


Fall 2002

## UA66/8/3 Geogram

WKU Geography & Geology

Follow this and additional works at: [http://digitalcommons.wku.edu/dlsc\\_ua\\_records](http://digitalcommons.wku.edu/dlsc_ua_records)

 Part of the [Geography Commons](#), [Geology Commons](#), [Higher Education Administration Commons](#), [Hydrology Commons](#), [Journalism Studies Commons](#), [Mass Communication Commons](#), [Public Relations and Advertising Commons](#), [Sociology Commons](#), and the [Speleology Commons](#)

---

### Recommended Citation

WKU Geography & Geology, "UA66/8/3 Geogram" (2002). *WKU Archives Records*. Paper 5205.  
[http://digitalcommons.wku.edu/dlsc\\_ua\\_records/5205](http://digitalcommons.wku.edu/dlsc_ua_records/5205)

This Newsletter is brought to you for free and open access by TopSCHOLAR®. It has been accepted for inclusion in WKU Archives Records by an authorized administrator of TopSCHOLAR®. For more information, please contact [topscholar@wku.edu](mailto:topscholar@wku.edu).



# GEOGRAM



Fall 2002

## The Annual Newsletter of the Department of Geography and Geology at Western Kentucky University

Dear Friends,

Welcome to the 2001-2002 issue of our annual alumni newsletter. Throughout this year's issue, you will read about the outstanding accomplishments of our distinguished faculty and students. We are indeed proud of the levels of excellence attained in the Department and we appreciate all of the support, both financial and otherwise, provided by our alumni.

This year, we welcome three new faculty members (Drs All and Wulff, and Kevin Cary), and we bid farewell to Dr. Conrad Moore, who moved west to southern Arizona, and to Ellie Goeke, who went off to Iowa to study for her Ph.D. in geology. The Department also bid farewell to over forty students who graduated from the Department during the past year. We wish you every success in your chosen careers and in your personal lives and we look forward to hearing from you on a regular basis. The Department continues to build on the successes of its students and faculty and is extremely proud of the quality of teaching, research, and service that has become a hallmark of Geography and Geology.

Technology continues to play a significant role in the student-learning process for virtually all of the courses offered by the Department. During the past year, the Department opened its new state-of-the-art instructional Geographic Information Science (GIS) laboratory in partnership with the Departments of Agriculture and Architectural and

Manufacturing Sciences. Over a hundred students have passed through, or are taking GIS classes in, this new lab and we're excited about the possibilities that GIS offers for student-centered learning, research, and public service. The Department also continued to seek funds to update equipment and software, and to provide students with access to the latest methodologies and technologies.

Excelling in student research and publications continues to be one of the hallmarks of the teaching and learning effectiveness of the Department's programs. During the past year, over thirty students attended, or presented papers at, regional, national and international professional meetings and authored or co-authored research articles for publication. Many of the Department's majors are involved directly in applied research through the Center for Cave and Karst Studies, the Kentucky Climate Center, and the Hoffman Environmental Research Institute. These research centers provide unparalleled research opportunities and experiences for students.

The Department's Master's in Geoscience program continues to grow, with 25 students now enrolled in the program. This Fall, 12 students are enrolled in the Geoscience Research and Literacy core course, the largest such enrollment in over a decade. The new program directed by Dr Groves that involves a partnership with the National Park Service to train geoscientists is underway, with three students enrolled through this program. Curriculum redevelopment to provide



### A Letter from the Department Chair

#### inside...

Welcome New Faculty and Staff .....	page 6
Adventures in Geography and Geology.....	pages 12-17
Faculty Activities .....	pages 18-29
Alumni News .....	pages 30-32

relevant courses for the geoscience Master's program has been completed, and the Department now has a revamped suite of courses ready for the new 2003-2005 catalog. These changes are in addition to the new 12-hour GIS certificate program for undergraduates and professionals, and a complete revamping of the undergraduate curriculum.

In addition to their outstanding teaching contributions, the faculty continue to be highly productive in their research activities, external grant writing, and service. Collectively, the faculty have achieved a very high level of research productivity over the past few years compared to previous periods. In addition, faculty members presented numerous papers at regional, national and international professional meetings--a testament to the professional engagement of the faculty.

External grant funding for Department research activities continued to be a high priority in 2001-2002, with grants awarded by several federal and state agencies (Kentucky EPScor, Environmental Protection Agency, National Park Service, National Science Foundation, Fish and Wildlife Service), as well as by other funding agencies. Other grants were derived from local sources and private corporations.

The students and faculty of the Department of Geography and Geology again have done exceedingly well during the past academic year. We have each and every one of you to thank for helping to build the Department into what it has become--the best in the state and one of the very best in the nation.

David J. Keeling (david.keeling@wku.edu)  
 Department Head  
<http://www.wku.edu/~david.keeling/index.htm>  
<http://www.wku.edu/geoweb>

\*\*\*\*\*

## **FAREWELL TO COLLEAGUES**

### **Conrad Moore Heads West**

The Department bid farewell to Conrad Moore this past summer as he loaded up the wagon and headed west to Arizona. Although Dr. Moore re-

tired officially on June 30, 2001, he taught in the Department during the Fall semester on optional retirement. Conrad and Elaine have constructed a hacienda in Sierra Vista, Arizona, and are looking forward to new adventures in the southwestern sun.

### **Elli Goeke Heads to the Midwest**

Faculty and students also bid farewell to Elli Goeke as she headed off to Iowa to commence doctoral studies in geology. Elli filled the hard-rock geology position for a year as the Department underwent a national search for a tenure-track geologist (see story on Dr. Andrew Wulff in this issue). We wish Elli great success in her new adventure.

### **Shana Restall Heads to the Northwest**

The Department also bid farewell this summer to Shana Restall, who has been accepted into the doctoral program in Geography at the University of Washington in Seattle. Shana taught several sections of World Regional Geography for the Department during the past academic year, as well as an experimental course titled "Women, Geography, and Development." Everyone wishes Shana great success in the Evergreen State!

\*\*\*\*\*

## **Memorial for Dr. Deborah Kuehn**

**Dr. Deborah Kuehn passed away on Saturday February 9, 2002. The following was read at the memorial service for Debbie on Tuesday February 12, 2002.**

The rich, full, and productive life of this wonderful woman cannot be captured by mere words alone, but this biography provides us with a sense of Deborah's life and accomplishments. Debbie was born to Charlie and Beverly Wilbur on November 4, 1954, in Syracuse, New York, and lived most of her growing-up years there. She was the eldest of five children -- 3 sisters: Diane, Doreen, and Denise, and 1 Brother: David. In high school Deb was very active in sports and other extracurricular activities. She played point guard on the girls' basketball team, which was ranked second in its class in the state of New York. Debbie's personal best in basketball was once sinking a record 56 con-

secutive free-throws! After graduating high school in 1972 she entered Juniata College in Huntingdon, Pennsylvania, choosing Geology as her major and graduating with her B.S. degree in 1976. At this time, only about 10 percent of the geology discipline was women.

While studying at Juniata, she met Ken Kuehn, a fellow geology student, and they were married in 1977. In 1980, she completed the MS degree in Geology at The Pennsylvania State University. Her thesis topic was coring and analyzing buried peat deposits in the Gulf of Mexico in order to study global sea level rise over the past 12,000 years. On September 19, 1980, Debbie and Ken celebrated the birth of their only child, Kerry Ann Kuehn. In 1983, she earned the Ph.D. in Geology at The Pennsylvania State University. Her dissertation research involved characterizing the organic structure of coal using Fourier Transform Infrared Spectroscopy. At the time, her work was considered to be a major breakthrough in understanding changes in certain coal properties at the molecular level.

Debbie's first professional position was for three years with the Department of Geosciences at the University of Tennessee, Chattanooga, where she served as Interim Department Head in 1983-84. In the summer of 1984, the Kuehn family moved to Bowling Green when Ken joined the regular faculty in Geography and Geology at WKU. Debbie served as an adjunct faculty member in the WKU departments of Chemistry and Geography/Geology from 1984-1990. She worked full time from 1985-88 as editor of the Journal of Coal Quality, an international journal published by WKU aimed at helping coal analysts in the laboratory and in the workplace. She joined the full-time WKU faculty in Geography/Geology in 1991 and achieved the rank of Associate Professor before retiring in 1998 for health reasons.

She taught introductory geology, historical geology, sedimentology, and paleontology in the WKU geology program. During her academic career, Debbie was author or co-author on 33 technical publications in a variety of geoscience subdisciplines and acquired nearly \$100,000 in funding to support research for herself and her students. Debbie worked closely with students and was appreciated by them for her easy communication of often-complex material and her genial personality.

I'd like to read an excerpt from Debbie's goodbye letter to faculty and students that appeared in the Fall 1998 Departmental newsletter, the GEOGRAM. "Making the decision to leave Western this year was a very difficult one. Having an overactive conscience, I began wrestling two years ago with the knowledge that there would soon come a time when I could no longer meet my personal standards for what was expected of a

faculty member. As a result, I decided to forego the request for tenure and "retire." For as long as it takes, I will be dedicating my time and energy to regaining my health.

"For all of the students I have taught since 1991, I say thank you for the fond memories with which I leave. Although some of you have given me more gray hairs than others, I treasure all the memories. Thank you for putting forth your best efforts in class and thank you for allowing me the opportunity to work with many of you on independent research projects. I hope the experiences I gave you allowed you to grow professionally, just as I grew from having known you and worked with you. "I leave you with a pun from one of my introductory geology classes that best sums up my years here at Western: I have had a simply marblesome time teaching geology and I still shall be around for hog roasts and other Department activities."

After retiring in 1998, Debbie remained active in the Department, helping with the Geology Club fundraisers and other activities. Deb was a key figure every semester in the three-day sale of rocks, jewelry, and other goodies sponsored by the Geology Club. On a personal level, Deb's friends and family remember her for many other talents beyond teaching:

- \*\* She enjoyed collecting and had numerous and assorted antiques and unique items;
- \*\* She enjoyed fine mineral samples and semi precious gems, especially making them into jewelry items;
- \*\* Debbie was an avid gardener and kept meticulous notes on her latest floral experiments;
- \*\* She enjoyed painting in watercolor and acrylics and had a fine eye for what was "good", or aesthetically pleasing in about nearly everything;
- \*\* She designed and decorated the unique home where the Kuehn family has lived since 1991;
- \*\* She loved to host parties/gatherings at the house;
- \*\* She loved antique cars and could often be seen buzzing around Bowling Green either in her 1963 Ford Thunderbird or her latest -- a 1961 diamond blue Thunderbird. Debbie had only 47 living years, but she accomplished more than most of us do in a full lifetime. She never wasted a minute unless her health kept her from being a participant. She was industrious, meticulous, and productive. I'd like to close by paraphrasing Deb's words from her retirement letter:

We have had a simply marblesome time knowing Debbie in our many interactions and we know that she shall be around in our hearts and our memories for as long as we all live.

**Donations in Dr Deborah Kuehn's memory can be made to the Department of Geography and Geology.**

## Outstanding Geography Students, 2001-02

The Department of Geography and Geography takes pride each year in the quality of its graduating seniors. Students graduating from the various program tracks offered by the Department must pass rigorous course requirements, satisfy applied skills components, and maintain their overall GPAs. All this is often in addition to outside employment demands, public service, family duties, and service to the Department and College. Each year, the Department recognizes its outstanding seniors at a public presentation by presenting them with awards and certificates. The recipients of the Department's highest honors also receive recognition at the Ogden College Awards Ceremony.

For the 2001-02 academic year, Timothy Perkins received the Outstanding Geology Senior Award, presented by Dr Fred Siewers.



The Outstanding Geography Senior for 2001-2002, Justin B. Watt, received the Ronald R. Dilamarter Award from Dr. David Keeling.



**Congratulations to ALL our Outstanding Students!**

## VISIT THE DEPARTMENT'S WEBWORLD

The Department's homepage continues to undergo a significant metamorphosis each year, including redesigned pages and updated program information. A new university server now hosts the website, so please update your bookmarks to the new URL or web address ([www.wku.edu/geoweb/](http://www.wku.edu/geoweb/)). In addition to accessing the outstanding Kentucky Climate Center site, originally developed by Glen Conner, our State Climatologist Emeritus, the homepage also provides access to complete program and course information, with links to myriad geography and geology related pages. For instance, pointing your browser to <http://www.wku.edu/geoweb/> will take you to the index page. From here, you can link to all the different types of courses offered by the Department. Many of the course descriptions will have the current syllabus attached, along with links to the Professor's personal homepage, to a variety of study guides, and eventually to interactive activities. From the homepage, you can also explore all of the different program tracks offered by the Department and link back and forth to the individual course descriptions within each track. There is much more construction yet to do, but we hope you find the material available so far informative and useful. Email us with your comments!! We'd love to hear from you.



