


Fall 2007

## Geogram 2007

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*Western Kentucky University*

WKU Department of Geography and Geology

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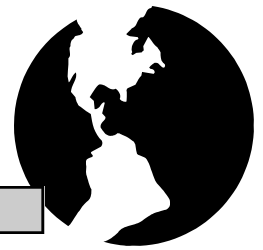
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# GEOGRAM



Fall 2007

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

Dear Friends,

Academic year 2006-2007 proved to be another extremely successful year for the Department of Geography and Geology. Highlights of the year's accomplishments include the following events and activities:

- ▶ Andrew Wulff received the 2007 WKU Award for Outstanding Teaching – he also won the Ogden College Award for Teaching.
- ▶ The WKU China Project, led by Dr Groves, received additional funding in 2007.
- ▶ Two students were selected for scholarships from an international competition to attend the annual ESRI GIS conference.
- ▶ Faculty and students were featured 100+ times in media print and online articles.
- ▶ Over 100 students participated in study-abroad programs, field camps, special field projects, and field trips during the year. Study abroad field-camp programs visited Australia and Western Europe, and are in development for the Yucatán and the eastern Mediterranean for 2008, with 40 students scheduled to participate.
- ▶ The Department awarded 21 GIS Certificates this year; and 45 students have completed half of the requirements. A new BS in GIS major has been developed, with 10 students expected to enroll during the coming year.
- ▶ A geoscience graduate student won presentation awards at the annual Sigma Xi student conference, at the Kentucky Academy of Science meeting, and at the Southeastern Geographers conference.



### A Letter from the Department Chair

- ▶ A geology major was selected for an REU program at the American Museum of Natural History during the summer.
- ▶ Forty students were actively engaged in applied research with faculty through the ARTP and through externally funded research projects.
- ▶ Faculty and students visited 15 overseas locations for research, professional development, conferences, study-abroad programs, expedition study tours, and collaborative activities, including multiple visits to China, Europe, and Southern Africa, and visits to Morocco, Niger, Mali, Burkina, Chile, Bahamas, and Turkey.
- ▶ The Kentucky Geographical Alliance received \$50,000 in national funding for the second year in succession.
- ▶ The Department Head published multiple Op Eds nationally on geoscience issues from global climate change to immigration and transportation.
- ▶ The Kentucky Mesonet developed several new weather network sites.
- ▶ Dr. Mahmood co-edited a special issue on climate and land cover use for the international journal Global and Planetary Change.
- ▶ Scott Dobler served as the Kentucky State Geographer during 2006.
- ▶ Nick Crawford was appointed a WKU Distinguished University Professor in 2006.
- ▶ Dr. Groves received a \$2 million grant for the China Environmental Health Project.
- ▶ Dr. Keeling lectured on two international study tours for the American Geographical Society, and

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served as Assistant Treasurer of the organization.

► A new B.S. Meteorology degree has been approved by the CPE effective July 1, 2007, and already has enrolled 10 students effective Fall 2007.

Faculty and students excelled again in scholarship, research, and professional development, convening and/or participating in myriad professional workshops and presenting over 40 papers at local, regional, national, and international conferences. Faculty also engaged significantly with the local community, serving on committees and task forces, participating in WKU-sponsored community outreach events such as the *Far Away Places* series at Barnes and Noble, sharing geoscience expertise on WKYU-FM's Midday Edition program, and giving talks at schools, churches, community organizations, and for service groups.

Three faculty served as editor or co-editor of professional academic journals or book series, six faculty reviewed manuscripts for academic journals or publishers, and one faculty co-authored a chapter in *Methods in Karst Hydrogeology*. Geography faculty research articles appeared in such diverse journals as *Global and Planetary Change*, *Progress in Human Geography*, *Climate Research*, *The Professional Geographer*, and *Journal of Hydrology*, among others. Over twenty faculty research articles or book chapters are either currently in review, revision, or awaiting publication, several co-authored with undergraduate or graduate students, an exceptional level of productivity indeed.

In May 2007, the Department recorded 164 majors in geography, 68 in geology, and 97 total minors. The Department graduated 40 students from its major programs during the year and it has a target of 40 new majors each year to maintain and grow the programs.

The students and faculty of the Department of Geography and Geology again have performed exceedingly well over the past 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. We look forward to hearing from you this coming year.

Best Wishes,

*David J. Keeling*

Department Head

## \*\*\* HOMECOMING \*\*\*

Saturday, November 10, 2007

\*\* Special Event: Geography and Geology Departmental Tour (Including our GIS lab, MESONET, and Applied Research Centers).  
Time: 1:00 - 2:00pm

Location: Meet on 3rd 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.

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### VISIT THE DEPARTMENT'S WEBWORLD

The Department's homepage continues to undergo regular updating, with new information posted each month. Details about the new GIS and Meteorology majors is now posted online. In addition to the outstanding Kentucky Climate Center site, originally developed by Glen Conner, our State Climatologist Emeritus, and continued by current State Climatologist Stuart Foster, the homepage provides 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 links to the syllabus or 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 always more construction 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/>

## Outstanding Geography Students, 2006-07

The Department of Geography and Geography takes pride every year in the quality of its graduating seniors and, 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 annual Ogden College Awards Ceremony.

For the 2006-07 academic year, Daniel Hawkins received the Outstanding Geology Senior Award, presented by Dr Andrew Wulff. Courtney P. Baines received the Ronald R. Dilamarter Outstanding Senior in Geography Award, presented by Dr Rezaul Mahmood. Ashley Littell received the Outstanding Geoscience Graduate Student award, presented by Dr Rezaul Mahmood.



*Dr Andrew Wulff presents Daniel Hawkins with the Outstanding Senior in Geology Award at the Annual Ogden College Awards Ceremony, April 2007*

**Congratulations to ALL  
our Outstanding Students!**



*Dr Rezaul Mahmood presents Ashley Littell with the Outstanding Geoscience Graduate Student Award at the Annual Ogden College Awards Ceremony, April 2007*

## Introducing Our Newest Faculty Member:



## Dr Aaron Celestian

Dr Aaron Celestian joins the WKU faculty after spending a year as a visiting assistant professor in the School of Earth and Environmental Sciences at the City University of New York Queens College. Dr Celestian received his B.S. from the University of Arizona in geoscience, and both his M.S. and Ph.D. from Stony Brook University. His undergraduate research focused on spectroscopic studies of pyroxenes under high pressure to understand the crystallographic behavior of earth materials under extreme geologic conditions. Then, during his doctoral research, Dr Celestian worked on engineering and characterizing new materials that are now being used to absorb high-level radioactive ions in spent nuclear waste from commercial and government waste sites.

During Dr Celestian's college years he was a con-



cert classical guitarist who had studied under Robert Guthrie, and he is a second generation disciple of Andre Segovia. When he is not playing the guitar, he is often found in mountain streams fly fishing for trout and other Salmoniformes.

Dr Celestian's teaching and research interests are centered on the atomic nature of solids, and specifically ion transport within solids. The process of ion exchange is one type of ion transport in a solid media where a charged species is spontaneously taken from the environment by a solid, but to maintain charge balance the solid must give up an ion(s) of equal charge. This process is important both to the environment and to industry. Examples of the commercial uses of ion exchangers include water softeners to improve the performance of laundry detergents, odor absorbers, catalysts for chemical reactions, and in slow release fertil-

izers. Environmental applications of ion exchangers include uses as dietary supplements for livestock to reduce toxic excrement release into the ground waters, and remediation of groundwater.

For the future, Dr Celestian plans on developing a multidisciplinary research program to study crystalline and nano-materials. His teaching goals are directly linked with his research interests and they are to stimulate an appreciation for earth and environmental materials science. He plans on developing new courses addressing the nature of the physical and chemical properties of materials so that students can succeed in this bright area of research. He especially encourages undergraduate and graduate students of the various disciplines within geology, chemistry, and physics to discuss their projects and problems related to materials. His door seems to be always open.



Instructors and participants in the *Mammoth Cave: People, Place, and History* workshop at Bell's Tavern, an important node on early travel routes to Mammoth Cave.



## An Update on the Kentucky Mesonet

The drought and record-breaking heat wave of August, 2007, highlights the impact of weather and climate in the daily lives of Kentuckians. Near real-time weather data are now becoming a reality across the Commonwealth with the development of the Kentucky Mesonet. Initial funding of \$1.5M for the Mesonet was provided through an earmark secured by U.S. Senator Mitch McConnell in FY '06. While earmarks were eliminated from the federal budget in FY '07, the National Weather Service provided an additional grant of \$400K to ensure that work continues on the project through the Kentucky Climate Center in the Department of Geography and Geology at WKU.

Progress is evident on many fronts. On May 17, 2007, the first Kentucky Mesonet environmental monitoring station was installed and began transmitting data to the Kentucky Climate Center. This station, located at the WKU farm, will be used as a test site, but it has since been joined by two other Mesonet stations that are collecting and transmitting data from Russellville in Logan County and Morehead in Rowan County. Each station records air temperature, relative humidity, solar radiation, wind speed and direction, and precipitation. Soil moisture and soil temperature probes will be added in the future. You can retrieve live data from these stations, and soon from additional stations, at <http://www.kymesonet.org/>.

Behind the scenes, work is ongoing to develop the information technology infrastructure for storing and managing Mesonet data, including a vast array of metadata about scientific instruments and operating Mesonet sites that are necessary to certify the integrity of a research-quality environmental monitoring network.

The Mesonet staff currently includes:

Zack Brown	Applications Programmer
Megan Ferris	Quality Assurance Meteorologist
Dana Grabowski	Meteorology/Electronics Technician
Mike Grogan	Systems Administrator
Stephen Struebig	Meteorology/Electronics Technician

In addition, the Mesonet has provided opportunities for several undergraduate and graduate students to gain valuable experience.

Mesonet staff and students continue to cover the state in search of sites for Mesonet stations, as plans call for the network to include near 100 stations when complete. A desirable site would be a relative flat, grassy area that is far from trees, buildings, and other obstructions that block the wind. More information about site selection criteria are available on our website. If you know of a good site for a Mesonet station, please contact Dr. Stuart Foster at (270) 745-5983.



Mesonet station at the WKU farm includes a 10-meter tower with meteorological instruments, an all-weather precipitation gauge with a wind shield, and a solar panel unit to power the station.



## Op-Eds About Issues of Importance to Society

*David J. Keeling*  
*Department Head*

As a member of the American Geographical Society's Writers Circle, I continue to write commentaries about relevant social issues viewed from a geographer's perspective for publication in the local, regional, national, and international media. These Op-Eds have ranged from arguments about transportation investment in the U.S. to global climate change's impacts in the Arctic region. Part of the mission of the American Geographical Society ([www.amergeog.org](http://www.amergeog.org)) is to stimulate debate on issues of importance to society and to highlight a geographic perspective on such issues. Scientists too frequently are accused of failing to engage with public policy in a meaningful way (witness ongoing debates over global climate change), so writing opinion pieces for local newspapers is one way to encourage a dialogue about important social and political issues. Our hope is to encourage the citizenry to engage with these issues at the local and regional level, thus helping to influence policies in a proactive way.

The following Op-Ed addresses the issue of building a fence between the U.S. and Mexico and suggests that there are other more productive ways of addressing the flow of people between the two neighbors. It was published in the South Florida *Sun-Sentinel*, as well as in other local and regional newspapers.

### **Big Fences Don't Make Good Neighbors!**

Iran's recent political skirmish with Britain over alleged incursions by British naval personnel into Iranian territorial waters highlights once again the importance of geographic boundaries. Territorial boundaries are important political and social elements in our modern global system. Boundaries are critical to the ordering of people and resources across the planet. Yet

boundaries, like big fences, do not always make good neighbors. This is especially true where boundaries are ill-defined or where they are used to hide broader policy problems. Failure to consider both the practical and perceptual importance of boundaries in today's geopolitical climate can lead to policy disasters for the U.S. and other countries. Clear demarcation alone is not enough. Understanding the meaning of boundary as barrier and as bridge is equally critical.

Without clearly defined and recognized political boundaries, the global system would collapse into territorial chaos. Indeed, humans have a long and sordid history of fighting wars over territory and resources. Even today, there are myriad unresolved boundary disputes across the planet. Iran's disagreement with Britain over the interpretation of territorial sea boundaries around the Shatt El Arab delta is but the latest and best publicized example. Others include several unsettled boundary disagreements between the U.S. and Canada, Chile and Argentina's ongoing Patagonia boundary disputes, and quarrels between China and its neighbors over islands in the South China Sea.

Ronald Reagan clearly recognized two decades ago that boundaries can limit opportunities and inhibit social, political, and economic development. One of the defining moments of the Cold War was Reagan's famous exhortation in 1987 to the Soviet leader at the time – "Mr. Gorbachev, tear down this wall." Reagan's explicit reference to the Berlin Wall had broader implications, as he argued for the elimination of the Iron Curtain – the perceptual and physical boundary between US capitalism and Soviet communism.

As a champion of globalization, free-market capitalism, and participatory democracy, the US ideologically supports the free movement of capital, goods, information, and people as a cornerstone of global economic growth. It has enforced the right of innocent passage in ocean waters – witness the US bombing of Libya in 1986 over the Gulf of Sidra boundary disagreement. The US has argued vigorously for unimpeded access to global markets, not only for goods but for the transnational elite who drive the global economy. Yet since September 11<sup>th</sup>, the US has hardened the boundary that defines US sovereign territory, making it harder for students, migrant workers, business people, and tourists to enter the country.

Twenty years after Reagan's call to tear down the wall, debate about another wall – one between Mexico and the US – is generating disagreement and ill-will across all segments of society. Yet it is hard to imagine the US initiating its own Iron Curtain, especially one running thousands of miles. Hardening the physical barrier along the US-Mexico border is unlikely simultaneously to solve the illegal immigration problem and to encourage “good neighbor” policies. The latest US policy initiatives to fortify the border with Mexico are misguided and hypocritical. Further militarizing or fortifying the boundary between the US and Mexico will not create more neighborly relationships.

Even Reagan recognized that walls do not facilitate economic integration, social change, or democracy – they discourage and isolate. U.S. policy instead should be aimed at creating seamless boundaries in the region, delineating zones of engagement rather than zones of separation. Strategies to help build vibrant economic communities in Mexico and points south would be far more productive than building a big fence. The US needs to develop policy approaches to important issues like illegal immigration, drug trafficking, and terrorism that do not create more barriers to economic and social interaction. An isolated, walled-in America viewing friends and neighbors with growing suspicion over bigger fences is not good for the region and it sends a bad message to the global community.

