later years, the word was, "Never EVER stop in Stratton, Colorado; Kentuckians are not welcome."

On the way to camp in 1950, in our two large station-wagon buses ("agony wagons"), still with mostly war vets, there was a constant poker game in the back of the bus. For some time in camp I noticed lights burning late in the study tent. I thought, "What a hard-working bunch we have this year!" When I dropped in to check, however, I found that the poker games had never stopped.

In 1954, on the first day out, we stopped to camp at Red Hills State Park, Illinois. Dinner was early and there was a lot of open space, so we decided to have a touch football game. The problem was we had no football. So we decided to use a can of condensed milk. I was quarterbacking one side. As I let fly a pass, Harvey Young jumped up to block and the can caught him square between the eyes - edge first. There were a lot of amused questions in the emergency room in nearby Lawrenceville, "What kind of can was that?"

In the early years, Dr. Mac rented horses from Sid Nicholi to take groups to the top of Cement Mountain and Double Top. Most of the crowd had never been on a horse before, so much of the expected happened. I remember one student who got lost from the group and, when found practically collapsed over the horse's neck, complained, "Damn fool horse can't even follow a trail." Bud Fisher enjoyed the time Harry Moore Whitman rode Sid's oldest horse, Dolly, up Cement. "She just mogged along head down as though each step would be her last. Moore got so bored that he turned around and rode her backward. When we finally reached an upland meadow the horses got excited and ran. Old Dolly got caught up in the thrill and took off at a gallop with Moore trying to hang on to the back of the saddle and shedding equipment like autumn leaves."

From Sid's house to the top of the mountain, the horses had to be continually pushed. When they got

back down to the road, though, there was no holding them back, and the ride down the steep mountain trail had been hell on rear ends and knees. It was BAM BAM and holding on for dear life all the way back to Sid's. Then along would come Sid in his jeep, picking up packs, saddle blankets, hammers, and an occasional student that had been dropped on the way.

Early in our stay in Colorado, it was found that the dangerous fun of rolling boulders down the great steep mountain slopes had to be strictly forbidden. One Saturday morning, however, the rule and reason were momentarily forgotten. West of Gunnison, at one of the numerous buttes capped with thick volcanic welded tuff, we had climbed the steep slope above the highway to the base of the tuff. At this place, parts of the glassy tuff had weathered into great spherical balls, some 5 feet or more tall. Temptation was too great. The students worked like beavers to undermine one of the larger balls. Suddenly freed, the great ball hurtled down the precipitous slope, accelerating rapidly, and bouncing in the air. Almost immediately the group froze in fearful expectation, as it became apparent that the tumbling ball and a truck trudging up the highway appeared to be on a perfect collision course. Just before the huge ball reached the highway, to the relief of all, it leaped high in the air, spinning rapidly, and the brittle glass exploded into a million pieces. The long silence was finally broken with, "Damn, I thought we had that truck!"

A sad thing happened in 1955. At dinner one night, Mr. Endner from Gunnison arrived in camp to tell the campers that the Lapis lazuli miner up in the Italian Mountains had backed his jeep over a cliff onto a snow bank, was badly injured and needed help. So a group, in the old jeep station wagon, took off in the dark of night to the mountain top and picked up the injured man. After a morphine shot in camp, he was taken to the Gunnison hospital, where, a day or so later, he died.

Bud Fisher tells about how, in 1958, the camp was called upon to fight a forest fire. "We were roused out about three or four in the morning and told to bring all available hands to the fire on Quartz Creek. We had an early breakfast at camp and took off. After some delay the forest service signed us on, but hated to put college students down as common labor so they signed us up in the next highest classification. Max Jacobs asked me why I didn't tell them I had a PhD, and I told him it wasn't worth a damn in fighting a fire. There was no great excitement, some nervous moments, but nothing more. We spent the day grubbing lanes through forest duff and around little patches where the fire had jumped. That night we were given a large meal

and a combined blanket and shelter half. The next day was much like the first. All were paid by check and everyone had a big time with cash they hadn't budgeted."

Final grades were not always determined entirely by effort and mapping skill. It seems that some students were discussing possible grades and Jim Blankenship was worried. Another student said, "You'll get an A." When asked how he figured, the other student said, "You laugh at Dr. Mac's jokes and you fell off the bridge while he was watching, you're a shoo in". Blankenship got an "A".

Some students followed the philosophy of Clarence King, first Director of the USGS, who is reported to have said, "Just because you work outside doesn't mean that you have to live like a savage!" One day Bill Thomas, Charlie Eldridge, and Harry Moore Whitman took Dr. Mac and Bud Fisher to see what they had been working on, then flabbergasted them at lunch time by spreading a table cloth on the ground and centering it with a small flower in a vase. The gasoline stove and tea pot that followed were too much for Dr. Mac, and he showered the "picnic with thrown rocks."

Most years, the camp entered something in the July 4th parade at the Butte. One year they rigged up a Kentucky still in the pickup truck; another year they made a huge chicken, and got Vin Nelson, with his white goatee, into a white hat and coat to impersonate Colonel Sanders. In 1978, the group found an old outhouse, decorated it, and pulled it through town. In 1968, the strongest guys in camp, including Bill Blackburn, Tommy Sauer, Russ Ping, Jon Huffman, Bruce Survant and others entered the tug-o-war which consisted of a pull across a creek at the Butte. It was a good effort, but a bunch of football players and a heavy-weight wrestler from Western Colorado College pulled our guys into the creek.

To me, field camp in Colorado was always a glorious experience, and it has been fun recalling some of it. In that records are incomplete, much of this article is based upon my recollections and those of others like Bud Fisher, Phyl Nelson, Frank Etensohn, Bill Thomas, Don Haney, Perry Wigley, Mel Smith, Kieran O'Hara, Frank Walker, Tom Wilcox, Lou Ponsetto, Russ Ford, and Earl Majeske. I, however, must take blame for any errors or omissions. Special thanks are due Bill Thomas, Frank Etensohn, and Lois Campbell for careful reading and editing.

ANNOUNCEMENTS

GEOLOGICAL SCIENCES ALUMNI WEEK-END AT UK

Our 1996 Alumni Week-End in Geological Sciences is scheduled for April 12, 13, and 14, 1996. The program will include a field trip, picnic, symposium, banquet, and open house. Registration materials will be mailed separately, early in 1996.

CO-OP PROGRAM

The co-op program (matching students with summer and/or part-time jobs) needs help to identify available jobs, and the requirements for staffing them. A similar search for qualified and interested students is underway in the department. Contacts for the program are:

for the Advisory Board—

Stephen B. Sullivan
4610 Deepwood Ct.
Louisville, KY 40241
Telephone

for the Department—

John C. Fern
101 Stone Building
Lexington, KY 40506-0053
Telephone: 606-257-1087

If you know of a job opportunity (or a possibility of one), please contact either Steve or John. We hope to provide some meaningful work experience for our students, and to provide employers with some enthusiastic young geoscientists as temporary workers. The potential for mutual recognition of future full-time opportunities is also present.

DEPARTMENT NEWS

1995 ALUMNI WEEK-END

Those who signed in for the 1995 Annual Alumni Week-End included:

Doug Gouzie	Pat Anderson
Elizabeth Haynes	Steven Juszczuk
Mary Sue Johnson	Earl J. Johnson
Mark Warrell	Wm. Jay Sims
Bill Thomas	Nick Sirek
Kieran O'Hara	David Moecher
Jake Neihaus	Walter Johnson
Earl Wright	William Andrews
Mark Kulp	David Remley
Paul Howell	Eric Anderson
Bill and Blessing Brown	Shane Schmidt
Kevin Lyne	Takeshi Hirano
Steven B. Wood	Maggie Brewer
David R. Wunsch	Mitch Rutledge
Lois Campbell	Ann Watson
Harry Whitman	Edward Harris
Robert W. Flynn	Jim Hower
David Butler	Bill MacQuown
Jim Dinger	Jim Drahovzal
Beth Combs Shamir	Sohrab E. Shamir
Jennifer Thompson	Nicholas Rast
Joe Allen	Dena Wunsch
Brandon Wunsch	Edward Woolery
Zhenming Wang	Jim McHugh
Diana Rast	David Jackson
Buddy Lewis	Sue Rimmer
Amy Moecher	Patrick Moecher
Tom Moecher	Peter Goodman
Frank Ettensohn	Marc Ettensohn
Jack and Ethel Carrington	Jean Sherman
John C. Mars	Donald Lumm
Lyle V.A. Sendlein	Andrew Rast
Penny Alano	Garland and Karen Dever
Edmond Nosow	Rachel Thomas

The program began with a field trip led by graduate student, Mark Kulp, on the topic, *Geological oddities in the Bluegrass*. Following the field trip, graduate students, Ed Woolery and Zhenming Wang, gave a demonstration on *Collecting geophysical data in the field*. The annual picnic was held at the Camahan House.

