Remarkable growth continued in the WVU Geology & Geography Department throughout 2012. In our 2011 newsletter I noted “… the total number of undergraduate students in Geology, Geography, or Environmental Geoscience exceeded 200 for the first time in 25 years.” Just over 12 months later, we now have over 300 undergraduate majors, almost certainly an all time record. There are 26 different undergraduate degree programs in the Eberly College of Arts and Sciences; since 2010, the three fastest growing programs are Environmental Geoscience (+57 %), Geology (+47 %) and Geography (+42 %)! Growth in G&G constitutes 72.5 % of the increase in majors within the whole Eberly College of Arts and Sciences over this period. Also, graduate school applications have been up in recent years, but we have limited grad enrollment to about 80-85 Masters and PhD students because there are only so many faculty advisers and graduate assistantships. This stable number is at record levels for the Department, and the vast majority of our grad students are fully funded.

Our total research funding has more than doubled to $9.2 million in less than three years, and as you will read in the following newsletter, G&G research surely addresses many of the challenges faced by the state of West Virginia, the nation, and the world. Much of our research is inter-disciplinary and almost all of it is potentially transformative.

Of course, our growth is very exciting, but brings some formidable challenges, with demand for extra lab sections and more frequent offerings of upper-level classes. It is no surprise that several of the annual faculty newsletter contributions include a statement to the effect of “It was a very busy year.” On a personal level, my geomorphology class has a third lab section for the first time since 1986 and grading 75 essay tests is quite a task!

We were blessed with three important faculty additions during 2012. The Geology program was able to lure Dr. Kathleen Benison to WVU, after she taught for 15 years at Central Michigan University. Kathy specializes in sedimentary geology and low-temperature geochemistry, and really “hit the ground running” upon her arrival. A second Geology faculty search is underway with some excellent candidates. Dr. Maria Perez and Dr. Jonathan Hall joined the Geography faculty as WVU PROF DOC (Promoting Research Oriented Faculty Diversification on Campus) Fellows. Maria completed a PhD at the University of Michigan, and specializes in critical cartography, underground geographies, anthropology of science, speleology and nationalism in Latin America and the US. Jonathan finished his PhD at Ohio State and is currently using GIS to explore interactions between the Bishnoi peoples, and key animal species in Rajasthan, India.

Dick Smosna and Ken Martis both retired in the 2012 academic year, but thankfully for our students both are teaching a class or two as faculty emeriti. Following the lead of Dick and Ken, both Henry Rauch and Jack Renton entered phased retirement in 2012. These two were hired when Dana Wells was Chairman of Geology & Geography and if all goes according to plan they will conclude their outstanding tenures at WVU with 45 and 50 years of service, respectively. Major transitions like the new hires and retirements signal an opportunity to reflect on our history, and I hope Professor Emeritus Bob Shumaker’s reflections on WVU and the images dating to 1950s and 1960s on page 8 encourage some of you to contribute your own memories to next year’s newsletter.

It has been gratifying to see a number of our alumni visit the department and others who have met with the WVU contingent at professional meetings. Mountaineer nation will celebrate Homecoming with a football game on October 19th against the Texas Tech Red Raiders, and we will host an alumni event in Brooks Hall to coincide, most likely on Friday October 18th. We also plan to hold social events at AAG, AAPG, and GSA meetings in 2013, so look for details in postings on the Department Web and Facebook pages.

Special thanks are in order to many of you for your continued gifts and donations to the Department through the WVU Foundation. This generous giving has grown significantly in the last few years, but the simultaneous growth in students and demands of a tough economy on students and their families have made the needs greater than ever. Considerable financial hurdles exist for most who undertake capstone field classes, study abroad, and field research, so if you are in a position to help our students in 2013, please consider the giving options outlined on pages 24-25. I can assure you the G&G faculty and I will be very grateful.
The Geology & Geography Department hosted a retirement celebration for Dr. Kenneth C. Martis and Dr. Richard Smosna on April 27, 2012 in Brooks Hall beginning with their last lectures. Dr. Smosna talked about "The Best Geology Learning Experience: Field Trips". Dr. Martis then followed with his last lecture on "Mapping Congress: Developing a Geographic Understanding of American Political History".

The celebration continued with a reception and remarks from current and emeritus faculty, alumni, and friends of the department.

WVU ENERGY RESEARCH GRANT USED TO EXAMINE NATURAL GAS DRILLING

Excerpt from article at http://wvutoday.wvu.edu/n/2012/10/30/wvu-energy-research-grant-used-to-examine-natural-gas-drilling

West Virginia University Assistant Professor Shikha Sharma has received $265,000 through the National Science Foundation to study the Marcellus Shale, one of the nation's largest reservoirs of natural gas, and examine potential sources of pollution that could result from natural gas drilling.