<http://www.wku.edu/geoweb/>



## A Very Spatial Place

### The GIS Lab is NOW Open to Students

The Department of Geography and Geology received funding last year, along with the Department of Agriculture and the Department of Architectural and Manufacturing Services, to develop an inter-departmental computer graphics and geographic information systems facility. Funding for the project approaches \$300,000. Dr Stuart Foster chairs the committee charged with designing and overseeing the project. Dr Katie Algeo, Kevin Cary, and other GIS faculty also represent the department on GIS matters.

The new GIS facility is located in the Industrial Education Building on the third floor. Renovation work began in early August 2001 and included installing new carpet, adding interior walls and doors,

and performing electrical work. Now complete, the GIS facility includes two computer classrooms, each equipped with 20 workstations, a conference and seminar room, a research production room, and an office area and study lounge. The full complement of GIS software from the Environmental Systems Research Institute (ESRI), including ArcView, ARCGIS, and ArcInfo, is available for use by students and faculty.

The new GIS facility provides excellent opportunities for the Department. It accommodates our expanded course offerings in geographic information systems and supports instruction in other techniques courses. In addition, the facility enables faculty and students to become more active in applied research. Courses now offered include Introduction to GIS, GIS Applications and Development, and GIS Analysis and Modeling. Stop by and visit the facility the next time you are back home at Western.

# WKU Homecoming 2002

## October 25-26, 2002

### Special Invitation to All Geography and Geology Alumni

Please join us on campus this year! The Department has some special Homecoming activities planned just for you! This year's schedule of events includes:

#### Friday October 25, 2002

Event: Homecoming Parade & Big Red Street Fest

Time: 4:00 pm and 6:00 p.m.

Location: Big Red Way/Practice Field

Event: Big Red's Roar

Time: 8:00 p.m.

Location: Colonnades [Fine Arts Center]

**Saturday 10/25/02:** Football vs. Indiana State Homecoming Event

Time: 4:30 p.m., Location: L.T. Smith Stadium

Contact: WKU Sports Information (270- 745-4298)

#### Saturday, October 26, 2002

**Special Event: Geography and Geology Departmental Tour (Including our new GIS lab and Centers for Applied Research)**

Time: 1:00 - 2:00pm

Location: Meet on 3<sup>rd</sup> Floor EST Building

**Special Event: Homecoming Tailgating**

Time: 2 p.m. - 4 p.m.

Location: DUC South Lawn - Join us at the Geography and Geology Alumni Tent.

Enjoy good food and old friends. Meet the departmental faculty and current students.

## Introducing Our Newest Faculty and Staff Members:



### Welcome Dr John All!

Dr. All has a PhD in Geography and Global Change, a JD in International Environmental Law, and a Master's Certification in Environmental Ethics. Dr. All's primary interest is at the boundary where science and policy intersect. In finding ways to bridge the two, his research has been directed towards natural resources and ecosystems that cross international boundaries: especially those that are impacted by climate variability or climate change. He has recently completed a holistic examination of Colorado River usage in the United States and resulting impacts upon Endangered Species in the River's Delta (located in Mexico). Dr. All developed several innovative techniques for monitoring vegetative change in wetland/delta environments in Mexico using remote sensing imagery. He has also worked on watershed management issues and fire management in the western US.

Societal impacts of Global Climate Change are a crucial part of Dr. All's research. He is helping to organize a UN research program under the auspices of WHO, WMO, UNEP, and FAO. This program will focus upon the impacts of climate variability and change upon human health, including vector-borne disease, food production, and clean water security. Also, he is addressing a heretofore neglected aspect of climate change research - the potential impacts on agricultural pests. Dr. All is conducting research on the changes in distribution as increased nightly and winter temperatures create favorable habitat in formerly adverse locations. He is also encouraging others to examine this problem in a variety of professional media outlets.

Locally, Dr. All is examining radon in the Western

Kentucky region with Dr. Wulff and others in the Department. Physical studies of radon distribution are being combined with a policy analysis to help inform local stakeholders. Also, they are working to create a radon evaluation scheme that other communities can utilize when addressing this issue. Water quality is also a key local issue that Dr. All examines; as the karst environment create a variety of problems. Long-term planning strategies that maximize water quality while minimizing the cost to individual stakeholders is the goal of this work.

In his scarce free time, Dr. All is an alpinist who has climbed on three continents using technical rock, ice, and aid-climbing techniques. He is a certified Rescue Diver, a triathlete, a nature photographer, and spent several years on Southern Arizona Search and Rescue.



\*\*\*\*\*

### Welcome Dr Andrew Wulff!

Dr Andrew Wulff comes to the Department after serving on the faculty at U. Iowa and as Chair of the Geology Department at Whittier College and Director of the Whittier Geology Field Course. He is currently teaching mineralogy and physical geology, and will be teaching petrology in the spring. Prior to the "academic" portion of his career, Andrew worked for the Maryland Geological Survey on various projects including mapping lands for potential mineral resource development, investigating radon content in saprolitic soils, and methods of evaluating the

strategic mineral concentrations in offshore sediments. Recent research has focused more on the use of mineralogical, petrographic, and geochemical data to develop petrogenetic histories in igneous environments.

Andrew took three undergraduates with him last January to work on the Descabezado Grande-Cerro Azul volcanic complex in the Chilean Andes. They collected lavas from vertical stratigraphic sections and then obtained complete major and trace element geochemistry, isotopes, and dates from them in order to detail the eruptive history of this large stratovolcano. He also is planning to take two undergraduates with him to sample lavas from the Cima Volcanic Field and the Little Cowhole Mountains in the Mojave Desert. Other undergraduate projects he is involved in include: using trace element signatures in chert artifacts to examine trading and travel routes for Native Americans; using clay mineralogy and particle size analysis to refine stratigraphic units of the southern Des Moines Lobe; analysing airborne particulates from various counties in Iowa and Kentucky, examining the relationship between airborne particulate quartz and lung-related disease in those counties; and using petrography and geochemistry to identify relative emplacement times for mafic dikes in the Mojave. He is finishing a paper on the geochemical characteristics of mafic dikes in Greenland.

Much of Andrew's research is based on analysis of earth materials and he is excited about developing analytical techniques at the Materials Characterization Center and training undergraduates in the use of the XRF, XRD, LA-ICPMS. He is working to find another XRD for the north side of campus (within the Geography-Geology or Chemistry Departments) to be used primarily for undergraduate research and teaching. He is also working with Fred Siewers and John Andersland (Biology Dept.) to purchase an IXRF-EDS system for the SEM in order to obtain quantitative analysis of mineral compositions.

Andrew is active in developing innovative teaching strategies for all levels of education and recently participated in the Iowa Chatauqua Program Science Teachers Workshop, helping twenty Korean earth science teachers develop instructional modules, lecturing on a variety of topics, and leading several fieldtrips.

On a completely different note, Andrew took time off from science for a career in opera, singing in many major houses both in Europe and in the U.S. He still performs (concerts, plays, musicals, radio work) and has directed more than twenty plays or musicals. He hopes to plug into the performance scene around Bowling Green in the coming years. He climbs, hikes, and is willing to (try to) play any sport available.

So, a chaotic summer has brought a pack of Wulffs to Bowling Green. Rachel is in first grade, John is now three months old after being born on Memorial Day (6 weeks early!), and Joan is very successfully keeping all organized and on-track, in addition to unpacking and remodeling, and everything else!! They are all glad to be here!



\*\*\*\*\*

## Welcome Kevin Cary

Kevin Cary joins the faculty as the new Geographic Information Systems Manager for the Department, as well as an instructor in GIS. He will teach courses in the GIS certificate program and work on projects and contracts in the new GIS facility. His interests are in the development and application of GIS in the economy and environment. Kevin received his B.Sc. in mathematics from Austin Peay State University in Clarksville, Tennessee, and his M.Sc. in Geoscience from Western. His master's thesis investigated the diurnal distribution of hourly precipitation





rates and spatial patterns of mean seasonal precipitation rates in Kentucky.

Kevin comes to us from the Myrtle Beach area in Conway, South Carolina. As Conway's GIS Specialist, his duties included designing and coordinating the development of the city's first GIS and incorporating it into the various departmental needs of the local government. His duties also included mapping spatial features with a GPS unit, which gave him a thrilling opportunity to map a 2000-acre fire in North Myrtle Beach from the air, in a Cessna 172, and on the ground, on a Honda Fourtrax 450. He also has over three years of teaching experience at Bowling Green Community College and has successfully taught introductory physical geography, world regional geography and meteorology. In addition, he has served on the GIS staff at the Barren River Area Development District (BRADD) in Bowling Green. Undergraduate and graduate students are encouraged to drop by the GIS facility in the Industrial Education Building to introduce themselves and to get involved in ongoing GIS projects.

\*\*\*\*\*

### Welcome New Graduate Students

The Department also welcomes several new graduate students into the Department. Some are familiar faces from the undergraduate program, while others are new to the campus and to the Department. Joel Thomas, Mark Graham, Michael Briggs, and

Angela Castelli come to the MS in Geoscience program directly from undergraduate programs at WKU. Sara All, Christina Henry, AJ Iovanna, and Timothy Coates join the program from out-of-state programs, while Jenna Harbaugh and Margaret Leachman are returning to graduate student after several years in the "working" world! We extend a very warm welcome to all our new graduate students and we look forward to some educational, fun, and interesting experiences over the next couple of years.

\*\*\*\*\*

## A Distinguished Approach

by Kimberly Shain Parsley

[reprinted from WKU's *Echo Magazine*—August 2002]

**Dr. Kenneth Kuehn** in Western Kentucky University's Department of Geography and Geology never planned to become a professor, let alone a distinguished professor. While completing his graduate work at Penn State University in State College, Pa., Kuehn focused on the latest geoscience research, primarily dealing with coal geology. "I never even taught a class in graduate school," he said. "I was strictly a researcher."

After earning his Ph.D. in geology, he worked on coal technology for Shell Oil and the Tennessee Valley Authority. "And of course that obviously qualified me for a position as a teacher," he joked. Kuehn began his teaching career at Western in 1984 and, though most of his training was on the job, he adapted well, adopting what he called a "whole person approach" to education. The whole person approach emphasizes teaching, research, and public service. Although unaware of it at the time, Kuehn was embodying the characteristics of a Distinguished University Professor, an honor that was formally bestowed on him this year.

The Distinguished University Professorship is a five-year appointment that recognizes faculty members who have given long and distinguished service to the University and who have been productive in teaching, research and scholarship, and public service. Kuehn said his entire philosophy about knowledge and education underwent a shift

shortly after he began teaching. As a researcher, his focus had been on shaping and enhancing the knowledge base for his field, or "knowledge for knowledge's sake," he said. "My students wanted to know what the pay off was right away: How is this going to help me? How is this going to get me a better job? Why do I have to know this?"

Kuehn said the first thing he does when he stands before an introductory class is congratulate the students on choosing geology as one of their general education courses. "Everybody should have at least one geology course," he said. "You live here your 75 earthly years, you'll use up some of these nonrenewable resources."

Kuehn said he tries to stress to those students that learning at least something about geology is a responsibility of their citizenship. He tells them that as voters, they will have to make choices about geological and environmental issues like the location of landfills, the preservation of farmland, and the proposed Kentucky TriModal Transpark currently being debated in Warren County. He said that despite the difficulties involved in sparking an interest in geology in the minds of those students, he enjoys teaching introductory level classes. "That's our bread and butter," he said. "They are the majority of our students. This

may be their only exposure to geology. Relatively few people come here with the idea of becoming a geologist," said Kuehn, who began his undergraduate studies as a chemistry major. "You have to convince them — and you don't convince them by being a dull bore."

Kuehn said that most students' knowledge of geology is limited to catastrophic geological events that make headlines, such as volcanoes and earthquakes. He said he discusses those things, even though those events are a small part of the discipline of geology. "A hurdle in geology that is unique to the

discipline is that most of the action on earth goes so slowly. It's hard to get slow, gradual change over millions of years to light anybody's fire," he said, "but if I can get them going on these other things that they can appreciate in human time and observe directly, then maybe by the end of the class, I can get their thinking extended to the things that maybe aren't so dynamic or exciting."

He succeeds. Kuehn, along with his students, studies how sand from different parts of the world differs based on its mineral content, and has amassed quite a collection of sand over the years. He tells his students before spring break that if they happen to be on the beach, additions to his sand collection are welcome. He laughed, saying that he has received several sand samples contained in emptied vodka or beer bottles as a result.

Kuehn attempts to show students the relevance of geology to their lives, emphasizing that Kentucky is a state rich in geological resources. According to Kuehn, if the revenue from some of the things for which Kentucky is well known — tobacco, horses, and bourbon — was combined, it still would not equal the amount of money generated by Kentucky's geological resources. The Commonwealth produces significant amounts of petroleum, gravel, clay, limestone (the third largest limestone quarry in the world is in Livingston County) and coal, which brings in more than \$6 billion annually.