Vice Chancellor Jack Blanton welcomed alumni to the campus for our annual Geological Sciences Alumni Symposium which addressed the topic, "Kentucky Coal Geology." Jim Cobb organized the program which included,

Recent research into the origin of coal

by Jim Cobb, Kentucky Geological Survey, and Adjunct Professor, Department of Geological Sciences

Coal quality and coal utilization

by Jim Hower, Center for Applied Energy Research, and Adjunct Professor, Department of Geological Sciences

Applied mining geology: The company rock doc

by John Popp, Mapco Coal, Lexington

Assessing coal resources in eastern Kentucky

by Gerry Weisenfluh, Kentucky Geological Survey

Social functions included a banquet at U.K.'s Boone Faculty Center, following which, Bill Thomas reported on the current state of the Department of Geological Sciences. An open house in Slone Building on Sunday concluded the Week-End.

New Faculty

We begin this year with two new permanent faculty members and one temporary member. Ford Cochran and Alan Fryar will contribute greatly to our program in hydrogeology and environmental geology, and Henry Berry will help us this year with teaching in the introductory and field courses.

Alan Fryar comes to us from the Texas Bureau of Geology. He holds a Ph.D. degree from the University of Alberta. His primary interests are in hydrogeology.

Ford Cochran comes to us directly from the Ph.D. program at Yale University. His interests are in low-temperature geochemistry.

Henry Berry comes to us from a faculty position at Bryn Mawr College. His Ph.D. is from the University of Massachusetts, and his research interests are in structure and tectonics in metamorphic rocks.

More information about our new faculty is included in their individual reports in the section on faculty news.

Bruce Moore retires

After more than thirty years in the department, Bruce Moore retired at the end of the spring semester. He is around Lexington part of the time, but his new

status provides many more opportunities to visit Australia. As most of you know, Bruce was the mainstay of teaching the geology course for engineering students, as well as petroleum geology and remote sensing. In recent years, he has developed a course in mineral resources as part of our University Studies offerings, and he has also taught sections of physical geology.

More Department Moves

During the past year, University planning decided to discontinue the use of Research Facility Number 1 (a.k.a. Surge) as a laboratory building. The hoods had become useless, and the renovation costs were estimated to be enormous. All of those laboratories had to be vacated, and that required some careful planning for the department. We were able to obtain additional renovation in the Slone Building to accommodate the geochemistry and X-ray laboratories, as well as some additional faculty offices. In addition, a laboratory in Slone was renovated for the rock-preparation laboratory. Nick Rast's microscope lab has been re-established in the Slone Building. Renovations in the basement of Bowman Hall enabled Frank Etensohn to consolidate his research laboratories that previously included a room in Kastle Hall and a lab in Surge, as well as space in Bowman. These moves involved some loss of total floor space, but we have a more convenient and efficient use of the renovated space.

HONORED ALUMNI

Herman H. Reike, B.S. 1959

Received a Distinguished Service Award from Republic of Honduras

ALUMNI NEWS

Adams, Philip R., B.S. 1986

Chief of the Petroleum and Water Division, 19th Corps Matériel Management Center, 3D COSCOM, V Corps in Wiesbaden, Germany. I manage bulk

petroleum storage, distribution, accountability, and forecasting for V Corps during exercises and wartime requirements.

Bruce Amig, M.S. 1988

Recently left Dames and Moore to accept a position with Coltec Industries, Inc. as Manager, Site Remediation. Coltec is a Fortune 500 firm that manufactures products for the industrial, automotive, and aerospace industries. Coltec has facilities throughout North America.

Jon B. Armstrong, B.S. 1990, M.S. 1992

Hydrogeologist; employed by Memphis Environmental Center, working as an in-house consultant at BP Oil Company in Atlanta, Georgia, managing the assessment and remediation of underground storage tank facilities in Kentucky, Georgia, North Carolina, and South Carolina.

Robert M. Baumgartner, M.S. 1991

Project Hydrogeologist with Eder Associates Environmental Scientists and Engineers in Ann Arbor, Michigan. Been with Eder since fall of 1992. Previously with Heritage Remediation and Engineering, Toledo, Ohio, as Field Hydrogeologist.

Dennis R. Bell, Jr., B.S. 1984

Senior geologist with Skelly and Loy, Inc. of Harrisburg, Pennsylvania. Conducting numerous geologic studies and consulting services for both public and private clients throughout the mining industry. I am a licensed geologist in the Commonwealths of Pennsylvania and Kentucky.

James G. Blankenship, B.S. 1958

Retired as of April 30, 1995.

Fred Bodycomb, B.S. 1956

Consultant, minerals and product development, in Springfield, Colorado.

Albert L. Bryant, B.S. 1958

Retired from Louisville Gas and Electric as Senior Geologist in April, 1994. Started consulting company in June, 1994—Bryant Geological Consulting, Inc.

John T. Caudill, B.S. 1979

President of Atlantic Geoscience, Inc. and consulting hydrogeologist.

Sarah Cross, B.S. 1992

Peace Corps volunteer—Jamaica. Environmental awareness field officer for an NGO. I produce an

educational newsletter on water issues and carry out other educational programs. I am also working to strengthen the NGO in its capacity to be community sustained.

Timothy D. Elam, M.S. 1978

In Chevron's five-man California Exploration Group. I was recently promoted to staff geologist. However, the group is being disbanded, and I will be offered an unknown new assignment within a couple of months. I hope to continue working in Bakersfield, California. My wife, Pat, enjoys working as a computer programmer. There is even less stability with her job, however. In our spare time, we are active in church duties and the local mineral society. I enjoy going to the Mojave Desert to collect petrified wood, onyx, agate, and evaporite minerals. I subsequently make rock products (clocks, bookends, cabochons). I was co-author of "Identification of petroleum systems adjacent to the San Andreas fault, California," with K.E. Peters. This was Chapter 26 of AAPG Memoir 60, 1994. I was also gratified to be acknowledged by another UK geology alumnus, Bill Schaub, recently. Bill authored an article which appeared in *Rock and Mineral* magazine on the minerals found in I-64 road cuts through Upper Ordovician rocks in Bath County, Kentucky.

Ernie A. Ellison, B.S. 1993

Geologist with the Commonwealth of Kentucky, Department of Environmental Protection, Division of Waste Management in the Morehead, Kentucky, regional office.

Joan Esterle, M.S. 1984, Ph.D. 1990

Research geologist and coal petrologist with the coal mining group at CSIRO, the Commonwealth Scientific and Industrial Research Organization, Australia.

Jurgen Faupel, 1968-1969

After having been at U. of K. in 1968-1969, in Namibia in 1971-1972, in Calgary in 1979-1981, we are back in the U.S.A. My home company BEB, Germany, has sent me on an assignment to EXXON Ventures (CIS) Inc. for the next three years. We hope to meet a lot of our old friends and also to drop by good ol' U. of K. Geology Department.

Russell J. Ford, B.S. 1949, M.S. 1950

President of R.J. Ford Inc., producing oil in Texas and Oklahoma. Although I am no longer drilling wells, we operate a number of leases in both states. My wife, Carolyn, and I enjoy traveling and spending

time with our children and grandchildren.

Donald S. Fullerton, B.S. 1958, M.S. 1961

Consultant, providing geologic services, technical and supervisory experience directed toward coal, industrial minerals, and mineral exploration and development, domestically and internationally.

In my spare time, of which there is a lot, I have taken up the classical guitar as a frustrating second career!

Douglas R. Gouzie, B.S. 1981, Ph.D. 1986

Geologist with the Agency for Toxic Substances and Disease Registry, a sister agency to the Centers for Disease Control in the U.S. Public Health Service. I perform environmental contaminant fate and transport assessments and environmental chemical exposure assessments in our evaluations of public health concerns related to releases of hazardous chemicals.

Harold A. Henthorn, M.S. candidate 1979-1980

Fund raising consultant and the Denver District Manager with Resource Development Services, Inc. I design and manage development programs primarily for medical corporations and other non-profit agencies. In much of their spare time, Harold and his wife Lynn, can be found up in the mountains exploring various areas across the state.

John N. Holenian, B.S. 1947

Retired as National Sedimentation Geologist with the Soil Conservation Service of the United States Department of Agriculture in 1982. I bought a winter home in 1982 at 1009 NE 3rd Street, Fort Lauderdale, Florida 33301. For the past 12 years I spend six winter months in Florida and six summer months in my Cheverly home, a Maryland suburb of Washington, District of Columbia. Retirement is wonderful.

Bruce L. Kells, B.S. 1977, M.S. 1981

Senior Geologist with Rumpke Sanitary Landfills (Cincinnati, Ohio) since October, 1992. Rumpke is the largest independent landfill company in the United States with active landfills in Ohio (4), Indiana (3), and Kentucky (2). I am in direct charge of obtaining geologic/hydrogeologic information required for permitting landfills, both new and expansion. I have professional registrations in Arkansas (PG 32), Indiana (CPG 989), and Kentucky (PG 151).

Ronald T. Mackey, B.S. 1970, M.S. 1972

After graduating, moved to New Orleans and worked for TEXACO as an Exploration Geologist offshore

Louisiana, Alabama, and Florida. I moved to Denver in 1974 with Skelly Oil and have lived in the Denver-Boulder area since that time. I worked as an exploration manager during the "boom years" in the Powder River basin of Wyoming and, in 1986, I started Venture Resources, Inc. During the last 8 years we have explored the central Kansas uplift and made production acquisitions throughout central Kansas. At the present time, Venture Resources is active in 3-D seismic, drilling wells, and operating more than 100 wells. In my spare time, I enjoy golf, elk hunting, and climbing Colorado Mountains (14,000').