The award supports Sharma's Stable Isotope Research Laboratory which is advancing research and training in the earth sciences with a primary focus on the energy and environment topics targeted by the National Science Foundation's Science, Engineering and Education for Sustainability program.

In her lab, Sharma examines isotopes, atoms of the same element that have the same number of protons, but a different number of neutrons. Isotopes may weigh more or less than their elemental counterparts with equal numbers of protons and neutrons, giving them unique properties. The study of isotopes can help us better understand the sources of natural gas and geothermal energy and track sources of potential pollution stemming from energy development. The grant will fund the purchase of new equipment to analyze the isotope content of individual compounds, including hydrocarbons and dissolved natural gases.

"The addition of this new instrumentation is greatly strengthening the ongoing energy research in our region," Sharma said. "The Marcellus Shale has not been a direct target for intense exploration until recently. It has not been sufficiently studied, and neither have the environmental impacts associated with its development."

Many people are concerned about possible impacts of shale gas drilling on water quality. Sharma's isotope research could not only help find areas where gas is likely to be more abundant, but also help identify the specific sources of gas and pollutants entering ground water and streams.

This award opens up new research frontiers across the state and the region. It also benefits the programs of a talented and diverse group of WVU research faculty who are currently engaged in stable isotope research. The combined research, teaching and hands-on training will provide opportunities for students to develop a better understanding of basic isotope science and its application in several science, technology, engineering and math disciplines while contributing to the growth of the Stable Isotope Laboratory.

As part of the grant, Sharma will hire a post-doctoral scientist to develop new research methods and manage her laboratory. Doctoral candidate Ruqian Chen is working on Marcellus Shale biogeochemistry and four master's students, Andrea Sack, Adam Pelak, Lindsey Bowman and Stephen Henry, are working on water quality and stray gas issues associated with Marcellus Shale gas drilling and efficient development of geothermal energy.

"I came to WVU specifically to work with Dr. Sharma on this project," Bowman said. "This research project is so relevant to West Virginia and the U.S.'s focus on unconventional energy resource development, which in this area are fossil fuels from the Marcellus shale. Through this research we hope to gain a better understanding of the intersection between oil and gas development and preserving environmental integrity."
HESSL DISCOVERS KEY TO GENGHIS KHAN’S EMPIRE

Theories about the Mongol conquests have sparked almost as many questions as answers. Mongol leader Genghis Khan forged an empire that eventually stretched from Asia’s Pacific coast to Eastern Europe and southward into Persia and Southeastern Asia—a feat that may have cost more than 40 million lives.

One of the most popular theories for the Mongol expansion was that the hordes started taking from their neighbors when they were forced to flee drought conditions that made resources of their own very scarce. But a discovery by Amy Hessl, WVU associate professor of geography in the Department of Geology and Geography, just might turn that theory on its ear by proposing that the spark behind the great Mongol empire expansion may have been rain, not drought.

Hessl is a dendrochronologist, a trained expert in analyzing past climate conditions by studying the growth rings in trees. It is an activity that requires skill, patience, powers of observation on a microscopic level, and a keen interest in the past.

Hessl said she found her “career happy place” where twin interests of history and environment peacefully coexist, even while trudging over an inhospitable Mongolian countryside in search of wood scraps that unexpectedly shed light on 800-year-old mysteries.

“I am focused on the interactions between humans and the environment over the past 500 to 1,000 years,” she explained.

So, when the opportunity came up to work as the principal investigator on a National Geographic-sponsored project in Mongolia focused on how climate change might have affected the region’s wildfire risks, she jumped at the opportunity. Last summer, she teamed up with colleague Neil Pederson of Columbia University’s Lamont-Doherty Earth Observatory, Baatarbileg Nachin of the National University of Mongolia, and a squad of local helpers to head out into the remote Mongolian countryside in search of telltale wood samples.

Their targets for research were wood remains in a 7,000-year-old lava flow. Hessl explained that tree rings can tell the tale of a region’s environmental history. They indicate whether abundant water supplies promoted growth or drought conditions inhibited it. And, as all middle schoolers are taught, counting rings can tell you how many years the tree lived.

Because trees grow more slowly in periods of drought or other environmental stress than they do under more favorable conditions, the size of the rings they produce varies. Looking at the pattern of a tree’s rings can reveal information about the environmental changes that took place while it was alive and growing.