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### **More Changes in the Department!**

This past summer, the Department renovated several more rooms in the 3rd floor of EST, partly with academic qualify funds received from the administration and partly with departmental and grant funds. Room 338 has been converted into a 25-seat conference and seminar room, with rectangular tables and comfortable chairs. EST 349 and 350 now each have 42 seats with accompanying work tables and are the primary classrooms for general education courses such as Introduction to Geology, World Regional Geography, and Introduction to the Physical World. The Mesonet project continues to fund renovations in rooms 344 and 355. Room 422, which used to serve as

a general education classroom, is now an open office space for post-doctoral research students and geoscience graduate students. The GIS lab has been outfitted with new computers, so students taking GIS courses will notice a significant difference in processing speeds and storage capabilities. The Department will continue to renovate space as funds become available during the coming year.

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### **WKU Geoscience Students Win GIS Conference Scholarships**

Two more Western Kentucky University Geographic Information Science (GIS) students received scholarships to participate in the 27th Annual Environmental Systems Research Institute (ESRI) International User Conference in San Diego, which convened June 18-22. Ronnie Leeper, a graduate geoscience student of Bowling Green, and Brandon Fowler, an undergraduate computer information systems major and GIS minor from Louisville, were selected from a pool of international applicants for the competitive scholarships, which support 60 graduate and fourth-year undergraduate students from universities and colleges throughout the United States and around the world. The scholarships require students to work half-days at the conference in exchange for their conference registration, workshops, meals and lodging.

ESRI is the biggest organization and vendor of Geographic Information Systems (GIS) software in the world. Each year, ESRI hosts a conference for GIS users to share ideas and gain knowledge about GIS technology. This year's 27th event expects to attract more than 14,000 attendees and 350 sponsors worldwide. ESRI is 38 years old. This is the sixth year in a row that WKU's Geographic Information Science program has had a student selected for the scholarship, but this year is the third time that ESRI has selected two; last year was the second. Three of the department's former geoscience graduate students work for ESRI in California and Washington, D.C. Also attending the annual GIS User's conference is Kevin Cary, WKU's GIS Center Director, and Dr. Yanmei Li, who directs the City and Regional Planning program in the Department.



## Geology Student Selected for Summer Research Program

Western Kentucky University junior Chelsea Brunner, a geology major from Louisville, was chosen in a national competition to participate in a Research Experience for Undergraduates (REU) program at the American Museum of Natural History in New York for eight weeks this summer.

The project is titled "Classification and Measurement of Inclusions in the Allende Meteorite." Brunner will be working with Dr. Denton S. Ebel in the Department of Earth and Planetary Sciences, Division of Physical Sciences, examining calcium-rich and aluminum-rich inclusions (CAIs) in the Allende meteorite. Approximately two tons of this carbonaceous chondrite meteorite fell and were recovered from a strewn field in the state of Chihuahua, Mexico, in 1969. The inclusions they will be studying originally formed as free-floating aggregates of mineral dust, some of which were partially or fully melted to form droplets in the solar nebula.

Brunner will study different types of meteorites in the museum's collection, hypotheses for their formation, and why the measurements of the inclusions are important in testing such hypotheses. She will also gain important expertise using the Scanning Electron Microscope and Electron Microprobe, in addition to image analysis software.

"The quality of WKU's geology program continues to grow as exciting opportunities open up for students like Chelsea," said Dr. David Keeling, Geography and Geology department head. "The department has had tremendous success in recent years placing geology students in competitive REU programs and field camps, and has seen a 100 percent growth in enrollment over the past five years in the B.S. and B.A. geology majors."

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## WKU China Project Receives \$100,000 Grant From Foundation

The ENVIRON Foundation announced this week that it will make a two-year, \$100,000 grant to Western Kentucky University for a project that will provide

training to scientists and government officials in methods to improve water resources in the limestone karst regions of southwest China's Yunnan Province.

WKU's China Environmental Health Project (CEHP) works to improve public health in China through university partnerships, focusing on water resources in southwest China's extensive limestone karst regions and impacts of coal combustion on air quality. With major support from the U.S. Agency for International Development (USAID) made possible with the help of U.S. Sen. Mitch McConnell (R-Ky.), a key goal of CEHP is to involve WKU and Chinese students in the process, to make the work sustainable by increasing the Chinese academic infrastructure to continue the work into the future. Other partners include the Woodrow Wilson International Center for Scholars and the International Institute of Rural Reconstruction.

Since 2005, the ENVIRON Foundation has provided financial assistance to endeavors that promote protection of human health and the global environment through relevant education, training, applied research, and direct initiatives. Its impact is being realized throughout the world, with projects working to improve public health in locations as diverse as Vietnam, Azerbaijan and Romania.

"The ENVIRON Foundation is pleased to be able to support WKU in its efforts to improve access to water resources and public health in China," said Dr. George O. Linkletter, chair of the ENVIRON Foundation Committee. "The goals of our groups are closely aligned, in particular as one of the Foundation's goals is to promote governmental and business decision making that is informed by scientific principles and by public engagement."

"This is just how the congressional appropriation process should work," according to Dr. Chris Groves, who directs the CEHP and authored the new grant. "The support of USAID has helped us to develop an infrastructure that then becomes sustainable through the support of a variety of funding agencies, such as The ENVIRON Foundation." The CEHP is a program of the Hoffman Environmental Research Institute within WKU's Applied Research and Technology Program.

The ENVIRON Foundation grant will enable CEHP to expand its existing training programs by

working with scientists and students at Southwest University of China (SWUC) to conduct training in karst hydrogeology for local and provincial level officials in Yunnan Province, where WKU-SWUC teams have been conducting fieldwork near China’s border with Vietnam.

“Ongoing research in China funded by these types of grants is part of the department’s mission to engage faculty and students in issues of global significance,” said Geography and Geology Department Head David Keeling. “What we learn from experiences in China can be incorporated into both experiential and project-based learning for students here on campus and in our local community.”

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### Groves Lectures in Switzerland

Western Kentucky University Geography Professor Chris Groves was invited to lecture at the continuing education course “Hydrogeology and Management of Karst Groundwater Resources” during October 2006 at the Université de Neuchâtel, Switzerland.

The workshop was organized by the university’s Centre d’Hydrogéologie, a research center whose members include several internationally prominent karst scientists, and is sponsored by the Swiss Federal Office for Water and Geology, the International Association of Hydrogeologists, and the United Nations Educational, Scientific, and Cultural Organization.

Dr. Groves, who directs the Hoffman Environmental Research Institute within WKU’s Applied Research and Technology Program (ARTP), was one of two Americans invited to participate in the course, which otherwise is taught by European scientists. The course ran for three days, with several days of field trips in the Jura Mountains and Alps of France and Switzerland.

The course aimed to provide a fundamental understanding of karst aquifer systems and the sustainable management of their valuable groundwater resources. This included a presentation of modern investigation techniques with a focus on groundwater quality and contamination problems, as well as a discussion of innovative approaches to groundwater vulnerability mapping.

Like Kentucky, Switzerland and other European

countries have extensive deposits of limestone in which karst landscapes and aquifers have formed, characterized by such features as caves, sinkholes and underground rivers. In such karst regions, groundwater resources are very easily contaminated, which is a major issue there since many Europeans rely on these aquifers for drinking water.

“The global reach of teaching and scholarship in the geosciences at Western Kentucky University is truly remarkable,” said Geography and Geology Department Head David Keeling. “From Europe to Asia, and from North America to South America, geoscience faculty and students are forging meaningful relationships that will provide significant learning and research opportunities in the future. Chris’ involvement in the UNESCO project is a great example of the internationalization of research and learning at WKU.”

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### All Discusses Global Climate Change

Western Kentucky University faculty member John All chaired a session on climate change during last week’s annual meeting of the American Association for the Advancement of Science (AAAS) in San Francisco. Dr All, assistant professor of Geography and Geology, chaired a Friday afternoon session titled “Canary in the Coal Mine: Mountains and Climate Change.”

The session, which featured talks by Dr. All and three other scientists, examined the current state of mid-latitude mountains in comparison to the recent past at various time scales and offered glimpses of the future. Topics included glaciers/ice core record data, tree ring chronologies and world wide instrument records.

Dr. All’s topic was “Global Climate Change Impacts in Alpine Regions – The Human Record.” In his talk, he examined the current consequences of climate change for alpinists including rockfall, avalanches and increasingly unpredictable weather patterns. “All of these things add up to rising death and injury rates in the mountains,” said Dr. All, who as a mountain climber also represented the American Alpine Club.

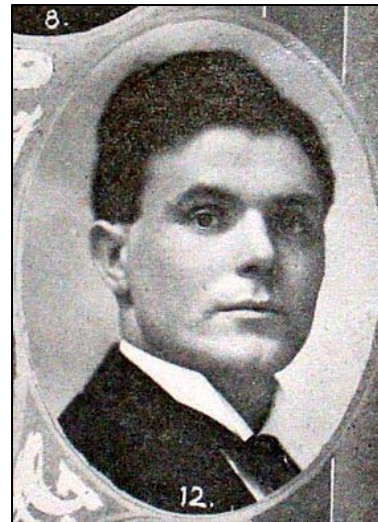
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## The Department Celebrates 100 years of Course Offerings

By Glen Conner  
State Climatologist Emeritus

The State Normal School, Western District, was formed in Bowling Green, Kentucky, on 22 January 1907. It enrolled 1,770 students during its first year. In August 1908, it published a *Bulletin*, Volume 2, No. 4, for the academic year 1908-1909 that was to begin on 8 September 1908. The course offerings from each of its eleven departments were listed. The Department of Geography and Geology was one of those departments. Four courses were described: Principles of Geography, Regional Geography, Dynamic Geology, and Structural and Stratigraphic Geology. The latter course had two hours each week for the study of rocks, minerals, and fossils.

Among the thirty-two members of the faculty and staff, was Professor R. P. Green who was the single member of the Department of Geography and Geology. He graduated from Southern Normal School in 1900, was a student at Chicago University in 1906, and was a Professor at Southern Normal School in Bowling Green from 1902 to 1907.



### GEOGRAPHY AND GEOLOGY.

PROF. GREEN.

Course I. *Principles of Geography*—Plant, animal and human societies in relation to environment. Study of geographic conditions which have influenced history and commerce. Their importance as compared to non-geographic factors. Conditions of commerce. Organization of industry.

Course II. *Regional Geography—North America*.—Physiography, natural resources of continent and the influence of geographic features upon inhabitants.

Course III. *Dynamic Geology—Advanced Physiology*.—Forces and processes that have shaped the earth's crust. Types of land and landscapes.

Course IV. *Structural and Stratigraphic Geology*.—The material of the earth's crust, their arrangement and distribution in time. Historical Geology.

Two hours each week will be given to study of common rock and mineral, and also to identification of fossils of this vicinity.

The Department participated in two Certificate Courses. The Elementary Certificate included Geography 1, Geography 2, and Physiography as three of the twenty-eight week resident requirements that led to an entitlement to teach in any of Kentucky counties' schools.

### ELEMENTARY CERTIFICATE COURSE.

This course leads to the Elementary Certificate which entitles the holder to teach in any county of the State for a period of two years immediately following issuance. The certificate will be granted to no one for less than twenty-eight weeks resident work.

Physiology 2	Grammar 3	Geography 1
Grammar 2	Arithmetic 3	Composition
Arithmetic 2	Pedagogy 1	U. S. History 1
Psychology 1	English History	Observation
Music 1	Music 2	Drawing 1
Forensics 1	Forensics 2	Forensics 3
Geography 2	Nature Study	
Reading 2	American Literature	
U. S. History 2	Algebra 1	
Algebra 1	Physiography	
Drawing 2		





ONE OF PROF. GREEN'S GEOGRAPHY CLASSES DOING FIELD WORK.  
The party returning from five days' outing at Mammoth Cave.

Professor Green and his class were used in the Bulletin as an illustration of fieldwork in an era of rather slow means of transportation.

Those who earned the Elementary Certificate were eligible to enter an additional one-year Intermediate Certificate program. The Department offered Climatology as one of its electives.

The Department of Geography and Geology one hundred years later has grown to twenty-three faculty members who serve about 240 undergraduate majors, 95 minors, and 34 graduate students.

**INTERMEDIATE CERTIFICATE COURSE.**

Those completing the preceding course can complete this course in one year of forty-eight weeks. Prior to graduation the applicant must have full credit for all of the work in the preceding courses, the subjects named in this course and four electives taken either from the following course or from some special courses. The selection of the elective must be approved by the Program Committee. No certificate of this class will be granted to any one, regardless of scholarship, for less than twenty-eight weeks of resident work.

- |                 |                 |                |
|-----------------|-----------------|----------------|
| Rhetoric 1      | Rhetoric 2      | English Lit. 2 |
| Biology 1       | Biology 2       | Biology 3      |
| Physiology 3    | Geometry 1      | Geometry 2     |
| Algebra 3       | English Lit. 1  | Psychology 2   |
| Elective 1      | Elective 2      | Elective 3     |
| Forensics 4     | Forensics 5     |                |
| Advanced Eng. 1 | Sociology       |                |
| Biology 4       | Advanced Eng. 2 |                |
| Geometry 3      | Pedagogy 2      |                |
| Psychology 3    | Climatology     |                |
| Elective 4      |                 |                |



Honors Night, April 2007



## Adventures in Geoscience

### The Shorts, the High, and the Triangle: The Geography and Geology of Bermuda

By Michael Trapasso

My first recollection of hearing the name “Bermuda” was in reference to a pair of short pants ... remarkably long, short pants. It was okay for girls to wear Bermuda shorts, but in my neighborhood, a guy could get beat up for wearing short pants (except in gym class). Nowadays it seems every guy owns several pairs of remarkably long shorts. Every once and a while I feel the urge to slap some idiot with shorts that hang below his knees!

My next reference to this island came from my first climatology class discussion on the Bermuda High. This is a major high-pressure system in the North Atlantic, and can be an important factor in the climate of the eastern United States. Also known as the “Azores High,” the Bermuda High can affect weather patterns in Europe and Africa as well. When the Bermuda High is off our east coast, its clockwise circulation directs warm, moist air from the Gulf of Mexico into the eastern states. It tends to bring us hot, humid days with a thunderstorm potential. When this High invades the eastern states, its stabilizing force may bring us drought conditions with hot, humid, hazy days. Meteorologically, the Bermuda High is a force to reckon with.

Then there is the Bermuda Triangle, this mysterious area of the North Atlantic where ships and planes disappear without a trace. As mysteries go, I rank this one somewhere between UFOs (my favorite) and the Lost City of Atlantis (yawn!). Having flown over this area of mystery, and having visited the other points of the triangle (i.e., Miami, Florida, and San Juan, Puerto Rico), it was time to visit the triangle’s namesake.

The climate of Bermuda made a January visit not only possible, but quite enjoyable. The island’s location in the warm water of the Gulf Stream current makes Bermuda’s temperature range rarely exceed 90 degrees F, and rarely drop below 55 de-

grees F. That week brought partly cloudy skies with the daytime highs around 70 degrees F and overnight lows of around 60 degrees F. Humidity can get high and uncomfortable during July and August, but the levels were fine in January. Ocean breezes help Bermudians cope with the higher humidity values, as well as blow pollutants and biting insects out to sea.