Thomas M. McMahan, B.S. 1984

Vice President—Operations for Brandywine Explosives and Supply, Inc. Distributing commercial explosives to highway contractors, limestone providers, utility contractors and landfill operators.

Mark Meagher, B.S. 1984

Work for the Defense Mapping Agency. Moved to St. Louis in August, 1994, after DMA's field office closed in Louisville. Have been with DMA for 10 years.

Phil M. Miles, B.S. 1938, M.S. 1940

Sold consulting business and equipment to Dan Wells. Retained one client with operating gas wells in east Kentucky.

Mark G. Moser, 1984

I am working as an environmental consultant for Geraghty and Miller in Tampa, Florida.

Don H. Neeley, M.S. 1982

Just moved to Indianapolis where Don is now working as a project manager for Groundwater Technology, Inc. Our son Owen is now 2 1/2 and a great joy to us. Rusty (1978, M.S. Communications) continues to keep us sane and on-track. Thanks for your work in keeping us all in contact.

Robert A. (Bert) Nienaber, B.S. 1984

Controller for Jordan Constructin of Hilton Head, Inc. In October, 1994, I married Connie Susanne Williams, originally of Akron, Ohio. We live and work on the island, where we closely monitor beach dynamics!

Martin C. Noger, B.S. 1952

Retired from Kentucky Geological Survey, June, 1993. Have worked part-time for K.G.S. since retirement. Usually spend January, February, and

March in St. Augustine, Florida. Attend 2 to 3 elder hostel programs a year; plan to attend a 3-week elder hostel program in Switzerland in August and September, 1995—includes a one-week stay with local Swiss family.

Sam Norris

I continue to be amazed at the resilience of our local oil industry. I grew up in the central Kentucky oil booms and busts that are so descriptive of our efforts in exploration. My father, always a "wildcatter," continued to have faith that the next well would be the big one. I never had his gambling spirit and approached the oil business very conservatively.

I have enjoyed a successful well logging business which, after fourteen years, I am turning over the operation to my oldest son. His wife, a school teacher, is easily depressed when business is slow and always complains to me that "the oil business has gone to pot." The "oil business" has always bounced back and when it does I remind my daughter-in-law about her "gone-to-pot" woes and moans.

My plans are to retire within another year or two. For all practical purposes, I am retired now and taking pills for heart disease, diabetes, and hypertension.

My wife, Anna, and I plan to travel a little more visiting some of our six children. Attorney Jan and her attorney husband John Clarke are working in San Diego, California. They will be joined by our oldest daughter Nan and her navy doctor husband Tad Dryden in July, 1995. The other four are located in Glasgow and Lexington, Kentucky.

Andy O'Hare, M.S. 1982

1994 and 1995 have been busy years for me. My wife, Linda, and I welcomed our first family addition (son Brendon, born February 28, 1994) and are expecting number two in August, 1995. I also became a certified professional geologist in the state of Virginia in 1994. Lastly, I changed employers recently and am presently Vice President of Environmental Affairs for APCA (the cement manufacturing industry's trade association). I was previously a regulatory analyst in the American Petroleum Institute's Health and Environmental Affairs Department.

Brent Owens, B.S. 1983

Completed Ph.D. in 1992 at Washington University in St. Louis, and stayed on for two years of post-doctoral research. I am currently teaching in the Department of Geology at Bucknell University in Pennsylvania.

Alma Hale Paty, M.S. 1984

My employer of the past five years—the American Mining Congress—merged with the National Coal Association in February 1995 to become the National Mining Association. I am now Director for Coal and Mineral Economics and handle various issues such as global climate change, the economic benefits derived from mining for each state, and other minerals-related issues. I also study voice once a week!

Don Prater, B.S. 1993

I am an environmental geologist/hydrogeologist for McCoy and McCoy Environmental Consultants in Lexington. I am presently working in the Assessments and Remediation Division at MMEC, Inc. and will begin graduate school in hydrogeology at Eastern Kentucky University this fall.

James S. Rankin, M.S. 1979

I teach mathematics at Thomas Jefferson High School, Denver, Colorado. During the summer of 1994 my family: wife and two daughters, aged 3 and 6, lived in Las Vegas, Nevada where I worked as a geologist. The work was for a company with a contract to develop a radioactive waste disposal site.

Herman H. Rieke, B.S. 1959

I was appointed in January, 1995, Professor and Head of the Petroleum Engineering Department at the University of Southwestern Louisiana in Lafayette. The department serves the large oil and gas industry in south Louisiana. My contributions to the scientific and engineering literature appeared this year in two books from Elsevier Publishers: preface and co-author on two chapters in *Subsidence Due to Fluid Withdrawals*; and as an author/editor in *Carbonate Reservoir Characterization: A Geologic-Engineering Analysis, Part 2*. This summer I served as an expert witness in court in Texas, attended a slew of professional meetings, and traveled.

Don C. Sargent, B.S. 1949

Retired and living on South Padre Island. Chief activities—fishing, girl watching (bikini clad only), complaining about being old, and some traveling. Rejected on last two job applications. One was for Judge of Wet Tee-Shirt Contest during last Spring Break and other was for Chief Taste Tester at new brew pub being built here. Reasons given were bad eyesight, poor memory, and only three-bottle capacity. Still think I had most of the answers right on the points to consider in the Wet Tee Shirt Contest, just couldn't remember why. Other than that still enjoying life.

William T. Schick, B.S. 1994

Employed by a civil engineering firm, GeoTechnologies, Inc., as an Engineering Technician. My job is entirely based in the field, doing everything from soil classification and core-sample classification to concrete testing and construction testing. I am currently enrolled as a part-time graduate student at North Carolina State University in hydrogeology.

Edward M. Self, B.S. 1950

Retired from Panhandle Eastern. Enjoying travel, golf, bridge, and other "retiree activities." Have four grandsons, two in Texas and two in California!

Tim Shy, M.S. 1985

Working on Ph.D. (expected in 1997!)

Michael M. Steen, B.S. 1993

Kentucky Department of Mines and Minerals, Division of Oil and Gas. We issue permits to drill wells in the State. John R. Bender, a geology alumni, is the new Director for the Division of Oil and Gas as of March 1, 1995.

Charles E. Tanner, B.S. 1987

Senior Operators Analyst for TGM/C/TXG Gas Marketing Company an affiliate of Texas Gas Transmission Corporation and Transcontinental Gas Pipe Line Corporation. I am in the 1995 class of Leadership in Owensboro, Kentucky, chair of the 1995 Texas Gas Employees Consolidated Charities Committee, and on the 1995 Board of Directors of Big Brothers/Big Sisters of Owensboro.

Charles P. Thurman, M.S. 1967

Independent geologist—still drilling oil and gas wells in the Gulf Coast area and having a great time!

Thomas R. Webb, B.S. 1983

Environmental Services Program Manager for the Lexington-Fayette Division of Environmental and Emergency Management. I am responsible for coordinating and supervising environmental programs within the Lexington-Fayette Urban County Government to include the Lexington-Fayette Petroleum Underground Storage Tank Regulations, Lexington-Fayette Farm Underground Storage Tank Regulations, and the Lexington-Fayette Hazardous Materials Ordinance. I am also an aviator in the 81229th Aviation Regiment (United States Army Reserve) and fly the Alt-64 Apache attack helicopter.

Joseph K. Wetherill, B.S. 1941

Consultant with Richard King Mellon Foundation.

Peter W. Whaley, M.S. 1964

Teaching at Murray State University. This spring finishes year 27. Suffered heart attack July, 1993, while collecting fossil starfish and crinoid. This fall returned to finish the collecting that was interrupted in 1993. Beryl and I are now in the grandparent business, one grandson age 2 and one granddaughter also 2 years old. I hope in the future to combine geology and the grandparent business.

David R. Wunsch, Ph.D. 1992

Research at the Kentucky Geological Survey. Taught Low-Temperature Geology at the department during the Fall 1994 term. Married in 1993 to Dena Leadley (Wunsch), and we have one child, a son named Brandon Gregory Wunsch.

George Brian Wyatt, M.S. 1991

I was married June 10 to Miss Cindy Jones, a WVU graduate and U.K. Masters degree candidate. Moved my consulting firm, GeoSurv, into a new office space, and continue to "enjoy" the self-employment struggle.

Scott Yankey, B.S. 1982

Hydrogeologist with Hanson Engineers Incorporated in Springfield, Illinois.

GSA MEETING

The 1994 annual meeting of the Geological Society of America was held in Seattle. Those who signed "the book" included:

Jim Hower
Judy Hower
Rachel Thomas
Paul Howell
Chris Prince
Joe Allen
Kieran O'Hara
Don Chestnut
John Holbrook

Lyle V.A. Sendlein
Bill Thomas
Kevin Pogue
Bill Blackburn
John C. Mars
Don C. Haney
Lavon Lewis
Randy Keller

AAPG MEETING

At the 1995 meeting in Houston, of the American Association of Petroleum Geologists, "the book" was signed by:

Donald C. Haney
Jim Drahovzal

Michael Currie
J.O. Lewis

IN MEMORIAM

This year the department received word of the passing of the following alumni and former faculty members. We are saddened by the loss of these friends, and we extend our sincere sympathy to their families.