The team of scientists expected to find tree samples that would give them an idea of environmental events going back 500 years or so—adequate for the purpose of their fire risk study. They packed up their laptops, microscopes, chain saws, data collection tools, and survival gear and headed into the old lava flow to search at a spot near the ancient seat of the Mongol empire, the Orkhon Valley. They intended to conduct on-site examinations of samples and document their findings.

Instead, a series of misadventures led to unexpected discovery.

Her colleague became too ill to venture out into the hot, inhospitable region to pick over the remains of old dead wood and examine old living trees, her Mongolian assistants judged their tolerance for dehydration; equipment malfunctioned and time ran out, so there was nothing left but plan B—gather up samples of the feasible dead wood they could find and lug them back to the United States for further study in the lab.

The exhausted researchers trudged back to civilization determined to salvage their excursion. They succeeded beyond any expectations.

Hessl was shocked when researchers began looking more closely at the samples they brought back. They didn’t turn out to be 700 years old. They turned out to be more than 1,300 years old, dating all the way back to about AD 650.

“We had all this environmental history all of a sudden that we never expected to have,” Hessl said. “It’s all about energy. What we are seeing in the rings is that around the time of the rise of the Mongols, there was abundant rain. Abundant rain made the grasses grow, and grass powered the horses that grew the cavalry that conquered the region.”

Hessl said it was “all about energy” again years later when the Mongols, after already establishing a massive empire, suddenly moved their capital. More evidence from the tree rings indicates that at the same time they moved their capital from Mongolia to Beijing, there had been a rapid decline in moisture in the Orkhon Valley.

In an article about her work that appeared in the March 21, 2012, edition of Scientific American, Hessl stressed that she and her colleagues are not claiming that climate was the main factor in the rise and fall of the Mongols. “Genghis Khan was really the key to uniting many tribes, and he spurred them to expand in a way that’s never been repeated,” she told Scientific American writer Charles Choi. “We just argue that it takes energy to create an empire, just as it does today, and rains may have helped provide the grass that powered their horses. After Genghis Khan died, the empire became somewhat factionalized, with most historians arguing that it became too large to effectively administer. We’re saying maybe climate change may have made managing the empire difficult also.”

Hessl isn’t finished yet. It was back to the Orkhon Valley of Mongolia again in July and August 2012 with an expanded team and a refocused mission. National Geographic awarded her another $20,000 grant as principal investigator to expand on the discoveries of last summer—recognizing the uniqueness of the work, its global significance, and its connection to the institution’s strategic goals of global engagement, exchanges of knowledge, and acceleration of quality research, the WVU Faculty Senate has also made a financial commitment of $12,000 to support the work.

Hessl’s “career happy place” may not be as large as the Mongol empire, but it is expanding thanks to nationally recognized research results, the commitment of WVU to global engagement, and a society that recognizes the need to look to the past to prepare for the future.
By Dr. Ann M. Oberhauser

Sabbatical leaves provide opportunities to engage in research and international travel in a way that is not possible during the typical semester of a faculty member. This fall, Ann Oberhauser experienced this opportunity first hand during her visit to the University of Venda (Univen) in South Africa as part of the Council for International Exchange of Scholars Fulbright Specialist Program. Her connections to this university go back to the early 2000s and include collaborative work with faculty and students in both geography and gender studies. Oberhauser and several students from WVU conducted research in this region on women and rural economic development with colleagues in the Department of Geography and GIS and the Gender Studies Program. Dr. Sam Nethengwe, now head of the Geography and GIS Department at Univen, received his PhD at WVU.

During her stay at Univen, Oberhauser worked with staff and students in several departments on research methods and participatory fieldwork, in addition to reviewing their curriculum and teaching practices. As Professor of Geography and Director of Women’s and Gender Studies at WVU, she has a wealth of experience in these areas. She also participated in several workshops and seminars sponsored by the Community Development and International Relations Programs at Univen.

Oberhauser’s experience in southern Africa will expand these research collaborations and student exchanges in the future. Several connections involving both universities are possible in the areas of GIScience, urban and regional planning, natural resource management, and gender and development. In addition, this exchange will open up opportunities for colleagues to coordinate work between Univen’s Directorate of Community Development and the WVU Center for Civic Engagement. These programs have similar missions to connect work being done in the university to communities in ways that benefit students, staff, and the local population.

Despite their locations on different continents, and the seemingly disparate nature of these two universities, WVU and Univen share many qualities and goals. They are both located in rural and relatively underdeveloped regions of the US and South Africa. As public universities, they have a mission to serve their surrounding communities and to provide quality education to students in fields that will meet the development needs of their regions. Finally, both universities are committed to building linkages with other universities as part of the growing need to expand global awareness.