Kuehn pointed out that every state has a geological survey, though they may not have biological surveys or chemistry surveys. He said this illustrates the importance of natural resources to every state in the country. Kuehn spearheaded the effort to create the Kentucky Society of Professional Geologists to provide geologists with opportunities to meet and



Photo Courtesy of Len Kuehn

interact with each other, as well as with students from across Kentucky. He recognized from his students that they weren't getting an adequate foundation in geology in middle and high school, so he began going to schools in the area to help teachers educate students about geology and its relevance in their lives.

Recently, Kuehn took a group of middle school students from the Oakland area to the proposed Kentucky TriModal Transpark site to point out some of the geological features, such as caves and sinkholes, to them. "I think that helps people understand and put into context some of the sound bites they are hearing in the media," Kuehn said.

Kuehn said he accepts the blame, or credit, for bringing attention to the possible environmental impact of the proposed Transpark. His desire to educate others about the importance of geological resources and his dedication to public service culminated in a bid to become one of Bowling Green's city commissioners. In the May primary, voters chose Kuehn and seven other candidates to advance to the general election to be held on Nov. 5.

Regardless of the outcome, Kuehn said he will continue to focus on teaching, research and public service his devotion to which earned him the Ogden College Award for Outstanding Teaching in 1990 and for Outstanding Service in 1999, and now a Distinguished University Professorship.

Dr. David J. Keeling, head of the Geography and Geology Department, said in a letter, "Dr. Kuehn has excelled in teaching, research, and public service, the three pillars of university activity, throughout his 17 years at Western. He has provided unparalleled leadership in building the geology program in the department, in promoting professional geology throughout the state, and through his many leadership activities on campus, in the community, and within his discipline."

\*\*\*\*\*

### Dr Fred Siewers Wins the Ogden College Award for Outstanding Teaching

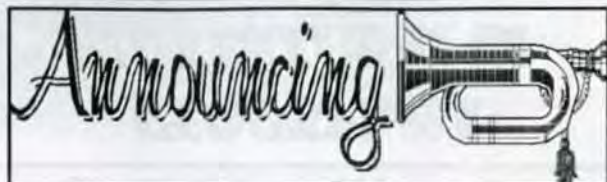
The Department of Geography and Geology was once again honored for its excellence in teaching. Dr Fred Siewers, Assistant Professor of Geology, won the 2001-2002 Ogden College of Science and Engineering

Faculty Award for Teaching. The award, which carries a cash prize and a certificate, was presented to Dr Siewers at the annual University awards banquet in April, 2002. The award, which is highly competitive, recognizes Dr..Siewers' outstanding teaching abilities and his efforts to advance the education of his students. As one former student wrote in a letter of recommendation for the award, "Dr Siewers has been a major influence on me as a student here, and I plan to attend graduate school in the fall. I owe part of my enthusiasm for geology to the enthusiasm that he has displayed as a professor here at Western Kentucky University. Dr Siewers is one of the best professors I have ever had, and I have walked away from every class with more confidence and a much greater knowledge and understanding of geology." Dr Siewers feels honored to have joined the ranks the Department's other recipients of the Ogden Faculty Teaching Award: Professor Emeritus and former State Climatologist Glen Conner and Distinguished Professor and geologist Kenneth Kuehn. Department Head, Dr David Keeling, writes that "Dr Siewers has excelled in teaching and student mentoring since joining the Department four years ago. He represents the very best in quality instruction that Western strives to provide for its students and he has committed himself to building geology at Western into the finest program in the Commonwealth. Students are fortunate to have Dr Siewers in the classroom."

\*\*\*\*\*



**Dr Siewers [left] presents Timothy Perkins with the Outstanding Geology Senior Award for 2001-02**



## Academic Program Reviews

In May 2002, the Department completed the most comprehensive overhaul of its academic programs in over a decade. All of the Geography tracks have been restructured, the MS in Geoscience has been revamped, and the Geology program is undergoing significant review this academic year.

### City and Regional Planning

Core Courses	18 hours
Track Courses	12 hours
Track Electives	<u>3 hours</u>
Track Total	33 hours

#### Additional Requirements:

Math 116	3 hours
----------	---------

### GIS and Spatial Analysis

Core Courses	18 hours
Track Courses	12 hours
Track Electives	<u>3 hours</u>
Track Total	33 hours

#### Additional Requirements:

Math 118 (or 116 + 117)	5 hours
CS 240	3 hours
AMS 202	3 hours

### Education in Geography (EDGE)

Core Courses	18 hours
Track Courses	12 hours
Track Electives	<u>3 hours</u>
Track Total	33 hours



### General Geography

Core Courses	18 hours
Track Electives	15 hours

---

Track Total 33 hours

### Meteorology and Climatology

Core Courses	18 hours
Track Courses	7 hours
Track Electives	9 hours

---

Track Total 34 hours

#### Additional Requirements:

Physics 201	3 hours
Physics 207	1 hour
Math 120	3 hours

### Environmental Planning and Management

Core Courses	18
hours	
Track Requirements	12
hours	
Track Electives	<u>3 hours</u>
Track Total	33 hours

#### Additional Requirements:

Phil 320 (Ethics)	
-------------------	--

### Sustainable Global Development

Core Courses	18 hours
Track Requirements	12 hours
Track Electives	<u>3 hours</u>
Track Total	33 hours

#### Additional Requirements:

Phil 320 (Ethics)	
-------------------	--

Please visit the Department's website for more detailed information about these new tracks:

## ADVENTURES IN GEOGRAPHY

### The Birthplace of Meteorology

By  
L. Michael Trapasso

It is difficult to pinpoint where, exactly, meteorology (or, for that matter, climatology) originated as a science. There are many roots to follow, all leading out along different tangents and all worthy of some distinction. Some, including myself, would designate 'the Bergen School' in Norway as the birthplace of *modern meteorology*. Certainly the work of Bjerknes (mid-latitude cyclones), Rossby (the jet stream), and Bergeron (rainfall processes) all originated there in the 1920s and 30s. Many people, however, feel that the roots go much farther back, to the Italian Renaissance in the 1600s. It was Galileo who invented the thermometer and Torricelli who invented the barometer. Thus, monitoring the atmosphere began during this time. Truly, several other countries can claim their share of the development of atmospheric science. For example, England could be a contender; this is where Hadley and Walker developed their theories of global circulation. Or perhaps Germany, where Fahrenheit developed his temperature scale, or France where Coriolis first explained the strange spinning of our weather systems. However, when it comes right down to it, the science of meteorology goes back even farther in time.

To discover the oldest roots of atmospheric science, we must consider one of the oldest civilizations on Earth — i.e., the Ancient Greeks. Around 400 b.c.e., Hippocrates (often called the Father of Modern Medicine) wrote "Airs, Waters, and Places." This treatise was about weather and geo-

graphical location affecting human health. Some 50 years later, ca. 350 b.c.e., Aristotle wrote his "Meteorologia," the first book about weather science. As far as I am concerned, this is as far back as you need to go to find the actual origin of the science many of us hold dear.

In October 2001, I participated in an international conference and workshop sponsored by the International Society of Biometeorology that convened in the province of Halkidiki in northern Greece. [If you look at a map of the area, you will see three finger-like peninsulas sticking out into the Aegean Sea. The middle peninsula, Sithonia, was where the conference was held and the region connecting the peninsulas is Halkidiki.] This coastal area on the Aegean Sea was a beautiful setting for scientific meetings and workshops. On the last day of the conference, those who so chose were taken on a full-day field trip into the region. This field trip was a geoscientist's dream. Wave action processes worthy of mention in any coastal geomorphology book or chapter riddled the spectacular coastline (stacks, arches, and promontories were abundant). The limestone bedrock of the region offered some great karst features as well. For example, the cave at Petralona was remarkable for both its geomorphologic features (the dripping cave is still actively forming) and its archeological finds (which included cave-man burials, and the oldest known evidence of the use of fire, dating back 1,000,000 years).

One of the highlights for this group of atmospheric scientists was the birthplace of Aristotle. The city of Stagira, where he was born and wrote some of his treatises, still exists in the northern hill country. Today, in the acropolis\* at Stagira, a white marble statute commemorates this genius and his great works of science and philosophy. Staring at a statue may not seem like a fun thing to do, but while surrounded by my colleagues (all of us owing our livelihoods, at least in part, to this great man), something of pride and honor filled us all. This was the last stop on our field trip and it



seemed a bit ironic to end the conference in the place where it all began.

\* The term acropolis (the highest part of a community) is very common to all Greek cities. When we see or hear the term, we usually think of the Acropolis of Athens complete with the famous Parthenon. Keep in mind, almost every city had an acropolis, it served as a natural defensive position in times of war and a place to worship the Gods, and honor great accomplishments in times of peace. The statue of Aristotle is well placed on the Acropolis of Stagira, the city of his birth.



### GEOSCIENCE GRADUATE STUDENT NEWS

Geoscience graduate student Rhonda Pfaff served as a Student Assistant at the 22nd Annual ESRI International User Conference in San Diego, California. The conference, held July 8-12, 2002, brought together 11,000 GIS professionals from 130+ countries. The 64 student assistants were selected from a pool of over 300 applicants and came from 29 states and 7 countries, although Rhonda was the only student from Kentucky. The students worked closely with ESRI staff to help ensure a smooth conference experience for attendees. In exchange for working half-days at the conference, ESRI provided Rhonda with conference registration, hotel accommodations, and food stipends. The students were able to meet with Jack Dangermond, the president and founder of ESRI. A photograph of the 2002 student assistants will appear in the 2003 conference announcement brochure and on ESRI webpages.

## GEOSCIENCE STUDENTS IN THE LAND DOWN UNDER

By Debbie Kreitzer

The culminating event of the academic year for Debbie Kreitzer and 20 students was the study abroad trip to Australia. Students from geography, geology, history, recreation, photojournalism, and nursing participated in this trip of a lifetime. Flying across the international date line and the equator was an experience in patience and endurance. The real fun began when the group arrived in Cairns (Queensland, Australia). Cairns has a population of about 100,000 and the economy relies mostly on tourism and sugarcane plantations. This coastal city and its surroundings are a virtual paradise during the dry winter months.

The group spent eight days in the Cairns area, experiencing natural wonders like pristine beaches, the Great Barrier Reef, Cape Tribulation, tropical rainforests, and the Great Dividing Range. The many things they studied included coral bleaching and the potential effects of global warming, the environmental effects of sugarcane farming and tourism, deforestation, the efforts to protect and even reinstate the rainforest in this region, and the preservation of the flying fox and the almost-extinct cassowary. Then it was time to leave this tropical paradise and fly north.

The next six days were spent in the Northern Territory (or the Top End). In this region the group spent all but one of the nights in tents. They flew into Darwin in the evening and spent a few hours the next day touring the city. Then the bus left civilization. Everyone knew they were in the "bush" when they saw their first crocodiles later that day. The group spent three days and nights in Kakadu National Park, two in Jabiru, and one at Gunlom Falls (featured in *Crocodile Dundee*). The next two days were spent in the Katherine area visiting thermal springs, Cutta Cutta Caves, and canoeing at Katherine Gorge. On the last day the group visited Litchfield National Park, which featured gorgeous waterfalls and impressive termite mounds. Some of the issues studied in this region included National Park and World Heritage Site management, aboriginal rights, the problem of invasive species, and the effect of tourism on sensitive environments. The Top End adventure ended with a red-eye

flight to Sydney.

Most of the group agreed that Sydney is one of the most beautiful cities in the world. The first couple of days were spent getting familiar with Sydney and the many things to do there. Everyone visited beautiful Sydney Harbor and the famous Opera House. Many



students found their way to famous areas in Sydney like Darling Harbor, the Rocks, and Chinatown. Others visited the AMP Tower, the Australian Museum, the Sydney Aquarium, or took a tour of the harbor by boat. The next few days were spent visiting Sydney Harbor National Park, several beaches, Canberra, Katoomba and Jenolan Caves in the Blue Mountains, and the Hunter Valley Vineyards. The students were able to study a variety of urban and rural conservation and planning issues in this region, including planned cities, public vs. private transportation, air pollution, water pollution, and park management. Our Austra-



lian adventure ended, not when we left Sydney, but when we arrived back in Nashville 31 hours later on the same day (thanks to the International Date Line). This was a wonderful experience for all who participated!