Hurricanes can be a problem for this small island. As a matter of fact, Bermuda became a British colony in 1609, when a hurricane caused the shipwreck of the “Sea Venture” on the island’s shallow reefs. This ship was heading to re-supply the British colony at Jamestown, Virginia. A new ship, “Deliverance,” had to be built on the island to eventually complete that mission. Records show a total of 52 brushes with hurricanes since that time. The shallow reefs protect some of Bermuda’s shores, but larger storm surges and torrential rainfall can flood low-lying areas. By law, all homes are built using the local limestone, so in general there is little permanent damage to homes. Of course, power outages hit Bermuda as badly as they would hit anywhere else.

Bermuda’s geology begins about 100 million years ago when a volcano emerged from the Mid-Atlantic Ridge. As the sea floor spread apart at the ridge, that volcano accompanied the North American Tectonic Plate. Today, the closest land mass is Cape Hatteras, North Carolina, some 1000 km (620 miles) away. During the early Pleistocene Epoch (1-2 million years ago), the volcano eroded to below sea level and corals began to grow around its margin. This type of structure makes Bermuda the only ‘atoll’ in the North Atlantic. The volcanic base rock is covered by limestone, formed from the concretion of coral sands. As we well know, where you have limestone, you find karst landforms. Collapse sinkholes, blue holes, and more than 150 caves exist in this limestone caprock. There were opportunities to explore several of these caves, and swimming was allowed in one of them. The pools are a combination of seawater and groundwater (known as anchialine water), and in January, man, it’s pretty cold! But by swimming around the cave, one finds occasional warm spots where the warmer ocean water seeps in through the cave floor. I’ve explored many caves in many countries around the

world, but this was the first time I ever took my clothes off and jumped in!

Geographically, Bermuda is a small place, an island shaped like a fishhook. It is 35 km (22 miles) long and 1.5 km (< 1 mile) wide. With a population of 68,500 it is the third most densely populated place on Earth. It's a bit crowded to say the least, and even big houses are small. Real estate is incredibly expensive, except for folks like the actor Michael Douglas and billionaire H. Ross Perot, who own homes there. Only one automobile is allowed per household. There are no rental cars, and taxis are expensive. The three main ways to get around are local buses, motorbikes, and walking. It was amusing to see people drive high-performance sports cars, and big SUVs on roads where the speed limit is strictly enforced at 25 mph. You can bet there's a lot of carbon buildup in those engines. [Don't forget, there is also something called a Bermuda Onion. I happen to like sweet onions, so I was amused by this one too.]

Another reason to explore Bermuda is for all the fortifications that exist around the shoreline. In the days of pirates and privateers, those shore batteries kept the island safe. After those pesky Americans won their independence, the British wanted to keep a close watch on North America, so they used Bermuda as a major base for His Majesty's Navy. No doubt the ships that attacked Washington and Baltimore during the War of 1812 were launched from Bermuda. These forts and shore batteries were renovated for World Wars I and II. Though German and Japanese submarines did indeed cruise the coasts of the U.S. and Canada, no attacks were attempted on Bermuda.

There are several restored forts to visit and remnants of others, accounting for over 20 fortified sites. Not even I could get to them all ... believe me, I tried. The highlight was the Royal Naval Dockyards, on the far end of the island. These dockyards were protected by a huge fortress, which contained what was once the Governor's Mansion. Nowadays the fortress is also home to "Dolphin Quest," a marine biological research institute designed to study these fascinating sea mammals. I couldn't resist a chance to swim with the dolphins. What an indescribable feeling I had interacting with these masters of the sea. Their lightning speed and agility is even more astounding when you experience it up close and personal! It was truly a memorable experience.

An American Civil War site was available on this trip, as well. The old "Globe Hotel" in the city of St. Georges is where Confederate blockade-runners\* (ship captains who escaped through the Union naval blockade of Southern seaports) would arrange the trade of smuggled Southern cotton, in exchange for anything and everything the Confederates could use. Through time this Hotel also hosted notorious pirates, traveling incognito. This building now houses the Bermuda National Trust Museum, with its permanent exhibit entitled "Rogues and Runners." [\* In the movie *Gone With The Wind* the character Rhett Butler (played by Clark Gable) was a Confederate blockade-runner.]

The environment is sensitive on such a small piece of ground. The deforestation of the wood (especially cedar trees) essential to building ships ended Bermuda's shipbuilding industry. This was yet another example of a population destroying a finite natural resource. A more important issue, however, concerns water. The only source of fresh water on the island is rainwater, which is supplied by people's rooftops. The rainwater is channeled down a series of grooves in the unique roof design and the gutter pipes flow into the basement, where each home stores the water in a cistern. As one resident said, "We're very aware of our water usage. For example, we Bermudians never keep the water running while we're brushing our teeth." You can also bet those folks keep their roofs, coated with white lime stucco, pretty clean. A signature trademark of Bermuda's architecture is the white roofs on most homes and businesses.



Characteristic white, lime stucco roofs are designed to catch rainwater and direct it into a basement cistern for personal use.

Oh yes, I almost forgot, there is also such a thing as Bermuda Grass. But I am neither a gardener nor a golfer, and I couldn't care less about this one. Dark Bermuda Rum, on the other hand, held great interest for me. A good dose of dark rum, a couple of fruit juices, a dash of this, and a dash of that, and you can create a "Rum Swizzler." Too many of these famous, fruity drinks, and you'll be looking at Bermuda from floor level. As for beer ... well, with close ties to the U.K., Canada, and the U.S. there is a wide variety of brew to try.

One puzzling incident occurred while shopping with a friend in the city of Hamilton. I stopped for a few seconds to photograph Hamilton Harbor, but when I turned back to the street my friend had disappeared! For the next three hours, he and I separately searched for each other, in all the same shops, on all the same streets. I even went back to search our bus terminal and then ... searched everywhere again. He was lost! I jokingly thought, "The Bermuda Triangle must extend into the city of Hamilton!" Well, later that same day we met each other back at the hotel, both wondering, what the ....?

Bermuda, despite the shorts, the high, and the triangle, is a beautiful island filled with marvelous geography, geology, climate, and culture. Mark Twain said it best when he wrote, "You can die and go to heaven ... I'll go to Bermuda!"

## STUDY ABROAD, WINTER 2007

By Debbie Kreitzer

This past Winter Term, the geography program offered a study abroad opportunity in conjunction with Leadership Studies. Students took either *Leadership in Urban Geography* or *Leadership in Urban Planning* and could choose to take the course for Leadership Studies or Geography credit. The group consisted of thirteen students who were majoring in a variety of disciplines, David Keeling and his wife, Jack Rudolph (Dept. Head, Agriculture) and Debbie Kreitzer. The group left Nashville on January 3, 2007, and flew first to Gatwick Airport in London. Students knew they were in for an interesting trip when they found out the group would be staying at the Hotel California.

The primary teaching goal was to encourage the students to examine the problems involved in leadership decision-making in a global urban setting. For example, in London the program discussed how global terrorism and the need for new security measures can affect transportation planning. Students were introduced to the "ring of steel" in London's financial district. The group also visited London's city hall, where students were able to learn about leadership and planning issues first hand from an experienced planner. Everyone had public transportation passes, which included the London "underground" and buses. Many students had never experienced large-scale public transportation and really enjoyed the experience. Students also walked many miles and were able to see the usual touristy parts of London like Buckingham Palace and Big Ben, but also areas that many tourists never see like the Isle of Dogs and the financial district. During the stay in London, the group also took a day trip to Oxford and discussed urban environmental issues. In Oxford many historic buildings and monuments are made of limestone and are being damaged by acid rain.

Although students were mostly involved in learning activities, they also had time to play a little, experience British cuisine, and interact with many Londoners. One evening everyone went to the musical *We Will Rock You*, where the students were treated to the visual phenomenon of "old" professors rocking out to



Dr Michael Trapasso consults with an expert in Marine Biology at the Dolphin Quest Station



Queen! Upon the group's return to the hotel via Kings Cross station, students found Platform 9  $\frac{3}{4}$  from the Harry Potter movie (most of the students have a picture of themselves pushing a cart into a brick wall).

The next urban landscape examined by the program was Brussels. The group rode on a high-speed train from London to Brussels (Eurostar) – a trip that only took two hours! Although it was a little windier and rainier, students were able to explore the city and learn about the impact of the European Union, both in Brussels and in Europe as a whole. The group also took two day trips — the first to the city of Brugge, also called “the Venice of the North” because of its many canals. Here the students learned a little historical geography, and discussed the transportation problems associated with having so much water.

Another day trip visited the amazing city of Amsterdam. Although this was mostly a free day for the students, and they were able to pick and choose the activities they participated in, they were also encouraged to compare and contrast (in writing) the many European urban landscapes they had experienced. Many students choose to take this opportunity to see some of the art and cultural museums of this fascinating city.

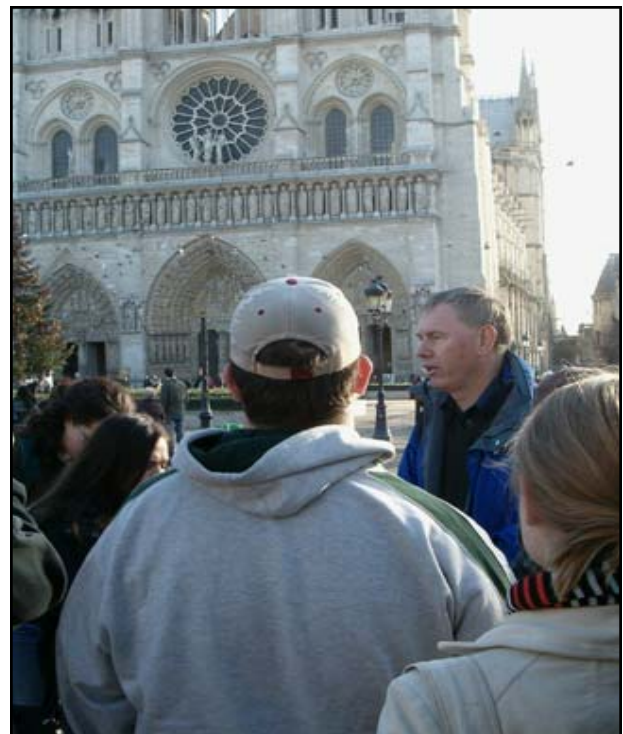
After spending five days in Belgium and the Netherlands, another high-speed train took the group southwest to Paris. The days spent in Paris were beautiful, with the sun shining almost everyday, and everyone soon fell under the spell of the “city of love.” Students also had public transportation passes for the Paris region, but they also walked many miles exploring the urban landscape. Students engaged in discussions and assessment of the historical and modern planning of the city, comparing the big, wide, straight boulevards to the small, winding side streets. Students also were able to visit the UNESCO offices and have a private presentation and tour. Coincidentally, Laura Bush visited UNESCO on the same day and so everyone had to deal with very strict security. Students were also able to visit Versailles and the Louvre.

The program ended on January 18, 2007, with a flight back to Nashville from Paris. Everyone agreed that this study abroad was a resounding success. The students engaged in experiences that challenged them to think critically and independently, and to engage with communities other than their own in new and challenging ways. This international learning experi-

ence will help these students become excellent leaders and decision-makers in an increasingly global society.



**Students explore the backstreets of Paris**



**Lecturing at Notre Dame on Urban Planning**



**Study Abroad Paris, January 2007**

Though they didn't steal the Liberty Bell (or the Declaration of Independence!), Margaret Crowder and a group of Honors students from her course on Global Climate Change enjoyed some of the national treasures of Philadelphia this past academic year during a trip to attend the Geological Society of America's annual meeting. While there, students participated in a GSA sponsored public forum on 'Understanding Climate Change' and attended several technical sessions addressing various climate change issues and met top scientists in the field.

### Summer Field Geology Course

Drs Andrew Wulff and Fred Siewers and three undergraduate geology majors participated in a geology field course this past summer, along with students and faculty from Illinois State University and Northern Illinois University. This is the first year that WKU has partnered with NIU and ISU, having been a member of the CIC Wasatch-Uinta field course the past four years. Students Ben Campbell, Mindy Coleman, and Samantha Kramer studied the geology of South Dakota, Montana, and Wyoming for six weeks from May 13 through June 23. The course, which is a capstone for all geology majors at WKU, emphasizes field mapping techniques to develop geologic maps, construct geologic cross sections, and address some of the practical applications of these maps. Students also compose detailed rock descriptions, measure and construct stratigraphic sections, and write reports and abstracts of their work. Projects included mapping exercises in the Bighorn Mountains, Badlands, Black Hills, Whitewood Peak, and Absaroka volcanics, and immersed students in a wide range of geologic structures, depositional environments, and rock types. Ad-

ditional trips to Yellowstone Park, Devils Tower, various mining operations, and other areas of geologic interest were led by national experts and extended the geological experiences and built context for the projects. WKU has sent fourteen geology students to various field-based geology experiences over the past five years. The course was challenging, but all agreed that it was an exceptional experience. The back of the T-shirt says it all; “We mapped in snow, hail, sleet, rain, and the scorching sun while walking UP THE MOUNTAIN. What did you do at your field camp?”

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### Spring Break Field Geology Course

Dr Andrew Wulff dragged sixteen undergraduates out to Death Valley and the Mojave Desert during the 2007 Spring Break. The rationale for this action was that geology is a field-based discipline - yet the opportunities for a broad range of field experiences are limited in the region surrounding WKU – and, of course, fun and getting away from Kentucky! The field course included several geologic mapping exercises in the Mojave Desert, in addition to field exercises examin-



WKU geology folks near the entrance to Yellowstone National Park. (from left: Ben Campbell, Samantha Kramer, Andrew Wulff, Mindy Coleman)



ing igneous and metamorphic rocks, young volcanic centers, and “classic” field locales in Death Valley and the surrounding area. These experiences are necessary to set a context for core geology courses in structural geology, geomorphology, igneous and metamorphic petrology, and mineralogy, and they provide a geological context that students at WKU literally cannot experience anywhere else. This field course follows the series of Fall Break field courses offered in past years to parts out west.

Students flew into Las Vegas for a night of exploration and took off for Death Valley early (HA!) the next morning. After almost three days of exploration of maar eruptions, folded and faulted rocks of all kinds, alluvial fans, and slot canyons, the group left the park to the south and saw obsidian/ashfall deposits and Lake Tecopa sediments (with cave-dwelling carved out – not in prehistoric times - but during the Great Depression). That night was spent camping out and enjoying Tecopa Hot Springs. The next two days were spent on mapping exercises at Rainbow Basin, a wonderfully exposed syncline north of Barstow, where students learned how to take strikes and dips while sliding down sloping beds. The following days

took the group to young volcanic fields, a large granitic dome, the site of an enormous explosive volcanic eruption, Joshua trees, yuccas and sage, huge sand dunes, magnetite deposits, and ..... a lot. The group camped in parks or in the open, and traveled by rented vans to field sites for work.