The Directorate of International Relations, the School of Environmental Sciences, and the School of Human and Social Sciences at Univen were instrumental in making this Fulbright Specialist visit possible. Oberhauser gained a tremendous amount of knowledge about and respect for this community during her visit to Thohoyandou and looks forward to continued collaboration with colleagues and students at Univen.

Greetings from south of the equator!

Visiting Committee Membership

Dr. Alan Brown, Co-chair, Schlumberger
Joe Sewash, Co-chair, North Carolina Center for Geographic Information and Analysis
Linda Culp, San Diego Association of Governments
Robert Dulli, National Geographic Society
Dr. Jay Gatrell, Indiana State University
Ronald Mullennex, Marshall Miller & Associates
Dr. Amy Pratt, Non-Profit Leadership
Brian Raber, Merrick and Company
Heather Ramsey, Chesapeake Energy
Geary Schindel, Edwards Aquifer Authority
Jennifer Sincock, US Environmental Protection Agency
Ashley S.B. Douds, EQT Production Company
Jeffrey A. Sitler, University of Virginia Environmental Health & Safety

Dr. Oberhauser
and University of Venda Geography students

Sam Nethengwe, a WVU graduate, with Dr. Ann Oberhauser at the University of Venda.

Photos: Ann Oberhauser
WVU GROUP PROMOTES FAIR TRADE FOR COFFEE FARMERS

Excerpt from article: http://wvutoday.wvu.edu/n/2012/07/19/a-cup-of-kindness-wvu-group-promotes-fair-trade-for-coffee-farmers

No matter how you take it – frothy vanilla latte, caramel macchiato or a plain ‘ol dark roast brew – coffee is a liquid luxury.

Don’t think so?

Ask seven West Virginia University students and a geography professor who witnessed firsthand how a coffee-farming community operates in Nicaragua.

Coffee growers in that region barely make enough to support themselves and their families. They certainly don’t have the financial wherewithal to splurge on $4 espressos every day.

Yet they continue to sweat away in sweltering fields harvesting the crop we desire for an a.m. jolt.

WVU Fair Trade 2.0 understands this process, and wants to change it.

In May, members of this student group traveled to Nicaragua for an up-close view of these farming communities in action. They even joined in – by planting yucca, pineapple and 300 tomato plants under the blistering sun.

“There are people in the world who struggle for basic needs under extremely difficult circumstances,” said Bradley Wilson, assistant professor of geography and Fair Trade 2.0 faculty representative. “Students participating in this trip walked away with a new, profound perspective on the world.”

Wilson said students devoted much of the trip to working with growers while learning about the history of Nicaragua and the plight of its farmers.

Fair Trade 2.0, founded in 2010, partners with agricultural cooperatives in Central America and promotes intercultural exchange, economic fairness and healthier working conditions for farmers.

Wilson said only 10 percent of the profit from a pound of coffee goes back to the country of origin. Of that 10 percent, just a fraction goes to the laborers who grew the coffee and picked the beans.

“The term ‘fair trade coffee’ means the coffee is purchased directly from the growers for a higher price than standard coffee. This helps give farmers a bigger cut of the profit.

Fair Trade 2.0 works with a coffee cooperative called “La Hermandad,” which represents 30 farming families in the community of San Ramon, Nicaragua. Wilson has worked with the group since 2005 while researching fair trade and organic certification for coffee.

Wait a second.

Why is a geographer researching coffee?

“Geography is much more than making maps,” Wilson said. “Geography is about discovery, making local and global connections and engaging with key development problems facing the world.”

Wilson, who earned his Ph.D. in geography from Rutgers University, said many geographers strive to create a more sustainable future for the world. For him, his research examines the role of changes in global coffee markets on small-scale farmers and workers in Central America. He’s currently working on a long-term ethnographic study on the politics of fair trade certified coffee in the United States and Nicaragua.

“But it’s more than research,” he added. “I am committed to working with these communities over the long haul to develop sustainable enterprises.”

And his journeys to Nicaragua have hit a personal nerve.

“It shook me that these folks worked 200 days out of a year to produce coffee but had between $1,000 to $3,000 to live on for a year,” Wilson said. “That’s their take-home salary. They’ve got to make it work.”

Wilson said the farming community welcomed him, and has welcomed his students.

They spent time on La Hermandad’s farm, which is half devoted to agriculture and half to protected cloud forest. Fair Trade 2.0 even helped fund the construction of some of the housing on the farm – the same housing the students lived in during their visit.