Irvin L. Allen
Hubert Dixon Crider, December 11, 1994
Jack Hirsch
Paul H. Moser
William V. Naylor, Jr., December 15, 1994
Bennett T. Sandefur
Robert G. Staggs, March 15, 1992
John A. Stokely, 1994
J. George Whitfield, 1983

FACULTY NEWS

Henry Berry

Henry "Spike" Berry was hired as temporary instructor for this year following the retirement of Bruce Moore. Spike spent last year at Bryn Mawr College teaching undergraduate and graduate courses in metamorphic petrology, tectonics, and natural resources. He supervised senior research projects in structural geology of an Alleghenian(?) fault in northern Connecticut, igneous geochemistry of Precambrian gneisses in the Pennsylvania Piedmont, and tectonic setting of metamorphosed volcanics near Wilmington, Delaware. He taught a summer geology course at Lafayette College, Pennsylvania, and then went out west to teach a segment of the Princeton/University of Pennsylvania YBRA geology field camp based in Red Lodge, Montana.

M. Ford Cochran

The past year has been an exciting and eventful one for me, not least because it brought me here to Lexington. Putting the finishing touches on dissertation research in low-temperature geochemistry and laying the groundwork for new environmental initiatives at UK have also kept me busy. The former involved fieldwork (in Hawaii and on Mt. St. Helens--no one had to twist my arm!) and both field and

laboratory experiments (in the White Mountains of New Hampshire, at Duke University, and at Oak Ridge National Lab) on the weathering and nutrient release which occur when plants first colonize rock and ash. The results have shed light on natural biogeochemical cycles. Moreover, since silicate weathering removes carbon dioxide from Earth's atmosphere, the evolution of higher plants on land some 400 million years ago led to a dramatic decrease in atmospheric CO₂--and therefore, via the greenhouse effect, to a decline in global temperatures. My recent work has put constraints on the magnitude of that drop. It may help climate modelers in their efforts to predict the effects of current human-induced increases in CO₂.

Current priorities include an examination of natural acid rain effects downwind of Kilauea volcano and a study of pollutant metal transport in New England and Kentucky rivers. These projects, plus long-term studies in the UK's Robinson Forest and other sites near Lexington, should provide ample grist for student theses and dissertations. I'm on the phone to Fisher and VWR (the major scientific supply houses) daily building a geochemical lab with our new hydrologist, Alan Fryar. With 150 thin-sections already cut from the latest expedition to Hawaii, I'll be putting mileage on Dave Moecher's microprobe. Teaching courses in global change, geochemistry, and environmental geology and chemistry will also keep me occupied in the coming year. Finally, I'll be working with department alumni to launch an endowment to keep our students and seminar series funded and our well-used vans on the road.

Frank Ettensohn

Field camp was offered this summer and we had our largest number of students since the mid-1980's, a total of 17 students. Field camp went well and everyone worked hard, but the weather this summer was very unusual. It was unusually cold, snowy, and rainy. There was very little spring this year, and the seasons effectively went from winter into summer. To map higher parts of the area, students were literally wading through waist-high snow - and I forgot to put snowshoes on the equipment list! On June 29, while in the Double Top area, we received about four inches of snow. We did not stay in the field long, for not only were we unable to see any rocks to map, but it became so cold and dark that hypothermia became a real worry. Our last snow came on July 4th, but even after this it continued to be cold and rainy right up to the last week of camp

when we finally got some more typical, hot, dry Colorado weather.

Two weeks after returning from Colorado, I took off again, this time to Germany, Poland, and Russia for the 13th International Carboniferous Congress in Krakow, Poland. A former student, Jack Pashin, and I presented a paper at that meeting on unconformities near the Devonian-Carboniferous boundary, but perhaps the most exciting things about the meeting for me were two field trips that I took related to the meeting. One trip arranged by friends took another former student, Don Chesnut, and I to the Altai Mountains in southern Siberia near the Russian-Mongolian boundary where we examined a mid-Paleozoic suture zone with superimposed Neogene rifting and basin-fill sequences related to formation of the Himalayas. Examination of the Paleozoic sequences required an all-day hike up into sub-Alpine terrain over 13,000 ft high (I was very thankful for all the climbing I had just done in Colorado!) where we saw beautiful glacial features eroded into the rocks of an ophiolite complex. The Neogene rifts, on the other hand, formed the hot, dry lowlands in the area and were still being actively infilled with alluvial, glacio-fluvial, and lacustrine sediments. At one point we did actually venture past border guards, who had been bribed with cigarettes, into Mongolia.

Just as exciting as the geology was the 19-hour trip to and from the Altai area. We accomplished this - six of us and two dogs all together - in a 15 cu. ft. compartment (literally a metal box with a door and two windows) mounted on the back of large khaki-colored military truck on roads that make those in the Colorado mountains look like superhighways. This large vehicle climbed up and down valleys with or without roads like none I have ever seen. The only problem was that during all of this climbing, there was nothing to sit on in our box except sleeping bags and camping gear. So the gear, the dogs, and we were jostled about pretty badly - I still have dog saliva and blood on my baggage. This is not to mention some of the worst sanitary conditions and food I have ever encountered. I think the only thing that must have saved us from getting sick was the sanitizing effect of all the vodka and beer that followed the meals. Added to this were some small problems at the frequent police and national guard checkpoints - at times we drove quite late at night just to avoid these checkpoints, because we were told that most of the guards slept at night. At one point, however, our vehicle with all of us in it was commandeered by the police to tow one of their vehicles over 100 miles. Geology in much of Russia is just spectacular, and largely unstudied, but as you

can see from our field trip, field conditions overall are poor, and sometimes just plain frightening.

In contrast, the trip into Poland was tame. Don, Jack Pashin, and I took the same trip together with about a dozen other geologists into south-central Poland to examine Devonian and Carboniferous sediments in the Variscan foreland basin just southwest of the East European Platform in Pomerania and the Holy Cross Mountains. We largely examined reefal and platform-margin carbonates along the East European Platform, as well as basinal black-shales and overlying epi-Variscan Permian cover rocks. The foreland basins and platforms are much smaller than we commonly see in the United States, but the diversity of synsedimentary structures and activity in that small area seems to have been much greater than we typically cross our in much larger basins and platforms.

On the publication front, a symposium volume on "Tectonic and Eustatic Controls on Sedimentary Cycles" edited by John Dennison from the University of North Carolina and myself was finally published late in 1994 by SEPM after a nearly three-year wait, and a "Reevaluation of the Bedford-Berea Sequence in Ohio and Adjacent States..." by Jack Pashin and myself was published as GSA Special Paper 298 early in 1995.

And finally, two of our longer term graduate students, Steve Barnett and Garland Dever, finished and defended their dissertations on the Duffin and lower Slade respectively, and relatively new student, Mark Kulp, finished and defended his thesis on the Brannon Member of the Lexington Limestone in record time. All have made important contributions to our knowledge of central Kentucky geology.

Alan Fryar

Prior to joining the faculty on August 1, 1995, I worked as a Research Associate at the Bureau of Economic Geology at The University of Texas at Austin. My degrees, all in geology, include a B. S. from Duke University (1984), an M. S. from Texas A & M University (1986), and a Ph. D. from the University of Alberta (1992). My research integrates chemical and physical aspects of hydrogeology and has included studies of ground-water recharge and flow, contaminant fate and transport, and diagenesis. During the past year, I finished a four-year study on hydrochemical evolution beneath the Texas High Plains. This project, which involved both field work and mathematical modeling, was part of a hydrologic and geologic characterization of the U. S. Department

of Energy (DOE) Pantex Plant, northeast of Amarillo. I submitted my final report in August and am busy trying to generate manuscripts from it. I was also selected this year as one of ten new faculty investigators to receive research grants from the DOE Subsurface Science Program. Together with scientists at Idaho National Engineering Laboratory (INEL), I and a graduate assistant will be studying how degradation of trichloroethene (TCE), a common solvent, may be tied to oxidation of basalt and sediments in the contaminated Snake River Plain aquifer.

My responsibilities at UK include acting as a technical advisor to the Federal Facilities Oversight Unit (FFOU) in Frankfort. The FFOU is operated by the Kentucky Water Resources Research Institute in support of the Natural Resources and Environmental Protection Cabinet. In this capacity, I am developing a conceptual hydrogeologic model of the area around the Paducah Gaseous Diffusion Plant (PGDP), another DOE facility. At Paducah, as at Pantex and INEL, ground-water contamination by TCE is a serious concern. I am also teaching a senior seminar in hydrogeology this semester.

My family and I are delighted to be in Lexington, and we look forward to a long and productive association with the Department and the University.

Paul Howell

We successfully launched a new, interdisciplinary Environmental Studies Minor program within the College of Arts and Sciences last spring. As a team with Rich Schein from Geography and Jennifer Thompson as teaching assistant, we taught two new undergraduate courses as an introduction to interdisciplinary approaches in Environmental Studies. This year I will teach a new senior seminar course for this program. Several courses from Geological Sciences feature as options in this minor, which I hope will bring new students into our program.

