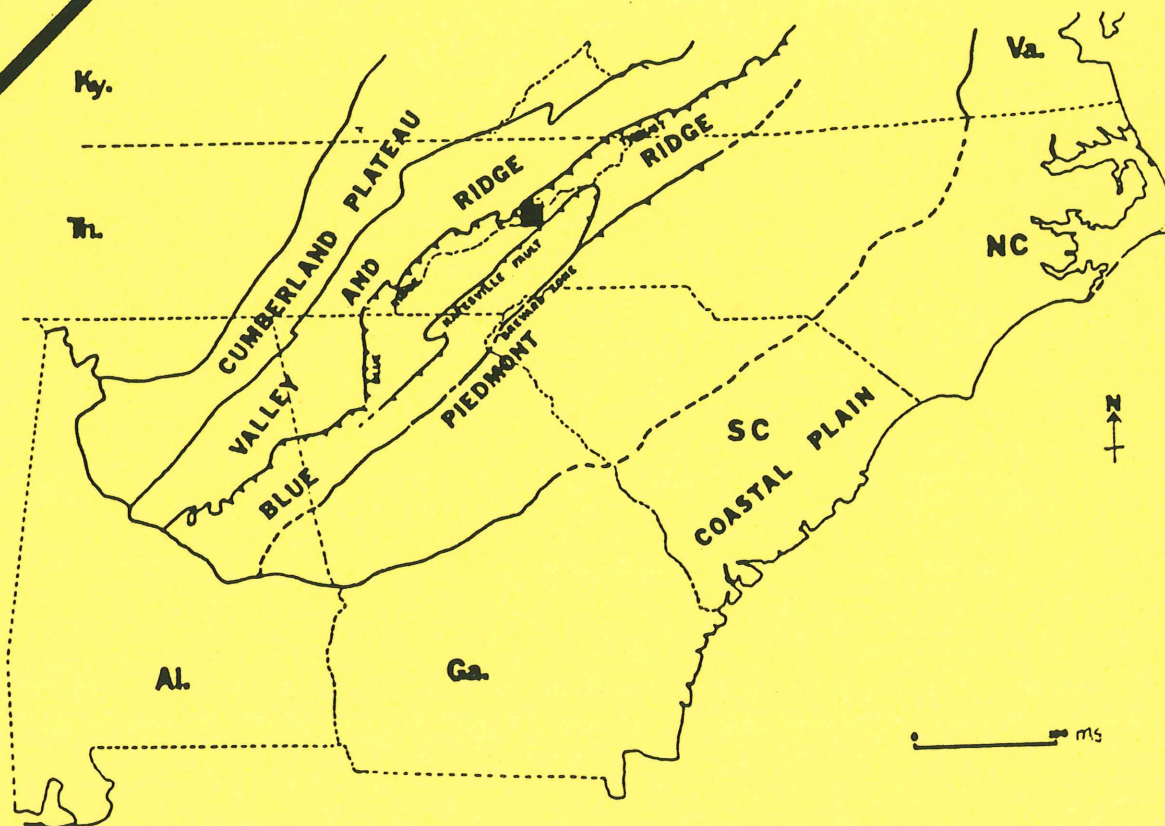


Round Up: 1997

Department of Geological Sciences
University of Kentucky



LETTER FROM THE CHAIRMAN

Dear Friends of the Department,

I have just returned from geology summer field camp in Colorado to formally assume a term as chair of the Department, as Bill Thomas, my predecessor, is now on sabbatical. Of course, six weeks in Colorado was a valuable opportunity to work with and learn about the concerns of our students, who are keenly aware of the changing role of the geosciences in our society. They are concerned about their preparation in this time of change and about their ability to compete for jobs. We faculty are also concerned about these aspects and are in the process of implementing changes that should enable us to prepare our students to meet these challenges more effectively. Foremost among these changes is a faculty consensus that the Department needs to move in a more applied, environmental direction, while maintaining a firm foundation in basic geology, other natural sciences, and mathematics. To this end, we will maintain a core of faculty in the traditional geologic subdisciplines, most of which build on our traditional strength in tectonics, but we are also seeking new positions to give us additional strength in the environmental field. We are gratified that the College of Arts and Sciences supports this strategy and has approved a new position in engineering geology effective next fall. With Ron Street, our seismologist, who is expanding his interests into environmental geophysics, and Alan Fryar, our hydrogeologist, this position will provide a nucleus of environmentally oriented faculty to make us more effective at teaching, collaboration in research, and competition for funds in the environmental field. Other faculty are also expanding or reorienting their teaching and research in more applied directions.

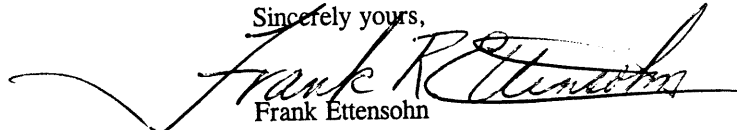
By next Fall, the Department will have also instituted a new undergraduate program in geology. We believe that it will provide a more integrated and field-oriented framework of instruction and encourage undergraduate research. We are also specifically considering a major in environmental sciences that will bring us more in line with the needs of students and help us to assume a leading role for this area in the college.

Integrally related to our undergraduate mission are graduate teaching and research. We continue to attract quality graduate students in traditional and environmentally related geologic fields. These students are becoming increasingly involved in collaborative research with units in the Colleges of Engineering and Agriculture, the Kentucky Geological Survey, and the Center for Applied Energy Research. Some of these students are winning awards and many regularly present their results at professional meetings. We are pleased that Professor Kieran O'Hara will continue to direct our graduate affairs, and we will soon have five new adjunct professors from the KGS to help us with our graduate mission.

Supporting these activities is our small, but dedicated staff, and the faculty. I point to the case of David Moecher, one of our younger faculty members who was granted tenure and promotion this year; he will be our new Director of Undergraduate Studies. As for other examples, Bill Thomas recently coauthored an important paper in the prestigious journal *Science*, and Nick Rast, the Hudnall Professor of Geology, was invited to present a paper at the distinguished John Dewey Conference in England. John Ferm was recognized for bringing his rock characterization techniques to New Zealand, and has been very successful with his new course for pre-service teachers. Ron Street, Alan Fryar, and Lyle Sendlein continue to be supported for their environmental oversight activities in western Kentucky, and Sue Rimmer is continuing her effective leadership as Associate Dean of the College of Arts and Sciences. Finally, Paul Howell was named one of this year's distinguished speakers for the National Association of Geoscience Teachers. Although I provide these examples to show that the Department is making real progress in its teaching, research and service missions, there is still much for us to do as we move forward and adapt to changing roles. We believe that the more applied emphases will help us in these endeavors, but at the same time will demand more collaboration among ourselves and with research units on campus and elsewhere.

You, our alumni and friends, are also a part of this collaborative network. Many of you have ideas about how to build a strong and effective department. We need to hear from you and when possible we also need your financial support (see page 24). You are still very much a part of our team, and working together toward common goals will only strengthen our Department.

Sincerely yours,



Frank Ettensohn
Professor and Chair

DIRECTORY

Department of Geological Sciences
University of Kentucky
101 Slone Building
Lexington, Kentucky 40506-0053
(606) 257-3758

Chairman

Frank R. Ettensohn

Donald C. Haney
James C. Hower

Professor

Richard I. Barnhisel*
John C. Ferm
Nicholas Rast
Lyle V.A. Sendlein
William A. Thomas

Technical Staff

James A. McHugh

Administrative Staff

Debra A. Smith
Mary S. Johnson

Associate Professor

David P. Moecher
Kieran O'Hara
Susan M. Rimmer
Ron L. Street

Emeriti

William R. Brown
Lois J. Campbell
William J. Dennen
Irving Fisher
William C. MacQuown
Bruce R. Moore
Thomas G. Roberts
John Thrailkill

Assistant Professor

Alan E. Fryar
Paul D. Howell

Instructor

David Wunsch

* Joint with Agronomy

Adjunct Faculty

James C. Cobb
James S. Dinger
James A. Drahovzal

ANNOUNCEMENTS

GEOLOGICAL SCIENCES ALUMNI WEEKEND AT UK

Alumni Weekend is set for April 17-18, 1998. The picnic will be held at the Kentucky Horse Park on April 17 and the banquet will be at Spindletop on April 18th. A detailed agenda will be mailed in the spring.

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 502-587-2641

for the Department—

John C. Ferm
101 Slone 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.

NEW FORMAT

From 1998 onward, we are hoping to change the format and composition of Round Up. Each year several of our alumni and faculty will be asked to compose a more extensive and complete description of their professional lives, including how and when they became interested in geosciences and how this guided their careers.