For some students, living and working with Nicaraguan farmers made them think differently the next time they were standing in line for a cup of joe.

“Part of knowing where coffee comes from is having to face the stark reality that our individual purchases ultimately do not have the kind of power to impact farmers’ lives that companies would like us to believe,” said Alanna Markle, a co-founder of Fair Trade 2.0. Markle, a Morgantown native, graduated in May with a dual degree in international studies with a focus in international development and political science.

In June, she was named the fifth Fulbright Scholar this year at WVU.

This marked Markle’s second trip to Nicaragua, and it counted as an accredited faculty-led course in sustainable international development.

Markle said the trip challenged students to conceptualize concepts such as service, poverty and solidarity in another country.

“Traveling to the region was essential to our work because it made us ensure that the organization’s work is based in a sincere sense of community and human connection,” she added. “The relationships I have cultivated both with Nicaraguans and my fellow students have undoubt-edly been the most rewarding part.”

For more information, go to www.wvufairtrade.blogspot.com.
WVU RESEARCHERS EXPLORE GEOLOGY, GEOGRAPHY AND ATTRACTION OF NEW RIVER GORGE CLIFFS

Excerpt from article: http://wvutoday.wvu.edu/n/2012/07/19/wvu-researchers-explore-geology-geography-and-attraction-of-new-river-gorge-cliffs

A team of researchers at West Virginia University want to better understand the cliffs surrounding the New River Gorge and what attracts visitors to the world-class climbing area in order to preserve it.

WVU was awarded a $235,000 grant from the National Park Service to conduct a comprehensive assessment of the cliffs in the New River Gorge National River.

The three-year, interdisciplinary project, which began in 2010, includes an assessment of geological and botanical components, as well as a comprehensive assessment of recreational users of the cliff areas.

Leading the team is Dave Smaldone, associate professor of recreation, parks and tourism resources in the Davis College of Agriculture, Natural Resources and Design. He is joined by Steven Kite, associate professor of geology and geography, and Amy Hessl, associate professor of geography, both in the Eberly College of Arts and Sciences.

According to Smaldone, until now the majority of the cliff ecosystems of the national river were geologically and biologically unexplored. In addition, visitor use of the cliff resources had never been systematically studied.

“This is a world-class climbing destination,” he said. “It’s important for us to understand why hikers and climbers visit here and the types of activities they do.”

To gain that understanding, Smaldone employed a variety of assessment tools to gauge visitor knowledge, attitudes, management preferences and recreational impacts regarding the cliffs.

“Some preliminary findings reveal that climbers are more likely to be repeat visitors to the river than hikers,” he said. “We found differences in attitudes and management preferences between climbers and hikers. In addition, differences were found between more finely segmented groups of visitors, such as locals and non-locals, first time and repeat climbers, and so forth.”

Further analysis of these segmented groups will be used to help the park develop targeted educational materials to deliver key messages to specific types of audiences.

Over the last 28 years, annual recreational visits to the river have risen from 230,000 to over 1.1 million. Rock climbing has also become increasingly popular within the park, with more than 1,600 established climbing routes.

“With an increase in hikers, climbers and other visitors, the National Park Service was concerned that impacts to the cliff areas may also be increasing,” Smaldone said. “Certain vegetative communities and rock outcrops are known to be susceptible to human impacts. If we know what types of habitats are growing there we’re able to better educate visitors on the importance of the areas, and how to minimize their impact.”

Kite’s effort focused on the geologic components of the cliffs and used mapping techniques to describe the extent of the cliffs and associated bedrock petrology, stratigraphy and structural geology.

For the botanical component, Hessl surveyed, inventoried and mapped the cliff vegetation and their associated communities, including the plants, bryophytes, and lichens. Also assisting in the efforts was Susan Studlar, visiting associate professor of biology and curator of bryophyte and lichen for the WVU Herbarium.

“We found a variety of species that were thought to be uncommon are quite common,” Smaldone said. “What’s most exciting for plant and lichen folks, however, is we also found unique and rare species. For example, some rare plants included Carex and danthonia species, as well as Dusky Rock moss, an uncommon bryophyte that is endemic to West Virginia.”

Rare lichens found include cliff gold dust (Chrysothrix susquehannensis), previously unknown in West Virginia, and Frosted rock tripe (Umbilicaria americana), which was initially thought to have been eliminated from the area.

While cliffs have often been thought of as places with little plant diversity, the botanical team found this was not true. In all, 139 species of vascular plants, 130 species of lichens, and 93 species of bryophytes were identified growing on the tops, bottoms or cliff faces in the New River Gorge.