The field course was a great opportunity to introduce students to field evidence for large-scale tectonic forces, in addition to features and styles of erosion/modification of the Earth’s surface by dramatically changing climate conditions over the past 30,000 years. Death Valley is a “classic” field site for studying the effects of large-scale extension of the Earth’s crust and for processes of geomorphological change in an extreme arid environment. The remarkable exposures reveal the three-dimensionality of geological forces in detail, and the desert environment is in great contrast to climatic conditions in Kentucky. These experiences certainly enable students to better understand the geological influences on Earth’s climate, and environmental change with time.

And – everyone had a great time!!

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Kevin Cary (left) and Dr Jun Yan (right) tutoring students at the new GIS lab at Southwest China University, set up through the Department’s China project.

## FACULTY ACTIVITIES

**KATIE ALGEO** enjoyed an interesting and productive year during 2006-2007. The highlight of her teaching activities was the inauguration of the online GIS program as she took Geog317, Introduction to Geographic Information Systems, to the internet during spring semester. She enjoyed the creative challenge of transferring this highly technical subject to the online venue and looks forward to repeating the class in Spring 2008. Look for other GIS classes to be offered online soon! As usual, Dr. Algeo also enjoyed teaching a variety of cultural geography, GIS and tourism courses.

A series of two week-long workshops during July 2006 provided the opportunity for Dr. Algeo to share her research interests in the culture history of Mammoth Cave and her skills in place-based teaching with over thirty community college teachers from across the nation. She co-taught these workshops, which were funded by the National Endowment for the Humanities, with colleagues Dr. Rick Toomey (Mammoth Cave International Center for Science and Learning) and Dr. Darlene Applegate (Folk Studies and Anthropology). In other Mammoth Cave-related research, Dr. Algeo has been working with personnel at Mammoth Cave National Park to preserve and analyze materials in the Park's curatorial collection that will aid in understanding the communities that existed before the national park was created.

She presented portions of this research at meetings of the Pioneer America Society, the Association of American Geographers, and at the 6th Quadrennial Conference of British, Canadian, and American Rural Geographers, where she was one of only 13 geographers selected to represent the U.S. In another research area, Dr. Algeo's work on classroom teaching practices related to immigration and hybrid identities has led to the acceptance of an article titled "Teaching Cultural Geography with *Bend It Like Beckham*" in the *Journal of Geography*. It will appear shortly.

Dr. Algeo played a central role in the annual meeting of the Southeastern Division of the Association of American Geographers, held this year

in Morgantown, West Virginia. As the Chair of the Honors Committee, she organized and ran the student paper and poster competitions, coordinated the faculty teaching, research, and service awards, and emceed the banquet program. She was very pleased to be able to present a first-place award in the poster competition to WKU Geoscience graduate student Ashley Littell – congratulations Ashley!

For the second year in a row, Dr. Algeo led a public tour of the Scottsville historic district as part of that town's Jacksonian Days heritage celebration. If your travels take you to Scottsville, be sure to drop by the Chamber of Commerce on the Public Square for a copy of her walking tour brochure. In October, you'll find Dr. Algeo skulking around Scottsville's Old City Cemetery after dark, leading visitors on the historic (and educational!) graveyard tour sponsored by the Allen County Historical Society. Other times, you'll find her skulking around her office in EST – stop by for a chat!

**JOHN ALL** had a busy year traveling, writing, and teaching while serving as vice-chair of the University Senate. He managed to find time to get married, however! John got married in Yosemite National Park to Narcisa Pricope and is incredibly happy. Narcisa is an alumna of the department who never took a class with Dr. All. When she emailed him for help with a remote-sensing project after graduation, their love quickly bloomed first over the internet, then by phone, and then in person again. It is still a matter of amusement that she didn't like any of his classes. Her loss!

John and Narcisa spent the Christmas holidays in her native Romania, meeting the parents and the family, and traveled to Croatia, Hungary, Slovenia, and Italy. This summer they spent three months in Africa while Narcisa worked on her dissertation examining the impact of national parks on social and ecological systems and John researched resilience and sustainability in the Kavango/Zambezi region of southern Africa. After three straight months in a tent, they were happy to return home.

Dr. All was fortunate enough to have manuscripts accepted for publication in the *Journal of Natural Resources and Environmental Law* (published at the University of Kentucky law school), *Environmental*



*Management*, and the *Southeastern Geographer*. John organized a symposium at the American Association for the Advancement of Science on Climate Change and High Mountain Environments. The symposium was standing room only and the accompanying press conference was attended by more than 30 reporters. He currently is finishing his work in Africa and past projects in Bhutan and Chile. This has been a great year and John looks forward to a busier but even more rewarding one next year.

**WILL BLACKBURN** continues to provide classes at both the Bowling Green and Glasgow campuses. He continues to refine his courses, making each class an enriching and valuable experience for each student. He strives to find new and innovative ways of engaging his students both in the classroom and beyond the traditional classroom setting.

This semester, Will plans to engage his students with trips to the Kentucky Museum and the Barren River Cultural Center in Glasgow. Other engagement activities will take the form of trips to Mammoth Cave National Park, as well as a trip to a working Kentucky dairy farm. In the Spring, Will plans to prepare to offer a beginning GIS course for the Glasgow campus. This will entail some remedial training, as it has been some time since his exposure to the science and the hardware and software have advanced without him.

This past year marked Will's return to the Department's study abroad program by participating in the creation of a field experience to Eastern Canada and the U.S. Northeast. Ultimately this program failed to gain enough student interest to make the trip feasible, but the effort was not a loss. For the summer of '08, Will is participating in a study abroad trip to the Eastern Mediterranean. There seems to be considerable interest from students at this early stage and he has high expectations that this program will come to fruition.

Will attended the annual convention of the Association of American Geographers in San Francisco this past Spring. He co-authored and

presented a poster exploring and comparing the study abroad programs offered at the other Kentucky state universities. The findings revealed that few of the state schools have a similar motivation and enthusiasm that Western displays when it comes to providing opportunities for students to participate in this rewarding experience.

Away from the office, Will still enjoys helping his father restore old Jeeps. Their latest project, now complete, is a 1944 Willys. He continues to care for 1,000 Black Walnut trees and hopes his descendants appreciate the effort, as this is definitely a long-term investment. Will's family enjoys good health; although his wife complains that the babies she cared for in the hospital nursery are now having their own babies. She will always be younger than Will. Daughter Abby continues to excel in school. She is playing soccer again and is still very involved with the equestrian arts. She still does not own a horse, and Will never forgets to be thankful for this situation. He hopes that trend will continue.



**KEVIN CARY** had another exciting year in the department. He's excited about the new GIS program that started Fall 2007, as students will now have an opportunity to begin earning a Bachelor of Science Degree in Geographic Information Science. It's the only one of its kind in the Commonwealth! WKU's GIS program is steadily growing and gaining recognition as one of the top GIS programs in the country. In addition, the department already offers a Certificate in GIS, GIS Minor, B.Sc. in Geography (GIS & Spatial Analysis Track), Graduate Certificate in GIScience, and M.Sc. in Geoscience (GIS & Spatial Analysis Track). For more information about these programs, visit our GIS website at [www.wku.edu/gis](http://www.wku.edu/gis).

This past winter, Kevin traveled with Dr Jun Yan to set up a student-based GIS lab and to conduct GIS workshops at China Southwest University's Research Institute of Karst Environment in Chongqing, China, as part of the USAID project directed by Dr Chris Groves with the Hoffman Environmental Institute. Kevin isn't a

stranger to East Asia, as he been there before as a kid living in Seoul, S. Korea, during his third, fourth, and fifth-grade years. During his stay in China, he encountered many wonderful and interesting people, and took advantage of all the good food that was offered, particularly the spicy food. He looks forward to the possibility of going back this winter.

In June 2007, he attended the ESRI Education and International User Conference in San Diego to present a research paper based on his students' final project from the GIS Analysis & Modeling class. He states that WKU's presence at the conference is increasing because he continues to meet more and more WKU alumni each year. In the following month of July, Kevin attended the 2007 Kentucky GIS Conference in Louisville to present WKU's GIS program, which was well received.

As the GIS Director for WKU's Center for GIS, he's currently working on developing a WKU GIS Consortium to provide more opportunities for GIS students to gain real-world experience. He looks forward to finalizing the details this fall so that he can get this consortium underway as soon as possible. The WKU GIS Consortium is a wonderful opportunity to get students involved with the local GIS community and to engage students in an array of GIS projects of different magnitudes.

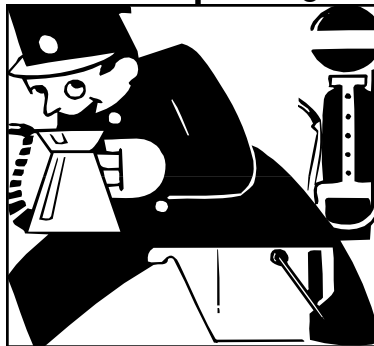
**MARGARET CROWDER** writes that, in addition to her occasional travel, she has enjoyed another very busy and productive year within the Department. Classroom offerings included Introductory Geology, Oceanography, an Honors Colloquium on Global Climate Change, Geology and Cinema, and Volcanoes and Earthquakes. Margaret also continued to serve as Chair of the WKU Science Alliance, is the current section Chair of the Science Education division of the Kentucky Academy of Science, and served on various other campus committees.

P-12 outreach activities were also important for Margaret, as she taught Hollywood Geology for both Fall and Winter Super Saturdays terms for the

Center for Gifted Studies, and Volcano! for Girls in Science Day, sponsored by Women in Science and Engineering on WKU's campus.

Teaching and service combined in Introductory Geology classes this past year as Margaret's GEOL 102 students logged over 165 community service hours while participating in service learning opportunities throughout the area. Students chose to participate in service learning activities such as a River Cleanup at Weldon Pete Park, Arbor Day activities in Lampkin Park, helping tutor underprivileged children after school, and working at Lost River Cave.

Along with the trip to Philly (see photo and caption elsewhere), Margaret also traveled to such 'exotic' locations as Morehead and Owensboro to attend meetings for the Kentucky Academy of Science and the Kentucky Society of Professional Geologists. Other locations included on Margaret's



agenda for this past year were the shores of Lake Michigan at Camp Miniwanca and Omaha, NE. In Michigan, she became a Wakonse Fellow for participation in the Wakonse Conference on College Teaching, and in Omaha Margaret attended the Earth System Science Education Alliance annual meeting while helping represent WKU's

Associate membership with ESSEA.

And lest you think it's just Margaret's students who participate in community service, Margaret follows through on her belief that good citizenship involves giving back to your community, as she continues to conduct SAFER behavioral dog testing for the Simpson County Animal Shelter and, as of January 2007, serves as an Elder and Session member of her church. Just imagine what our world would be like if everyone would volunteer even small amounts of their time to do community service!

**SCOTT DOBLER** has completed his seventh year at Western Kentucky University. This past year he was appointed to the position of State Geographer for the Commonwealth of Kentucky by Governor Ernie Fletcher. He was selected for this position due to his ongoing work

with the Kentucky Geographic Alliance (<http://www.kga.org>) and the new campaign from National Geographic entitled My Wonderful World (<http://www.mywonderfulworld.org>). This past year he presented at a number of state and national meetings:

- Kentucky Academy of Environmental Educators
- Kentucky Council for Social Studies
- Kentucky Science Teachers Association
- National Council for Geographic Education

Scott has teamed up with the Kentucky Mesonet to help K-12 teachers use local meteorology data in their classrooms. He has also worked with the Hoffman Environmental Research Institute to represent the China Environmental Health Project to K-12 teachers. Scott's continuing research interests will address how Kentucky college and university geoscience programs are preparing P-12 students for their future. If you are interested in geographic literacy, or geographic education, Scott would be interested in talking to you.

**STUART FOSTER** attended the American Meteorological Society Annual Meeting in San Antonio in January, where he presented "The Development of GeoProfiles for United States Historical Climatology Network Stations in Kentucky" (with Dr Mahmood and Geoscience graduate student Ashley Littell) and "Exploring the Spatial and Temporal Variability of DTR among USHCN Stations in the Ohio River Valley" (with Dr Mahmood). While there, Dr. Foster escaped serious injury when he fell on an ice-coated sidewalk, as San Antonio was nearly brought to a standstill by freezing rain. You would think that weather folks could do a better job of picking a location to hold a meeting!

Drs Foster and Trapasso were guests on WKYU-PBS TV for "Outlook: Global Climate Change," a half-hour talk show hosted by Barbara Deeb that was televised March 30<sup>th</sup> and has been rerun periodically. In addition, Dr Foster was a guest on WKYU-FM NPR for an interview on the Kentucky Mesonet with Dan Modlin that was

broadcast April 13<sup>th</sup> on the Midday Edition.

As drought conditions intensified through the spring and summer, Dr. Foster contributed historical climatological perspective as a member of Kentucky's Water Availability Advisory Group and filled numerous media requests from around the Commonwealth.

In addition to these activities, Dr. Foster has continued to direct the development of the Kentucky Mesonet. He presented an update on the Mesonet to an audience that included high-level administrators with the National Climatic Data Center and National Weather Service during a special session at the Annual Meeting of the American Association of State Climatologist in Coeur d'Alene, Idaho.

On the home front, Stuart will not be the only member of the Foster household on the Hill this fall, as his daughter, Caley, will enroll as a freshman. Stuart and his wife, Jo Ann, still have a couple years before facing the empty nest syndrome, as their son, Greg, begins his junior year at Greenwood High School.



**GREG GOODRICH** had a productive second year in the department. His biggest accomplishment was being part of the committee that successfully crafted the proposal to start the new B.S. in Meteorology degree program. This year-long process culminated at the CPE meeting in Frankfort in May 2007 that officially marked the start of the new program. In addition to working on the proposal to develop the degree program, Greg also worked with the Louisville office of the National Weather Service and faculty at other universities to develop the curriculum for the new meteorology program. The new curriculum will meet all requirements of both the National Weather Service and the American Meteorological Society. His work on the curriculum also included the writing of course proposals for five new advanced meteorology courses and revisions of two others that will be offered starting in the fall of 2009.

In order to advertise the new B.S. Meteorology program to prospective students, Greg started the "WKU Meteorology Blog" which can be found at



<http://blog.wku.edu/~gregory.goodrich/>. The blog has received about 500 visits per month since it was started in February 2007. The blog also contains Greg's thoughts on current and future weather conditions for the Mid-South region. The blog brought Greg and the department some publicity in April when an article that discussed a solution to the problem of numerous cancellations of Major League Baseball games due to inclement April weather received national media attention. The blog article was discussed on ESPN.com and other online media outlets in cities affected by the cancellations.