For our Physical Geology laboratory course, we introduced a new "no-lecture" curriculum in the spring which placed strong emphasis on collaborative exercises in the lab and requires a "Pre-lab" exercise to be handed in at the beginning of each class. For the first time in memory (mine, anyway), students come to class knowing what "phaneritic" means and they start the period by diving right into the exercises, without reading the campus newspaper first. It is an improved learning environment. Our big plans for this course are production of our own lab manual and developing a required field trip for the fall semester

of '95.

On the research front, I began in December a cooperative venture investigating isostatic subsidence of the Mississippi Delta region. This project involved work with two undergraduates, Matt Wise and Dave Butler, and one graduate student, Mark Kulp. We compiled stratigraphic and vertical motion data (uplift and subsidence measurements) and produced preliminary, quantitative subsidence models. Initial results were promising enough to present at the Southeast GSA meeting in Knoxville in April. We also realized the limits of our modeling capabilities, and I visited NASA Goddard Space Flight Center this summer, where I found a collaborator (Bruce Bills, a geodynamicist) who is providing the computational firepower that we need to take this project the next step. Dave, Mark and I will present three back-to-back abstracts in a Mississippi Delta theme session this fall at the GSA Annual Meeting in New Orleans detailing our current research results on this project.

Another undergraduate project begun this spring is work on characterizing the regional groundwater chemistry of an area within the Western Kentucky Coalfield region. Dan Liles (geology junior) initiated this project, which not only will form the basis of a senior thesis for Dan, but also forges a new link between the department and the Kentucky Geological Survey. Dan worked part time at the Survey this summer and the KGS is also providing partial support for this project. The dedication of the undergraduate contributors on these projects is so invigorating that I hope to expand my own research areas with more promising undergraduate researchers next fall.

We received funding through the UK Research Major Equipment Grant program to develop a small computer facility for image processing and GIS. The Environmental Systems Information and Imaging Laboratory will be a University research facility with labs in both Slone and Miller Halls. Our lab will have one Pentium and one PowerMac machine with software for image processing and combining image and map data. We look forward to housing this facility and using it to enhance several areas of research in our department.

David P. Moecher

From my perspective, most of the big news this year is on the student and teaching front. I am trying to change ("change is good" is the hot phrase around the department) the content of GLY 260, the most recent incarnation of undergraduate mineralogy. I am instituting: a lab on X ray diffraction, making use of

Sue Rimmer's X ray diffractometer lab; a lab on chemical analysis, employing the electron microprobe; a day long field trip to collect mineral samples in the Bluegrass area, co-led by Warren Anderson of the KGS. I think the former two features give the students an introduction to techniques they may need in a real world job. The latter gets them out to see something other than "rocks in a box". See this space next year for other developments in Mineralogy.

Speaking of field experiences, last spring we made two petrology/tectonics-based field trips. In GLY 461 (Igneous and Metamorphic Petrology) we went on the annual Blue Ridge field trip to look at "hard rocks" in North Carolina. On the way down to the Smoky Mtns. and Blue Ridge we look at features of the Appalachian Plateau and Valley and Ridge. I think it's a real eye opening experience for many students, who haven't seen anything but flat lying sedimentary rocks (not that there is anything wrong with the latter!). Immediately after the end of the 1994 spring semester, the Geology Student Association sponsored (i.e., they paid for the gas with money made from T-shirt sales, so buy more T-shirts!) a field trip to the Grenville Province in Ontario. Not only was the geology completely different, but the concept of temperatures in mid-May hovering around freezing was for many a real cold slap in the face! The weather aside, we viewed the Sudbury structure, the Huronian Supergroup, the Grenville Front, and other spectacular high grade ductile fault zones. If the vehicle fleet holds up, and if funds are available, we hope to make this trip a biennial event, alternating with a trip to coastal Georgia (and warmer climes!) to view modern clastic depositional systems.

Graduate students Eric Anderson and Claudia Cook are making excellent progress on their theses dealing with the petrogenesis of rare earth element (REE)-bearing skarns in the Grenville Province, Ontario. Eric has an extensive stable isotope and mineral chemical data base on different lithologies of skarn-forming system. Claudia just finished a stint at the University of Maryland where she collected REE analyses and Nd isotope data on the same rocks. They will both defend their theses this academic year. Bryant Ramirez, a new Ph.D. candidate from the University of Cincinnati, has arrived at UK this fall. He will be working on U-Pb geochronology in metamorphic rocks, with specific applications to dating metamorphic events in the Waterbury dome area of the New England Appalachians. I am really excited by the prospects of getting into the geochronology game with Bryant. It is clearly the key to deciphering the details of metamorphic processes, and has applications in many other fields

as well.

Kieran O'Hara

Dave Moecher and myself and students continue to work on NSF-funded projects related to the chemistry of mylonites and isotopic composition of pseudotachylytes (melted rocks produced during seismic events). Doctoral student Xin-Yue Yang has collected large quantities of whole rock chemical data on mylonites with the help of Henry Francis at the Geological Survey using the x-ray fluorescence facility, and his dissertation project on chemical changes in ductile shear zones is underway. I continued my collection of oxygen isotope data on mylonites and pseudotachylytes this past summer at the University of Lausanne, Switzerland, and also collected microprobe data using the Kentucky microprobe facility here at UK. Our first paper on the source of fluids in the Blue Ridge province came out recently in the *Journal of Geodynamics* and we presented preliminary data on pseudotachylytes at the '95 Penrose Conference in Washington in August. I continue as Director of Graduate Studies this year. I will be teaching Field Methods in the Fall and Mineralogy and Advanced Structural Geology in the Spring.

Nicholas Rast

This year Nicholas Rast concentrated on catching up and publishing data. Moreover, he has expanded his interests in Kentucky geology and together with Dr. F. R. Effensohn attracted a graduate student, who began investigating the Mammoth Cave system from a tectonic standpoint. This research is based on stratotectonic basis.

In early 1995, Dr. Rast was invited to organize, convene, and chair a major GSA symposium entitled Assembly and dispersal of supercontinents; the symposium was held in Knoxville, Tennessee. Fourteen speakers made presentations at the symposium and many more participated in discussions.

In the summer of 1994, Dr. Rast has been appointed as associate editor of the international *Journal of Geodynamics*, which in 1995 became an official journal of the European Geophysical Society.

Lyle V. A. Sendlein

This has been another busy year. Because it was to be my last year before semi-retirement I had a lot

of things to do to get ready. One of these was to try and get all of the students I am advising completed before the end of the school year. Three MS students were able to defend during the year. Chris Elvrum, Joey Cupp, and Doug Graham. Unfortunately, I am still working with six others but do think they will be finished soon.

We had a good student representation at the GSA in Knoxville this past year. Doug Graham presented his work on the use of geophysics to locate karst conduits, Daryl Hines reported on the groundwater study of the Toyota Plant near Georgetown, Teri Dowdy presented her work on the application of GIS to groundwater analysis at the Toyota Plant (she also presented a poster paper at the GSA in Seattle, Washington, October 22-27, 1994). Carl Peterson presented his work on infiltration and recharge at an agricultural site in western Kentucky, and Mark Warrell presented his work on infiltration analysis on a coal fired ash disposal site (see citations under publications).

The other half of my appointment is directing the Kentucky Water Resources Research Institute. Our Institute had a good year. We have approximately 35 employees with more than 20 of them working in either Frankfort or Paducah Kentucky. Our office staff numbers five full-time people and three part-time student assistants. A major contract with the Kentucky Natural Resources and Environmental Protection Cabinet has afforded us the opportunity to hire a new faculty member who has a joint appointment with the Institute and the Department. Alan Fryar joined the staff this summer and we anticipate that he will play a major role in the geological and hydro-geochemical definition of the USDOE Paducah site. We are also looking forward to him developing a strong hydrogeology program in the Department.

A final report was completed on the underground storage tank study. The work is being adopted in part by the Kentucky Environmental Protection Department as regulations to help close leaking tanks in the state. The study represents a major effort by several faculty members at UK, Murray State University, and Western Kentucky University.

I have been given a one year appointment in the Department without tenure for the next year so I will be around on a limited basis for a few more years.

Ron Street

During the past year, facilities within the Geophysics Lab have continued to improve. Funding

from the State has enabled us to install two additional seismic stations and two more downhole strong-motion arrays in western Kentucky, and a downhole strong-motion array in northwestern Tennessee. The downhole accelerometer array in Tennessee is a cooperative effort between Lamont-Doherty and UK. With the completion of these Installations, the lab will be operating a total of twelve seismic stations, six on-site digital, strong-motion stations, and four on-site digital, downhole strong-motion arrays. The downhole arrays are state-of-art, and are the only such installations in the United States outside of southern California. Data from the downhole arrays are to be used to further our understanding of the propagation of earthquake induced seismic waves in the low-velocity sediments of the Upper Mississippi Embayment.