Now in the final stages of data analysis, the team will partner with Penn State University, where the data will be compiled into one final synthesis report.

This summer and fall Kathryn McKenney, a graduate student in the recreation, parks and tourism resources program, will use the gathered data to develop targeted educational materials for use inside the park.

While the exact materials have yet to be determined, Smaldone believes there will be a variety of products including brochures and signs as well as interpretive projects targeted for specific visitor groups.

“Since hikers and climbers access the area for different reasons, it’s important for us to determine how we can best increase awareness of the uniqueness of the cliff resources and minimize the impact on them,” Smaldone said.

Smaldone expects initial educational materials to be ready for distribution sometime this fall, while the full report on their findings will be prepared in 2013.
By: Dr. Robert Shumaker

When Jennifer, our editor-secretary, asked me to write a few reminiscences about my teaching years I realized, at 81, that some of my first students are now old enough to be thinking about retirement themselves. Time moves on. When we arrived in Morgantown back in ’72, it was a gastronomic wasteland and the coke ovens in Richard were still smoking. Some of you may remember that Bordenburger and Communtzi’s were the downtown restaurants. It was quite an adjustment coming from an oil company in New Orleans where each geoscientist was on the same page; that is, finding oil and gas, to University scientists who had their own niche-research subject. There was no other geologist to talk with who had a similar background. Yet, coming to WVU was one of the best decisions we, Beverly and I, ever made.

Here are just a few of many reminiscences:

- Camp Wood, helping students draw regional structural sections across the Appalachians
- photo geology with drainage analysis, lineaments and the beginnings of “Remote Sensing”
- petroleum classes with geophysical logs and sample descriptions
- basins of the world, structural styles and the Cloos table mud pies of simple and pure shear (commonly built two or three times before “success”)
- so many wonderful students (eventually including female and foreign grad students)
- growth from the third floor with shared offices to two floors, then three floors -- and then all of White Hall
- grad students who played football in front of Wise Library, the site of Professor White’s home
- the aroma of egg rolls being cooked in the basement lab
- the various annual pot-luck feasts in the geomorph lab
- a demolition derby virtuoso; he had to be there to drive on Saturday night
- sage advice from Milt Heald when it was needed

They were good years, all 25 of them; and I hope you have found memories too. One “memory” that lives on is the old Geologic Research Fund, that has morphed into (along with other contributions) the Beverly and Robert Shumaker Fund for Geologic Research and Travel. You older grads remember oil company recruiters like Rocky Stone (that was his real name) who came to the department. Now, many grad students travel to professional meetings or “Rendezvous” where they present papers to make connections leading to employment. Most of the income from our Fund now assists grad students attending those meetings, helping them obtain their first professional jobs. It is gratifying to know that the old Research Fund still continues to help grad students, and occasionally a faculty member, each year.

You are invited to share your favorite stories, memories and insight on what it was like to be a WVU student, faculty and friend of the department.

We would love to hear from you!

See our back cover for contact information.
DEEL WORKS TO PROTECT THE CHESAPEAKE BAY

By Rebecca Herod

Article from http://wvutoday.wvu.edu/2012/12/27/wvu-graduate-student-works-to-protect-the-chesapeake-bay

Lindsay Deel calls the Chesapeake Bay region home, a home she’s working to protect from ecological collapse. Deel, who grew up in Hampton, Va., is using her work as a graduate research assistant in the Department of Geology and Geography at West Virginia University to safeguard the bay’s ecology.

She recently received funding to continue her research on monitoring disturbances such as nitrogen that can leak into the water system near her beloved home.

Through the Environmental Protection Agency STAR Fellowship, Deel received $42,000 to pursue her dissertation research on instabilities in the water. According to previous research, excess nutrient pollution was identified as the major force contributing to the declining health of the Chesapeake Bay. Deel is developing satellite imagery-based forest disturbance metrics to improve predictions of nutrients, mainly nitrogen, and sediment loads to the Chesapeake Bay.

“I view the EPA STAR fellowship as a way to move my career further in the direction of developing emerging technologies and methods for addressing environmental issues and to contribute to the critically important problem of nutrient pollution in the Chesapeake Bay,” Deel said.

Streams in the Chesapeake Bay Watershed eventually drain into the bay, carrying excessive nitrogen, which leads to the creation of large algal blooms. When the algae die, they sink to the bottom of the bay and decompose, consuming oxygen.

This loss of oxygen is fatal to the inhabitants of the bay, including blue crab, striped bass and herring, and creates “dead zones” where little or no life can be sustained.