DEPARTMENT NEWS

NEW CURRICULUM FOR THE GEOLOGY MAJOR

Until recently, the schedule of our undergraduate courses followed that established in the early fifties and the emphasis lay on stratigraphy, structural geology, mineralogy, and petrology. The last quarter of the twentieth century, however, led to the rapid development of other earth science disciplines, including hydrogeology, environmental sciences, engineering geology, etc. Hence, it became clear that it is time to change the composition of our curriculum to introduce a broader understanding of geosciences. The Department, after establishing a committee chaired by Dr. Paul Howell and prolonged deliberation, is recommending a new curriculum for the Major in Geology leading to the Bachelor of Science degree, involving the following changes:

- A.) a strengthened "premajor" program, including a reorganized introductory course in Physical Geology and a year-long Fundamentals of Geology course focusing on field and laboratory exercises,
- B.) a single core (for all majors) of six upper level courses focusing on the insights and methodologies of modern geology. One of the required courses is the summer "field camp" course,
- C.) room at the junior/senior level for elective courses to encourage increased depth and breadth of study,
- D.) increased emphasis and opportunity for undergraduate research and/or experiential education (i.e., co-op program).

In addition to these changes for the major program, we have formulated a simpler lower-level course structure to better address the needs of non-majors who desire an introduction to geology. In our proposed curriculum, the lower-level courses are all topical with no prerequisites (courses such as "Dinosaurs and Disasters" and "Environmental Geology"). Physical Geology will be taught at the 200-level and will be taken by Geology majors and by those non-majors who require geology coursework for their majors (e.g., Civil Engineering and Landscape Architecture). The

effect of this change is to allow the pre-major courses to focus on a solid preparation for upper level work while the other introductory courses provide an introduction to geological ideas, reasoning and topics of broad societal interest.

We anticipate that these changes will improve the quality of our undergraduate education and provide geology majors with an appropriate background for graduate study or work in a broad range of geological fields. Foremost on our list of changes will be our efforts to work together as a faculty so as to bring about change, improvement, and synergy among our individual classes. True curriculum reform begins as we examine what it is we truly want to teach and how we might best teach it. Those who have a particular interest in the structure of our proposed changes, or in offering suggestions based on your own experiences, please feel free to contact us to discuss these issues.

1997 ALUMNI WEEKEND

Those who signed in for the 1997 Annual Alumni Weekend and participated in some of its functions included:

Alan Fryar	Eric Wallin
Kieran O'Hara	Elizabeth and Doug Haynes
Wm. Jay Sims	William A. Thomas
Greg Graham	Steven Juscuk
Bob Timmons	Sunil Mehta
Margaret Brewer	Mitch Rutledge
Donald Eisenbarth	Lowell King
Charles Holbrook	Mark Kulp
Thomas B. Brackman	Frank Ettensohn
Frank Stanonis	Pat Anderson
Paul Howell	Debra A. Smith
Lois Campbell	Carol Ruthven
Joe Allen	Harry Whitman
Ann Watson	David Butler
David Wunsch	Sue Rimmer
Dena Wunsch	Steve Hurst
Mary Sue Johnson	Mark Warrell
Ernie Ellison	Jim McHugh
David Jackson	Rachel Thomas
Ormon Shewmaker	William Andrews
David Moecher	Kieran O'Hara
Donald Lumm	James Drahovzal
Ann Watson	Peter Goodmann
Bill and Blessing Brown	Reuben Gillispie
Jennifer Miller	Christina Langston
Aaron Baldwin	Scott Boyer
Cara Kiger	Julie Hyatt
Nicholas Rast	

The 1997 McFarlan Lecture was given by Dr. William R. Muehlberger of the University of Texas at Austin and was entitled *Astronaut training module: Turkey and the Arabian plate*.

The weekend program included the annual picnic at the Kentucky Horse Park Friday evening and a field trip on Saturday afternoon led by John Kiefer and Jim Currens of the Kentucky Geological Survey on the topic, *Springs of the Bluegrass*.

Our annual Geological Sciences Alumni Symposium again consisted entirely of presentations by some of our current graduate students. The topics represented ongoing thesis and dissertation research that are nearing completion. Alan Fryar organized the program which included:

Intersecting structural trends in the Appalachian thrust belt in northwestern Georgia

by Aaron Baldwin (M.S. thesis)

Stratigraphy of the Late Ordovician Bardstown Member, Drakes Formation of north-central Kentucky and reef occurrence

by Shane Schmidt (M.S. thesis)

Truth or dare: The Maquoketa-Trenton (!) petroleum system

by Cara Kiger (undergraduate research)

Isostatic compensation in the Mississippi Delta: Distribution and rates of subsidence and uplift

by David Butler (undergraduate research)

Mineralogical and soil textural classification of uncompacted mine spoil and a target forest ecosystem in eastern Kentucky

by Marie Sullivan (M.S. thesis)

Spatial and temporal variability in seepage fluxes between contaminated aquifers and tributary streams

by Eric Wallin (M.S. thesis)

This year's program combined our annual Department Awards Program with our annual Alumni Banquet. Thanks to contributions from alumni, student attendance at the banquet reached a new high level, and the awards program was an enthusiastic climax to the Alumni Weekend. The significant awards to students were impressive and the list begins on page 12 in the Round Up. In addition, some less-than-serious but traditional awards provided lighter, humorous moments.

STUDENT COMPUTER LAB

More than a year ago, with the assistance of the College of Arts and Sciences and a generous anonymous donor, the Department upgraded the

student computer lab in Slone Building. This facility is used by graduate and undergraduate students in their course work and thesis research. A component of the upgrade involves connecting all the student computers to the internet. These connections are now in place and provide students with the capability to access data bases worldwide. With the assistance of the College, we have all the faculty and the department office in Slone Building "internetted". Please feel free to stop in and see the student computer lab during the next Alumni Weekend!

ALUMNI SURVEY

In June 1996, we sent a survey to all our departmental alumni for whom we had mailing addresses (nearly 600 of approximately 750 living graduates). Our purpose in distributing this questionnaire was to obtain comments and suggestions from alumni on such subjects as degree programs, job outlook, graduate recruitment, and department-alumni relations. Initially, we received 21 responses, which were summarized in the 1996 *Round Up*. As of July 1997, 39 more alumni had returned the questionnaire, and all 60 responses are included in this summary.

The alumni who responded represent a broad range of graduation dates (1931-1996) and current employment. Those who received more than one degree from the department are classified by the date of their first degree. The largest number of respondents (12) are geoscience consultants, 11 work in petroleum exploration and production, 10 are retired, and 9 each work for government agencies and for colleges or universities. Others are in non-geoscience jobs, full-time students, or unemployed; one did not indicate current employment status.

Numerical rankings and written comments from the respondents were generally, but not uniformly, favorable. Alumni were asked to indicate their agreement or disagreement with the following statements: "My University of Kentucky education prepared me very well for life in general" and "My training in geology at the University of Kentucky prepared me well for my career." On a scale of 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement, responses ranged from 2 to 5 for each statement, averaging 4.12 for the first statement and 4.04 for the second. The highest ratings were offered by alumni from the years 1931 through 1969.

Alumni were also asked to recommend changes in the degree program, to comment on the format and content of Alumni Weekend, and to offer other comments on their education and career choice. Nine

respondents commented on the relevance of other sciences, six the importance of courses in business, six the importance of hydrogeology and environmental geology. Five also stressed the importance of "real world" or "hands-on" experience (including field work). Recommendations for alumni activities included continuing education courses and presentations on recent developments in the geological sciences. None of the respondents indicated any regret at the choice of geology as a field of study.

We recognize the commitment of time and postage necessary to complete and return this survey, and we appreciate your input as we work to improve the department.

AWARDS

Several people associated with the University of Kentucky, Department of Geological Sciences were recipients of awards for their research and presentations at the 1996 Eastern Section of the American Association of Petroleum Geologists' conference in Charleston, West Virginia. The awards were presented at the annual meeting held in Lexington, Kentucky, September 29.

Stephen F. Greb and Cortland Eble, Kentucky Geological Survey, and James C. Hower, Center for Applied Energy Research, won the Ralph L. Miller Memorial Energy Mineral Division Best Paper award. Drs. Greb, Eble, and Hower also won the Energy Mineral Division Best Poster Award shared with Thomas L. Phillips of the University of Illinois. Cara B. Kiger, geology major, and Paul D. Howell, geological sciences, won the Margaret Hawn Mirabile Memorial Best Student Paper Award. James A. Drahovzal, Kentucky Geological Survey, won the A.I. Levorsen Memorial Award for the best paper given at the 1996 Eastern AAPG meeting.

James Hower is the 1997 Outstanding Kentucky Geologist Award from the Kentucky section of the American Institute of Professional Geologists.

ALUMNI NEWS

Anderson, Eric, M.S. 1996

After graduating in May, I headed to Fayetteville, West Virginia, to take tourists rock climbing. Last winter I dug ditches—following a family tradition of ditch

digging and grave robbing. Actually, I've been building a house as a business investment.

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

I am currently employed by BP Oil Company. I am working as a senior hydrogeologist managing the assessment and remediation of petroleum storage facilities in the eastern United States.

Allan Axon, M.S. 1987, Ph.D. 1992

I am leaving the Ohio Geological Survey after five years of working on coal-resource evaluations. I am moving to the North Carolina Geological Survey to do GIS work related to the low-level radioactive waste facilities.

Brian Baker, B.S. 1982, M.S. 1992

I have been working at the Department for Environmental Protection in Frankfort, Kentucky, for over six years. I primarily do regulatory work on groundwater investigations at hazardous waste sites throughout Kentucky. My main hobbies include hiking, gardening, and folk music.