\*\*\*\*\*

## GEOLOGY IN THE NEWS

### Department offers on-line courses in Earth System Science Education

In Fall 2001, the Department of Geography and Geology joined the Earth and Space Science Education Alliance (ESSEA), a national initiative to provide professional development opportunities to teachers in Earth System Science. The Department's involvement in this initiative was made possible by a 3-year grant to geologist Dr Fred Siewers from the Institute for Global Environmental Strategies and NASA's Center for Educational Technology. Joining Dr. Siewers on the grant is Dr Joan Whitworth, a science education specialist at Morehead State University, Kentucky. The goal of the grant is to provide Kentucky teachers with an understanding of Earth System Science concepts and ability to teach those concepts via NASA-created educational materials, with new approaches to classroom instruction. All courses are team taught by Drs Siewers and Wentworth.

Thus far, Drs Siewers and Wentworth have successfully offered one ESSEA course to Kentucky middle grades teachers. In Fall 2002, they will be team-teaching an ESSEA course for K-4 teachers. In Spring 2003, the team will be offering an ESSEA course for pre- and in-service high school teachers and any persons interested in Earth System Science and the brave new world of on-line education. The course will be entitled Geology 495, 495G – Earth System Science for Teachers - and it will be offered through both Western Kentucky University and the Kentucky Virtual University (<http://www.kyvu.org/>). All persons completing the course will receive 3 hours of undergraduate, graduate, or continuing education credit from Western. Anyone interested should contact Dr Siewers for more information ([fred.siewers@wku.edu](mailto:fred.siewers@wku.edu); 270-745-5988). To learn more about the courses, see the ESSEA web site at <http://www.cet.edu/essea/>.

## NEWS FROM THE CENTER FOR CAVE AND KARST STUDIES

By Nick Crawford

The CCKS had a very successful first year in the newly renovated offices and new dye tracer laboratory. Full-time Center employees included: Scott Roach, Lab Manager; Leigh Ann Croft, Research Hydrogeologist and Education Coordinator; and Rita Collins, Administrative Assistant.

The laboratory, geophysical investigations, and other research activities of the CCKS have provided important educational opportunities for the following undergraduate students who have been employed by the CCKS: Chris Ray, Alison Parker, Joe Howard, Ron Taylor, Rolland Moore, Matt Glass, Mike Peveler, Clay Brunton, Jeff Tibbs, David Wyatt, and Ben Hutchins. In addition, the Center has supported a graduate assistantship for Jeremy Richardson and has employed for individual projects the following graduate students: Joseph Islas, Pat Kambesis, Phani Kalabagunta, and Madhusudham Rayapasti. Most of these students have had the opportunity to rotate their time between laboratory work on dye-trace analysis and field work involving dye traces, microgravity, electrical resistivity, report preparation, and other karst-related research projects. Many of these students have been listed as co-authors on professional reports and papers presented at professional meetings. Their involvement in real world applied research has provided a great educational opportunity and will assist them in obtaining employment upon graduation. They have been involved in all aspects of Center activities, including the numerous public service activities. Therefore, they have been involved in all aspects of the University's mission of education, research and public service.

The great increase in applied research grants and fee-for-service contracts has fulfilled the goals of the Applied Research and Technology Program of Distinction as well as those of the Department and the University. The Center has assisted private and government agencies in New York, Pennsylvania, Tennessee, Georgia, Florida, Arkansas, California, and Kentucky, as well as Israel, Canada, Ireland and Croatia.



In addition, the CCKS has continued its important educational activities, such as the Karst Field Studies Program and our work with Lost River Cave. The following undergraduate students have been paid through the CCKS to serve as tour guides at Lost River: Donna DeRonde, Kristi Hancock, Amy Nichter, Steven O'Nan, Amanda Owens, Nichole Phillip, Leslie Ann Smith, Chris Hall, and Ryan Rennick. These students, while earning money to support their education, have learned a great deal about karst hydrogeology, and they have helped to educate the public as tour guides for the Lost River Cave boat tour. Lost River Cave expects to exceed 45,000 visitors this year. This important natural and historic resource could not have been saved without the hard work of many of our alumni, who helped to build trails, install lighting, and build the dam that permitted the boat tour. Your contribution will provide enjoyment and karst education to many future generations. The Center and the University greatly appreciates your contribution!

This year the Center contributed to the community of Bowling Green by accepting a grant from the Intermodal Transportation Authority to conduct an investigation of the hydrogeology in the vicinity of the proposed Kentucky Trimodal Transpark. The Center has submitted numerous proposals for grants and contracts and has been successful in obtaining a total of 69 for applied karst hydrology research. The largest was \$145,000 for laboratory and other assistance to the IT Corp (Shaw Group) for dye traces at Redstone Arsenal at Huntsville, Alabama. In addition, Center personnel have authored 11 articles and professional reports and presented 8 papers at professional meetings. All but one of these included graduate and/or undergraduate students as co-authors.

The need for Bowling Green to work on its storm water runoff management was evidenced in February 2002 when a sinkhole collapse occurred under the newly constructed Dishman Lane during rush hour traffic. Four cars were involved but no injuries. This collapse, the largest in Kentucky's history, was approximately 200 feet in diameter, collapsing into State Trooper Cave. Nick and alumnus James Webster and other graduate students had worked on this project in 1987-88. They identified with microgravity a large collapse cave room and recommended that it be avoided in the road's construction. At this time, the

Center also mapped State Trooper Cave and identifying its exact location with a cave radio transmission on an air photograph. Eleven years later when the highway was constructed, the identified collapse cave room was avoided. Unfortunately, due to financial constraints, a portion of the road was rerouted over an area not investigated by the Center's microgravity, although it had been identified on the CCKS map as being a collapsed cave room (Mudderhorn Chamber) with cave air rising to the surface from crevices in the ground. Although our research indicated that a portion of the Mudderhorn Chamber had already collapsed to the surface, the collapse appears to have included both the previously broken rock and a portion of the intact cave roof.



Since many roads in Bowling Green are built over caves, no one could have predicted with certainty that this location would actually collapse. However, once the road was built, storm water runoff directed into this area of underground collapse appears to have been a major contributor to the collapse of the Mudderhorn Chamber under Dishman Lane. This problem of storm water management is being addressed by the City of Bowling Green at this time. Fuller, Mossbarger, Scott and May Engineers, Inc., and the CCKS have teamed to work on a Storm Water Master Plan for the City of Bowling Green to meet the new USEPA Phase II requirements.

Immediately after the collapse, the City of Bowling Green requested the CCKS to investigate the collapse and its potential for expansion. Leigh Ann Croft, staff hydrogeologist, and several graduate and undergraduate research assistants worked on the project performing microgravity and using cave radio transmission to

map an outline of State Trooper Cave on the ground's surface. Nick's Hydrogeology Class took on the research as a class project. Graduate students Pat Kambesis and Rhonda Pfaff, and undergraduate Rolland Moore put in many hours of work. The Traverse 2 Dishman Lane Collapse diagram shows a large low-gravity anomaly over State Trooper Cave at a location where it had not collapsed and demonstrates the CCKS ability to locate caves from the ground surface. The report submitted to Bowling Green, including profile views of the collapse, was used to bid the job for remediation.

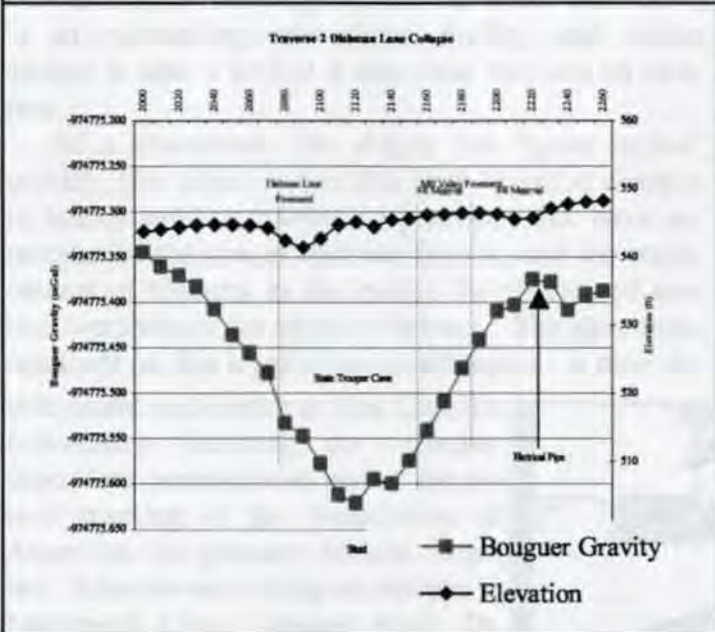
ford at MCNP; 4) Speleology, taught by Mr. Roger Brucker at MCNP; and 5) Cave Surveying and Cartography, taught by Ms. Patricia Kambesis and Dr. Nicholas Crawford at MCNP. The Center is presently working with Mammoth Cave National Park and the WKU Center for Biodiversity on an expansion of our course offerings and other educational and research activities at Mammoth Cave National Park.

**NOTE to past CCKS employees, staff and alumni:**

The Center's accomplishments and national prestige developed over the past 24 years are a direct result of the hard work and dedication of its undergraduate and graduate research assistants, employees, professors, and adjunct professors. Nick hopes that these individuals recognize their important contribution, not only to Western Kentucky University, but to the development of new karst research technologies, to karst environmental problems solved through their applied research, and to karst education that will influence generations to come. "Progress" does not appear overnight...it is a growth process of which all of you are a part.

In particular, Nick would like to recognize the hard work and dedication performed this year by Leigh Ann Croft, Research Hydrogeologist and Education Coordinator, and Scott Roach, Laboratory Manager who are propelling the Center to a new level of national prominence in education and scientific research.

\*\*\*\*\*



The broken rock and soil is now being excavated to bedrock and then being repaired by stacking and compacting rock from solid bedrock to the ground surface. A pipe will be installed to ensure that the State Trooper Cave stream will continue to flow, and the highway will be constructed over the repaired sinkhole. This collapse was featured in a short article in *GeoTimes* Magazine. Graduate student Pat Kambesis is assisting the Center in the preparation of an article to be presented to a professional journal.

The Center completed the 23<sup>rd</sup> year of its Karst Field Studies Program with five courses taught: 1) Management of Karst Aquifers, taught in Texas by Dr. George Veni; 2) Karst Geomorphology, taught at Mammoth Cave National Park (MCNP) by Dr. Darryl Granger and Mr. Joe Meiman; 3) Karst Hydrology, taught by Dr. William White and Dr. Nicholas Craw-

## FACULTY ACTIVITIES

=====

**KATIE ALGEO** enjoyed a productive first year on the faculty of the Geography & Geology Department at Western. In addition to teaching introductory classes in Human Geography, she taught Scope & Methods in Geography and Introduction to Geographic Information Systems, the latter course now part of the Department's new GIS certificate program. Dr. Algeo reports that the new GIS lab in the Industrial Education building (across the street from EST) is an outstanding educational facility and invites alumni to take a look at it next time they are on campus.

As a researcher, Dr. Algeo has "gone native" quickly. Her major project this year looked at changes in burley tobacco marketing practices that have accompanied the rise of contract farming and the implications of changes in the spatial distribution of auction warehouses for tobacco farmers. She gave presentations on this topic at two conferences: a rural development conference at East Carolina University focusing on tobacco-dependent communities and at the annual meeting of the Association of American Geographers in Los Angeles. After several hiking excursions in Mammoth Cave National Park, Dr. Algeo has become fascinated with the cultural history of that region, especially the links between cave tourism, economic development, and landscape change. In June she traveled to San Marino, California, to peruse the collection of the Huntington Library, which owns a large volume of materials related to Mammoth Cave dating to the early nineteenth century.

As a director of the Contemporary Agriculture and Rural Landuse specialty group of the Association of American Geographers, Dr. Algeo helped shepherd that group through its merger with the Rural Development specialty group this spring. She maintains the web site for the resulting Rural Geography specialty group (<http://www.wku.edu/~katie.algeo/rgsg/rgsg.htm>), and invites everyone to visit the site. Community service activities found Dr. Algeo clambering among rafters and learning how to roof a house as she

helped the Allen County chapter of Habitat for Humanity with its current project. Finally, Dr. Algeo found time to lie on a beach along the Mayan Riviera south of Cancun, as well as explore ancient pyramids, henequen plantations, and the colonial city of Mérida in the Yucatán peninsula.

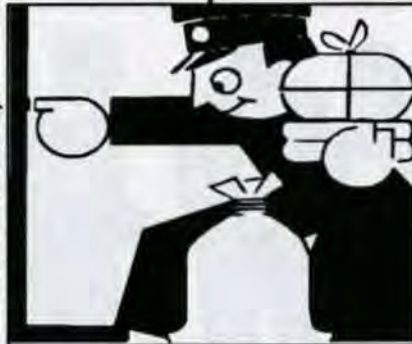
**JIM BINGHAM** writes that "it has been an eventful year in many ways--the first year with Dr. Keeling as department head, 9/11, and my first stay in the hospital. David is doing a good job leading the department as we continue to wage the WAR ON GEOGRAPHIC IGNORANCE. I do not know if we will win or not, but if we lose it will be after one hell of a BATTLE. Surely, with 9/11 and other world-scale events of the past several years, it should be rather obvious that a lack of geographic knowledge can lead to serious problems. I look forward to an additional 3-4 years at WKU with David in charge of the ship.