Greg introduced a new course to the Meteorology curriculum when he taught Synoptic Meteorology (GEOG 432) in fall 2006. Students learned surface and upper air map analysis and gave weekly map discussions to improve their communication skills and improve their understanding of weather terminology. Students also competed in a forecast game that allowed them to apply synoptic theory to weather forecasting. He also taught introductory courses in Physical Geography and Meteorology at both the main campus and at Glasgow. He looks forward to teaching his new course GEOG 325, Meteorological Instruments, for the first time in fall 2007. Students will get hands-on experience with each of the instruments found in the new Kentucky Mesonet. He also expects to be heavily involved in the development of the many advanced meteorology courses that will be coming on line in the next few years.

Greg continued to advance successfully his research program of investigating the relationship between low-frequency variability of the ocean/atmosphere (also known as teleconnections) to drought and precipitation patterns. He published five peer-reviewed articles in geography (*The Professional Geographer*, *Geography Compass*) and climate journals (*Climate Research*, *Climatic Change*, *Weather and Forecasting*) and has another in press (*Journal of Applied Meteorology and Climatology*). He made presentations of his research at five national and regional conferences and received funding from the WKU Summer Faculty Scholarship program that will allow him to submit a NOAA proposal in fall 2007. Also during

the summer, Greg was able to submit four new articles that ranged from studying the impact of teleconnections on forest fires in Mississippi to studying the impact of teleconnections on wine quality in the West Coast. One of the articles that was submitted last summer was a collaboration of Greg's GEOG 475 climate research group, made up of four undergraduate and three graduate students. The students worked under Greg's supervision to develop a GIS model that used population, transportation, and snowfall data to rank historical Kentucky snowstorms since 1960. Look for more good things from this research group in the future!

On the home front, Greg's wife Demara completed her Masters degree in Nursing and will begin her teaching career as a new Assistant Professor in the School of Nursing at Western. She will also begin the PhD program in Nursing at Vanderbilt University in the fall of 2007.

**CHRIS GROVES** writes that it has been another busy year. Along with his students and colleagues, Chris continued to make progress on the Hoffman Institute's educational and research programs. After nearly five years of effort and negotiations, and with the support of Kentucky's senior Senator Mitch McConnell, in October 2006 the *China Environmental Health Project* (CEHP) was initiated, with major funding from the US Agency for International Development (USAID), with project funding just over \$2.5 million. The project develops partnerships between WKU and two Chinese universities to build academic infrastructure there for work that will enhance environmental health. This has meant a considerable amount of additional travel for Chris, with necessary visits to project field sites and meetings with project partners in Chongqing and Kunming, along with briefings to the State Department at the US Embassy in Beijing and to USAID Regional Asia headquarters in Bangkok, Thailand. In May, CEHP efforts expanded when Chris was awarded a grant for \$100,000 from the ENVIRON Foundation for training in karst water-resource investigations for scientists in Yunnan Province.

Several of Chris' grad students wrapped up

excellent thesis research projects during the year dealing with various hydrological issues including Melissa Hendrickson and Johanna Kovarik, both of whose research fieldwork took place in southeastern Alaska's Tongass National Forest. Pat Kambesis' work focused on karst hydrology and water quality in northeastern Iowa and, a bit closer to home, Scotty Sharp examined pesticides in nearby Rough River Lake, a drinking water source for several communities.

In addition to the ongoing China work, the Hoffman Institute continues to build international relationships. Chris and several students attended a conference in limestone hydrology in Switzerland in September 2006, and this past summer the Institute and WKU hosted the *International Conference on Karst Hydrogeology and Ecosystems*, with about 100 attendees from a wide variety of countries including China, Slovenia, Korea, and Peru. The Institute also welcomed two visiting scholars during the year to the team, Dr Lisa Fuller from England and Xavier Beuchat from Switzerland, as well as Priscilla Baker who is working as an environmental specialist on the China project.

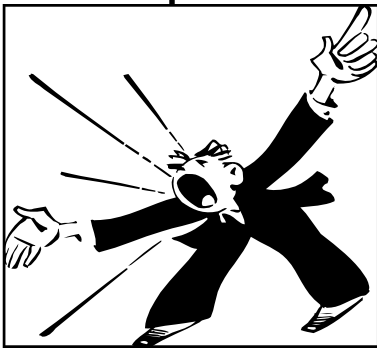
Deana and Chris were very happy to mix business and pleasure when they traveled to China in July. After a week of project work in Guilin (libraries) and Hunan (caves), they traveled to Jiangxi province to adopt their second baby daughter from China, Leah Mei Xinmiao Groves. Their now four-year-old daughter Lillian made her first trip back to China and the family is having a great time getting adjusted to its newest member.

**DAVID J. KEELING** reports that his fourteenth year in the Department, and sixth as Department Head, continued to generate challenges, excitement, some great international trips, several informative conferences and workshops, and hard-working students to keep him extremely busy.

As always, travel continues to dominate Dr Keeling's professional and personal life, and over the course of the past year he enjoyed several marvelous research and lecture trips to the four corners of the planet. In August 2006, Dr Keeling traveled to Venice

in northern Italy for a two-week jaunt around the region. The Veneto region, including Padova and Verona, contains some urban gems, topped by Venice. This marvelous city provides so much for an urban geographer to explore. Then he took the train from Venice to Ljubljana, capital of Slovenia, one of the European Union's newest members. After a couple of days exploring this wonderful city, he journeyed up to Bled in the Julian Alps to enjoy some hiking and spectacular mountain scenery.

In November and December, Dr Keeling spent three weeks in the Sahara on an American Geographical Society educational expedition. The tour started in London and visited Morocco, Mali, Niger, Burkina Faso, Egypt, Algeria, and Tunisia before returning to London. The Sahara is one of the most amazing physical and cultural landscapes on the planet. Along the way, Dr Keeling lectured on the



Sahara's physical geography, its regional development challenges, the role of its indigenous music in helping the development of American Rock and Roll, and the challenges of transportation across the region. A couple of highlights from the tour included visiting the Tuareg people in the Air Mountains of northern Niger, and spending the night on the rooftops of Tiebele, a small village in

southern Burkina Faso.

In January 2007, he headed back across the Atlantic to London for the annual departmental study abroad program. Comprising fourteen students and two other faculty (including Dr Rudolph from Agriculture), the group visited London, Oxford, Brussels, Brugge, Amsterdam, Versailles, and Paris. The program focused on leadership issues in urban planning and highlighted the work of Christopher Wren in London and Georges Hausmann in Paris, as well as addressing modern urban planning issues such as the creation of the London Ring of Steel to protect the city against terrorism.

In March, Dr Keeling took another trip across the Atlantic on the way down to Cape Town, South Africa, for spring break. He spent some time in the Stellenbosch region evaluating the development and production of wines and the impact of this industry on the local and regional economy. The Department is

planning to develop a course called Geography of Wine, and this provided a perfect opportunity to evaluate southern hemisphere viticulture operations.

The academic year ended with yet another trip across the Atlantic back to London for a two-week trip through the British Isles evaluating urban transport developments for an article he is writing for *Progress in Human Geography*.

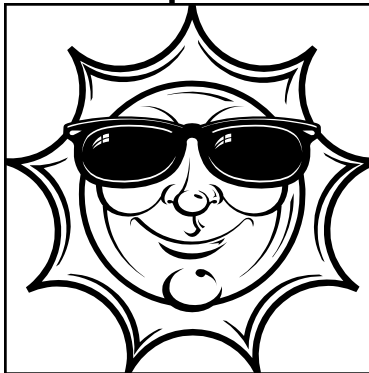
Dr Keeling participated in several conferences and workshops during the year. At the beginning of the 2006-07 academic year, he participated in Western's Engaging the Spirit workshop, and in the FaCET mini-conference on putting together study abroad programs. In April 2007 he attended the annual Conference of the Association of American Geographers in San Francisco, where he organized a session celebrating research published in the *Geographical Review*, presenting a paper on the policy implications of recently published research.

Within the community and on campus, Dr. Keeling gave several talks on issues ranging from Montenegro's independence to Mexico's presidential election, and on boundary issues and global ignorance. He appeared several times on WKYU-FM's Midday Edition—his 25th appearance on this forum featured a discussion about the recent Iran-Iraq boundary disagreement. Dr Keeling also gave a presentation on Turkey at Barnes and Noble, and contributed lectures to a number of departmental courses. Dr Keeling continues to serve as a National Councilor for the American Geographical Society, and as the webmaster for the Society (visit [www.amergeog.org](http://www.amergeog.org)).

As Department Head, Dr. Keeling still attended way too many meetings during the year, but managed to contribute to the ongoing development of the Leadership Studies program ([www.wku.edu/leadership](http://www.wku.edu/leadership)) and to international education on campus ([www.wku.edu/iec](http://www.wku.edu/iec)). Despite the administrative load, Dr. Keeling still found time to write and publish research—this past year his review article on global transportation appeared in the international journal *Progress in Human Geography*. He also had two book reviews published, along with several Op Ed commentary pieces that appeared in newspapers

around the country, including the South Florida *Sun-Sentinel*, the *Chicago Sun-Times*, the *Utah Spectrum*, *Circumpolar Musing*, the *Toledo Blade*, the *Henderson Gleaner*, the *Northwest Arkansas Times*, *Bakersfield Californian*, *Oxford Eagle*, the *Fort Worth Star-Telegram*, *Calhoun Times*, the *Newport News Daily Press*, the *West County Times*, and the *Bowling Green Daily News*.

As always, Dr Keeling encourages past, present, and potential students to come by and share travel stories, information, and geographic tidbits. He can be reached easily in cyberspace at: [david.keeling@wku.edu](mailto: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>.



**STEVE KENWORTHY** has had another busy year at WKU teaching and engaging students in research projects. Steve's local research focus is still the Upper Green River basin, where he has a number of ongoing projects related to understanding the hydro-geography of the system and patterns of fluvial sediment transport during storms.

These efforts have expanded in the past year to include cellular to internet data transmission from field sites on Pitman Creek and at the WKU Upper Green River Biological Preserve. Installation of new sites is planned for the Fall as the system expands to include other tributary streams. These new data sources will provide valuable information for classroom projects and student research efforts in the coming year.

Over the summer, one of Steve's graduate students, Juan Herrera, finished his MS thesis and left to begin a Ph.D. program at Purdue University. A new grad student, Julie Schenck-Brown, arrived to begin studying karst hydrology and to manage the ongoing research at Logsdon River, a cave stream in Mammoth Cave National Park. Another student, Amy Edwards, is also completing a thesis on the hydrology of Mammoth Cave, and James Otoo, a grad student from Ghana, is beginning graduate work related to Green River sediment dynamics.



The big news from the Speck-Kenworthy household this year is the birth of daughter Marissa Lynne. She arrived on Feb 28 and had been a constant source of joy and worry ever since. Marissa makes occasional visits to the Department so you may get to meet her if stop in at the right moment. Steve and Renae are looking forward to introducing Marissa to the other Geography and Geology families that have new additions.

**DEBRA KREITZER** writes that the 2006-2007 school year was another exciting and productive one. She spent another very industrious year teaching, researching, traveling, and planning new geographical experiences. Debbie is still the advisor of the Geography Club, which grew by several members and was more active than the previous year. The Club seems to be picking up more majors as freshmen, which means club members participate longer and become more invested in the department. This year club members hope to get involved with the Office of International Programs by helping international students acclimatize themselves to living in Bowling Green and attending a U.S. university.

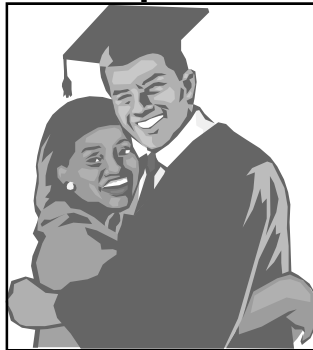
Debbie taught the University Experience class for incoming Geography and Geology freshmen last year and is teaching it again this year. It is exciting to introduce new students to our outstanding department and university. Especially exciting is the opportunity to assist students who are starting some of our brand new programs, like the B.S. Meteorology and B.S. GIS programs. Students are not only coming from all over Kentucky to enroll in these programs, but from many other states as well, as WKU is one of the few universities in the surrounding states to offer these opportunities. Also exciting is helping freshmen learn how to think critically and become engaged in the world around them.

The annual meeting of the Association of American Geographers (AAG) was held in San Francisco, CA, in April, 2007. Debbie attended the meeting and presented a paper with her colleague Will Blackburn. Of course, geographers who attend conferences out of town are "required" to go on field trips, and San Francisco offered many exciting opportunities for geographic observation. Debbie was

also able to take a day trip through the gorgeous Napa Valley.

As usual, expanding the departmental Study Abroad Program is an important goal of Debbie's. During the Winter Term at WKU (January), the department was able to offer a study abroad opportunity in conjunction with Leadership Studies to Europe. Together with David Keeling, Debbie taught *Leadership in Urban Geography* and *Leadership in Urban Planning*. A total of 13 students were able to study the urban landscapes of London, Brussels, Amsterdam, Bruges, and Paris. These students were exposed to many people, organizations, and activities (e.g. city and regional planners, the European Union, and UNESCO) that should help them to become engaged leaders in a global society.

The department plans to offer study abroad opportunities at least once a year. This year, Debbie is involved in the planning of two trips. The first study abroad is offered in conjunction with the Sociology Department in January and will go to Mexico's Yucatan Peninsula. And in May/June a departmental study abroad program will visit the Mediterranean (Turkey, Greece, Italy and Slovenia). If any of you are interested in participating in one of our study abroad programs or in supporting a student on a study abroad trip, please send me an email <[debbie.kreitzer@wku.edu](mailto:debbie.kreitzer@wku.edu)>.



**KEN KUEHN** sends greetings to all! He very much appreciated hearing from so many students over the summer; it's always great to be caught up on the latest career and family news. This past academic year, his 23<sup>rd</sup> at WKU, was a full and busy one. Ken's creative energies were mainly focused on the subjects of sustainable development and pedagogy. He wrote one book review and was co-author of five professional presentations in these two areas. Basically the idea that Ken wants to get across to all WKU students is how to live in a way that will afford future generations the same opportunities that we have today. Some of his presentation titles were, "*Infusing Sustainable Development Concepts into the Undergraduate Curriculum*," "*Whys and Ways to Infuse Sustainability Concepts across the Curriculum*," and "*Sustainability as a Paradigm Shift for 21st Century*

*Education.*” Ken is very happy to report that after a presentation to the WKU Council of Deans last Fall, the concept of sustainability was adopted as an educational outcome by the University.

Ken received two external grants through the National Park Service this past year to analyze natural resource and watershed conditions in two park units, one in Kentucky and one in Alabama. He is working with Nathan Rinehart, a graduate student in Geoscience, to get these studies completed by September 2008.

Things are booming in the classroom as well. Geology is enjoying high enrollments in all the upper division courses and Ken’s first time offering of *The Geology of Fossil Fuels* had 14 students participate. It has the same number enrolled this Fall semester. He taught *Professional Preparation in Geology* for geology seniors for the second time last Spring. This is a new course developed during recent curriculum renovation some three years ago. The program took full advantage of the new Student Success Center in DUC and learned about a wide variety of job search techniques and market trends there. Ken is pleased to report that salaries are rising and the job market is very strong for our discipline, especially in the area of fossil fuels.