Leslie F. Berry, B.S. 1967

Resigned as Chief Geologist, Lake Ronel Oil Company, Tyler, Texas, in 1990. Currently self-employed as exploration consultant out of Lindale, Texas.

E.M. Bodycomb, B.S. 1956

Consultant in industrial materials (marketing, product development, end-use development, research).

Albert L. Bryant, B.S. 1958

Retired L.G. & E., 35 years as senior geologist in 1994. Started a consulting company in 1994.

Jude Cecil, B.S. 1985

Received a second B.S. (computer science) from the University of Kentucky in 1994 and am working as a software quality analyst for Analysts International Corporation in Lexington, Kentucky.

Dennis Coskren, M.S. 1972, Ph.D. 1983

Still working on Alum Cave Bluff minerals. Trying to arrange study of phase relations.

Nancye Dawers, B.S. 1984

Currently working on late Jurassic normal faulting in the northern North Sea. I have been a post-doc. at the University of Edinburgh, Scotland, since January,

1996.

Pat Diamond, B.S. 1969, M.S. 1972

I am continuing to conduct research on the geologic and reservoir engineering factors influencing the occurrence, migration, and control of coalbed methane in the underground mining environment. However, due to the "wisdom" of the U.S. Congress, the Bureau of Mines where I had worked since 1973 was abolished. This act resulted in about 1,500 geologists, mining engineers, and support personnel being thrown on the street in late 1995. About 500 of us in the Bureau's Health and Safety research area were first transferred to the Dept. of Energy, and, subsequently to the National Institute for Occupational Safety and Health (NIOSH), which is part of the Centers for Disease Control. Professional highlights during this unsettled time include being certified as a Coal Geologist by the AAPG, and receiving a Best Paper Award at the 1997 International Coalbed Methane Symposium in Tuscaloosa, Alabama. Several other U. of K. graduates attended the symposium, which gave us all the opportunity to relate our favorite tales of life in the Geology Department in the "olden days" as well as updating current activities.

Pete Dodd, B.S. 1983

After graduating from U.K., I moved to New Orleans to work on offshore oil rigs for Schlumberger. After five hurricanes, I decided to do something different, so I spent the next two years getting a M.B.A. from the University of South Carolina. For the last eight years, I have been living in Greenville, South Carolina working as a portfolio manager for Liberty Capital Advisors, an institutional money management firm. I went from "rocks to stocks." I've been married for 13 years and have two boys, ages six and four.

Kevin M. Durham, B.S. 1996

Environmental consulting (project management).

Tim Elam, M.S. 1981

I am a staff geologist with Chevron in Bakersfield, California. After being in San Joaquin Basin exploration for the last nine years, I recently moved on to a development geology position. I am working Cymric, on our active heavy oil/steam drive fields in the San Joaquin. For fun, it's rocks, geology, and more rocks. I am an officer in the local mineral society. I collect minerals in the Mojave Desert, and I am involved in lapidary work (making clocks, pendants, and belt buckles) as well. I was asked to set up rock

and mineral displays for a new museum here in Bakersfield, the Buena Vista Museum of Natural History. The strength of our non-profit museum is collection and restoration of local Miocene vertebrate fossils. I am now on the museum's board of directors. My wife, Pat, is enamored with computers and puts up with all the rocks and dirt I bring into the house.

Noel W. Engel, B.A. 1935

I retired from Superior Oil Company in 1975, after a challenging, successful career which started in 1937. I did some consulting for several years, but other, non-related, activities soon took all my time. We live in a Senior-Adult community, Kern City, which is in the midst of south-west Bakersfield. The oil business center of California is here in Bakersfield as well as a good part of the big farming industry of this state. It is a busy city and we have enjoyed living here since 1977.

Jurgen Faupel

Cutting my present assignment with EXXON Exploration Co. short, I will start a new three-year assignment with ESSO E.&P. Nigeria Ltd. on May 1, 1997, as Exploration Manager. One of the numerous oddities of that country is the lack of a decent postal service. I thought until a short while ago that my experiences in the CIS countries cannot be topped but now I'm sure there will be new challenges and more excitement to come.

Robert J. Gibson

Retired 1973 as Vice President for Marketing, Lawsmith Cement Company after 33 years of service. Worked another 13 years as a sales representative for W.R. Stamler Corporation, Millersburg, Kentucky, selling heavy crushing equipment. Now enjoying full-time retirement and playing golf and bridge regularly.

Keith A. Goins, B.S. 1995

I spent over a year in Dallas, Texas, working for ATC Environmental as a project manager. My primary job was inspecting properties and writing Phase I ESA's. Additional jobs included limited sampling for asbestos, lead in paint/water, and radon. I'm currently working for Kenvirons as a geologist. My work includes logging and describing rock and soil cores and observing and recording landfill construction.

James W. Hazel, M.S. 1973

Still working as inspector for the Department of Mines and Minerals Division of Oil and Gas. Our most

exciting news is our first grandchild—a little girl born June 19, 1996.

Roger B. Head, M.S. 1964

Teaching geology at community college level.

Charles E. Holbrook

Jewell and I returned from Indonesia last June (1996) and I requested an early retirement package from Chevron rather than take the job in Houston. We have since been traveling quite a lot and finally bought a house in Pinehurst, North Carolina (lots of golf courses).

Jerald D. Huffman, B.S. 1958, M.S. 1964

Been in Ohio for over 30 years. Drilled a bunch of Knox Wildcats. Fortunately, some were good ones, and unfortunately, a lot were "dogs." Wildcatting is the craziest part of the oil business. No one back in the 50's in the U.K. Geology Department ever mentioned the headaches and misery that geologists would experience in their endeavors to find more of that stinking oil. If any of you young geology students are reading this, I'm warning you here and now that it takes guts, strong intestinal fortitude to withstand the ups and downs of wildcatting. However, I will have to admit that I have met some great people along the way, but I have also dealt with a lot of crazy landowners with the meanest lawyers in the country, crooked promoters that were always going to get me rich with just what falls off them, and seismologists that lied when they said it looks good. Believe me, I have experienced it all. But still, nothing hurts like a dry hole in which you personally put a lot into and, again, nothing is so spectacular and fascinating as a discovery.

If I could just hit one more "big one," I might retire, and move back south across the big river to the old country (that's the Ohio River and not the Rio Grande). I might even give five bucks to the McFarlan Fund. However, right now too many people depend on me; such as pumpers, supply stores, seismic companies, unproductive people on welfare, et cetera, et cetera, to even think about that nonsense. Besides, as any geologist knows, there are always offsets to drill when you make a discovery.

C.B. Huggins, V., M.S. 1987

Six months ago I started an environmental management consulting firm, C.B. Huggins and Associates, located in Roanoke, Virginia. The focus of the company is environmental compliance programs

for industry and assisting clients in developing management strategies for contaminated properties. Most of our work is based in Virginia, West Virginia, and the Carolinas.

Eric S. Johanson, B.S. 1988, M.S. 1997(hopefully)

Currently working for the State of Indiana Department of Environmental Management in the tech. support section of the Office of Environmental Response. My job duties include oversite tech. support for Superfund, state clean-up, voluntary remediation, leaking underground storage tank, Department of Defense, and emergency response sites. My primary duty is oversight of soil and groundwater remediation at these sites.

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

Have been senior geologist with Rumpke Sanitary Landfills since 1992. Rumpke is the fifteenth largest waste company in the United States. In the last year, I have been put in charge of not only all aspects of geology relative to landfill development, but also all aspects of groundwater, surface water, and explosive gas monitoring at all of Rumpke's facilities in three states (Ohio, Indiana, Kentucky). Between my job and my family (two teenage children), I don't have near enough time to keep up with the rapid advances in geology that I would like.

Julie Ross Kemper, B.S. 1981

Currently working as a geologist for an engineering firm Mining Consulting Services, Inc., in Lexington, Kentucky.

Kevin Kohles, M.S. 1985

Coming up on 10th year with Geological Data Services in Dallas, Texas. Mainly working the Permian and San Juan basins. Sheri and I have two kids now, Ben (7) and Jenna (4).

Robert Lieber, M.S. 1978

I am currently Chief Geoscientist for a software company in London, England. I am responsible for technical design and verification (but thankfully not programming) of a UNIX-based geological and geophysical software product called Tigress. My UK address is 28 Oakley Road, Chinnor, Oxford OX94HB England.

Gordon Rerrick Marsh, B.S. 1952

Substituting full time in local high school. Training life guards and supervising local neighborhood

swimming pools in summer.

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

Semi-retired. Still have two oil and gas clients at this point, November, 1996. Engage in investing in oil and gas prospects (deals).

Brent Owens, B.S. 1983

I just finished my first year in a tenure-track position here at William and Mary. My main teaching responsibilities are mineralogy and petrology.

Alma Hale Paty, M.S. 1984

I have started my own government affairs, resource policy, minerals education business as of January 1, 1997. I love it! I am in the marketing phase to get the word out that if anyone needs an "ear on the ground" in our nation's capital, let me know. The business is called "A Capital Resource" and if the past three months are any indication, I look forward to a very hectic and fun year.