"In December, I spent my first days ever in the hospital as a result of congestive heart failure. Luckily, the Doc determined that the problem could be handled with medicine and I did not have to be cut on. I am doing OK now and everything seems to be under control. I have to follow a strict diet and as some of you would probably guess, I do not get to eat the things that I would really like to eat.

"My research interests continue to focus on small town and rural Kentucky. With the 2000 Census material now coming available, I plan to examine from a spatial perspective a number of demographic and economic problems. I am especially interested in the role that transfer payments play as sources of income for rural areas and small towns in the Commonwealth.

"I continue to grow and hybridize irises as a hobby and have been elevated to the status of Master Judge by the American Iris Society for those of you who may be interested to know. It seems that the first question a lot of past students will ask when I see them will be about irises.

If you were in the Department during the 60s and 70s and know the whereabouts of your fellow majors and minors at that time, PLEASE, PLEASE, PLEASE let us know about them. Provide as much information



as you can about them and also tell us about you. We want to expand and improve our alumni files.

I would like to hear from all graduates during my tenure at WKU personally. Feel free to call, snail-mail, or e-mail me [james.bingham@wku.edu] here at WKU.

I hope your year has been as good as mine, and come visit our tent during homecoming this year. We will have some food and drink and I promise the BS will be deep! TM, KEEP ON ROLLING WITH THE FLOW. BEST WISHES,  
TENN, TUCK, AND JIM BINGHAM

**GLEN CONNER** retired in July 2000 but remains active in research and other professional and scholarly activities. In August 2001, he attended the American Association of State Climatologists in Omaha, NE. On 5 October 2001, he attended the National Climatic Data Center's 50<sup>th</sup> Anniversary celebration in Asheville, NC. He was one of just a few ex-State Climatologists to attend this meeting. On 9 November 2001, he attended the joint meeting of the Kentucky Academy of Science and the Tennessee Academy of Science in Murfreesboro TN. He presented a paper "Dr. Samuel D. Martin, Physician and Meteorologist, 1865-1875."

In January 2002, he attended the 82<sup>nd</sup> annual meeting of the American Meteorological Society held in Orlando, Florida. Glen also attended the AMS Chapters meeting. In March 2002, he attended the annual meeting of the American Association of Geographers held in Los Angeles, CA, and presented a paper on "Pre-1896 Climate Observations In The United States."

In May 2002, Glen attended the 13<sup>th</sup> Applied Climatology Conference held in Portland, OR, and sponsored by the American Meteorological Society. He presented a paper on "Data Mining: Gold Or Pyrite?" He also was the Chair of two sessions on drought that saw the presentation of fourteen papers on this important topic of research. Also in May 2002, he attended one day of the Agriculture and Forest Climatology Conference held in Norfolk VA.

Glen will be teaching Aviation Meteorology this fall.



**NICK CRAWFORD** was involved during the past year in a variety of education, research and public service activities as Director of the CCKS. One of the Center's most interesting requests for assistance occurred after 9-11. Nick was contacted by both NASA and FEMA about the possibility of using the Center's microgravity techniques for locating voids where people might still be alive beneath the World Trade Center rubble. Nick and alumnus Michael Lewis had previously used microgravity to identify the extent of a sinkhole collapse under NASA's building that holds the supercomputer that runs the Space Shuttle located at Redstone Arsenal, Huntsville, Alabama. Nick packed his suitcase and loaded his suburban and was on call for about a month as NASA tried to get permission from the New York City Fire Department for him to perform the work. The site was so rugged that the only way to take measurements would have been to be lowered in a basket by crane to take each measurement. The NYFD understandably did not wish to interrupt its concentrated efforts to locate survivors in order to try an experimental application of microgravity. Nick was later contacted again by NASA and FEMA and asked to be "on call" for any possible disaster at the Winter Olympics in Utah.

This experience has resulted in Nick applying for and receiving a \$250,000 grant (\$75,000 per year for 3 years) from the Kentucky Science and Technology Center to develop a remotely controlled vehicle to permit microgravity and other geophysical techniques to be used to locate subsurface voids for search and rescue and military applications.

In August 2001, Nick used microgravity for Epic Engineering, Inc., to assist in the location of 20,000 gallons of gasoline that had leaked into the Floridan aquifer at Albany, Georgia. He also completed a dye trace study for the US Corps of Engineers to identify the source of a large leak (15,000 cfs) below the Jim Woodruff Dam at Lake Seminole, Florida. This involved injecting dye into holes in the bottom of the lake located about 1,700

feet upstream from the dam and tracing them through the confined Floridan aquifer to the large boil in the Apalachicola River about 2,000 feet downstream from the dam.

In December 2001, the CCKS received a grant from the Croatian government to investigate a sink-hole approximately 300 feet in diameter filled with 150 feet of toxic waste near Rijeka on the Adriatic coast. After an eight day visit to the site in Croatia, Nick and Stuart Edwards, Consulting Engineer, prepared a report based on the HELP model and recommended future research. Hopefully the Center will be involved in performing dye traces in Croatia at this site and an additional landfill site in the future. During the trip, Nick also visited the School of Karstology at Postojnska, Slovenia, which is located in the classic karst of southeast Europe. The school offers a Ph.D. in karstology. The CCKS hopes to work with this famous institute, possibly offering a summer course in Slovenia as part of the Karst Field Studies Program in the future.

After approximately two years of effort, Nick's work to acquire funding to begin a program that would treat urban storm-water runoff prior to its sinking into the caves under Bowling Green finally paid off. Through the help of Rep. Ron Lewis, the Corps of Engineers was awarded a \$100,000 appropriation to plan a wetland treatment system to treat all the storm-water runoff along US 31-W from Campbell Lane to Natcher Parkway. President Ransdell sent a letter making WKU the local sponsor of this program. This section of the highway will be widened from 2 to 5 lanes in the near future. The plan will include storm sewers that will direct storm-water runoff to a filtration and wetland treatment facility located behind the Center's Karst House at Lost River Cave. Other filtration wetland treatment locations will also be used, one of them possibly behind WKU's new Center for Research and Technology (Old Bowling Green Mall). Once the plan has been completed, the Corps is very optimistic that it can fund the project under its 206 Protection of Aquatic Species Program. Nick hopes that this program will permit the CCKS, the Center for Biodiversity, and the Water Resources Center to perform research on differ-

ent filtration and treatment techniques at the Lost River Groundwater Protection Laboratory. Two filtration techniques that we wish to test are the sphagnum peat moss filter and activated carbon. These filtration techniques are reported to remove 80% to 90% of urban storm water runoff contaminants, including oil and grease and heavy metals. It is hoped that the site will also serve as an important educational facility as required under the new B.G. Storm Water Master Plan being prepared to meet USEPA Phase II requirements. Fuller, Mossbarger, Scott and May Engineers, Inc., and the CCKS have teamed to work on the plan for the city of Bowling Green.

During the past year Nick wrote a section entitled "Water Tracing History," to be published in the *Encyclopedia of Cave and Karst Science*. Nick, along with other CCKS staff and graduate and undergraduate research assistants, prepared ten professional research reports and presented eight papers at scientific meetings.

Nick was interviewed by various national news media after 9-11 on ways of finding caves in Afghanistan. These included: the *New York Times*, the *Chicago Tribune*, London's *Sunday Times*, *USA Today*, NBC National News, and a live interview on Fox News Channel. The *Wall Street Journal* visited the Center and reported on our microgravity and resistivity techniques, including interviews with Leigh Ann Croft and graduate student Jeremy Richardson. Nick hopes to take a sabbatical this spring semester and plans to research and write a book on the large karst springs and water-filled caves that drain the Floridan aquifer in Florida.

**RICHARD DEAL** is beginning his second year at Western Kentucky University this year. This past year he taught a variety of introductory classes, as well as the Geography of Europe, showing as many slides as possible, and the perennial student favorite, Data Analysis and Interpretation.

His research continues to focus on efforts to es-

establish elected regional governments in England. He presented a paper at the Association of American Geographers Annual Meeting in Los Angeles entitled *Progress Towards Devolution in Yorkshire and the Humber*. Prior to that meeting, he attended a conference of political geographers in San Diego, where he went on a tour of the US-Mexico border led by the US Border Patrol. The fences and sensors, as well as the efforts to patrol it, are fascinating to anyone interested in borders. They are also far more difficult to cross than the border fence between England and Scotland, which Richard illegally crossed in 1997 in order to get a better picture than by not crossing the border.

He spent the summer in England, largely doing additional research on devolution to the English regions. He also spent some time walking 200 miles in Yorkshire, in northern England, walking the Wolds Way and the Cleveland Way, two national trails. His original plan to walk the Hadrian's Wall Path had to be abandoned because the trail has not yet opened.

**SCOTT DOBLER** has completed his second year at Western Kentucky University. This past year Scott presented a paper at the Kentucky Academy of Science entitled "Local Precipitation Associated with Pine Mountain in Southeastern Kentucky." This paper is the first in a series that will address geoscientific issues that influence the state of Kentucky. The research will be tailored to fit into the curriculum established by the Kentucky Department of Education. It will provide thematic environmental examples for P-12 teachers to use in their classroom.

In unrelated research on field methods, Scott Doblér spent two weeks during the summer touring the state of Kentucky as a platoon sergeant in the Kentucky Army National Guard. His unit, the 202 Army National Guard Band, performed at the Danville Brass Band Festival, The Louisville Zoo "Roar"chestra series, and various home-town concerts in Frankfort, Lexington, Stanford, and the International Highland Games in Glasgow, Kentucky. Scott has been involved with the Army National Guard for the last seventeen years. He plays the Trombone, Euphonium and he has been known to lead troops into battle with



a Banjo on his knee. He has been "band" from playing banjo in his office during regular EST business hours established as 7 AM to 8 PM. These hours were voted on by the departmental faculty and staff, and narrowly passed by a "Shave and a haircut" vote of 17 to 1.

**STUART FOSTER** was involved in a variety of activities as State Climatologist and director of the Kentucky Climate Center. In addition to responding to hundreds of requests for climatic data and services, he continued work on the GeoProfiles Initiative to develop spatial metadata for Kentucky's climate stations. This work, in conjunction with his involvement in the U.S. Climate Reference Network project, involved some field trips in western Kentucky and will involve more travel across the state in the coming year. Dr. Foster gave presentations on climatology and GIS to groups in Kentucky and presented a poster summarizing research on the drought of 1999-2001 at the 13<sup>th</sup> Applied Climatology Conference held in Portland, Oregon, during May, 2002.

**CHRIS GROVES'** happily had a much safer year than in 2001 and the time has been, overall, fun and productive. Probably the most significant development of the year has been the accelerating evolution of the Hoffman Institute's environmental research program in southwest China. Since 1995, this effort has been undertaken in cooperation with the Institute of Karst Geology in Guilin, China, and in recent years has focused increasingly on working to develop solutions to water resource problems in the southwest China karst region. This year a group of five that included Chris and Deana, graduate student Tricia Coakley, Shiu-Yue Mak from WKU's library, and Joe Meiman from Mammoth Cave National Park, visited China in March, where they installed monitoring equipment on a large spring near Yaji Village in Guangxi Province. After giving several training and research lectures about the equipment and project, the group visited gorgeous karst areas

near Liupanshui, Guizhou, and began to investigate a number of environmental issues there, as well as scouting out some unexplored caves near Baihe in support of an upcoming Cave Research Foundation expedition in 2004.

Chris and Deana returned to China in early August to do some maintenance on the Yaji water monitoring equipment, and Chris gave a lecture about ongoing work at Mammoth Cave. They also spent a few days inspecting and planning monitoring projects in the Stone Forest area of Yunnan Province, a wonderful scenic karst area famous for tall, steep limestone pinnacles. This side trip was especially nice because the area, although only about 100 miles from the borders with Vietnam and Laos, lies at an elevation of over 6,000 feet and so the weather was cool and pleasant.

In other projects, the Hoffman Institute continued to grow and evolve with ten students working on various projects funded by the Environmental Protection Agency, the National Park Service, the National Science Foundation, the Kentucky Department of Agriculture, and the American Chemical Society. Chris and the students gave research presentations at the WKU Biodiversity Conference and the national and regional Geological Society of America meetings in Boston and Lexington. Five students gave presentations at the WKU Sigma Xi Student Research Conference in March, with Johnny Merideth receiving an outstanding presentation award in the graduate division for his talk *Quantitative Evaluation of Vertical Shaft Evolution & Function Within the Mammoth Cave System*. Active research work also continued in collaboration with Chris's pal and colleague Joe Meiman at Mammoth Cave National Park. One new highlight was the initiation of the Hoffman Institute's *Distinguished Speakers in Environmental Science* series, with excellent presentations in the Department during the year by Professor Yuan Daoxian from Guilin, China, and Dr. Andy Baker of the University of Newcastle, England.