Several species of algae and bacteria are toxic to humans and animals, creating public health concerns, particularly in coastal regions. The Chesapeake Bay Watershed is home to more than 17 million people.

With her recent grant, Deel is working closely with the Chesapeake Bay Program Office to improve predictions of nitrogen, phosphorus, and sediment export from forested watersheds that have disturbance levels.

The Environmental Protection Agency recognizes this problem of excessive nutrients in the bay as a top priority to be solved.

Deel’s research looks at forested areas for the origin of nitrogen. The majority of nitrogen from forests comes from plants, soils and nitrogen deposits from the atmosphere that runs off into the streams. Ultimately, her goal is to reduce nutrient pollution to the bay to make the water more safe and usable by screening the nitrogen in the water using satellite imagery.

“In forested areas, greater amounts of nitrogen enter water bodies after disturbances like clear-cut forest harvests (logging), wind storms, and insect defoliations,” Deel said.

“Disturbances can be either natural or anthropogenic (human-caused). While we can’t always prevent natural disturbances, we can create management plans that address the impacts of both types of disturbances. My project will add understanding to the different impacts of different disturbance types so we can create more effective management plans for both natural and anthropogenic disturbances in forests.”

A second part of her dissertation research focuses on communicating science between scientists, policymakers and the public. As a news writer at Frontiers in Ecology and the Environment, Deel believes it is important to communicate with a variety of audiences to be able to enact change and bring awareness to the environmental issues facing society.

Deel received her bachelor’s degree in geography science from James Madison University in 2006 and her master’s in geography science from James Madison University in 2009. She currently works as an EPA STAR Fellow at WVU. Deel is in her second year as a doctoral student.

For more information, contact Brenden McNeill, at 304-293-0384 or brenden.mcneill@mail.wvu.edu.

STUDENT FINDS 300 MILLION YEAR OLD FOOTPRINT

Left Photo: A footprint from a Permian-age fin-back reptile (Synapsida, Pelycosauria, Dimetrodon) found by an undergraduate geology major, Chris Heath, along a creek near Waynesburg, PA. The footprint was originally in mud, which was then filled with sand that later lithified into sandstone.

Right Top Photo: Chris Heath shows the footprint to Dr. Tom Kammer, Geology Professor with a specialization in Paleontology.

Right Bottom Photo: A drawing of the skeleton. Such excellent specimens like this are rarely found. These predators were wandering around WV and PA about 300 million years ago.

Photos: Dr. Thomas Kammer and Department Photo
Outstanding Senior: George Case
Alan C. Donaldson Scholarship: Michael Hipelius, Ryan Reese
Chesapeake Energy Scholars: Caitlin J. Ahrens, Katherine E. Berry, George N.D. Case, Stephen J. Henry, Asa J. Mullennex
Bob & Beverly Shumaker Scholarship: Ruiqian Chen, Justin Dean, Chris Kramer, Andrea Lisi, Matt McKay, Chantelle Parish, John Tudek, and Jay Zambito
George Clarkson Memorial Scholarship: Timothy Orie Wyatt, Samantha Blair
Wilcox Geology Scholarship: Mitchell Hankinson, Amy Groseclose, Jared Stein, Justin Dean, Justin Nichols, Mary Maley, Asa Mullennex, Eric Drain, Katie Kingry, Kyle Matthews, Matt Snyder, Tucker Conklin, and Mason Patterson
AAPG Weeks Award: Carli Parana
Roy Sites Award: Orie Wyatt, Samantha Blair
Phi Beta Kappa: Benjamin founts, Corey Burkett, Stephen Henry
Margaret Hawn Mirable Best Student Paper Award for the Eastern Section of the AAPG: Taylor McClain

Caitlin Ahrens, a double major in Geology & Physics at WVU, participated in the Ninth Annual Undergraduate Research Day at the Capitol on January 26, 2012 where she presented her poster entitled: "Relationships Between Earthquake Events on Associated P-wave Shadow Rings: A Case Study for Events in the Central Virginia Seismic Zone." Caitlin was a recipient of a Chesapeake Energy Scholarship and a NASA Space Grant Consortium Scholarship and was advised by Dr. Tom Wilson. Caitlin served as an excellent representative of the Eberly College and the Department of Geology & Geography at the State Capital.