A. Edwin Pettit, B.S. 1940

I have retired. . .play some golf, do a bit of fishing, and lots of reading.

Don Prater, B.S. 1993

Geologist/project manager in charge of UST closures, site assessments, and remediation system installation and maintenance.

Herman H. Rieke, B.S. 1959

I was on the steering committee for the Society of Petroleum Engineering that held a week-long colloquium on petroleum engineering in Breckenridge County in July. Presentations and discussion centered on the relationship between the departments (world-wide) and the petroleum industry and government organizations. The role and function of industry advisory board was explored in depth. Part II of the book, *Carbonate Reservoir Characterization of Geologic-Engineering Analysis*, was published by Elsevier last fall. I was a co-author of the book. This makes a total of eight.

Michael G. Roark, B.S. 1988

I left employment with McCoy and McCoy Environmental Consultants in 1996 and began working with the Lexington-Fayette Urban County Government.

Henry M. Rutledge, B.S. 1956, M.S. 1958

I am retired and living in Lakeway Village, Texas, which is located about 15 miles west of Austin, Texas. Martha and I have two children living in Austin. Two grandchildren live in Sugarland, Texas. We both like to travel and do so quite a lot. During 1996, we traveled in France, Canada, and Mexico. We spent a month during July and August in the Blue Ridge Mountains in North Carolina to escape the Texas heat.

Tom Schick, B.S. 1994

I am working as a Geologist/Senior Engineering Technician for GeoTechnologies, Inc. in Raleigh, North Carolina. I am currently involved with the University of North Carolina Kenan Stadium expansion, acting as the quality control representative for the University.

Edward M. Self, B.S. 1950

Retired—lived in Florida since 1988. Play a lot of golf, bridge, and travel. I enjoy the *Round Up*.

Larry Spangler, M.S. 1982

I have been employed with the U.S. Geological Survey in Salt Lake City, Utah, since September, 1988. As a hydrologist, I work on ground-water investigations concerning both the quantity and quality of groundwater. Projects I have been involved with include salinization of freshwater aquifers, effects of coal mining on ground-water quality, recharge and discharge relations, water-level monitoring, and aquifer testing and analysis. I am also the water-quality specialist for the Utah District. Outside of my job, I continue to pursue personal research in the hydrology of karst terrains.

Dan F. Travis, B.S. 1957

Retired from U.S. Mining, a Division of United States Steel as Division Manager-Engineering. Started second career as independent contractor. Started new business in Birmingham, then Huntsville. Now considering selling out and starting third career. Life is good!

Franco Urbani, M.S. 1972, Ph.D. 1975

On July, 1996, I finished my term as Director of the School of Geology, Mines and Geophysics at the Central University of Venezuela. Now I returned to work full-time in teaching (two subjects per semester) and research in the field of mineralogy and geothermics.

Thomas C. Wachs, M.S. 1975

I left the U.S.G.S. in 1984 after nine years as a geophysicist. I continued to grow into my freelance photography business. I do much of the District of Columbia area photography (books, calendars, post cards, etc.), some commercial work and many art shows on the east coast. My work is primarily landscape/travel/ people—United States, Canada, China, Tibet, Italy, Morocco, Australia. All of the uncertainties of self-employment but I eagerly look forward to every day. It combines my favorite interests—travel, photography, backpacking, flying, etc. I sometimes miss the academic environment—especially piloting Bruce Moore all over the U.S.A., Bahamas, and Australia as a graduate student.

Joseph K. Wetherill, B.S. 1941

Retired from consulting business in 1996.

George Brian Wyatt, M.S. 1991

In July 1997, I closed my private practice land surveying business in Lexington, Kentucky and, with my wife, Cindy, moved to Marysville, Ohio. Currently, I'm seeking employment with environment engineering interests in the Columbus, Ohio, area.

GSA MEETING

The 1996 annual meeting of the Geological Society of America was held in Denver, Colorado. Over thirty participants signed "the book."

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.

William A. Bruce, July 29, 1996

Wallace W. Hagan, July 18, 1997

Earl F. Middleton, August 1, 1988

George R. Thomas, Sr., April 2, 1996

Frank T. Whittinghill, April 9, 1980

Wallace Hagan

Dr. Wallace W. Hagan, former Director and State Geologist of the Kentucky Geological Survey died early July 18, 1997. Dr. Hagan led the Survey from 1958-1978 and was responsible for the Kentucky/USGS Mapping Program which made Kentucky the best mapped state in the nation. A memorial service was held July 22, 1997, at the First Methodist Church,

High Street, Lexington, Kentucky. In lieu of flowers, the family asked that contributions be made to the Hagan Scholarship Fund, Department of Geological Sciences, University of Kentucky.

STUDENT NEWS

1996-1997 DEGREES AWARDED

Bachelor of Science

Scott Boyer
Jerry J. Jones
Cara Kiger
Christina Langston
H. Dan Liles
Azlan Malik
Jennifer M. Miller
Julie E. Osborne
Cynthia S. Palmgreen
Chris A. White

Master of Science

William M. Andrews, Jr., 1997, M.S., Structural control on the origin and nature of the Brassfield formation (Lower Silurian) west of the Cincinnati Arch, Kentucky.

Advisor: Frank Ettensohn

Richard T. Hendricks, 1996, M.S., Stratigraphy and sedimentology of the Silurian (Wenlockian) Laurel Member of the Salamonie Dolomite in Kentucky and adjacent southeastern Indiana.

Advisor: Frank Ettensohn

Brian A. Higgins, 1997, M.S., Site amplification of earthquake ground motions in unconsolidated sediments in Henderson, Kentucky.

Advisor: Ronald L. Street

Penny L. Padgett (Alano), 1997, M.S., Sulfur variability and petrology of the Lower Block coal member (Pennsylvanian) in southwest Indiana.

Advisor: Sue M. Rimmer

Carl Petersen, 1996, M.S., An assessment of groundwater movement within a perched and regional

aquifer system in the Jackson Purchase Region of Kentucky.

Advisor: Lyle Sendlein

William J. Sims, 1996, M.S., A fault boundary for a segment of the northeast Ancestral Uncompahgre uplift, Ancestral Rocky Mountains, Colorado.

Advisor: William Thomas

GRADUATE STUDENT RESEARCH

Aaron R. Baldwin (B.S., East Carolina)

M.S. thesis: Structural intersection in the Appalachian thrust belt in northwestern Georgia. Supported by USGS EDMAP.

Advisor: William A. Thomas

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

M.S. thesis: Structure of an ancient rifted continental margin along the Blue Ridge in Tennessee, North Carolina, and Virginia. Supported by North Carolina Geological Survey, S.E. G.S.A., and McFarlan Fund.

Advisor: William A. Thomas

David L. Butler (B.S., Kentucky)

M.S. thesis: Biodegradation of trichloroethene in wetland soils from McCracken County, Kentucky Supported by the Kentucky Water Resources Research Institute

Advisor: Alan E. Fryar

David Campbell, (B.S., Morehead)

M.S. thesis: Tidal facies of the Pennsylvanian Lee Formation in southeastern Kentucky.

Advisor: Paul Howell

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

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

Advisor: Sue M. Rimmer

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

Esawi K. Elesawi (M.S., North Carolina, Chapel Hill)

Ph.D. dissertation: Geology and geochemistry of the Mocksville Complex, central North Carolina: Petrogenetic and tectonic implications.

Advisor: Nicholas Rast

Alan Gentry (B.S., Louisville)

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

Advisor: Lyle V.A. Sendlein

Reuben Gillispie (B.S., Marietta)

M.S. thesis: Increased resolution of the ground-water basin boundary of Royal Springs, a karst water-supply aquifer in Scott and Fayette Counties, Kentucky.

Advisors: James S. Dinger and Alan E. Fryar

Greg Graham (B.S., Wisconsin-Milwaukee)

M.S. thesis: Geologic mapping and three-dimensional characterization of two juxtaposed lateral ramps in the Appalachian thrust belt in northeastern Alabama.

Supported by USGS EDMAP

Advisor: William A. Thomas

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; M.S., Eastern Kentucky)

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: Petrography, stratigraphy and depositional environments of the Big Lime on the Pine Mountain overthrust, southeastern Kentucky.

Advisor: John C. Ferm and Frank R. Ettensohn

Walter Johnson (B.S., Louisville)

M.S. thesis: Stratigraphy of the Ste. Genevieve-Girken contact in western Kentucky.

Advisors: Frank R. Ettensohn and Nicholas Rast

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? Supported by the Southeastern Section of the Geological Society of America research grant.

Advisor: William A. Thomas

Mark A. Kulp (B.S., Juniata; M.S., Kentucky)

Ph.D. dissertation: Isostatic contributions to

subsidence and uplift in the northern Gulf coast.

Advisor: Paul D. Howell

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

Sunil Mehta (B.Sc., Jodhpur; M.Sc., Poona; M.S., Northeast Louisiana)

Ph.D. dissertation: Cross-formational discharge and flow of basinal brine within the Ogallala aquifer, Southern High Plains, Texas

Supported by AAPG, S.E. GSA, and the McFarlan Fund

Advisors: Alan E. Fryar and William A. Thomas

Jeremy Middleton (B.S., William and Mary)

M.S. Thesis: Genesis and filling of a foreland marine flooding zone: stratigraphic and architecture of the Pennsylvanian Magoffin Member, eastern Kentucky.