As in the past several years, Chris and his laptop took advantage of the email wires stretching across the Pacific to continue working on these projects while joining Deana for the summer at the University of Hawaii, where she continues to work on a summer M.S. Program in Library Science.



**DAVID J. KEELING** writes that his ninth year in the Department, and first as Department Head, provided many different opportunities and challenges, as well as a healthy dose of excitement, excellent students, several international adventures, and multiple administrative issues to keep him busy. He began the academic year, and ended the 2001 summer, by teaching one of his favorite classes, Data Analysis and Interpretation — not one of the students' favorite classes, though! In the Fall, he took over responsibility for the graduate Geoscience Research and Literacy course and introduced students to a new perspective on research, logic, and analytical techniques. As always, Dr. Keeling team-taught the Introduction to Latin American Studies course each semester with his colleague from History, Dr. Richard Salisbury.

Despite the new administrative burden generated by the Department Head position, Dr. Keeling still managed to travel to several interesting places during the year. In November, he returned to Buenos Aires, Argentina, to complete ongoing research on the rehabilitation of the Puerto Madero complex. An article based on this research is currently under review by an academic journal in Spain. After several days in Buenos Aires, Dr. Keeling flew across the Andes to Santiago, Chile, and spend several days investigating the wine industry in the central valley and urban growth along the Pacific coast. In December, he spent a week in Puerto Rico researching transport issues and evaluating some of the constraints on accessibility and mobility caused by the physical environment.

In early January, Dr. Keeling headed across the Pacific to Hong Kong and Guilin, China. The Department has a long-standing collaborative agreement with the Karst Dynamics Laboratory in Guilin, and Dr. Keeling's visit marked the 9th exchange between our two programs. During the 10-day visit, Dr. Keeling gave seminars in research techniques, talked about strategies for developing a Heritage Corridor research project, and helped several of the students and faculty with their English-language projects. Dr. Keeling's spouse also held four classes in English for Special Purposes, well attended by faculty and graduate students. Several field trips with graduate students to re-

search sites around the area provided several opportunities to develop ideas for collaborative projects and stimulated much discussion on scientific methods and techniques.

In March, during a trip to San Diego (with a side-trip to Los Angeles to attend the annual conference of the Association of American Geographers), Dr Keeling slipped across the border to Tijuana, Mexico, to evaluate recent urban growth trends in this border town. This once-sleepy little border town has exploded to a major city with over 1.5 million people, with all the attendant problems of air quality, water shortages, crime, economic development problems, and a lack of urban aesthetics. Coming back across the border into the U.S. took over two hours, as a consequence of the higher levels of security in the aftermath of the events of September 11, 2001.

Dr Keeling finished up the academic year with a trip to Tuscany, Italy, to investigate regional economic development and to see what progress has been made integrating Italy into the European-wide transportation network. Although many of the major cities such as Milan, Florence, Rome, and Bologna are well connected to national and international routes, especially with new high-speed rail links, many of the smaller towns and villages still suffer from problems of poor accessibility and mobility.

Dr. Keeling attended several conferences and workshops during the year, including the 100th Anniversary of the Nobel Peace Prize "Peace and Justice" conference convened at Hofstra University in New York, in November 2001. He also attended several fascinating workshops on global climate change and the oceans at the Woods Hole Oceanographic Institute in Massachusetts as part of the annual summer meeting of the National Council of the American Geographical Society. He gave several talks to community organizations, including a presentation for the Noon Rotary Club in June titled "Kashmiris and Kalisnakovs in the Valley of Shangri-La." Dr. Keeling also featured several times on WKYU-FM's Midday Edition interview discussing Argentina's economic collapse and the current crises in Afghanistan and Kashmir.

Research conducted in Argentina and Mexico during a sabbatical leave in Fall 2000 finally made it to

publication this past year. A chapter on "Transportation Challenges for Latin America in the 21st Century" appears in a new book titled *Latin America in the 21st Century: Challenges and Solutions*. This book is assigned reading for the Latin American Studies class this year, so students will become very familiar with transport issues in the region! A second paper developed during sabbatical research has been accepted by the journal *World Development*, subject to revision, and now sits on Dr. Keeling's desk awaiting the final edits. He hopes to get this project finished by the end of the year. Another major research project is in the writing stage. Two chapters in a new book titled *Geography Rocks! Place, Culture, and Popular Music* have been completed, and Dr. Keeling hopes that the remaining eight chapters will be completed by the end of June 2003. This book is a study of rock music from its emergence in the 1950s through to the 21st century from a geographical perspective. Dr. Keeling plans on using this research as the basis for another course on the Geography of Rock and Roll perhaps in Fall 2003 or Spring 2004.

As always, Dr Keeling encourages past, present, and potential students to come by and share travel stories, career information, and geographic tidbits. He can be reached easily in cyberspace at: david.keeling@wku.edu or by phone at (270) 745-4555.

Also, visit Dr Keeling's homepage on the World Wide Web—just enter:

<http://www.wku.edu/~david.keeling/index.htm>.

**DEBBIE KREITZER** spent a very productive year teaching, researching, and planning new geographical experiences. She presented two papers, one at the combined Kentucky Academy of Science and Tennessee Academy of Science conference titled *Environmental Globalization and the International Biosphere Reserve Project*, and one at the Association of American Geographer's Meeting (AAG) titled *Environmental Globalization: The United Nations' International Biosphere Reserve and World Heritage Projects*.

Debbie was also asked to present research about the effects of September 11<sup>th</sup> on Mammoth Cave National Park and the Mammoth Cave area to a





*Geography of Tourism* class at the University of Kentucky. The research showed that visitation was not affected by the terrorist attacks, but that many policies dealing with safety were changed. For example, big boulders now decorate the walkways leading to the visitors center and the administration building to keep potential bomb-carrying cars out. Moreover, visitors to the administration building must now sign in and out and are issued a visitor's tag.

Debbie is still the advisor to the growing Geography Club. During the past year the Geography Club was involved in several fundraisers and two major field trips. One of these field trips involved camping at Mammoth Cave National Park and participating in Ranger-led activities. The other field trip was to the national meeting of the Association of American Geographers (AAG) in Los Angeles, CA. Six students participated in this event, which involved attending paper and poster sessions, networking with professional geographers, and learning the geography of the Los Angeles area. For some of the club members, this was their first trip to the west coast. They showed their colors as true geographers on the plane trip to Los Angeles. By using an atlas and finding landmarks on the ground, the students were able to tell surrounding passengers and crew exactly where we were at almost all times! The Los Angeles trip gave Geography Club members cultural and educational experiences they will never forget. During the coming academic year the club plans on participating in many more educational and fun activities.

The culminating event of the year for Debbie was the study abroad trip to Australia. More details about this exciting program can be found on page 13 of this GEOGRAM.

**KENNETH KUEHN** sends warm greetings to G&G alumni! He writes: "As you have read in the related *Geogram* articles, my year was marked by the most extreme of personal lows and highs. These were mixed with a diverse array of professional activities.

In the realm of public service, I made numerous media appearances, including television, radio, and

newspapers. Why? This was mainly due to my declared candidacy for public office! Having survived the spring primary election, I will appear on November's ballot along with seven others (including our own renowned Dr Mike May) as a contender for a seat on the Bowling Green City Commission. This level of visibility has provided a great opportunity to educate our citizens about relevant geological and environmental issues, and there are many of them! For instance, the city and county are cooperating on a massive, 4000-acre business and industrial complex called the Kentucky Trimodal Transpark. The city has a federally required stormwater permit application due next year, and back in February we had the largest catastrophic ground collapse in city history occur on a new stretch of Dishman Lane.

Last fall, I attended the Kentucky Society of Professional Geologists (KSPG) Annual Meeting and Field Conference, which examined some historic oil fields of eastern Kentucky. The following month I participated in a workshop in Evansville, Indiana, that reviewed the earthquake hazard in the Tri-State Region and discussed how to build disaster-resistant communities. This was very appropriate because on June 18 of this year the region experienced a 5.0 magnitude quake that was felt all the way to Bowling Green! Fortunately, no damage was reported.

The past year also was a busy one in geological research. In November, I presented a paper entitled, "*Why on Earth do they want to put it HERE? A critique of the site selection process for the proposed Kentucky Trimodal Transpark*" at the Kentucky Academy of Science and Tennessee Academy of Science joint Annual Meeting in Murfreesboro, TN. I also coauthored three other papers that were presented at various meetings, as well as two field guides for professional field trips. I led one trip around our famous karst environment just prior to the spring sectional meeting of the Geological Society of America in April. I also continued my efforts with the Kentucky Geological Survey throughout the year as part of the planning team contributing information in the evaluation of possible routes for the proposed Interstate 66 in the Bowling Green area.

In the teaching world, I continued with general



education geology courses and Structural Geology for our majors and minors this past year. In April, I led the annual 800-mile field excursion into the southern Appalachians of Tennessee and North Carolina for about twenty students, accompanied by two other faculty.

I also continued in my part-time role as Assistant to the Ogden College Dean, contributing to several College-wide initiatives this past year. I authored the overall strategic plan for our Applied Research and Technology Program, developed a new recruitment strategy for the College, and participated in a successful search process to find the new Dean of Ogden College. These were all very time-consuming activities, but very satisfying in their own way.

This Fall, the Geology faculty will undertake a complete review and possible restructuring of the Geology curriculum. Please contact me (270-745-3082, [kenneth.kuehn@wku.edu](mailto:kenneth.kuehn@wku.edu)) with your suggestions about this or just to share the latest news. I am always glad to hear from you.

**REZAUL MAHMOOD** writes that it proved to be a busy and exciting first year. Teaching new courses and research activities kept him quite busy. He taught meteorology, weather forecasting and analysis, and physical climatology during the 2001-2002 academic year. Rezaul continued to focus his research on the area of soil moisture modeling. He is also developing new interests in Monsoon dynamics and Appalachian flooding. Rezaul published some of his research as a lead author in several peer-reviewed journals, including *Climate Research*, *Agronomy Journal*, and *Bulletin of the American Meteorological Society*. His soil moisture modeling work also appeared as a peer-reviewed book chapter published by the World Meteorological Organization. Moreover, the initial results of Rezaul's ongoing research activities appeared in several conference proceedings. He was also involved in several multi-departmental and multi-institutional grant-writing activities for extramural funding to support research here at WKU. Rezaul went to Lexington, KY (annual SEDAAG conference), and Portland, OR (Applied



Climate Conference), to present papers at professional meetings, and to the National Center for Atmospheric Research (NCAR) at Boulder, CO, to participate in a workshop.

During these trips Rezaul was able to carve out some time for fun. On his way to Lexington he visited famous Cumberland Falls, the Natural Bridge, and the Red River gorge of eastern Kentucky and explored surrounding areas. Rezaul took Amtrak to Portland. This was an absolutely superb scenic tour. Among other routes, Amtrak travels along the Mississippi, the Missouri, and through the Glacier National Park and the Columbia River gorge. While in Portland, he traveled to Mt. St. Helens and Mt Hood, and also to the superb series of falls along the Columbia River gorge. Like any other geographer, Rezaul also took the opportunity during weekends to explore areas adjacent to Bowling Green. This resulted in numerous road trips through the Kentucky countryside. Rezaul is looking forward to another equally productive and fun year.

**MICHAEL MAY**, having completed his sixth year as a geology faculty member in the Department, has expanded his public service duties to include running for the Bowling Green City Commission. Dr Ken Kuehn is also running for a Commissioner spot and both geologists are finding out that the lack of geology in the planning process in the Bowling Green area has cost taxpayers far too much and they would like to contribute to a change for the better in the community. Dr May's service to the region has ranged from serving as a key member of the Bowling Green/Warren County Storm Water Advisory Committee, to testifying at marathon planning and zoning meetings for the Kentucky Trimodal Transpark (KTT), a proposed 4,000-acre industrial park between Bowling Green and Mammoth Cave.

Dr May, along with other scientists in the area as well as internationally known scientists, is concerned about the potential damage to our beloved karstlands east of Bowling Green. All

classic EPA pathways of concern, such as soil/rock, groundwater, surface water, and air, could be dramatically affected in a negative fashion by poor siting and planning of power plants, highways, and industrial facilities, particularly those that are so close to Mammoth Cave National Park (MCNP).