In addition to helping to operate the seismic and strong-motion networks, students in the lab have completed several kilometers of high-resolution, P- and SH-wave CDP reflection profiles in the Kentucky Bend Area, which is in the southwest corner of the state. Our interest in the Kentucky Bend area is based on the belief that an elongated topographical high near the center of the bend is remanent of a recent fault scarp, possible associated with the great New Madrid earthquake of February 7, 1812. P-wave reflection profiles are being collected over the area, and several parallel faults striking approximately N30°W have been identified. Vertical displacements of as much as 5 meters have been interpreted from the seismic sections. SH-wave profiles along selected portions of the P-wave lines where recent faulting is suspected, have permitted us to map displacements in near-surface gravel layers, and thereby establish the fact that the faulting seen in the Paleozoic bedrock (600 m) extends upwards to within a few meters of the surface.

Bill Thomas

During the past summer, Bob Hatcher (University of Tennessee, Knoxville) and I were invited by Professor Gouwei Zhang of Northwest University, Xi'an, China, to join him for a trip across the Qinling Mountains in Shaanxi Province. The idea was to make comparisons between the Qinlings and the southern Appalachians. We traversed mostly the interior belts in metamorphosed and highly deformed rocks; however, the metasedimentary stratigraphy records several episodes of continental rifting and compression. Very interesting geology! As interesting as the geology is, however, I was most

fascinated by the life style of the people in rural China. Topographically, the Qinling Mountains are much like the Appalachians, and parts are reminiscent topographically of eastern Kentucky. Some parallels, although about two generations apart in time, are evident in the development of infrastructure, roads and electrical power, for example. To see the labor-intensive methods of harvesting wheat, using a short-handled one-hand scythe, points to the hard work and persistence necessary to life in a somewhat isolated agriculture-based situation. The contrast of old and new was vividly exemplified by three workers thrashing wheat by hand (spreading the wheat on flat ground and beating it with a long-handled flail) in front of a house which had a television dish on the roof. The drive to raise the standard of living and to provide electrical power to homes, as well as industry, has lead to serious air pollution from coal-fired steam generating plants, burning dirty soft coal. The Chinese people are working diligently to improve living conditions, which for a large population is most challenging and poses significant questions of balancing legitimate needs with concern for the environment.

During this year, Nick Sirek (fracture controls on groundwater flow in eastern Kentucky) and Jay Sims (northeast boundary of the Uncompahgre uplift, Colorado) have nearly finished their M.S. theses, and Lyle Mars (sequence stratigraphy in the Black Warrior basin, Alabama and Mississippi) has nearly finished his Ph.D. dissertation. Maggie Brewer has begun research for her M.S. thesis on rift-related basement faults along the Blue Ridge in Tennessee, North Carolina, and Virginia. Steve Juscuk is doing dissertation research on basement structures in the foreland of the Ouachita thrust belt in Oklahoma, Arkansas, and Texas, mainly focusing on the Arbuckle-Wichita uplift. Steve did his M.S. thesis at TCU on structures in the Wichita Mountains. Meanwhile, Jay Sims has already begun research for his Ph.D. dissertation, using conglomerate composition for provenance modeling and structural restoration in the Central Colorado trough of the Ancestral Rocky Mountains. Aaron Baldwin arrived at the beginning of the fall semester, and he has selected a thesis on structural geology in the Appalachian thrust belt in Georgia. Brian Whiting (Assistant Research Professor) and I are continuing our research on subsidence history of the Black Warrior basin.

Brian Whiting

Since the date of last year's Round Up, I have

been engaged in a variety of exciting activities. In August, 1994, I attended a week-long Summer School for Global Change Research at NASA's Jet Propulsion Lab in Pasadena, California. This was a multidisciplinary course, led by a number of top experts in the fields of biogeochemistry, atmospheric chemistry, atmospheric physics, and ocean science. I was especially interested in the state-of-the-art discussion of the geologic record of global change, and I hope to incorporate some of the insights I gained there in future research. Last Fall, I taught Field Methods ("Saturday Field" to many of you) and Introductory Geology. I really enjoyed the chance to get out and learn the local rocks.

My main research interest and work here continues to center around the tectonics, subsidence, and stratigraphy of the Black Warrior foreland basin. Bill Thomas and I are now working on a manuscript that quantitatively addresses the effects of Ouachita thrusting on Black Warrior basin subsidence. We are also poised to delve deeply into the three-dimensional controls on basin stratigraphy and structure.

The most exotic activity in the past year was my participation in Ocean Drilling Program Leg 160 in the eastern Mediterranean. My main interest in this was in the incipient continent-continent collision off the southern margin of Cyprus. I was part of a team of 29 scientists that spent eight weeks at sea in the Mediterranean, drilling at twelve sites in water depths of 2,000 to 4,500 meters. We recovered over 3,200 meters of core, and the level of teamwork and cooperation required to do the science on board was very high. Later this academic year, I will begin conducting further post-cruise research aimed at understanding the sequence of events in the collision, and I will be in charge of the 1996 Summer Field Camp.

ADJUNCT FACULTY

Jim Hower

My research has continued to be more focused on coal-combustion by-products than on coal-bed studies. That type of work is interesting as it involves cooperation with the electric utilities in the region but it does mean that much of the research does not directly involve geologic studies. I am still working with the KGS and USGS on geochemical investigations of several eastern Kentucky coals. In the spring of 1995, I was part of a team teaching Coal Geology at the graduate level. Seven students survived the course and claimed that they enjoyed the experience.

My tenure as chairman of the Geological Society of America Coal Geology Division is coming to an end in November. It is often frustrating to chair a small division in such a large organization, but I did learn a bit more about the GSA organization.

EMERITUS FACULTY

Lois Campbell

In September, I took the trip that has been the highlight of the year for me: first to Sweden and then to St. Petersburg (Dr. Brown got there several weeks before I did.). In Sweden I met three of our librarians from the Miller Hall days: Dolly Krauthelm (now Mrs. Borje Jeansson) in Gothenburg, and Esther Zedner and Birgitta Molin in Stockholm. Birgitta had arranged the Russian jaunt which took us by ship from Stockholm to St. Petersburg for two days and then back. (Going and returning, the Baltic was calm.) The two days in St. Petersburg allowed only a sampling of what the city has to offer, and it was not just the Hermitage. There are beautiful parks and major public buildings have been restored, many of them once mansions and palaces, but now museums, housing various kinds of exhibits.

Here at home I continue my interest in the economic geology that supported the ancient civilizations of Egypt and the Near East. This means more reading and some writing.

William Dennen

We have been involved in selling, buying, and moving from Nahant, Massachusetts, to Rockport, Massachusetts.

1994-1995
DEGREES AWARDED

BACHELOR OF SCIENCE

Jeffrey A. Bond
James T. Calhoun
Keith M. Goins
Christopher A. Martin

Peter M. McKeon
Mary E. Poston
Matthew D. Varney
Matthew R. Wise

MASTER OF SCIENCE

Jacek Amudzidis, 1994, M.S., Deformation of carboniferous rocks along the Pine Mountain overthrust.

Advisor: Nicholas Rast

Elvrum, Christopher D., 1994, M.S., Relationship of fracture traces and sinkholes to stratigraphy and groundwater in the Inner Bluegrass Karst Region, Kentucky.

Advisor: Lyle V.A. Sendlein

Graham, C. Douglas R., 1994, M.S., Electrical resistivity studies in Inner Bluegrass Karst Region, Kentucky.

Advisor: Lyle V.A. Sendlein

Kulp, Mark A., 1995, M.S., Paleoenvironmental interpretation of the Brannon Member, middle-upper Ordovician Lexington Limestone, Bluegrass Region of central Kentucky.

Advisor: Frank R. Ettensohn

Moore, Angela M., 1994, M.S., The impact of agricultural pesticides and nitrate on karst groundwater quality in the Inner Bluegrass Region, Woodford County, Kentucky.

Advisor: Lyle V.A. Sendlein

Panetta, Brian J., 1995, M.S., The relationship of Devonian black shale gas production to natural microfractures in a portion of the Appalachian basin, Martin County, eastern Kentucky.

Advisor: Bruce Moore

DOCTOR OF PHILOSOPHY

Barnett, Stephen F., 1995, Ph.D., The Portwood Member (Upper Middle Devonian) of the New Albany Shale of central Kentucky: Nature and origin.

Advisor: Frank R. Ettensohn

Dever, Garland R., Jr., 1995, Ph.D., Tectonic implications of erosional and depositional features in Late Meramecian and Early Chesterian (Mississippian) carbonate rocks of south-central and east-central Kentucky.

Advisor: Frank R. Ettensohn

Mars, John C., 1995, Ph.D., Sequence stratigraphy of the late Paleozoic Black Warrior foreland basin in northwestern Alabama and northeastern Mississippi.

Advisor: William A. Thomas

Toles, Christopher A., 1995, Ph.D., Production of activated carbons from coal and coal maceral concentrates using phosphoric acid.

Advisor: Susan Rimmer

GRADUATE STUDENT RESEARCH

Penny Alano (B.S., Indiana)

M.S. thesis: Pyrite distribution and association in the Lower Block, Upper Block and Buffaloville coal members of the Brazil Formation (Davies County); Implications for the depositional environment.