Advisor: Paul D. Howell

Shane Schmidt (B.S., Indianapolis)

M.S. thesis: Stratigraphic and paleoenvironmental controls on Upper Ordovician coral "reefs" in west-central Kentucky.

Advisor: Frank R. Ettensohn

Wm. Jay Sims (B.S., Arkansas-Little Rock; M.S., Kentucky)

Ph.D. dissertation: The geometry and kinematics of the Pennsylvanian-Permian central Colorado trough.

Supported by Colorado Scientific Society and G.S.A..

Advisor: William A. Thomas

V. Marie Sullivan (B.S., Juniata)

M.S. thesis: Physical and chemical comparison of uncompacted coal mine soil to forest soils; eastern Kentucky.

Advisor: Paul Howell

Christofer J. Sweat (B.S., Kentucky)

M.S. thesis: Sorption of trichloroethane on wetland soils and paleowetland sediments.

Supported by the Kentucky Water Resources Research Institute

Advisor: Alan E. Fryar

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

Ph.D. dissertation: Coal petrology, mineralogy, and

geochemistry of the Fire Clay coal bed, southeastern Kentucky.

Advisor: Sue M. Rimmer

Eric J. Wallin (B.S., Georgia Southern)

M.S. thesis: Spatial and temporal variability in seepage fluxes between the Continental Deposits and Little Bayou and Bayou Creeks, McCracken County, Kentucky.

Supported by the Kentucky Water Resources Research Institute

Advisor: Alan E. Fryar

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

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

Advisor: John C. Fern

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.

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

Christina Langston (B.S., University of Kentucky)

Matthew Vest (B.S., Morehead State University)

Jessica Wichtowski (B.S., SUNY Geneseo)

Kari Wirth (B.S., SUNY Geneseo)

TEACHING ASSISTANTS

Margaret Brewer

David Campbell

Gregory Graham

Mark Kulp

Jeremy Middleton

Wm. Jay Sims

Chris Sweat

Matthew Vest

Jessica Wichtowski

Kari Wirth

Xin-Yue Yang

RESEARCH ASSISTANTS AND FELLOWS

Aaron Baldwin

Gregory Graham

Christina Langston

Sunil Mehta

STUDENT AWARDS

American Association of Petroleum Geologists

Research Grant

Sunil Mehta

Geological Society of America (Southeastern Section) Research Grant

Sunil Mehta

Graduate School Research Grant

Sunil Mehta

Wm. Jay Sims

Graduate School Travel

Margaret C. Brewer

Kentucky Natural Resources & Environmental Protection Cabinet Scholarship

David Butler

Chevron Fellowship

Not awarded this year.

Undergraduate Research and Creativity Awards

Cara B. Kiger

Graduate School Allocated Fellowship

Sunil Mehta

Graduate School Open Fellowship

David Butler

Hudnall Scholarships

Steve Aldis

Chris Hettinger

Jerry Jones

Richard Xedos

McFarlan Fund

Aaron Baldwin (Travel)

Margaret C. Brewer (Travel and research)

E.K. Esawi (Research)

Reuben Gillispie (Research)

Steven Juszczuk (Travel)

Cara Kiger (Travel)

Sunil Mehta (Research)

Jeremy Middleton (Travel and research)

Shane Schmidt (Travel)

Wm. Jay Sims (Travel)

Pirtle Award - outstanding junior showing promise in geology

Thomas Brachman

Pirtle Graduate Fellowships

David Butler

Sunil Mehta

Christofer Sweat

UK Exceptional Teacher-Scholar Apprentice Award (Finalist)

Eric Wallin

Tarr Award (Sigma Gamma Epsilon) - outstanding graduating senior

Cara Kiger

STUDENT PRESENTATIONS

Robert E. Andrews – Regional mapping of coal beds in Kentucky, Eastern Section American Association of Petroleum Geologists, September 27-30, 1997, Lexington, Kentucky.

David Butler – Isostatic compensation in the Mississippi delta: A three-point problem approach to geodetic leveling: Kentucky Geosciences Symposium, Lexington, May 23, 1997.

James Coble – Structural metamorphic development of the Hayesville Fault, Haywood and Jackson

counties, North Carolina. Annual Meeting Geological Society of America, Denver, Colorado, October 28-31, 1996.

E.K. Esawi – Geological and geochemical constraints on the tectonic evolution of Carolina Terrane in central North Carolina. Annual Meeting Geological Society of America, Denver, Colorado, October 28-31, 1996.

Reuben Gillispie – Hydrogeologic studies in the Royal Springs Basin of Fayette and Scott counties: Kentucky Geosciences Symposium, Lexington, May 23, 1997.

Greg Graham – Three-dimensional characterization of two juxtaposed lateral ramps in the Appalachian thrust belt of northeastern Alabama, Annual Geological Society, Salt Lake City, Utah, October 27-30, 1997.

Elizabeth Haynes – A calcite-biotite-serpentine-perovskite xenolith in the Elliott County, KY, kimberlite: A sample of primary kimberlite melt? Geological Society of America Southeastern Section Meeting, Auburn, AL, March 27-28, 1997.

Steven Juszczuk – Palinspastic restorations of cross sections constructed around the Ouachita salient. Annual Meeting Geological Society of America, Denver, Colorado, October 28-31, 1996.

Cara Kiger – Truth or Dare: Trenton-Maquoketa(!) petroleum system. Eastern Section Meeting of American Association of Petroleum Geologists, Charleston, West Virginia, October 10-11, 1996.

Cara Kiger – Treading lightly: A mapping exercise in Arches National Park. Annual Meeting Geological Society of America, Denver, Colorado, October 28-31, 1996.

Mark A. Kulp – Stratigraphic and structural framework of Granville-like lithologies in the Tanglewood member, Middle and Upper Ordovician Lexington Limestone, central Kentucky. Eastern Section, American Association of Petroleum Geologists, Lexington, Kentucky, September 27-30, 1997.

Mark A. Kulp – Recognition of seismogenic influence during Paleozoic epicontinental

sedimentation: Examples from the Middle Ordovician Lexington, Kentucky. Eastern Section American Association of Petroleum Geologists, Lexington, Kentucky, September 27-30, 1997.

Sunil Mehta – Adapting MODFLOW to accommodate gravity-driven flow in variable thickness aquifers. Geological Society of America Annual Meeting, Denver, Colorado, October 31, 1996.

Achim Mueller – Garnet and sillimanite growth during retrograde shearing along the Chunky Gal Fault, NC: Implications for interpretation of peak metamorphic mineral assemblages in the southern Blue Ridge. Geological Society of America Southeastern Section Meeting, Auburn, AL, March 27-28, 1997.

Penny (Alano) Padgett – Sulfur distribution in the Lower Block coal (southwestern Indiana): Inferences about the depositional environment. Annual Meeting of Geological Society of America, Denver, Colorado, October 28-31, 1996.

Penny (Alano) Padgett – Hardgrove grindability study of Powder River Basin and Appalachian coal components in the blend to a midwestern power station. Eastern Section American Association of Petroleum Geologists, Lexington, Kentucky, September 27-30, 1997.

Shane Schmidt – Sequence stratigraphy of the late Ordovician Bardstown Member, Drakes Formation and “reef” occurrence in north-central Kentucky. Kentucky Geosciences Symposium, May 23, 1997 and Southeastern Section Geological Society of America, Auburn, Alabama, March 27-28, 1997.

Wm. Jay Sims – Contrasts in reactivation history of basement faults at the margins of the Uncompahgre uplift, Ancestral Rocky Mountains. Annual Meeting Geological Society of America, Denver, Colorado, October 28-31, 1996.

Wm. Jay Sims – Geologic instruction at the secondary or introductory college level using local topographic and geologic maps. Annual Meeting Geological Society of America, Denver, Colorado, October 28-31, 1996.

Ian Thomas – Mass transfer attending tectonic mixing in a high grade ductile shear zone:

Geochemical Evidence Geological Society of America Southeastern Section Meeting, Auburn, AL, March 27-28, 1997.

Eric Wallin – Spatial and temporal variability in seepage fluxes between contaminated aquifers and tributary streams. Midwest Groundwater Conference, Lexington, Sept. 30, 1996

Eric Wallin – Groundwater/surface water interactions and contaminant mobility near the Ohio River, McCracken County, Kentucky. Kentucky Geosciences Symposium, Lexington, May 23, 1997

Eric Wallin – Combining hydraulic, thermal, and hydrochemical approaches to delineating seepage between contaminated aquifers and streams. American Geophysical Union, San Francisco, California, Dec. 12-19, 1996.

Xin-Yue Yang – Element mobility during greenschist mylonitization: An example from the Brevard Zone, North Carolina. Annual Geological Society of America, Salt Lake City, Utah, October 19-23, 1997.