Dr Kuehn served as the Kentucky representative to the Association of State Boards of Geology (ASBOG), Council of Examiners, meeting in Minneapolis this past spring where councilors spent three days reviewing and revising the nationally standardized exam. It was very rewarding to interact with so many dedicated people whose priority it is to advance the profession and practice of geology. The ASBOG exam is required for professional registration in Kentucky and, as everyone should already know, professional registration is required in order to practice here. If you are not yet registered, now is the time to pursue this important credential!

This Fall, Ken is helping to organize and lead a joint field trip for the American Association of Petroleum Geologists (AAPG) and the Kentucky Society of Professional Geologists (KSPG) along with Drs Mike May and Rick Toomey. The trip will examine the karst and hydrocarbon resources of the

Mammoth Cave region and designate the town of Kyrock, Kentucky, as a “Distinguished Geologic Site.”

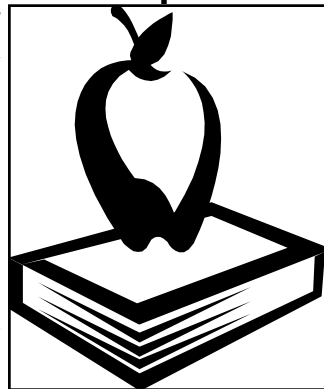
That’s it for now, but please keep in touch. Ken is always happy to hear from former students! (kenneth.kuehn@wku.edu, 270-745-3082)

**YANMEI LI** has enjoyed a busy first year here at Western Kentucky University. She taught Data Analysis and Interpretation, Advanced Planning Theory and Practice, Introduction to Planning, and the Geography of Asia. She is expecting to teach more exciting courses in city and regional planning and geography. She is also working on improving the planning curricula in the Department. She anticipates proposing some new courses in planning in the coming academic years.

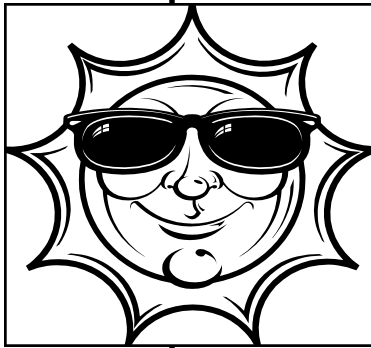
During the process of strengthening the planning program, she tried to initiate contacts with various planning organizations in the City of Bowling Green, Warren County, and other local communities in Kentucky. She served on several planning-related committees in the City of Bowling Green/Warren County. She worked for the Habitat for Humanity program this summer and she is expecting to continue to work for local communities to help build a better tomorrow. This semester she is teaching Rural Planning and she is supervising a student project in adaptive reuse of two historic buildings in Scottsville. She and her students are very excited about the project and look forward to working closely with the organizations and residents in the City of Scottsville.

In the past year she has encouraged students to engage in planning practice in local communities. As class projects she has asked students to evaluate the Comprehensive Plan of the City of Bowling Green/Warren County. The students also learned the mechanics of downtown revitalization and how neo-traditional and new urbanism subdivisions can solve some of the issues caused by urban sprawl and cookie-cutter urban development.

In the past year Yanmei has worked diligently on research projects. She revised her dissertation and has submitted two manuscripts to peer-reviewed journals.



She plans to publish four papers from the dissertation in the coming year, while at the same time she is working on finding new research niches here at WKU. In addition to papers related to her dissertation, she is working on multiple papers and grants with various topics, such as housing cost burdens of female-headed households, neighborhood satisfaction in the Memphis metropolitan area, historic preservation in small cities, and public policy responses to drought. She has attended multiple domestic and inter-national conferences over the past year and has presented papers at these conferences. Her continued interests in community development and the housing market will help her establish a solid research agenda in the future. Now she is especially interested in sustainable community development and how urban planning responds to climate variability. She has been working with other colleagues from WKU and other universities on some NSF and NOAA proposals since May 2007. In the near future she plans to apply for grants related to development issues (such as historic preservation and downtown redevelopment) in small cities/towns. She looks forward to having more student participation and engagement in her research activities.



**REZAUL MAHMOOD** has continued to focus on teaching, research, and service and has remained very productive. He taught meteorology, dynamic meteorology, and weather analysis and forecasting during the year. Rezaul continued to conduct research on the impacts of land-use change on long-term climate, soil moisture modeling (as it relates climate), land surface-atmosphere interactions, modeling of transport of aerosols, and hydrometeorology of flash flooding in eastern Kentucky and the Appalachian region. Seven graduate and three undergraduate students participated in these research activities and gained hands-on learning experience. Rezaul mentored five students to present papers and posters at the 103<sup>rd</sup> Annual Meeting of the Association of American Geographers (AAG) at San Francisco, CA; four student at the 61<sup>st</sup> Annual Meeting of the Southeastern Division AAG (SEDAAG) at Morgantown, WV; four students at the 91<sup>st</sup> Annual

Meeting of the Kentucky Academy of Sciences, Murray, KY; and five of his students presented posters at the Sigma Xi conference here at Bowling Green. Several of these students received first prize in various categories for their presentations. Rezaul presented two papers at the 87<sup>th</sup> Annual meeting of the American Meteorological Society, San Antonio, TX.

Rezaul is pleased to note that he has received tenure this year. During the past academic year, he published his peer-reviewed research in *Global and Planetary Change* and in *Hydrological Processes*, and served as a lead guest editor for a special issue of *Global and Planetary Change*. In addition, Rezaul has continued to review proposals for the National Science Foundation (NSF), which requires a significant time commitment.

A number of his papers have been either in press or currently in review with *Monthly Weather Review*, *Journal of Geophysical Research-The Atmospheres*, *Journal of Applied Meteorology and Climatology*, and *Journal of Environmental Quality*. He has continued to organize a special issue to be published by the *Journal of Applied Meteorology and Climatology*, which will focus on the impacts of land-use change on climate.

Rezaul was also invited to serve on the editorial board of *Physical Geography*. He has reviewed papers for prestigious academic journals, including *International Journal of Climatology*, *Climate Research*, *Journal of Applied Meteorology and Climatology*, and *Geography Compass*.

Recently, he successfully co-organized a workshop titled "Detecting the Atmospheric Response to the Changing Face of the Earth: A Focus on Human-Caused Regional Climate Forcings, Land-Cover/Land-Use Change, and Data Monitoring." The workshop is a follow-up to the *Global and Planetary Change* special issue on impacts of land use and land-cover change and is the culmination of about a year-long effort. This workshop was funded by the NSF, more than 50 papers were presented, and participants from the US, the Netherlands, China, Australia, Colombia, and Turkey contributed to this two and half day long conference. The workshop attendees have made a series of recommendations to the NSF

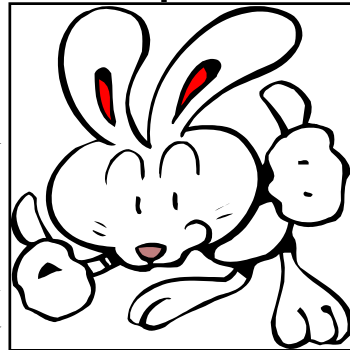


regarding future research and monitoring priorities.

After several years of groundwork, in 2006, Dr Stuart Foster and Rezaul received \$1.5 million from the NOAA to begin work on the first phase of the Kentucky Mesonet. The NOAA has committed an additional \$400,000 to continue this work. Currently, three stations are operational and several others will be installed over the coming months. So far, 85 candidate Mesonet sites have been surveyed by the site team, which includes several graduate students from the Department and representatives from the National Weather Service. The Mesonet project also hired five full-time employees, including a systems administrator, application developer, data quality assurance specialist, and two meteorological technicians. Dr Foster and Rezaul expect tremendous opportunities in research, education, outreach, and service in the future using the Kentucky Mesonet.

Rezaul has continued his research on micro- and meso-scale land surface atmosphere interactions and aerosols transport funded by the United States Department of Agriculture (USDA) (Total Budget: \$85,000). This funding allowed him to hire a post-doctoral research associate and one graduate student. Rezaul also submitted two large competitive grants to the NSF (Total budget of \$5 million) to study land-surface atmosphere interactions.

**MICHAEL MAY** is starting his 12<sup>th</sup> year in the Department. He is expanding his course offering such as a new upper level subsurface geologic methods course and revamped field methods courses at both the undergraduate and graduate levels. The subsurface geologic methods course covers wire line logging, correlating wireline logs and basic seismic stratigraphy and sequence stratigraphy for applying to energy resources and protecting the environment. The field method courses entail basic geophysics, subsurface and outcrop mapping, karst studies including basic dye tracing, soils description and interpretation, GPS, digital geologic maps, digital aerial images, proper field note compilation, field observation and documentation etc. Students are expected to generate field equipment experience portfolios and project summaries in digital format in



the field research and field methods courses.

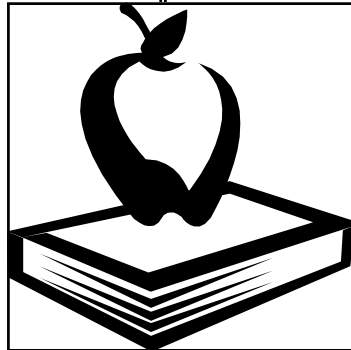
In addition to developing new courses Mike continues on the Executive Committee of the Kentucky Society of Professional Geologists (KSPG) as past President, consulting on sedimentary geology issues at various sites from coast to coast, and he has submitted a paper on biostratigraphy of conodonts for inclusion in the 40<sup>th</sup> Anniversary Pander Society Monogram (conodont focused research) with colleagues from other universities. He also helped to organize a field trip for the 2007 sectional American Association of Petroleum Geologists (AAPG) and the KSPG along with Dr Kuehn, and he has participated on several MS thesis committees and various other Departmental, College and University committees, and he continues working as a member of the content advisory team for Prentice Hall and American Geological Institute (AGI) in developing a new environmental geology textbook to be published in 2008.

Dr May, along with Drs Ken Kuehn and Rick Toomey (Mammoth Cave International Center for Science and Learning), led a group of KSPG and AAPG members on a joint field trip in the Bowling Green and greater Mammoth Cave areas recently. This outing was held September 14-15 as the Annual Field Conference of KSPG and as a pre-meeting field trip for part of the AAPG Eastern Sectional Meeting held in Lexington September 16-18 entitled "Winning the Energy Trifecta – Explore, Develop, Sustain." A field guide for the joint field excursion was published by KSPG and AAPG entitled *Geology of the Mammoth Cave and Nolin River Gorge Region with Emphasis on Hydrocarbon and Karst Resources*. At the AAPG meeting, Drs May and Kuehn presented a poster session on September 16 with a similar title as the field guide. During the KSPG Field Conference the fourth Kentucky Distinguished Geologic Site was designated. Dr May nominated the Kyrock area of Edmonson near the Nolin Dam as a Distinguished Site because of its great history and geology and it was approved by the KSPG Executive Committee over the 2007 summer. Kyrock was the center of asphalt mining in the first half of the 20<sup>th</sup> century. It is located just west of Mammoth Cave National Park (see story

elsewhere on Kyrock). There is now renewed interest in the asphalt rock deposits in this area that might boost the economy of Edmonson County and adjacent areas.

On a personal note, there have been several transitions over the past few months for Dr May and his family. He was promoted to the rank of full professor in 2007. His wife, Beth, left WKU as a part-time instructor in Public Health to take on leading the middle school science program at St. Joseph School in Bowling Green. The eldest of the 'Maylets', Peter, is now in high school and as a freshman is enjoying playing on the varsity soccer team. Kevin, meanwhile, is getting used to having his mom as his science teacher in the 7<sup>th</sup> grade. It should be an interesting year for sure!

**FRED SIEWERS** had an enjoyable and productive year in the Department. During the fall semester, Dr. Siewers was on sabbatical leave, his first during his nine-year tenure in the Department. Most of his sabbatical time was devoted to projects related to his teaching and research efforts on San Salvador Island, Bahamas, efforts which have increasingly been focused on "paleolimnology" (the study of ancient lakes). As veterans of past "Geology of Bahamas" trips will recall, San Salvador has numerous hypersaline lakes. Many call those lakes smelly and disgusting (which in truth they are!), but Dr Siewers has found that the sediments in those lakes provide an excellent record of past environmental change. Along with Dr Lisa Park, a colleague at the University of Akron, Dr Siewers has been able to define past hurricane events in several cores and is currently working to piece together past water chemistry changes on the basis of faunal and geochemical proxies. Dr Siewers presented the results of this work at the 13th Symposium on the Geology of the Bahamas and at the national GSA meeting in Philadelphia, including a core workshop on ancient lakes sponsored by Exxon-Mobil. He and Dr Park are busy on several publications and are seeking grant dollars to continue their Bahamas work. As in the past, that work will involve WKU students both during Winter Term courses to the Bahamas and during the summers.



Dr Siewers found himself firmly back in the Department during the Spring semester. He taught his usual mix of soft-rock geology courses, including his largest-ever Earth History class and an upper-level course in sedimentology and stratigraphy. Dr Siewers also co-taught the first three weeks of a multi-university collaborative field camp, held in the Big Horn and Absaroka Mountains of Wyoming and the Black Hills of South Dakota (see accompanying article and photographs). Dr Siewers chaired the search committee for the Department's new position in environmental geology, which resulted in the hiring of environmental mineralogist Dr Aaron Celestian. In the local community, Dr Siewers co-founded and co-lead the Christ Episcopal Church Earth Ministry, a group that in partnership with the City of Bowling Green and other environmental groups, managed to remove many tons of garbage and trash along the Barren River during two clean-up events.

Dr Siewers continued to serve as Treasurer and Secretary of the Kentucky Society of Professional Geologists and began his work as the co-organizer of the 14th Symposium on the Geology of the Bahamas, a symposium that will be held on San Salvador Island in June 2008. Dr Siewers enjoys an active family life with this wife and two daughters and tries to indulge his other interests in clawhammer banjo and outdoor activities whenever time allows. Dr Siewers loves hearing from past students and anyone interested in the Department's programs. Feel free to contact him anytime at [fred.siewers@wku.edu](mailto:fred.siewers@wku.edu).

**L. MICHAEL TRAPASSO** has spent another year doing his regular class assignments in the Department. He is still teaching sections of GEOG 100 (Introduction to the Physical Environment), using his own textbook *Essential of Physical Geography* by Gabler, Petersen, and Trapasso (Thomson Brooks-Cole Publishing). He also teaches sections of GEOG 121 (Introduction to Meteorology). Between the two introductory courses, he is still able to bring in some new majors and minors from other, less interesting, programs on campus. At the intermediate level, he teaches GEOG 222 (Observational and Analytical

Meteorology). In this sophomore-level class, he tries to prepare students for the greater challenges in the upper-division courses. His favorite course is still GEOG 426 (Applied Meteorology and Climatology). His research projects through the years have almost always been some form of applied atmospheric science, making this course “his baby.” In addition to teaching, Trapasso runs the GEOG 121 meteorology laboratory. Though he is called the “Laboratory Administrator,” to him it is more of a baby-sitting job. According to Trapasso, “There are a number of problems that can occur with a computer lab, and staying on top of it all can sometimes be a real pain in the butt.”