Advisor: Sue M. Rimmer

Liane B. Alessi (B.S., Arizona)

M.S. thesis: Mineralogical and chemical composition of brecciated clay-carbonate sequences associated with No. 13 coal, western Kentucky: Implications for origin.

Advisor: Sue M. Rimmer

Eric Anderson, (B.S., Virginia Tech)

M.S. thesis: Chemical and isotopic constraints on the origin of carbonatite-like rocks, Grenville Province, Ontario.

Supported by National Science Foundation

Advisor: David P. Moecher

Margaret C. Brewer (B.S., Hunter)

Structure of an ancient rifted continental margin along the Blue Ridge in Tennessee, North Carolina, and Virginia.

Advisor: William A. Thomas

Denny J. Cantrell (B.S., Kentucky)

M.S. thesis: Organic maturation of the Devonian black shales in eastern Kentucky.

Advisor: Sue M. Rimmer

James F. Coble (M.S., East Carolina)

Ph.D. dissertation: Migmatitic development in the Ocoee Supergroup in western North Carolina.

Advisor: Nicholas Rast

Claudia Cook (B.S., Vanderbilt)

Rare earth element and neodymium isotopic composition of "carbonatite" and related rocks, Grenville Province, southern Ontario.

Advisor: David P. Moecher

Tony L. Cooley (B.S., Washington [St. Louis])

Ph.D. dissertation: Characterization of the macropore system and water movement through soils and soil/rock interface over a shallow karst conduit system.

Advisor: Lyle V.A. Sendlein

Thereseann Dowdy, (B.S. Kentucky)

M.S. thesis: Application of a GIS to a hydrogeologic study of the Inner Blugrass Karst Region in Scott County, Kentucky.

Advisor: Lyle V.A. Sendlein

Alan Gentry, (B.S. Louisville)

M.S. thesis: Application of RISK PRO to USG sites in Kentucky.

Advisor: Lyle V.A. Sendlein

Peter J. Goodman (B.S., Iowa; M.S., Temple)

Ph.D. dissertation: Numerical models of basin analysis in the autochthonous Appalachian basin in Kentucky, Cumberland Plateau region.

Supported by Chevron.

Advisor: Nicholas Rast

Richard T. Hendricks (B.S., Louisville)

M.S. thesis: Paleontology and paleoenvironments in the Laurel Dolostone, west-central Kentucky.

Advisor: Frank R. Ettensohn

Michael W. Hiatt (B.S., Middle Tennessee)

M.S. thesis: Characterization of groundwater flow and quality of Big Springs, Rutherford County, Tennessee.

Advisor: Lyle V.A. Sendlein

Brian Higgins, (B.S., Morehead)

M.S. thesis: Site responses due to seismic loading in Henderson, Kentucky.

Advisor: Ron L. Street

Daryl Hines, (B.S., Kentucky)

M.S. thesis: Hydrogeologic investigation at an industrial site of Scott County, Kentucky.

Advisor: Lyle V.A. Sendlein

Peter Idstein, (B.S., Eastern Illinois University; M.S., Eastern Kentucky University)

Ph.D. dissertation: Investigation of current and alternative groundwater sampling methods for contaminants moving in a karst flow system.

Advisor: Ralph Ewers (Eastern Kentucky University)

Scott Johansen, (B.S., Kentucky)

M.S. thesis: The Carboniferous limestone in southeastern Kentucky.

Advisor: John C. Ferm

Steven Juszczuk (B.S., Queens; M.S., Texas Christian)

Ph.D. dissertation: How do the late Paleozoic structures within the Southern Oklahoma aulacogen relate to the late Paleozoic structures of the Ouachita-Marathon orogenic belt?

Advisor: William A. Thomas

Dennis G. Lewellen (B.S., Oregon State; M.S., Eastern Washington)

Ph.D. dissertation: Control of sedimentation by contemporaneous structure, Pocahontas Formation,

Buchanan County, Virginia.

Advisor: John C. Ferm

Donald Lumm (B.S., Illinois; M.S., Vanderbilt)

Ph.D. dissertation: Re-examination of the Pennsylvanian-Mississippian unconformity in southern Illinois.

Advisor: John C. Ferm

Roger J. Paulson (B.S., Wisconsin-Plattville)

M.S. reports: Revision of input and output for Prickett, Naymik, and Lonquist random walk solute transport modeling program; and Contaminant hydrogeology of a site in Jefferson County, Kentucky.

Advisor: Lyle V.A. Sendlein

William J. Sims, (B.S. Arkansas-Little Rock)

M.S. thesis: Northeast boundary of the Ancestral Uncompahgre uplift, Gunnison County, Colorado.

Supported by Petroleum Research Fund, Pirtle Fellowship, Chevron.

Advisor: William A. Thomas

Nicholas Sirek, (B.S., Kentucky)

M.S. thesis: Distribution, abundance, and predictability of fractures (joints) in relation to the flow of groundwater in the Eastern Kentucky Coal Field.

Supported by Kentucky Geological Survey

Advisor: William A. Thomas

Yalan Tang (B.S., Shanxi; M.S., Beijing)

Ph.D. dissertation: Coal petrology, mineralogy, and geochemistry of the Fire Clay coal bed, southeastern Kentucky.

Supported by Medlin Award (Geological Society of America).

Advisor: Sue M. Rimmer

Jennifer A. Thompson (B.S., Smith)

Ph.D. dissertation: Organic facies in the Devonian shales, central Kentucky.

Supported by Center for Applied Energy Research.

Advisor: Sue M. Rimmer

Zhengping Wang (B.S., Wuhan; M.S., Beijing)

Ph.D. dissertation: Comparison of macroscopic and microscopic coal lithotypes.

Advisor: John C. Ferm

Zhenming Wang (B.S., Peking; M.S., Kentucky)

Ph.D. dissertation: Source characteristics of earthquakes in the New Madrid seismic zone.

Supported by Martin Marietta Energy Systems, Inc.

Advisor: Ron L. Street

Mark Warrell, (B.S. Kentucky)

M.S. thesis: Determination of the origin of groundwater in a fly ash landfill in northern Kentucky.

Advisor: Lyle V.A. Sendlein

Anna E. Watson (B.S., Kentucky)

M.S. thesis: Stratigraphy and depositional environments of the Pennington Formation, southeastern Kentucky.

Advisor: Frank R. Effensohn

Edward Woolery, (B.S., Eastern Kentucky; M.S. Kentucky)

Ph.D. dissertation: Near-surface structural investigation and seismic hazard analysis of the Northern Mississippi Embayment.

Supported by U.S. Geological Survey

Advisor: Ron L. Street

Xin-Yue Yang, (B.S., Central South University of Technology; M.S., Changsha Institute of Geotectonics, Academia Sinica)

Ph.D. dissertation: Chemical changes in ductile shear zones as a function of depth in the continental crust.

Supported by National Science Foundation

Advisor: Kieran O'Hara

NEW GRADUATE STUDENTS

William M. Andrews, Jr. (B.S., University of Kentucky)
 C. Erik Appel (B.A., California State University)
 Aaron Baldwin (B.S., East Carolina University)
 Reuben Gillispie (B.S., Marietta College)
 Walter K. Johnson (B.S., University of Louisville)
 Bryant Ramirez (B.A., Miami University; M.S., University of Cincinnati)
 Shane Schmidt (B.S., University of Indianapolis)
 V. Marie Sullivan (B.S., Juniata College)
 Eric Wallin (B.S., Georgia Southern University)
 Xin-Yue Yang (B.S., Central-South University of Technology; M.S., Changsha Institute of Geotectonics, Academia Sinica)

TEACHING ASSISTANTS

Penny Alano	Walter Johnson
William M. Andrews, Jr.	Steven Juszczuk
C. Erik Appel	Mark Kulp
Aaron Baldwin	Shane Schmidt
Margaret Brewer	Wm. Jay Sims
Reuben Gillispie	V. Marie Sullivan
Peter Idstein	Eric Wallin

RESEARCH ASSISTANTS AND FELLOWS

Claudia A. Cook, U.K. Women's Fellowship,
 Open Competition Fellowship
 Bryant Ramirez, Lyman Johnson Fellowship
 Zhenming Wang, Martin Marietta Energy Systems,
 Inc., Computation Sciences
 Edward W. Woolery, U.S. Geological Survey
 Xin-Yue Yang, National Science Foundation
 Research Assistantship

STUDENT AWARDS

**Kentucky Environmental Protection Cabinet and
 Kentucky Water Resources Research Institute**
 David Remley
 Dena Wunsch

Undergraduate Research and Creativity Awards
 David Butler
 H. Dan Liles
 David Remley
 Matthew Wise

Hudnall Scholarships
 Christopher L. Cayton
 Jeffery A. Esterle
 Mark H. Fackler
 John L. Griffith
 H. Dan Liles
 Azlan Malik
 Todd J. Milici
 Brent E. Millay
 Cynthia S. Palmgreen
 David A. Remley
 Jeffery J. Roberto
 Shane R. Schmidt
 Gary W. Stone
 Ian Thomas
 Matthew R. Wise
 Steven B. Wood
 John M. Yanasak

Pirle Graduate Fellowships
 Claudia Cook
 William J. Sims
 Zhengping Wang

McFarlan Fund, Research
 William M. Andrews, Jr.
 Claudia Cook
 Walter K. Johnson

McFarlan Fund, Travel
 Teri Dowdy
 Steven Juszczuk
 Mark Kulp
 John C. Mars
 Wm. Jay Sims
 Jennifer Thompson
 Zhengping Wang

Tarr Award (Sigma Gamma Epsilon) -
outstanding graduating senior
David A. Remley

Pirtle Award - outstanding junior showing
promise in geology
David L. Butler

STUDENT PRESENTATIONS

Thereseann Dowdy: Application using the Inner Bluegrass Karst Region in Scott County, Kentucky: Geological Society of America Southeastern Section Meeting, Knoxville, Tennessee, April, 1995.