FACULTY NEWS

Frank R. Ettensohn

This summer we completed another successful geology field camp in the Elk Mountains of the Crested Butte – Gunnison area of south-central Colorado. Upon return at the end of July, I formally began a term as chair of the Department, and I have been “scrambling” ever since. Of my several students in progress, William “Drew” Andrews and Todd Hendricks finished their theses on Silurian rocks from the western flank of the Cincinnati Arch. Unlike the more typical Brassfield on the eastern side of the arch, Drew was able to show that some of the unusual Brassfield facies encountered on the western side of the arch are related to synsedimentary structural control that was previously unrecognized, and Todd was able to show some similar controls on the deposition of his unit, the Laurel Dolostone.

With colleagues in New York, I have been working in rocks of similar age from the northern Appalachian Basin, and we now have evidence from the stratigraphic record that compliments structural and

igneous evidence, supporting the continuation of Taconian orogeny into early Silurian time. Farther cratonward in Kentucky and adjacent states, using evidence like that developed by Drew and Todd above, we have also been examining the stratigraphic record for evidence of far-field tectonics. Although long recognized in Europe under the term "Germanotype" tectonics, this type of tectonics encompasses a more subtle kind of deformation that is related to and coeval with intense deformation in the orogen. This type of deformation is expressed by regional tilting, seismicity and reactivation of basement structures at distances up to 2000 km from the active orogen. During Paleozoic deformation on the Appalachian margin, the shallow seas that stretched across Kentucky were the sites of such far-field deformation. Abrupt facies changes associated with basement precursor faults as well as seismites are evidence for such movements. Accordingly, Nick Rast, Ron Street, and I have been engaged in the study of ball-and-pillow structures throughout the Ordovician of central Kentucky, as we believe that these horizons represent major episodes of dewatering caused by earthquakes on structures in the area. Finally, I have been using some of my carbonate petrology to characterize and identify the origins of historic mortars. Working with a local conservator in Lexington, I have been developing techniques for the application of standard microscope petrography to the study of mortars, techniques that have been little used in the field of historic restoration.

John C. Ferm

John spent the Fall Semester teaching his sedimentary petrology and geology for elementary teachers courses. Much time was spent organizing the labs for the teachers' course and, although the format is not stabilized, progress is being made. It is expected that about 60 students will enroll in this course each semester.

The second semester was spent mainly in New Zealand and some time in Australia. In New Zealand, John was associated with Coal Research Ltd., the organization that employs former student, Tim Moore. Most of the work there was developing a rock classification that can be used in coal exploration. The rocks there are quite unlike those of the Appalachian or Rocky Mountain coal fields and it is a real challenge. He was also able to visit various coal operations and was able to observe some major differences between them and Appalachia. (Unless a coal seam is six-feet thick, they don't consider it minable.) He was also able to give lectures at Canterbury and Victoria

Universities and the Royal Society of New Zealand.

He was able to visit some BHP operations in Australia and visit with former student, Joan Esterle; Joan is making great progress in reducing coal "fires" and is cooperating with mining engineers to improve their products.

Alan E. Fryar

Dr. Fryar has been appointed as chairman of the departmental seminars committee.

My students and I spent a lot of time in the field and the lab this past year, and our studies of watershed hydrology, contaminant fate, and regional ground-water flow are coming to fruition. Much of this work centers on the Paducah Gaseous Diffusion Plant; our activities there are supported by the Kentucky Water Resources Research Institute. Eric Wallin is finishing a 15-month study of ground-water/stream interactions around PGDP, including monthly monitoring of water levels, temperatures, and stream-flow rates and seasonal sampling of ground water and stream water. David Butler and Christofer Sweat are studying biodegradation and sorption of trichloroethene (TCE), an organic solvent and ground-water contaminant, in wetland soils and paleowetland sediments near PGDP. Beth Nodurft, an M.S. student in Civil Engineering, is completing her thesis with me on reactions of TCE with basalt from the Snake River Plain aquifer in Idaho. Sunil Mehta and I made two trips to the Texas Panhandle to locate and sample wells as part of a regional study of ground-water salinization. The first of those trips preceded the Geological Society of America meeting in Denver, where I convened a theme session on High Plains hydrogeology. I also traveled to Bethesda, Maryland, in May to serve on a U.S. Department of Energy grant review panel for natural and accelerated bioremediation. This past spring I taught hydrogeology in a video classroom; the course, including one field trip, was taped and broadcast by satellite during the summer session. I'm currently teaching a graduate course in contaminant hydrogeology and (the usual paper chase) am trying to submit proposals and manuscripts.

Paul D. Howell

Dr. Howell has been selected as a Distinguished Lecturer for the National Association of Geoscience Teachers for 1997-98. He will be visiting four other universities to discuss teaching and curriculum issues. He also served as Short Course and Workshop Chair for the Eastern Section meeting of the American

Association of Petroleum Geologists in Lexington and convened a New Technology Workshop for that meeting.

Paul together with Cara Kiger received an Eastern Section of AAPG for the best student paper at the 1996 meeting in Charleston, West Virginia.

David P. Moecher

Dr. Moecher has been promoted to the rank of associate professor. He is also serving as the Director of Undergraduate Studies.

As Dr. Ettensohn reported in his opening letter, the major news from my perspective is that I have been granted tenure and promotion to Associate Professor. Along with such a promotion comes added departmental responsibilities: I am now Director of Undergraduate Studies, replacing Dr. Ettensohn. With Dr. Ettensohn and other faculty members I will be working hard to improve a number of aspects of the undergraduate experience in Geological Sciences at UK. In early September we held the first (hopefully to be "annual") Undergraduate Orientation and Departmental Fall Picnic. The goal of the former is to introduce new undergraduates to the faculty and staff, inform them of major yearly events, and to appraise them of resources available in our Department. The goal of the latter event was to provide a more informal setting for everyone within the department to interact. We have other plans for our undergraduate program and will keep alumni apprised of these events in future installments of the Round-Up.

The Department continues to send a large contingent of students and faculty to present their research at the Southeastern Section meeting of the Geological Society of America held last spring in Auburn Alabama. Four students working with me (Elizabeth Haynes, Julie Hyatt, Achim Muller, and Ian Thomas) presented the results of undergraduate research projects on various aspects of southeastern geology. [See the listing of presentations by students at national and regional professional society meetings.]

In keeping with our desire to provide ample field geological experiences for our students, Paul Howell and I took a contingent of 15 graduate and undergraduate students on a week-long field trip to the northeast to explore aspects of northern Appalachian geology. We made a loop from the Alleghenies in Pennsylvania, to the Catskills, Adirondacks, and Taconics of New York and Vermont, continuing on to the highlands of western

Massachusetts and Connecticut. We finished off the trip with an afternoon at the American Museum of Natural History in New York City to view the recently remodeled dinosaur exhibit. It was a great trip with a great bunch of students! In addition to this field trip, I now take the Igneous and Metamorphic Petrology students on a three day whirlwind tour of the Great Smoky Mountains and Blue Ridge in Tennessee, North Carolina, and Georgia in early September. This timing permits the students to collect a small suite of samples for a class project to be completed during the semester, in addition to providing much milder weather than the traditional time of early April which can be rainy, cold and even snowy!

My personal research interests continue to include aspects of metamorphism and tectonism in the southern and northern Appalachians. Following the spring field trip to New England I presented the results of the Master's thesis of Eric Anderson and Claudia Cook on carbonatite petrogenesis (recently published; see below) at the Geological Association of Canada Annual Meeting in Ottawa, Ontario. I was also able to work in a month of research in June at the University of Lausanne in Switzerland, to complete stable isotope analysis of pseudotachylites, a collaborative research project with Professor Kieran O'Hara. Life is tough.

Kieran O'Hara

I continue as Director of Graduate Studies this year. Over the past year our graduate students have been active in presenting papers at national and regional meetings, writing research proposals and papers and, of course, defending their theses. Drew Andrews, Todd Hendricks, Brian Higgins, Penny (Padgett) Alano, Jim Coble, Carl Petersen, and Jay Sims all finished since the Last *Round Up*. Drew and Todd are working for the KGS, Penny for the Indiana Geological Survey, Brian for the Kentucky River Authority, Carl for the Federal Oversight facility in Frankfort, and Zhenming Wang (ABD) for the Oregon Geological Survey.

This past year our graduate students made 22 presentations in meetings, authored or co-authored 13 publications, five of which were journal articles. The Department also awarded an Allocated Fellowship and an Open Competition fellowship from the Graduate School, which went to Sunil Mehta and David Butler respectively. All in all, it was a very productive year.

Nicholas Rast

Dr. Rast continued research in the Appalachians and in collaboration with F.R. Ettensohn on Ordovician seismogenic structures in Kentucky. A preliminary report on this topic was delivered on the 16th of September at the Dewey Conference on Continental Tectonics in Oxford, England.

Susan M. Rimmer

In a difficult year involving administrative changes in the College of Arts and Sciences, Dr. Rimmer continued as a much overworked Associate Dean.

Ron L. Street

The students and I have continued to acquire P- and SH-wave seismic reflection data in the Kentucky Bend area of the New Madrid Seismic Zone in an attempted to image a suite of NW trending faults that we believed moved during the great earthquake of February 7, 1812. We have also been busy acquiring about 15 km of SH-wave reflection seismic data in the vicinity of the Paducah Gaseous Diffusion Plant in an effort to map a contaminated aquifer.