At the graduate level, he has been an active participant in three Master’s theses committees in the past year. This summer has presented him with two more thesis proposals to read, so he’ll be back in the graduate realm in the coming year as well.

For those of you with nostalgic feelings about the meteorology/climatology track in the Department, Dr Trapasso is still in charge of the College Heights Weather Station. Nowadays, the Weather Station is worked by teams of undergraduate and graduate students. Under his direction, they learn to collect and archive weather data, as well as about the proper care and maintenance of the weather instruments. However, the old College Heights Weather Station is showing its age. Spare parts for the older instruments are getting harder to find, and it is only a matter of time before this long-running Departmental facility will qualify as a ‘weather station museum’. There is no way this old classic weather station can keep up with our new MESONET system, now in development.

Since the publishers of *Essentials of Physical Geography* have decided to release a new edition next year, Trapasso and his co-authors will be on another 18-month writing spree to meet the publisher’s deadlines. Therefore, 2007-2008 will find him working mostly on this textbook project.

Not to be completely left out of the journals, he recently submitted a manuscript to the journal, *FOCUS on Geography*, concerning the role geography played in Kentucky and Bowling Green

during the Civil War. History and geography have often gone hand in hand and this article will demonstrate several relationships on a local level.

In an effort to keep meteorology and climatology in the minds of the general public, Trapasso has gotten himself involved in another long-term outreach project. WKYU-FM, the National Public Radio service at Western Kentucky University, has asked him to do a weekly radio feature. The feature is entitled “Up in the Air,” and is described as a feature that ‘addresses anything and everything atmospheric’. In this format Trapasso takes questions, comments, or issues from the listening audience and discusses them in a 5-minute segment. As he points out, “It’s a lot of fun to do, but doing a weekly feature makes the schedule unrelenting. Meteorology is such a visual science, which makes doing a radio show a serious challenge. I have to keep the language simple and basic and, when possible, throw in a little humor. I want to make these little ‘meteorological discussions’ fun for the audience.” The feature airs every Thursday morning from 9:30 to 9:35 a.m. on WKYU-FM (88.9 FM) and affiliate stations.



On the travel front, Trapasso tries to squeeze in a few trips a year. Last January found him exploring the British colony of Bermuda. The place is not too terribly ‘rough and tumble’, but he still managed a little “Indiana-Jonesing around.” He took the opportunity to swim in some of the caves, and later tried swimming in the company of dolphins (more on that trip elsewhere in this newsletter).

The Republic of Turkey was his serious trip of the year, so far, with Istanbul the primary target. It is an ancient city with ties to the Hittites, Egyptians, Greeks, Romans, Byzantines, and the Ottoman empire. What better company can you find than Egyptian Pharaohs, Alexander the Great, Julius Caesar, and St. Paul the Apostle! He later went deep into the interior of Anatolia (now Central Turkey). Snow awaited him at these higher altitudes. Here, an eroded, volcanic tuff layer creates amazing landscapes of tall rock pillars and spires. In this thick, soft, volcanic tuff, the city of Capadoccia was dug for the protection of early Christians from the Roman Army. This city had eight subterranean levels complete with



family living quarters, food storage areas, waste disposal, shops, kitchens, stables, a mortuary, and a church. With proper ventilation tunnels and access to ground water, this city of 500 to 1500 people could survive underground for several months. "Crawling through that clandestine city was quite an adventure; what an elaborate hiding place!" he said. Though he is not a devoted Christian, Trapasso kept finding places where Biblical figures walked and where others are buried. These included St. John the Baptist, the other St. John, and the Virgin Mary. The ruins of the Roman City of Ephesus was another highlight of the trip. Trapasso loves Roman architecture and engineering, and Ephesus had plenty of both. He reminds us that "St. Paul preached in Ephesus for about two years before the pagan priests had him thrown out!" Finally he spent the last few days on the Mediterranean coast to relax before his long flight home.

This summer he is heading back to Alaska to see more of our largest State. It appears that he missed a few spots on his last trip. As always, he'll travel with his notebook and digital camera. No doubt there will be more high-latitude discussions in his various classes this fall ... not to mention new photographs for his next edition of his textbook.

On the reenacting front, he still manages to get out and about now and then. Last summer he flew out to Denver to ride as the Captain of the 10<sup>th</sup> U.S. Cavalry (the Buffalo Soldiers). When he's not actively commanding the Buffalo Soldiers, he acts as their cavalry advisor. As for the Civil War, the weekend after the May commencement ceremony Trapasso was riding with the 6<sup>th</sup> Kentucky Cavalry (Confederate) in the Battle of Sacramento, Kentucky. The event can be described as a few tough battles complete with saber charges, pistol charges, and dismounted fighting. According to Trapasso, it helps him clear his mind, ease his soul, and relax.

As always he wishes his students well, and loves to hear from them.

**ANDREW WULFF** continued to develop undergraduate research opportunities, be involved at a high level in field-based geology research and

learning, and augment the analytical side of "hard rock" geology at WKU. He was honored to receive the Ogden College and University Teaching Awards for the past year. Three grants helped to fund a preliminary study of dripwater chemistry in Diamond Caverns, lab equipment, undergraduate research projects, and materials and equipment for six activities to be implemented in area schools to augment the existing K-8 earth science curriculum. Andrew and his students combined for six presentations at scientific conferences, and he was a co-author on two additional presentations with professional colleagues. He is a co-author on two articles, in addition to being the lead author of a textbook supplement (along with Drs Kuehn and May) on the geology of Kentucky and Tennessee.



Andrew is currently supervising undergraduates working on eight different projects ranging from radiogenic isotope characterization of lava flows from Chile and dikes in the Mojave, to mineral phases and crystal growth rates in geodes from Kentucky, the influence of external processes on cave dripwater chemistry, accessory minerals in carbonatites from Arkansas, intrusive relationships in west-central Maine, and the use of digital geological quadrangle maps using GIS. He is also the academic advisor for twenty students, three graduate students, and is on six graduate committees. Students presented aspects of their research at the Kentucky Academy of Science, Sigma Xi, the International Conference on Karst Hydrogeology and Ecosystems, and the prestigious Keck Symposium.

Dr Wulff led a field geology course during the 2007 Spring Break, taking sixteen geology majors to Death Valley and the Mojave Desert for a week of mapping and hiking and more rocks and faults and folds than they could imagine! More on the trip elsewhere in the GEOGRAM. He also co-led an annual fieldtrip with Ken Kuehn to sites and sights in Kentucky, Tennessee, and North Carolina in the spring, and taught three weeks of the summer field geology course with Fred Siewers. More on that elsewhere too.

Dr Wulff is the current President of the Kentucky

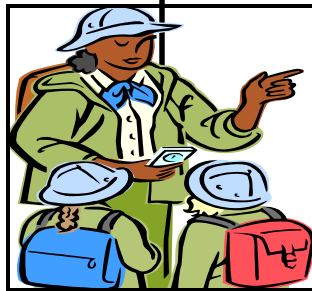
Society of Professional Geologists (see other articles in GEOGRAM for KSPG activities and fieldtrips), was elected to a three-year term as one of the national Councilors for the Council on Undergraduate Research (CUR), appointed a Delegate to the American Association of Petroleum Geologists (AAPG), and is one of the six-member board of the Alliance for Geoscience Field Education, charged with developing a National Center for Field Geology. He is finishing the first year of a two-year term as the Ogden College Faculty Fellow for the Center for Leadership Excellence, and helped to initiate a campus-wide survey to examine attitudes and awareness of the Leadership program. He and two other Fellows presented preliminary results at the university's annual "Engaging the Spirit" conference, and co-authored an article along with a presentation of the results at the annual conference of the International Leadership Association.

Dr Wulff is committed to bringing more earth science to the K-12 classrooms in the area and has logged more than 1500 contact hours with students (primarily 4<sup>th</sup>, 5<sup>th</sup>, and 10<sup>th</sup> graders) over the past few years. He has become known as "Dr Rock" and is tickled by the minor celebrity that accompanies his visits to area schools. He has been analyzing data collected during two years of study (The Consortium for Evidence Based Research in Rural Educational Settings - CEBRRES) of the academic and social environment of a rural elementary school science classroom, and is co-authoring a paper to be submitted in October. He and Margaret Crowder have simulated volcanic eruptions using liquid nitrogen, dry ice, balloons of all sorts, and many variations on the Mentos and Diet Coke experiment that has become well-known on the Internet and Discovery Channel. They even blew up a couple of trashcans during the 1<sup>st</sup> ARTP Expo!

Andrew continued to train geology majors to help present aspects of geology to students at area elementary and high schools and become more involved in the community. Topics included the wonders of rocks and minerals, aspects of structural geology, geological hazards, and various earth resources. Additional activities for this year include units on fossils, crystal growing, and maps. Some of

the geology majors have even gone back to their old schools as the "experts."

Andrew enjoys the challenges of identifying rocks and minerals brought to the department by folks from all over the area, which this year included proposed meteorites, sedimentary iron deposits, carbonates of all sorts, artifacts, and Pb-Zn ores from Honduras. If you have samples or questions – bring them in! He continues to be involved in the community by becoming certified as a Community Emergency Response Team (CERT) member, helping to organize neighborhood events (e.g. a National Night Out potluck event), playing bass and singing around town in a rock band, and is a story-teller at a local church Sunday school.



**JUN YAN** writes that, as a member of the GIS faculty, he continues responsibility for teaching up-level GIS and methodology courses. In all his courses, he has actively engaged his students in a variety of real-world issues. In order to do so, Dr Yan focused his efforts on developing projects that can best serve local communities. Currently he and his student researchers are working on a number of projects related to the community safety issues, specifically aiming to support the Bowling Green Police Department (BGPLD) and Metro Nashville Police Department (MNPB). The first project is to detect traffic accident "hotspots" in a network setting. The findings of this study are expected to be used for improving decision-making in Bowling Green and in State Police departments and to assist these law-enforcement agencies to develop more effective accident-reduction programs.

The second project is related to crime pattern analysis. Findings in this project will help the BGPLD and MNPB understand the spatio-temporal patterns of crime in the region, thus helping them allocate their resources more efficiently and effectively. In addition to these two projects, Dr Yan also worked extensively with the Bowling Green Warren County Metropolitan Planning Organization (MPO) on a number of issues related to transportation planning and polices.

Dr Yan had a very productive year with his research activities. He published two papers and

another paper is under review. He attended several regional and national conferences, including the Middle Tennessee GIS Forum, the AAG annual conference, and the 2007 GIS-T conference. At the AAG annual conference in San Francisco, he gave a presentation on the visual data mining of historical drought data in Kentucky. This research reflects a collective effort with Dr Stuart Foster in studying spatio-temporal dynamics in the drought evolution process. Together with his graduate student, Caitlin Hager, Dr Yan also presented research findings at the 07 GIS-T Conference on a project related to

commuting analysis in small U.S. metropolitan areas, including the Warren County Bowling Green Metropolitan Area. Dr Yan also worked in the WKU USAID China Environment and Health Project. Along with Kevin Cary, WKU's GIS Director, he set up a GIS research lab at Southwest University of China and conducted a series of ArcGIS workshops. Dr Yan really enjoyed his trip back to China, especially the authentic Sichuan spicy food. He found out Kevin is better than him in terms of handling spices.

Overall, Dr Yan is really excited about the continuous growth of the GIS program at WKU. In addition to the undergraduate GIS certificate the Department also offers a GIS minor, a graduate certificate in GIScience, and a Bachelor of Science in GIScience. He is so proud that WKU has the most comprehensive GIS program in the region.



Jim Bingham Retires from WKU



## Retirements!

After several decades of teaching and research excellence in the Department of Geography and Geology, Dr Nicholas Crawford and James Bingham have chosen optional retirement at WKU effective Fall 2007. Both Nick and Jim contributed in many important ways to the growth of the Department during their tenure at WKU. Jim played a significant role, along with former Department Head Wayne Hoffman, in building a strong planning program at

WKU and training a generation of city and regional planners. Nick developed an international reputation in cave and karst science for his myriad contributions to the discipline through the Center for Cave and Karst Studies, which he established, and the Mammoth Cave Summer program. The Center is alive and well today under the guidance of Dr Chris Groves and the Hoffman Institute. Former students, retired faculty, and the current crop of faculty and students in the Department owe both Jim and Nick a debt of gratitude for their service to the university over many decades. We wish them well in retirement, although both Jim and Nick have the option of teaching part time for the next five years.



Nick Crawford Retires from WKU





*Our New Geology Faculty, Dr. Aaron Celestian, in a typical research location!*



*Alumnus Chris Moore and son, June, 2006*

## ALUMNI CONTRIBUTIONS

Contributions to the Department of Geography and Geology Development Fund in 2006-2007 increased again this past year. The number of individual contributions to our Fund topped the 120 mark! Thanks to everyone for helping us achieve our goals this year; we were able to support several students attending conferences and participating in study abroad programs. Your generous contributions go a long way to ensuring that we have sufficient supplies and equipment for student use. When you receive a call from students, or whenever the spirit moves you, make a contribution to the 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 over 20 years. 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:

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| <b>Melissa Alexander</b>          | <b>Kelly T. Erbs</b>             |
| <b>Tony C. Allison</b>            | <b>Dr. Thomas Feeny</b>          |
| <b>David L. Anderson</b>          | <b>Mr &amp; Mrs Jerry Finley</b> |
| <b>Mr &amp; Mrs Curtis Barman</b> | <b>Jon W. Fish</b>               |
| <b>Janet G. Bemiss</b>            | <b>J. Ronald Gonterman</b>       |
| <b>Chandra K. Beyer</b>           | <b>Jamison R. Gorrell</b>        |
| <b>Joseph H. Bishop</b>           | <b>Luke D. Hall</b>              |
| <b>Teresa L. Bishop</b>           | <b>Patti Jo Hall</b>             |
| <b>Irvin G. Boysen</b>            | <b>Albert Vance Hamm</b>         |
| <b>Kristi M. Brown</b>            | <b>Joel K. Hargis</b>            |
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| <b>Drs Jim &amp; Nancy Davis</b>  | <b>Paul F. Koss</b>              |
| <b>Mr &amp; Mrs James DeBold</b>  | <b>Raina N. Lewis</b>            |
| <b>Nancy C. Demaree</b>           | <b>Mr &amp; Mrs Robin Lewis</b>  |
| <b>Mr &amp; Mrs Ron Diaz</b>      | <b>Michael A. L'heureux</b>      |
| <b>Ramey A. Douglas</b>           | <b>Catherine M. Lowe</b>         |
| <b>Wilbur B. Drake</b>            | <b>Drs D. and F. Mader</b>       |

Mr & Mrs W. McKenzie  
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 Drs Conrad and E. Moore  
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 Wachovia Foundation  
 David H.. Watkins  
 Chad Weaver  
 WFD Oil Corporation  
 Aric D. Wilhelm  
 Mr & Mrs Shaun Winter  
 Mr & Mrs Michael Zimny  
 Gregory Zoeller

*Special Thanks to the  
 Gildersleeve Family  
 for ongoing support of  
 the Geology program,  
 especially Kent Gilder-  
 sleeve.*

*Special thanks to the  
 Leigh Roy Bell Estate*

## ALUMNI NEWS

**Alcorn, Michael G. (Geology 1986)** reports that since graduating WKU he has worked mainly for the federal government including the Air Force as an officer, the Defense Mapping Agency, USGS, Bureau of Land Management, and US Forest Service. Most of his work has involved environmental cleanup and investigation, environmental inspections and compliance programs. He also worked a short while with the Alaska Volcano Observatory in Anchorage and lived in Alaska for a total of eight years. Mike completed his MS in Geology at Eastern Washington University and later a second BS in Engineering. He has traveled to nearly every state, and abroad to Europe, Canada, Australia, Japan, and Korea. He is presently enjoying life in the mountains near Asheville, NC, with his wife and two daughters while working for the US Forest Service.