Thereseann Dowdy: Using GIS to study the Inner Bluegrass Karst Region in Scott County, Kentucky: Geological Society of America Annual Meeting, Seattle, Washington, October, 1994.

C. Douglas Graham: Electrical resistivity studies in the Inner Bluegrass Karst Region, Kentucky: Geological Society of America Southeastern Section Meeting, Knoxville, Tennessee, April, 1995.

Daryl Hines: Hydrogeologic investigations at an industrial site of Scott County, Kentucky: Geological Society of America Southeastern Section Meeting, Knoxville, Tennessee, April, 1995.

Steven Juscuk: The structural geology of an unnamed hill south of Sally Mountain, Western Slick Hills, southwest Oklahoma: Geological Society of America North-Central/South-Central Section Meeting, Lincoln, Nebraska, April, 1995.

Mark A. Kulp: Paleoenvironmental interpretation of the Brannon Member: Evidence for synsedimentary tectonism in the Middle Ordovician Lexington Limestone, central Kentucky: Geological Society of America Southeastern Section Meeting, Knoxville, Tennessee, April, 1995.

John C. Mars: Recognition of sequence stratigraphic units in a Paleozoic foreland basin: Geological Society of America Annual Meeting, Seattle, Washington, October, 1994.

William J. Sims: Possible fault boundary along the northeast side of the Ancestral Uncompahgre uplift, Gunnison, County, Colorado: Geological Society of America Rocky Mountain Section Meeting, Bozeman, Montana, May, 1995.

Zhengping Wang: Characteristics of lithotype thickness and sequential association of some Kentucky coals: The Society for Organic Petrology, 11th Annual Meeting, 1994.

Mark Warrell: Determination of the origin of groundwater in a fly ash landfill in northern Kentucky: Geological Society of America Southeastern Section Meeting, Knoxville, Tennessee, April, 1995.

Xin-Yue Yang: A stable isotopic study of fluid infiltration into large scale shear zones during thrusting: Geological Society of America Penrose Conference on fine-grained fault rocks, Leavenworth, Washington, August 31-September 4, 1995.

FACULTY RESEARCH SUPPORT

U.S. Department of Energy:
Laboratory studies of abiotic reductive dechlorination of trichloroethene by basalt and sediments.
Alan E. Fryar

UK Summer Faculty Research Fellowship:
Causes and consequences of rapid subsidence in the Mississippi delta.
Paul Howell

College of Arts and Sciences Research Assistantship:
Causes and consequences of rapid subsidence in the Mississippi delta.
Paul Howell and Mark Kulp

College of Arts and Sciences Research Assistantship:
Aquifer differentiation and water quality characterization in the Western Kentucky coal field region.
Paul Howell and Dan Liles

Faculty Associates Program (Teaching and Learning Center, UK):

How the Earth Works: Part I: Applying constructivist principles in historical geology laboratory classes.

Paul Howell

Faculty Associates Program (Teaching and Learning Center, UK):

How the Earth Works: Part II: Applying constructivist principles in introductory geology laboratory classes.

Paul Howell

National Science Foundation:

Chemical changes in retrograde mylonites as a function of metamorphic grade.

Kieran O'Hara and David Moecher

National Science Foundation:

Stable isotopic study of pseudotachylyte-implications for melting during frictional fusion on brittle faults.

Kieran O'Hara and David Moecher

Martin Marietta, Inc./DOE:

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Zhengping Wang, Graduate Student

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Zhenming Wang, Graduate Student

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Mark Warrell, Graduate Student

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Brian M. Whiting, Research Assistant Professor

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**DEPARTMENTAL SEMINARS
1994-1995**

Proterozoic Assembly of Gondwana - Nicholas Rast, Department of Geological Sciences.

Appalachian-Ouachita tectonics: the Pan American Petroleum No. 1 McGee well, Scott County, Mississippi - William A. Thomas, Department of Geological Sciences.

Igneous ring complexes, with especial reference to Mull - D.E. Rast, University of Kentucky.

A natural cross section of the eastern Appalachians in Kentucky - J. Campbell, The Nature Conservancy.

Lower Paleozoic K-bentonites: Records of large scale explosive volcanism - W.D. Huff, University of Cincinnati.

Preliminary fracture trace analysis in part of the western Slick Hills, Oklahoma - Steven J. Juszczuk, Department of Geological Sciences.

Continuous electronic monitoring of the Cathedral Hall Cave Stream, Lee County, Virginia - Peter J. Idstein, Department of Geological Sciences.

Recognition of sequence stratigraphic units in a Paleozoic foreland basin - John C. Mars, Department of Geological Sciences.

Pseudo-carbonatites of the Central Metasedimentary Belt, Grenville Province, southern Ontario - Eric Anderson, Department of Geological Sciences.

Determination of the Mississippian-Pennsylvanian boundary in the Cumberland Gap region, southeastern Kentucky - A.E. Watson, Kentucky Geological Survey.

An interpretation of the Brannon Member of Lexington Limestone - Mark A. Kulp, Department of Geological Sciences.

Environmental mediation - Jennifer A. Thompson, Department of Geological Sciences.

Late Devonian oceanic anoxic events and biotic crisis: Rooted in the evolution of vascular land plants? - T.J. Algeo, University of Cincinnati.

The holistic stable isotope geochemistry of Paleozoic vertic soils - Claudia I. Mora, University of Tennessee, The Association of Women Geologists-Phillips Distinguished Lecture.

Liquefaction of waste plastics with coal - G.P. Huffman, University of Kentucky.

Environmental oversight: Paducah gaseous diffusion plant - Lyle V.A. Sendlein, University of Kentucky.

Sorting out differential compaction and Penecontemporaneous structure in Harlan County - John C. Ferm, Department of Geological Sciences.

Avalon - Nicholas Rast, Department of Geological Sciences.

More activated carbons from coal - Chris Toles, Department of Geological Sciences.

Panel discussion on sedimentology and hydrogeology - Teri Dowdy, Jay Sims, William A. Thomas, Department of Geological Sciences.

Tertiary? Gravels and terraces - Walter Johnson, Department of Geological Sciences.

Microfracture analysis related to Devonian black shale gas production in eastern Kentucky - Brian Panetta, Department of Geological Sciences.

Geochemistry of trace and minor elements in coal - Frank Huggins, University of Kentucky, Cffls.

Eolian deposits in the deep sea - Steven Hovan, Indiana University of Pennsylvania.

Paired sillimanite-kyanite belts in the Variscan chain of northwest Spain. Extensional vs. compressional orogenesis - Craig Dietsch, University of Cincinnati.

Panel discussion on tectonics and geophysics - Peter Goodman, Nicholas Rast, Zhenming Wang.

The geology and geopolitics of Albania - Ralph Langenheim, University of Illinois.

GSA hydrogeology lecture - Chris Neuzil, Birdsall/Dreiss Lecturer.

McFarlan Lecture:
Geological specializations in the service of mankind - Robert D. Hatcher, University of Tennessee.

NE boundary of Ancestral Uncomphagre uplift - William Sims, Department of Geological Sciences.

Patterns of deposition in the Middle Ordovician High Bridge Group, central Kentucky - Ian Thomas, Department of Geological Sciences.

Application of a GIS to a hydrogeologic investigation of the Inner Bluegrass karst region in Scott county, Kentucky - Teri Dowdy, Department of Geological Sciences.

Hydrogeologic investigation at an industrial site in

Scott County, Kentucky - Daryl Hines, Department of Geological Sciences.

Assessment of groundwater movement in a perched and regional aquifer system in western Kentucky - Carl Peterson, Department of Geological Sciences.

Stratigraphy of the Argentine Precordillera: A fragment of Laurentia - Ricardo Astini, Universidad Nacional de Cordoba, Argentina.

DEPARTMENTAL FUNDS

Several important departmental funds continue to be supported by contributions from alumni and friends of the department. The special uses of these funds are as follows:

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- student research grants; student prepares proposal including itemized budget
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(endowed by James S. Hudnall)

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NO CURRENT ADDRESS

We do not have current addresses for the following alumni. Please look over the list, and help us with any addresses you know.

Allsop, Charles M.
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 Austin, C. Bradford
 Beam, John D.
 Bechner, Jefferson
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 Brice, Donald A.
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 Cromley, Ellen K.
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 Fisher, Mary A.
 Fouts, John D.
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 Whittler, John
 Wilder, Graham
 Willoughby, Gregory T.
 Woock, Robert D.