I am also happy to report that we were successful in obtaining funds to purchase a 48-channel seismograph and a Vibroseis system capable of generating P- and S-waves. The hold-down weight of the Vibroseis is 7,500 lbs., which will be of considerable help to us in our studies in the Mississippi Embayment.

William A. Thomas

Dr. Thomas stepped down as chairman and began a year of sabbatical leave July 1, 1997.

Following completion of his terms as Department Chair, Bill is working on Appalachian thrust belt in Alabama (in cooperation with the Alabama Geological Survey) and in the Cambrian rift history of the southern margin of Laurentia and the Argentine Precordillera (under a grant from the National Science Foundation).

A new focus on geologic mapping is growing out of the National Geologic Mapping Program of the USGS. The EDMAP (educational mapping) program provides support for graduate students doing original geologic mapping. We received an EDMAP grant to support Aaron Baldwin's M.S. thesis research, a geologic map of an area of intersection of two sets of Appalachian thrust-belt structures near Rome, Georgia. The primary aquifer in the area is a fractured Devonian chert, and it has proven highly susceptible to pollution in the recharge area. Aaron's project provides the best of both theoretical (structural

intersections) and applied (surface extent and subsurface geometry of an aquifer) objectives. Similarly, we obtained an EDMAP grant to support Greg Graham's M.S. thesis, the field work for which will be done this winter. Greg is mapping an area in northeastern Alabama, where two lateral thrust ramps are juxtaposed, giving rise to complex bedrock geology and abundant fractures. In addition to the theoretical objective of understanding lateral thrust ramps, Greg has the applied objective of identifying the controlling factors in the distribution of large springs, which provide substantial municipal water supplies in the area. Both of these projects encompass complex stratigraphic and structural controls on groundwater supplies, and this work illustrates the integration of modern scientific concepts with practical needs, an emphasis on which the Department continues to place priority. Sabbatical leave comes with high expectations. I hope to have some stories to tell next year.

ADJUNCT FACULTY

New Adjunct Faculty

In the very near future, five new adjunct faculty from the Kentucky Geological Survey will be added to the Department roster. These include Dr. Donald R. Chesnut, Jr, in coal geology; Dr. Cortland Eble in palynology and coal geology; Dr. Stephen F. Greb in sedimentary and coal geology; Dr. John D. Kiefer in engineering geology; and Dr. David R. Wunsch in low-temperature geochemistry and water resources. The Department looks forward to these additions as a means of enhancing its graduate teaching and advising capabilities.

James A. Drahovzal

I continue to head up the Geologic Mapping and Hydrocarbon Section at the Kentucky Geological Survey. With the cutbacks in oil and gas research in this country, our group has continued its refocusing. We are continuing several programs in digital geologic mapping for the state's 7 1/2-minute geologic quadrangle series and begun programs in neotectonic studies in western Kentucky. Application of GIS to geology continues to grow in the section. We continue to carry out oil and gas research and service.

Personally, I have continued to conduct research in the Cambrian and Precambrian rift basins of Kentucky and in mapping of the Precambrian basement. Most of this work has been done utilizing

newly available reflection-seismic data for the state. This past year, I completed research on the link of the East Continent Rift Basin to associated Precambrian rifting events in the western part of the state and completed a preliminary map of the Precambrian unconformity in the western part of Kentucky.

As an adjunct associate professor in the department, this past year I participated on the committees of three Master's and six Ph.D. candidates. Their research includes organic geochemistry, high-resolution seismic reflection studies, seismic-reflection interpretation, structural geology, earthquake geophysics, stratigraphy, and paleontology. Three of the department's geology undergraduate and graduate students have student appointments with the Geologic Mapping and Hydrocarbon Section at KGS.

NOTE: Dr. Drahovzal received the A.I. Levorsen Memorial Award for the best scientific paper given at the 1996 Eastern Section American Association of Petroleum Geologists meeting in Charleston, WV. The award was presented September 28, 1997 at the Opening Session of the 1997 Eastern Section American Association of Petroleum Geologists and The Society of Organic Petrologists Joint Meeting in Lexington, KY. The paper for which the award was received was entitled: "Cambrian and Precambrian rifting in central and western Kentucky: Evidence from reflection-seismic data." Dr. Drahovzal was also General Co-Chair, 1997 Eastern Section American Association of Petroleum Geologists, The Society for Organic Petrology Joint Meeting in Lexington.

James Hower

Jim Hower is an adjunct member of the geology faculty with his primary work conducted at the Center for Applied Energy Research. With cooperation of the Kentucky Geological Survey and the U.S. Geological Survey, he maintains active research in the petrology and geochemistry of coals. Much of the research conducted at the CAER is directed towards the utilization of coal and products derived from coal. Dr. Hower is part of the Waste Management Group at the CAER. Waste Management is concerned with the issues surrounding the utilization and disposal of coal combustion by-products. Dr. Hower's research has focused on the petrographic aspects of the grinding properties of coal and on the petrology of coal-derived fly ash. Research is conducted in

cooperation with many of the coal-burning utilities in the eastern United States

NOTE: Dr. Hower, along with Drs. Eble and Greb were recipients of awards for their research and presentations at the Eastern Section of the American Association of Petroleum Geologists' Conference in Charleston, West Virginia.. They received the Ralph L. Miller Memorial Energy Mineral Division Best Paper award. They also won the Energy Mineral Division Best Poster Award. Dr. Hower also won the American Institute of Professional Geologists, Kentucky 1997 Outstanding Kentucky Geologist Award on April 18, 1997.

David Wunsch

David Wunsch, with the Kentucky Geological Survey, taught Low-Temperature Geochemistry for the department during the Fall term. David is looking forward to attaining adjunct faculty status with the department, and gaining a closer relationship with students interested in performing thesis or undergraduate research projects in hydrogeology and geochemistry. David's research interests include studying the hydrodynamics of the shallow salt-water interface in the Appalachian Plateau, the hydrogeology of large mine spoil areas, and water-rock interactions related to hydrochemical facies evolution. This past year David was awarded a grant to utilize remote sensing and GIS to perform lineament and fracture trace analysis in eastern Kentucky in order to identify areas with the potential for producing high-yield water wells.

EMERITUS FACULTY

William Dennen

A few things of interest for the Round Up come to mind:

Bill Blackburn and I are in print as of May with "Encyclopedia of Mineral Names," Volume 1 in the Special Publication Series of the Canadian Mineralogist which, for about 3700 recognized species, gives the origin of the name, chemical formula and crystallographic system, type locality, discoverer, and references. Published by the Mineralogical Association of Canada, P.O. Box 78087, Merilene Postal Outlet, Ottawa, Ontario, Canada K2E 1B1.

Bill's wife, Ramona, has accepted the position of Vice President, Academic, at the University of Victoria, and he has resigned his position at Windsor to move west effective at the end of the fall semester.

Dennis Coskren has discovered at least three previously unknown rare earth oxalate minerals.

John Thrailkill

I have been remiss in furnishing material to the Round Up about our activities. When I received the call for information I checked back issues and discovered that I have not provided anything since the Round Up started back up in 1994. Maybe the earlier calls for information got lost or arrived when we were traveling or something. I'm sure there was a good excuse! But I will try to atone by outlining what has been happening since 1992 when my wife Lavine and I both retired from UK.

Although we knew we would miss our friends and good times in Lexington, we had decided to relocate to the St. Augustine area in Florida. We rented a condo on the beach and started a search for a cruising sailboat. We found a 10-year old 36 foot Cape Dory cutter (one mast and 3 sails) in Maryland. We started south on the Intracoastal Waterway on October 1 and after numerous adventures arrived in St. Augustine 6 weeks and 1000 miles later.

Most of 1993 was spent working on the boat and taking short cruises. Then in November we went down the Intracoastal to Palm Beach and then across to West End in the Bahamas. GPS is great! Spent Christmas in the northern Bahamas and then flew back to St. Augustine for routine dental and medical appointments. Unfortunately, one of Lavine's appointments wasn't so routine and surgery for breast cancer was needed. The next 4 months were spent in recuperation and buying a condo (in the same complex where we had been renting). We flew back to the boat in June and worked our way through the Bahamas to Georgetown in the Exumas. Then returned via Nassau and Bimini to Palm Beach and back up the waterway in October.

We spent 1995 in settling into our condo, playing tennis, and taking two land trips. The first was in the spring up the east coast visiting Civil War battlefields, New England (including a day with the Fishers in Maine), and Lexington. The second trip in the fall was to west Texas, then up to Colorado and back through Iowa to see relatives.

In May 1996 we left on a driving trip to the west coast. Got as far as Silver City, New Mexico, where I ended up in the hospital for surgery. Turned out to be a bowel obstruction due to adhesions from surgery I had had in Lexington 20 years earlier. Decided to skip the west coast and settled for a few days in eastern Arizona. In October we flew to Hawaii and

spent over a week seeing the islands on a cruise ship. We have now been in all 50 states. Saw Kilauea in eruption from land, from the cruise ship, and from a helicopter.