Some assaults to the region's air quality due to Kentucky building numerous, so-called merchant coal-fired power plants or not retrofitting existing, 1960s and 1970s technology plants with Best Available Retrofit Technologies (BART), are a concern. Dr May, along with Dr Chris Groves, was asked to testify before the EPA in Chicago last year (August 2001) to urge strong passing of the BART rule on behalf of the National Park Conservation Association (NPCA) and MCNP. The nation's national parks have increasingly poor visibility, and a strong BART rule would be a correct move in literally clearing the air for future generations. Numerous surveys conducted by the Park System have suggested that poor visibility in our National Parks greatly diminishes the typical visitor's perception of the parks and their overall satisfaction of them.

Additional public service for Mike has included presenting local schools, civic groups, and churches with field trips and lectures related to geology and environmental issues, particularly those related to the proposed KTT. Although the concept of a multi-modal (truck, train, air) industrial facility sounds good, Mike is very much opposed to the selection of a site on the side of Bowling Green located closest to MCNP as opposed to other areas of the county that are already industrialized. This project has brought much publicity to the Department (for a series of articles on the Transpark and Dishman Lane, see [www.stoptranspark.org](http://www.stoptranspark.org) and click on News). Dr May's other apparent service is getting the Department's name out on local radio shows, TV, in newspapers, and even on National Public Radio (NPR). He was the featured geologist on NPR's December 27, 2001 *All Things Considered* show, with the topic being the proposed Transpark and Mammoth Cave ([http://search.npr.org/cf/cmn/segment\\_display.cfm?segID=135433](http://search.npr.org/cf/cmn/segment_display.cfm?segID=135433)).



He takes little credit for getting this show in to the national spotlight, noting that Western's own Dan Modlin of WKYU Public Radio does such great work. Another spotlight was pushing for national coverage of the Dishman Lane collapse in **Geotimes** (see Drs Crawford and May featured in a short article in April 2002 entitled "Slip and Slide in Kentucky" (<http://www.agiweb.org/geotimes/april02/geophen.html#slip>)).

On the academic front, Mike has continued to teach intro geology, physical geology, stratigraphy, environmental geology, and aqueous geochemistry classes. He continues as an adjunct faculty member for the University of North Carolina, Chapel Hill, and in August 2002 co-taught the UNC environmental regulations short-course in Norfolk, Virginia; in January 2002 he also taught the course in Daytona Beach, Florida.

Several meetings and field conferences were the usual for Mike this past year. With Dr Kuehn and one-year geology instructor Elli Goeke (MS student hailing from Indiana U. and now a Ph.D. student at University of Iowa) he enjoyed the annual field trip of the Conference of the Kentucky Society of Professional Geologists (KSPG) in September 2001 to the historic oil fields of eastern Kentucky. The WKU geologists also took in the scenery of Natural Bridges State Park and the Red River Gorge geologic area. Another important conference was a joint southeastern and north central sectional meeting of the Geological Society of America in Lexington, KY. Mike, along with co-author Ken Kuehn, presented in a public policy and geology theme section a talk on the KTT and the lack of geology in the siting and planning process. Another highlight was attending an earthquake workshop in Evansville, Indiana, in October 2001.

In November 2001, Dr May, along with other colleagues in Geography & Geology and students, attended a joint Kentucky Academy of Science (KAS) and Tennessee Academy of Science (TAS) Meeting at Middle Tennessee State University in Murfreesboro. He and his students presented several papers at this meeting. "Grain-size

Distribution of Select Chesterian Rocks in South Central Kentucky" was presented by Jessica Campbell (co-authors Leslie Falin, Tassall Hughes, Patricia Littell, Dan Polak, Dan L., and Dr May). "A Preliminary Grain-size Analysis of Basal Pennsylvanian Rocks in South Central Kentucky" was presented by Julie Neltner (co-authors Alison Parker, Tom Arndt and Dr. May). "A Geologic Critique of an Environmental Assessment for the Kentucky Trimodal Transpark" was presented by Dr May and Ron Taylor. Co-authors Chad Weaver, Kieran Hosey, Jeremy Ballard, and Dr May presented "Petrographic and Outcrop Study of Basal Pennsylvanian Sandstones and Granular-to-Pebbly Sandstones in South Central Kentucky."

Work continues for Dr May on the Mississippian-Pennsylvanian Unconformity project in south-central Kentucky, and he is now also working with Dr Carl Rexroad (Indiana Geological Survey) and Dr Lew Brown and students (Lake Superior State University) on rocks in Butler County associated with the unconformity. This research is focusing on delineating age relationships via the use of conodonts. The tiny conodonts have to be processed for conducting biostratigraphic studies. They range from about 0.3 mm to 1.5 mm in length and are amber or brown/gray colored, tooth- or plate-like structures of calcium phosphate (apatite) of little understood biological origin but they are great correlating tools for stratigraphers. Other local projects included co-authoring grants to the USGS, National Park Service, and similar groups on water quality issues near Bonnieville, KY, and on Mercury fall-out from combustion of coal and its effects on water quality and biota in the Mammoth Cave region.

Mike and his wife Beth, and sons Peter (9), and Kevin (7), continued with various sports activities for the year and enjoyed a full three weeks in Colorado this year along with a one-week family trek to the east coast. Mike is looking forward to more spare time with his family and a well-deserved sabbatical leave for the spring 2003 semester. He will be working on petrographic aspects of limestone replacement by iron-rich kaolinite clays, (potentially producing our familiar

"red soil" or terra rosa in the karst area). He will be working with another geologist, Enrique Merino, at Indiana University during his sabbatical leave on this project. If time permits, he may revisit some petrographic territory in the realm of modern carbonates via isotopic study of Pingelap Atoll (Micronesia) samples housed at the U. of Kansas.

**MARY PRANTE** writes: "Greetings to all. I hope you've all been enjoying life. I've got some bits and pieces you might find interesting (Myself, I'm finding a return to routine very fulfilling.):

Many of you remember seeing my Little Blue Car tooling around Bowling Green... I'm pleased to say she and I passed 350,000 miles this summer (Quiz question: About how many times around the Equator would this be?). Although not quite the world travelers that Dr. Keeling and Dr. Trapasso are, Little Blue and I have seen a considerable amount of Kansas and the rest of the U. S. together, and hope for a few more miles out of this first engine.

Kevin Cary, our new staff member and director of the new GIS Lab, has already been hard at work. If all continues to go well, by the time you are reading this, some of my maps will be on their way to Rome, for a visit with the Pope. Actually, bishops make a visit to Rome every five years, and the document they submit is called the Quinquennial Report; having read the previous reports while digging around in the Diocese of Owensboro archives, all those who have taken my Cartography course know I couldn't resist asking to help. Not anything significant for anyone else, I find it interesting my maps will be seen by one who has some influence over the lives of 1.8 billion people (Quiz question: How many times the population of the U.S. is this?). So I'm thankful Kevin is back with us and so very up-to-date with all the bells and whistles in the GIS Lab.

Lastly, I'm looking for an undergraduate or graduate student to assist in a community service project appropriate for Halloween: One of the local cemeteries is considering investing and building a mausoleum complex and, personally, I'd like to know what's beneath the surface at the site. (I hope that the folks upstairs at The Center for Cave and



Karst Studies will be able to squeeze us in between all the other projects they are involved in!)

I hope to see you at Homecoming! We all like to see the successful people who used to be our students. If you can't make it, drop us a line, or pop by the Department sometime if you get the chance. (Quiz Answers: Question 1: A bit more than 14 times; Question 2: Something more than 6 times.)

**FRED SIEWERS'** 4<sup>th</sup> year at Western has been an exciting one, full of new teaching and research initiatives and public service activities. On the teaching front, Dr. Siewers presented courses in Historical Geology, Paleontology, and Sedimentology. New this year in Paleontology was a class field trip to the Maysville, Kentucky, area, an area well known for its richly fossiliferous Ordovician limestones. The purpose of the trip was to collect fossils representative of the formations of the area and to learn how fossils can be used to interpret ancient marine environments. Students came away with a huge number of slabs and specimens. That material formed the basis for an end-of-the-semester research project and a series of student poster presentations. Judging by the quality of posters and enthusiasm of the student presenters, the field trip and project were a great success.

Dr. Siewers' Sedimentology class, like past years, was a research-oriented course. Students in the class studied the Mississippian Girkin Formation at several localities throughout Warren County. Unlike most studies of the Girkin, which tend to focus on its well-developed caves and sinkholes, Dr. Siewers' class conducted a stratigraphic study of the formation. The goal of the study was to subdivide the Girkin into members and to correlate those members to equivalent strata in western Kentucky, southern Indiana, and Illinois. Through detailed outcrop and laboratory studies, the students found particular features – ancient soil horizons and brecciated zones – they were able to recognize throughout the study area and use for preliminary correlations. This work was presented at the annual WKU Sigma Xi research conference and will form



the foundation of future studies of the Girkin.

Also related to this teaching, Dr. Siewers worked closely this past year with geology senior Tim Perkins on an independent study research project. Like the Sedimentology class, Tim worked on a project involving the stratigraphy and sedimentology of the Girkin Formation. Tim's research took him all over south-central Kentucky, including outcrops in Logan, Warren, Edmonson, and Hart Counties. Tim and Dr. Siewers were able to correlate two newly defined members of the uppermost Girkin throughout the study area – a significant advance over previous stratigraphic correlations. During Fall 2001, Tim gave an oral presentation of this research at the Joint Kentucky and Tennessee Academy of Science meeting in Murfreesboro, TN. For his presentation, Tim received 1<sup>st</sup> place in the Geology undergraduate research competition. Tim also gave an excellent poster presentation of this work at the joint North Central-Southeast Regional Meeting of the Geological Society of America, held this past spring in Lexington, Kentucky. Like the contributions of Dr. Siewers' sedimentology class, this work will allow for more detailed studies of the Girkin

For his own research, Dr. Siewers submitted an article on "ooids and coated grains" for the soon-to-be-published *Encyclopedia of Sediments and Sedimentary Rocks*, and he worked extensively on a paper documenting the formation of hardgrounds and paleokarst surfaces in the Ordovician limestones. Related to this research, and to the broader teaching and research mission of the Department, Dr. Siewers secured two important grants. One grant from the KY EPSCoR program, brought in \$75,000 in research start-up monies for Dr. Andrew Wulff, the Department's new full time mineralogist/petrologist. The other grant provided monies to purchase two new petrographic microscopes and a much-needed fiber optic light source for the Department's mineralogy lab. These funds and facilities will greatly enable the Department to advance its teaching and research mission.

Dr. Siewers continued to be actively involved in

university and public service. He served on several University committees, and was actively involved in the WKU Chapter of Sigma Xi, and the geology section of the Kentucky Academy of Science. He currently serves as President of WKU Sigma Xi and the geology section of the KAS. In addition, Dr. Siewers continued his involvement with geoscience education initiatives throughout the Commonwealth. Among various activities, he and Dr. Ken Kuehn, in collaboration with the School of Teacher Education, assembled a new Geology Program track in Earth and Space Science education. When approved by the University, this track will provide a new opportunity for WKU students to earn a high school-level teaching certificate in Earth and Space Science.

And finally, Dr. Siewers was recognized this past year for his outstanding teaching. In Spring 2002, he received the Ogden College of Science and Engineering Faculty Award for Teaching (see article p.10). Dr. Siewers spends most of his time away from the Department with his wife Helen and two daughters Anna (5) and Maria (2). Dr. Siewers enjoys keeping up with former students and alumni of the program. Feel free to contact him at any time (fred.siewers@wku.edu; 270-745-5988)

### L. MICHAEL TRAPASSO

is doing his usual job of teaching many of the weather and climate courses in the Department. With Glen Conner in retirement, Trapasso is in charge of all the advisement for the Meteorology/Climatology Track students. His new colleague, Rezaul Mahmood, has taken some of the load of the upper-level weather and climate courses, which allows Trapasso more time to administer the new GEOG 121 (web-based) computer lab. According to Trapasso, "It's a real baby-sitting job... there's always something that needs attending."

On the professional side, he is still quite active. Late last year he was approached by a few colleagues and asked if he would like to help write a new edition of an introductory physical geography textbook. Since he had never done this before, he accepted the challenge and, at present, is revising all the weather and climate chapters in this new edition. If all goes according to the publishers' (Brooks/Cole Division of Thomson Publishing) schedule, the new edition

should come out for the Fall 2003 Semester. If you can, please look for *Essentials of Physical Geography* by Gabler, Petersen, and Trapasso. Michael was recently asked by the editor of *The Encyclopedia of World Climates* to write a few entries for that reference book. Since the editor is a personal friend, Trapasso agreed and soon will be working on that project. Last October, Michael traveled to Thessaloniki in Northern Greece to present some of his sabbatical research at an international conference and workshop sponsored by the International Society of Biometeorology. It was a delightful setting to present a paper, and a wonderful opportunity to visit the mainland of Greece. A written version of his research was published on the web.