**Allen, Patrick M. (Geology 2004)** is in the Aerospace Medical Service with the United States Air Force.

**Benson, Aaron (Geography, 2000)** lives in Louisville and has worked for AMEC Earth and Environmental as a consultant for almost two years. He has a Certified Hazardous Materials Manager credential and is preparing to take the ASBOG geology exam.

**Bluhm, Justin (Geology 2000)** is employed at TPM Inc. in Bowling Green as an environmental geologist/hydrogeologist. His work involves Phase IIs, Phase IIIs, UST closures and related groundwater monitoring.

**Broyles, Lucas (Geography 2005)** is an Assistant GIS Specialist with URS Corporation in Tampa, FL.

**Burns, Jennifer L. (Geology and Geography 2006)** is an environmental scientist with SpecPro, Inc., a subcontractor to NASA. She is stationed at Cape Canaveral where she develops computer models for managing stormwater, wastewater, groundwater, and drinking water supplies at the site.

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.

**“I predict a fantastic 2008 if you send in your Alumni Information sheet right away.....”**

**Chalmers, Patty (Geology 2005)** completed her MS degree in metamorphic petrology at Rensselaer Polytechnic Institute in May 2007. She has taken a full time position in Houston with URS Corporation doing environmental consulting for the oil companies. She looks forward to a lot of travel and field work around Texas.

**Conner, Mike (Geology 1993)** writes that he has started a new company in Bowling Green, Southern Environmental Services, in conjunction with Key Oil. The company's purpose is to provide full service environmental consulting and compliance for its clientele.

**Coyle, Brad (Geology 2000)** and his wife are pleased to announce the arrival of their first child, Addison Brooke Coyle born on July 3, 2007. Brad continues to work as a project geologist with Linebach and Funkhouser Inc. in Louisville, where he manages multiple groundwater remediation sites.

**DeMott, Laura (Geology 2003)** recently earned her MS degree at the University of Texas at Austin. The thesis was titled "Travertine deposits as records of groundwater evolution in urbanizing environments" and was supervised by Dr. Banner. In September, Laura started her new job as a geologist with ExxonMobil in Houston!

**Estes, Ben (Geography 2006)** works for the Public Safety-Snowbird Ski and Summer Resort and planned to start graduate school in Fall 2007 in Parks and Tourism at the University of Utah.

**Firkins, Michael (Geography 2003)** is a planner with the Triple S Planning Commission in Shelbyville, Kentucky.

**Fish, Jon (Geography 1998)** is the youngest person to hold the rank of sergeant for the North Carolina Torts Police. He and fellow officers board every foreign vessel entering the port of Wilmington, NC, to assess security conditions.

**Foster, Ben (Geography 2006)** has begun a tour of duty (or "study abroad" as he calls it) in Af-

ghanistan with the U.S. Army Medical Service Corps.

**Freeman, Mollie (Laird) (Geology 2003)** finished her MS in Geochemistry at University of Maine in December 2006. She is now living in Jonesborough, TN, where she is working with the Gray Fossil Site through East Tennessee State University. She was married on March 31, 2007.

**Goodnight, Shane (Geology 2000)** completed his MS thesis, " $\delta^{13}\text{C}_{\text{org}}$  and  $\delta^{15}\text{N}_{\text{org}}$  Variability in Devonian-Mississippian Black Shales" at the University of Kentucky in 2004. He is currently working as an environmental geologist for Shield Environmental Associates in Lexington. He traveled recently to Sweden and will go to Brazil this fall. He will be sitting for the ASBOG exam this fall as well.

**Gossett, Matt (Geology 1999)** is a geologist with URS Corporation's Diamond Division in Louisville. His work takes him to DuPont-owned sites throughout the southeastern US, focusing primarily on RCRA investigations and remediation activities. He reports that he has followed the standard career path of a geologist in the environmental field, progressing from field work into project management. He passed the ASBOG exam last year and received his professional geologist registration. He currently lives in New Albany, IN, with his wife Stephanie.

**Graham, Mark (MS Geoscience 2004)** continues work on his Ph.D. dissertation at the University of Kentucky, and recently spent time in Thailand.

**Gunnels, John (Geography 2001)** is currently working as a GIS Specialist assisting in mapping coal mines and reserves throughout the state for the Kentucky Revenue Cabinet.

**Hale, Elizabeth (Geography 2004)** is the Physical Science Technician for Oregon Caves National Monument.

**Harrington, Leslie (Falin) (Geology 2004)** was married in 2004 and is currently residing in Gainesville, Florida where her husband, Jason, is pursuing a PhD in Mathematics.

**Hawkins, Weldon (Geology 2005)** continues to work as an environmental geologist with EnSafe Inc., but has been recently transferred from their Nashville, TN, office to Bowling Green.

**Hirsch, Emily (Geology and Biology 1999)** is living in Bellingham, Washington, and working as a Wetland Ecologist for a consulting firm in Everett. She writes A LOT in her job, including critical area studies, mitigation and restoration plans, habitat management plans, and biological assessments. Her work deals mostly with developers, residential developments and individual landowners who want to build.

**Hosey, Kieran T. (Geography 2001)** works as a geologist in Indianapolis.

**Hughes, Tassall (Geology 2004)** has been working for UNIMIN Corporation, a worldwide mining company specializing in industrial minerals, for three years. She is a quality assurance specialist in clay minerals using X-ray Fluorescence and Scanning Electron Microscopy. She and her husband reside in Bellevue, TN, and have a two-year old son, Kolter.

**Ingram, Brooks (Geography 2005)** reports that he is working as a GIS Specialist at AMEC Earth & Environmental in Nashville along with several other of our Department graduates: **Brandy Woodcock (Geology 2006)**, **Reece Chism (Geography 2006)** and **Nick Lawalin (Geography 2007)**.

**Jarboe, Stacey (Geography 2006)** works for FMSM Engineers (main office in Lexington) as an environmental scientist.

**Johnston, Todd (Geology 1995)** has finished his 10th year in the Bowling Green Regional office as an Environmental Inspector with the Kentucky Environmental Protection Cabinet - Division of Waste Management.

**Kendrick, Dasen (MS Geoscience 2005)** is working for Conestoga-Rovers & Associates as a Environmental Project Manager in the air quality sector located in Houston, TX.

**Kleman, Brian (Geology 2004)** lives in Evansville, Indiana, and works for ATC Associates, Inc. as a

manager of their Construction Materials Testing and Environmental Consulting Departments. He and his wife Heather were married in December 2006.

**Lam, Doug (Geology 1997)** is employed by Trihydro Corp as site geologist doing groundwater work at a closed refinery near Cincinnati. The Lams live in Union, KY, and have one child, Alex, who is five years of age.

**Lam, Shelly (Forbis) (Geology 1997)** works for Tetra Tech EMI in Erlanger, KY, and has spent the past two years working full time as a contractor to the EPA's Environmental Response Team. Her work involves environmental monitoring, emergency response, and training.

**Lancaster, Jamie (Geography 2003)** is an Environmental Specialist with Georgia's Department of Natural Resources, Environmental Protection Division.

**LaRue, Shanda Galey (Geography 1999)** graduated from Johns Hopkins University with a Master's of Liberal Arts in May 2007

**Link, Allison (Geography 2007)** works for SDI Maps, Louisville, KY, in its 3-D Stereo Analysis department.

**Littell, Ashley (MS Geoscience 2007)** is a research and GIS analyst for Connected Nation in Bowling Green, KY. She's a veteran of the Department's study abroad programs!

**Lynch, Doug W. (Geography 2001)** is the GIS manager for Carter-Burgess in Atlanta, GA, and he recently earned his GISP designation.

**McCarty, Jeremie (Geography 1999)** writes that he is working as an Upstream Project Manager/Waste Management in Nashville.

**Milam, Keith A (Geology 1997)** was recently appointed to the faculty of the Department of Geological Sciences as an Assistant Professor at Ohio University.

**Miller, Johnny A. (Geography 1970)** has retired as a manager with the Kentucky Dept. for Employment



Services, and is now self-employed p/t as a graphic design/Web developer.

**Moore, Chris and Patricia [Krouse] (Geography 1994)** are stationed in South Bend, IN, where Chris is on a two-year recruiting tour for the U.S. Army.

**Morris, Wade (Geography 2000)** writes that he is a subcontractor to the Dept. of Energy at Los Alamos National Laboratory in Los Alamos, NM. Wade is an associate scientist for Canberra Industries interpreting gamma spectroscopy and neutron coincidences. The company characterizes all the transuranic waste for shipment and storage at the Waste Isolation Pilot Plant outside of Carlsbad, NM. He was also involved in the cleanup efforts at Rocky Flats while living in Denver, CO, and the Nevada Test Site while living in Las Vegas, NV. Wade is currently pursuing a second bachelors in computer science at the College of Santa Fe to get more math and physics for his job!

**Neisz, Troy (Geology 1993)** is a project manager for AMEC Earth and Environmental in Nashville where he has worked for the past 15 years. In the past two years he has been involved in CSX railroad projects working in the central and eastern US. He resides in Hendersonville, TN, with his wife Tammy and three children—Peyton, Lauren, and Dalton.

**Glenn Nicotera, Thomas Glenn (Geology 1990)** has been employed as a geologist with the Commonwealth of Kentucky for the past 8.5 years. His duties require him to be the primary groundwater investigator for the western half of the State on all groundwater-related issues. He coordinates with staff on special projects such as dye tracer studies, groundwater protection plan reviews, and groundwater network sampling. He also conducts groundwater complaint investigations, responds to accidental releases and spills, and reviews permits and project proposals for various industries. He has a five-year-old daughter, MacKenzie.

**Norton, Carol E. (Geology 1980)** passed away in October 2006 after a long battle with cancer. Carol worked as a geologist-hydrologist for the Arizona Dept. of Water Resources. She was laid to rest at Cave Hill Cemetery in Louisville, KY.

**Powell, Chris (Geology 2001)** is a project geologist for Environmental Services, Inc., in Florida.

**Reizner, Julie Ann (Geology 2003)** is completing her Master's studies in Earth Sciences (Paleontology) at Montana State University.

**Robinson, Marshall (Geography 2006)** is the staff planner for the City of Gallatin Planning Division; he has been working recently on the Wolf Creek Dam in Russell County, KY.

**Snow, Mary M. (MS Geography 1996)** teaches meteorology courses in the Applied Aviation Sciences department at Emery-Riddle Aeronautical University in Daytona Beach. She had a co-authored paper titled *Annual Temperature Range Time-Series Trends* published in "The National Weather Digest," Vol. 29: 3-12, by the National Weather Association.

**Snow, Richard K. (MS Geography 1996)** also teaches meteorology courses at Emery-Riddle Aeronautical University in Daytona Beach and co-authored *Annual Temperature Range Time-Series Trends* published in "The National Weather Digest," Vol. 29: 3-12, by the National Weather Association.

**Spoelman, Seth (MS Geoscience 2000)** works as a GIS specialist with FEMA. His rolling office is a 90,000 pound Mobile Emergency Operations Vehicle (MEOV) known as "Red October." He maintains a Friendster blog which can be viewed at: [http://sethspoelman.blogs.friendster.com/the\\_cesspool/](http://sethspoelman.blogs.friendster.com/the_cesspool/)

**Tabor, Jr., Troy (Geology 1999)** has worked eight years for the Kentucky Department for Environmental Protection in Bowling Green and was recently promoted to Regional Supervisor with the Division for Air Quality.

**Talley, Nathan (Geology 2004)** works in the Division of Science and Resource Management at Mammoth Cave National Park. He is involved in managing invasive exotic plants with the goal of boosting populations of the American Chestnut and Butternut in the Park. He works with the WKU biology co-op/

internship class each semester and is a wildland fire fighter on the Park's fire team.

**Thompson, Laurie Myjak (Geography 2003)** is the Website Editor for the City of Goodlettsville. She got married in August 2006.

**Thornton, Melissa (Geology 2002)** completed her MS Geology at the University of South Carolina in August 2005 and is currently working in Oak Ridge, TN, for Washington Group International doing environmental remediation. Melissa reports that she has won her battle with breast cancer and that she, **Laura DeMott (Geology 2003)** and **Bethany Overfield (Geology 2001)** will be walking in the *Women for the Cure* 3-Day (60-mile) event in Dallas, October 26-28. Alumni contributions are welcome.

**Tibbs, Jeff (Geology 2003)** is currently working as an environmental inspector for the Kentucky Department for Environmental Protection in Bowling Green.

**Tolliver, Deven (Carigan) (MS Geoscience 1998)** is working with the Kentucky Environmental Protection Cabinet - Division of Water in Frankfort - where she deals with water-well compliance, Groundwater Protection Plans, and assists in sample collection for the statewide ambient groundwater monitoring network. She has two daughters ages 3 and 1.

**Troutman, Tim (MS Geoscience 1999)** is the Warning Coordination Meteorologist at the National Weather Service Forecast Office in Huntsville, AL. He recently published *21st Century NWS Warning Communications* in the "The National Weather Digest," Vol. 29: 60-64, by the National Weather Association.

**Voils, Kasey (Geography 2004)** is the Water/Wastewater Coordinator for the Lake Cumberland Area Development District.

**Wayne, Robert J. (Geography 2004)** has enrolled in the Masters of Public Affairs program at Indiana University.

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**GEOGRAM** is designed, edited, and produced for the Department by Dr David J. Keeling.  
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## Alumni Information

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

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

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

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

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

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