In February 1997 we flew to Buenos Aires and boarded a cruise ship which sailed down the Argentine coast to Ushuaia, the southernmost city in the world. It is on the Beagle Channel 100 miles north of Cape Horn. Then through the Strait of Magellan and north up the fjords of Chile to Puerto Montt where we left the ship, flew to Santiago, and then home. There were lectures by an Argentine geologist who had just finished a post doc at Princeton and several other geologists on board. Quite a trip.

In another week or so we plan to take off again on a driving trip to the northwest and down the west coast. I hope we make it this time. We sold the boat, since although we enjoyed cruising, we found there wasn't much time for anything else and so we will let someone else do the driving. A year ago we decided that while we still get around the tennis court pretty good, there will probably come a time when we can't. So we started hitting golf balls and are trying to learn the game. A slow process but we're getting there. We both volunteer for the American Cancer Society (I a little and Lavine a lot) and manage to keep busy. On August 10 we celebrated our golden wedding anniversary (actually it's only our 45th but getting within 10% is pretty good in geology!). So that's what we have been doing in the last five years.

FACULTY RESEARCH SUPPORT

U.S. Department of Energy:

Laboratory studies of abiotic reductive dechlorination of trichloroethene by basalt and sediments.

Alan E. Fryar

U.S. Geological Survey

Spatial and temporal variability in seepage fluxes between contaminated aquifers and tributary streams.

Alan E. Fryar

Space Imaging EOSAT:

Geoarcheology research at the Monte Verde site in Chile.

Paul D. Howell

FEMA

A proposal to install seismographs in high school science labs in western Kentucky.

Ron Street

Kentucky Water Resources Research Institute/DOE

A proposal to acquire SH-wave seismic reflection and refraction data in the area of the northeast trending contaminate plume at the Paducah Gaseous Diffusion Plant.

Ron Street

U.S. Geological Survey:

Dynamic site periods in the northern Mississippi Embayment area of western Kentucky and southeastern Missouri.

Ron L. Street

National Science Foundation

The Argentine Precordillera, when and how was it transferred from Laurentia to Gondwana?

William A. Thomas

U.S. Geological Survey:

High-resolution P- and SH-wave seismic reflection investigations of the Reelfoot and Kentucky Bend Scarps in the New Madrid Seismic Zone.

Ron L. Street

U.S. Geological Survey, EDMAP

U.S. Geological mapping in the Appalachian thrust belt in northeast Alabama.

William A. Thomas

U.S. Geological Survey:

Geological mapping in the Appalachian thrust belt in northwest Georgia.

William A. Thomas

**REPRESENTATIVE
PUBLICATIONS**

This list provides examples of faculty and student publications; a complete list is available on request.

Faculty - Bold

Students - underline

Andrews, W.M., Jr., **Hower, J.C.**, **Ferm, J.C.**, Evans, S.D., Sirek, N.S., Warrell, M., and Eble, C.F., 1996. A depositional model for the Taylor coal bed, Martin and Johnson counties, eastern Kentucky: International Journal of Coal Geology, v. 31, p. 151-167.

Butler, D.L., **Howell, P.D.**, Kulp, M.A., Isostatic compensation in the Mississippi delta: A three-point problem approach to geodetic leveling in Kentucky Geosciences Symposium Proceedings: Lexington, Kentucky Society of Professional Geologists, p. 17.

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Kiefer, J.D., **Drahovzal, J.A.**, **Cobb, J.C.**, and Williams, D.A., 1997. Review of Illinois State Geological Survey Study on Quaternary faulting in southern Illinois and reconnaissance of neotectonic structures of southern Illinois and western Kentucky, Kentucky Geological Survey, Open-File Report 97-01, 10p.

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Project report to the Federal Facilities Oversight Unit, Kentucky Geological Survey, Open-File Report 97-02, 17p.

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Ettensohn, F.R., **Kulp, M.A.**, and **Rast, N.**, 1996, Far-field foreland responses to Taconian orogeny: Evidence from the Jessamine Dome region and the Lexington Limestone, central Kentucky: *Geological Society of America Abstracts with Programs*, v. 28, p. 52.

Ferm, J.C., 1996, Life and death hypothesis about coal and coal-bearing rocks: *Proceedings of the 30th New Castle Symposium*, University of New Castle, New Castle, NSW, Australia, p. 43-52.

Ferm, J.C., 1995, Some avoidable problems in a privatized coal industry: *Proceedings of the 6th New Zealand Coal Conference*, Coal Research Association of New Zealand, Wellington N.Z., p. 279-282.

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**DEPARTMENTAL SEMINARS
1996-1997**

Introduction to faculty research - Faculty,
Department of Geological Sciences

The Argentine Precordillera—a fragment of North American Laurentia - William A. Thomas,
Department of Geological Sciences

Impacts of technology on the global gas resource base - Carol Ruthven, Kentucky Geological Survey

Jurassic tectonics and ore deposits of Cuba - Barry Maynard, University of Cincinnati

The GSA Hydrogeology Division Birdsall-Dreiss Lecture - Negative pH, ultra-acidic waters, and the challenges of environmental restoration at the Iron Mountain Mine superfund anomaly - Kirk Nordstrom, U.S. Geological Survey

Energy balance assesment of Cathedral Glacier, British Columbia - Keith Mountain, University of Louisville

Cosmic dust - Moshe Elitzur, Department of Physics and Astronomy

Geologic instruction at the secondary or introductory college level using topographic and geologic maps - Wm. Jay Sims, Department of Geological Sciences

Adapting modflow to accommodate gravity driven-flow in variable thickness aquifers - Sunil Mehta, Department of Geological Sciences

Sequence stratigraphy and cyclicity in the Devonian of New York - Carlton Brett, University of Rochester

Petrology, geochemistry, and palynology of Joggins Formation (Westphalian A) coals, Cumberland Basin, Nova Scotia - Jim Hower, UK Center for Applied Energy Research

Geochemical implications of the shallow salt-water interface in the Appalachian coal field - David Wunsch, Kentucky Geological Survey

Paleoecology, culture ecology and archaeology: research problems and designs - Tom Dillehay, Department of Anthropology

Digital geologic mapping - Warren Anderson, Kentucky Geological Survey

Multiple bench coals in the Appalachian Basin - Stephen Greb, Kentucky Geological Survey

Geology and public policy - Donald Haney, Kentucky Geological Survey

Metamorphic petrology and laser $^{40}\text{Ar}/^{39}\text{Ar}$ studies of temperature and deformation histories in the Northern Appalachians and Caledonides - William Hames, Auburn University

National Ground Water Association Darcy Lecturer - Water, microbes, and rocks: the geochemical ecology of contaminated ground water - Philip C. Bennett, University of Texas at Austin

The northern Cincinnati Arch: What is it, where is it, and why is it there? - Kees DeJong, University of

Cincinnati

Evidence for life in a Martian meteorite (! or ?) - Harry McSween, University of Tennessee-Knoxville

Ophiolite tectonics of the eastern Mediterranean region and implications for the Neo-Tethys - Yildirim Dilek, Miami University

Borehole geophysics applied to fractured rock hydrology - Frederick Paillet, U.S. Geological Survey, Denver

McFarlan Lecture I - Astronaut training module: Turkey and the Arabian plate - William R. Muehlberger, University of Texas at Austin

McFarlan Lecture II - Studying the earth from the space shuttle (Geology at 5 miles per second) - William R. Muehlberger, University of Texas at Austin

Seismic liquefaction features—have you seen but not recognized them in the field - Stephen Obermeier, U.S. Geological Survey, Reston, Virginia

Compositional variations within the internal structures of a brittle fault zone - Jafar Hadizadeh, University of Louisville

Geology of Labrador - Nicholas Rast, Department of Geological Sciences

Observations on terrestrial impact craters and near Earth asteroids - David H. Speidel, Queens College, City University of New York

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:

The GEOFund

- a new endowed fund to provide long-term departmental needs

McFarlan Fund

- student research grants; student prepares proposal including itemized budget
- student travel to professional meetings to present papers
- McFarlan Lecture (annual seminar)

Geology Development Fund

- enhancement of departmental programs in teaching and research through improvement of equipment and facilities

Geology Support Fund

- support of the departmental seminar program
- equipment for enhancement of instruction
- support for initiation of special programs

Geology Museum Fund

- operation of the Hudnall Geological Sciences Museum

Glenn Rice Memorial Fund

- undergraduate research grants, to support senior theses

In addition to the funds supported directly by alumni contributions, the Department of Geological Sciences has other funds supported by endowments from alumni and annual corporate contributions. These funds and the purposes are:

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(endowed by James S. Hudnall)

- scholarships for participation in the summer field course

Pirtle Scholarship Fund

(endowed by George W. Pirtle)

- undergraduate scholarship for outstanding junior (\$1,000 per year)
- graduate fellowship (approximately \$2,000 per year as summer stipend plus tuition)

Chevron Fellowship (funded annually)

- graduate fellowship (approximately \$9,000 per year plus tuition)

Chevron Support Fund

- support for student research
- equipment for instruction and/or research

- equipment for instruction and/or research

Wallace W. Hagan Scholarship Fund

(endowed by contributions)

- undergraduate scholarship, for a student in field-oriented geology

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