Though the trip to Greece was a wonderful opportunity, that just wasn't enough for Trapasso. During a (slightly extended) Spring Break, he went to visit a friend in New Zealand. According to Trapasso, "My friend Reg picked me up at Auckland Airport...two weeks and 3500 miles later he dropped me off at the airport." This super road trip took them to both the North and South Islands, where they experienced a variety of climates and different types of geomorphology (fluvial, karst, coastal, and glacial). Upon his return he immediately jumped back into classes ... exhausted but happy.

This summer he decided to take life a little easier, spending a few weeks wandering around parts of eastern Canada (Quebec and Ontario). According to Trapasso, "There's a lot of French and Indian Wars and War of 1812 history up there, complete with forts and battlefields." His intense love of military history keeps him busy outside the classroom. With respect to the Civil War (his main war), he is constantly asked to address school and community groups, showcasing his expertise on this period of US history.

On the Civil War re-enacting front, Trapasso has suffered a setback. After doing a few Civil War re-enactments this year, his horse Savannah (a good mare) had to retire (due to leg trouble) and he's "interviewing," as he puts it, for a new war horse. According to Dr. Trapasso, horses are everywhere, but a good cavalry horse is hard to find. We all wish him luck.



## ALUMNI CONTRIBUTIONS

Contributions to the Department of Geography and Geology Development Fund between January 2001 and June 2002 (including the Wayne Hoffman Memorial Fund) surpassed \$13,500 in cash and other gifts. The number of individual contributions to our Fund topped the 135 mark! Thanks to everyone for helping us achieve our goals this year. As always, we continue to need your help now more than ever as budgets remain extremely limited; your contribution goes a long way to ensuring that we can support student research, scholarships, and field work. When you receive a call from our students, or whenever the spirit moves you, make a contribution to the

Dr. Catherine Algeo  
Mr/Mrs James A. Anderson  
Mr/Mrs Paul D. Anderson  
BG Men's Handicap League  
Mr/Mrs Jeffrey V. Baker  
Mr/Mrs Curtis W. Barman  
Sherri S. Barnes  
Leslie E. Barras  
Jerry P. Battistello  
Janet Gail Bemiss  
Joseph H. Bishop  
William P. Blackburn  
Mr/Mrs Dennis B. Bond  
Robert J. Bond  
Connie M. Boree  
Sam S. Boyd  
Irvin Gene Boysen  
Mr/Mrs Michael Burke  
John Kenneth Carmichael  
Mr/Mrs Bobby Carson  
Sharyn F. Castelli  
Harvey Lee Clark, Jr.  
Mr/Mrs Richey B. Cline  
Mr/Mrs Matt Cornacchione  
Judi Dewilde Craig  
David Martin Cross  
Francis Michael Cuffe  
Col. D. Glen Conner  
Drs Nancy and Jim Davis  
Patrick Sean Davison  
Dr. Richard E. Deal  
Mr/Mrs James R. Debold  
Nancy Carol Demaree  
Scott Alan Dobler  
Ramey Allen Douglas

Ruth Price Duncan  
Mr/Mrs Anthony J. Eyl  
Mr/Mrs Jerry Finley  
James T. Ford  
Dr. Stuart Foster  
Mr/Mrs Mark H. Freer  
Clint H. Franklin  
Charles D. Fulkerson  
Ellie R. Goeke  
James R. Gonterman  
Mr/Mrs John K. Grace  
Jerry C. Griffin  
Mr/Mrs Chris Groves  
Dr Virginia L. Hagee  
Luke Drew Hall  
Patti Jo Hall  
Albert Vance Hamm  
Joel K. Hargis  
Harrison & Goin Law  
Joseph Maurice Hayden  
Michael Eugene Hazelett  
Ruth Hoffman  
Judith M. Hower  
William O. Jackson  
Keirsten H. Jagggers  
Mr/Mrs Jogn Jameson  
MSG Luther V. Jenkins  
Timothy Wayne Justis  
Dr. David J. Keeling  
Dr. Johnette Keiser  
Timothy E. Kelly  
KY Society of Geologists  
Damon H. King, Jr.  
Lisa Frye Kinkel  
Kevin R. Kinne

Debra D. Kreitzer  
Anna Nicole Langley  
Mr/Mrs Robin J. Lewis  
Michael A. L'heureux  
Lilley Endowment, Inc.  
Howard J. Lowrey  
Douglas W. Lynch  
Dr Rezaul Mahmood  
Theodore J. Marshall  
Mark P. Masterson  
Dr. Michael May  
Michael W. McDougal  
Larry Vernon Miller  
Dr/Mrs Conrad Moore  
Byron Kevin Morris  
Dr/Mrs Joseph Murphy, Jr.  
Mr/Mrs Joseph Nance  
Michael Cody Nichols  
Mr/Mrs David P. Orne  
Jeffrey S. Pemberton  
William D. Peyton, II  
Gregory W. Powell  
Leonard Pyzynski, Jr.  
Mr/Mrs Jerry. W. Ralston  
Joseph F. Rather  
Daniel P. Raymer  
Elissa A. Rees  
Denise A. Rogers  
George M. Rogers  
Sharon D. Rouse  
S & J Vending Company  
James P. Shaw  
Randolph Shields  
Dr/Mrs Fred Siewers

Donald J. Simon  
Gina Renee Slaughter  
Rebecca Sue Smith  
Mr/Mrs William Sorrell  
Harry L. Spires  
Andrew T. Spurling  
John Carl Stark  
Mr/Mrs William Steedly  
William K. Steinmetz  
Stuart Douglas Stevenson  
Jamie L. Strickland  
Kenneth N. Szymanski  
Dr/Mrs James W. Taylor  
Mr/Mrs James Thomason  
Barbara Jean Thomas  
Sherree Lynn Tipton  
Dr. L. Michael Trapasso  
Mr/Mrs Robert Tudor  
Kate Walker  
Patricia C. Warren  
Mr/Mrs Terry Wease  
Charmaine Weber  
Aric D. Wilhelm  
David A. Williams  
Mr/Mrs Shaun Winter  
Paul David Wood  
Ross W. Workman  
Wendy Wrenn  
Col. Douglas B. Yates  
John T.M. Yewell  
Bertrand L. Zeller  
Mr/Mrs Michael Zimny  
Gregory Zoeller

Department and to the University. You can also gift funds to the Hoffman Memorial Fund, in memory of Wayne L. Hoffman, who led the Department for nearly 25 years, or in memory of Dr. Deborah Kuehn. Be sure to specify that the money be designated for use by the Department of Geography and Geology. Our profound thanks to our contributing alumni. We gratefully acknowledge gifts from the individuals listed on this page. Funds were applied during the year to support student research, student attendance at conferences, study abroad scholarships for students, new furniture for the student lounge, the annual alumni homecoming geofeast, and other support.

\*\*\*\*\*

## ALUMNI NEWS

**Roger D. Breeden** (Geology 1982) is an environmental geologist with TPM Group, Inc., in Bowling Green, a locally owned full-service environmental consulting and contracting company offering a multitude of services. Roger is a senior project manager, senior project geologist, and division manager for TPM.

**Wayne Burke** (Geography minor 1971) works for an insurance marketing firm in Louisville. Wayne's wife Gail is the lab director at Baptist Hospital East. He sends greetings to Jim Bingham, who was just a "pup" when Wayne was in the geography department.

**Bradley L. Coyle** (Geography and Geology 2000) writes that he was offered a total of three positions with well-known environmental firms (two were in North Carolina and the one in Louisville). Bradley accepted a position with August Mack Environmental's Louisville office in March 2001 and feels that he's growing as a professional with this firm. In addition to changing jobs, Bradley got married in May to his college sweetheart, Angela. She's a teacher with Oldham County Schools and they're living in Louisville.

**Ramey Allen Douglas** (Geography 1999) teaches 6th grade geography for the Danville Independent Schools.

**Joshua Gunnels** (Geography 2001) recently accepted a job with Baltimore Gas & Electric Company, assisting in the updating of their maps.

**Martha Blair Harrison** (MPS City & Regional Planning (1976) writes that her planning education is very useful in her position as Oakland City attorney.

**Joe and Linda Hughes** (1963 and 1965) write that they spend considerable time in the Grand Canyon and among the dormant volcanic peaks of Arizona trying to relate to the events that shaped this area and that continue to influence such a large region.

**John Kuenzi** (Geology 1982) is a construction mechanic, 2nd. Class, on active duty with the U.S. Navy at the Naval Mobile Construction Battalion 17 in Denver, Colorado.

**Jason Lindsey** (Geography (Meteorology) 2000) currently lives in Cheyenne, Wyoming, where he is the morning and noon weather anchor for KGWN-TV(www.kgwn.tv). Jason is taking correspondence courses at USDA Graduate School in Washington, D.C., to complete his degree in meteorology. He is working on Dynamic Meteorology I and Oceanography. Jason recently passed the National Weather Association's Broadcast Seal of Approval Exam and should have the seal by December.

**Brandi Meredith** (Geography 2000) has been accepted into Vermont School of Law.

**Chris and Patricia [Krouse] Moore** (Geography 1994) write that Chris recently earned his Masters Degree from Webster University and continues to serve in the military at Columbia/Fort Jackson, SC.

**Paul E. Nichols** (Geography/City & Regional Planning 1991) is currently assigned to the Army staff in the Pentagon. He is working to complete an MPA at the University of Maryland during the evenings and weekends.

**Michael Peveler** (Geology 2001) is working for the U. S. Army Corps of Engineers in the Louisville office as a geologist in the Engineering Division Geotechnical branch.

**Timothy "Scotty" Pruett** (MS Geoscience 2000) has accepted a full-time position as a geography instructor at Frostburg State University in Maryland.

**Jerry Ralston** (Geography 1969) writes that he is currently in his 2nd year as Superintendent of the Barren County School System in Glasgow, Kentucky. His career includes 33 years in education: 25 years as an administrator and the past 12 years as a superintendent. His wife, Marcella (WKU, 72) teaches 5th grade at Red Cross



Elementary in Barren County. Jerry's daughter Laura (WKU, 99) lives in Texas, his son Jefferson is a junior at Western, and his son Benjamin is a sophomore at Murray State.

**Tom D. Richards** (Geography 1952) now lives in Texas, after retiring from Delta Airlines as a captain.

**Caryn Smith** (Geography 1989) works for Williams Communications in Tulsa, Oklahoma.

**George W. Troutman** (Geology 1974) is a geological advisor for Devon Energy Corporation in Oklahoma, the largest independent oil and gas company in North America. After successfully running Troutman Geo/logical & Associates, a domestic and international consulting firm, for 16 years, George joined Devon in August 2000. George is a past president of the Oklahoma City Geological Society and has been active for many years in the American Association of Petroleum Geologists (AAPG).

**Wesley Wright** (Geography 2000) is a land-use planner for Hardin County, where much of his time is devoted to reviewing subdivision plats and dealing with map amendments.

NEWS

\*\*\*\*\*

Fill out the Alumni Information sheet on the next page and mail it to the Department today. We want to know how your career and life are progressing. You can also attach a small passport-sized picture of yourself, if you like, that we can publish alongside your news.

\*\*\*\*\*  
★  
★ **YOUR PROFILE AND NEWS** ★  
★ **BELONG HERE!!** ★  
★  
\*\*\*\*\*

**"I predict a profitable and successful 2003 if you send in your Alumni Information sheet right away....."**



\*\*\*\*\*

**GEOGRAM** is designed, edited, and produced for the Department by Dr David J. Keeling.  
david.keeling@wku.edu  
<http://www.wku.edu/~david.keeling/index.htm>

# GEOGRAM 2002

## Alumni Information

Name of Graduate \_\_\_\_\_  
(include maiden name)

Major \_\_\_\_\_ Year of Graduation \_\_\_\_\_

Current Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Occupation \_\_\_\_\_ Employer \_\_\_\_\_

NEWS: \_\_\_\_\_

Mail to: Dr. David J. Keeling, Editor  
Department of Geography & Geology  
Western Kentucky University  
One Big Red Way  
Bowling Green, KY 42101-3576

# GEOGRAM

**Department of Geography and Geology**

**Department of Geography and Geology  
Western Kentucky University  
1 Big Red Way  
Bowling Green, KY 42101-3576**

**Address Services Requested 1**

**NONPROFIT ORGANIZATION  
US POSTAGE PAID  
PERMIT NO. 398  
BOWLING GREEN, KY 42101-3576**

## **inside...**

<b>Introducing our New Faculty.....</b>	<b>page 6</b>
<b>Adventures in Geography &amp; Geology.....</b>	<b>pages 12-17</b>
<b>Faculty Notes .....</b>	<b>pages 18-29</b>
<b>Alumni News .....</b>	<b>pages 30-32</b>