A team of Geology graduate students won 2nd place in the Eastern Section Finals at the American Association of Petroleum Geologist (AAPG)'s Imperial Barrel Award Program (IBA) on March 24, 2012. Photo Left to Right: Dr. Tim Carr, Geology Professor and Advisor, Taylor McClain, Chantelle Parrish, Andrea Lisi, and Ben Dotson. Not in Photo: Albert Babarsky

Geography Honorary (Gamma Theta Upsilon) Initiation: Left to Right: Dr. Steve Kite (Department Chair and Geology Associate Professor), Aaron Nestor, Aaron Ferrari, Jason Kikel, Ali Railing, Dr. Tim Warner (Adviser & Geography Professor)
Geology Graduates
James Adams, M.S.
Albert Babarsky, M.S.
Annie Berlinghieri, M.S.
Blake Bergerud, M.S.
Stacy Berry, Ph.D.
Samantha Blair, B.S.
Jeremy Browning, B.S.
Corey Burkett, B.S.
John Kevin Butcher, B.S.
George Case, B.S.
Keith Coffindaffer, M.S.
Justin Dean, B.S.
Ben Dotson, M.S.
Virgil Dove, B.S.
Joel Follmeyer, M.S.
Benjamin Fouts, B.S.
Amy Groseclose, B.S.
Jessica Hayward, M.S.
Stephen Henry, B.S.
Nicholas Krohe, B.S.
Kacey Largent, M.S.
Amanda Laskoskie, M.S.
Mary Rose Maley, B.S.
Kyle Matthews, B.S.
James Metz, M.S.
Johnathan Moore, M.S.
Michon Mulder, M.S.
Carly Parana, B.S.
Jennifer Ryan, M.S.
Andrea Sack, M.S.
Anne Steptoe, M.S.
Elise Swan, M.S.
Emily Swaney, B.S.
Patrick Tobin, B.S.
Matthew Weber, M.S.
Timothy Wyatt, B.S.
Andrew Zell, B.S.

Geography Graduates
Jonathan Adams, B.A.
Patrick Anderson, B.A.
Benjamin Baker, M.A.
Evan Chapman, B.A.***+
Peter Clark, M.A.
Warren Dickerson, B.A.*
Brian Ellison, B.A.***
Jason Hoban, B.A.
Adam Hurley, B.A.*
Cathleen Johnson, M.A.
Kayla Knotts, B.A.
Jimmy McCune, B.A.
Erin Murphy, M.A
T. Scott Pruett, Ph.D.
Teresa Reichenbaugh, B.A.
Cassidy Rhea, M.A.
Tyler Rohrbaugh, B.A.**
Aaron Ross, B.A.
Naomi Shanguhyia, Ph.D.
Craig Smith, B.A.
John Tonkin, B.A.
Brian Wayne, B.A.
Tyler Wylie, B.A.*

Environmental Geoscience Graduates
Joshua Ash, B.A.
Elise Austin, B.A.*
Mary Daoulas, B.A.
Jancis Durney, B.A.
Jacob Felton, B.A.
Zack Lease, B.A.
Matthew Merrill, B.A.
Kayla Metheny, B.A.
Teresa Reichenbaugh, B.A.

*Certificate in Geographic Information Science and Remote Sensing
**Certificate in Development and Globalization Studies
+Gamma Theta Upsilon (International Geography Honor Society)

The list of degree candidates in this program is tentative and based upon the anticipated successful completion of degree requirements. The document should not be taken as an official record that degrees have been awarded.
The West Virginia GIS Technical Center is the state’s central repository for GIS data, information, and GIS technical guidance. The WVGISTC provides program support, technical support, data development, training, standards development, and application development for state, county and local groups and agencies wishing to create or enhance existing geographic information systems.

Back Row: Kevin Kuhn, Geographic Information Specialist; Dr. Trevor M. Harris, Co-Director; Eric Hopkins, Lead GIS Specialist; Frank LaFone, Senior Internet Coordinator; Kurt Donaldson, Senior Project Manager; Front Row: Corey Shaffer, GIS Developer; Xiannian Chen, GIS Programmer; Dr. Gregory A. Elmes, Co-Director; Evan Fedorko, Geographic Information Specialist; Not Photographed: Maneesh Sharma, NatCarb Coordinator

Department Photo

2012 Map Projects

Flood Hazards- The WV Flood Tool provides a free tool for citizens, businesses, and governmental officials so they can check flood risk for properties throughout the state. The tool has garnered regional and national recognition for being a leader in public flood information communication. (see map below)

Trout Streams- The WV State Trout Stocking Tool is the most popular interactive mapping application in the state. Customers can check trout stocking schedules, DNR managed rivers and lakes, and discover how they can enjoy this vast state resource.

Energy- The National Carbon Sequestration Tool provides a national look at industrial CO₂ sequestration potential throughout North America. Users can examine both CO₂ emissions sources as well as the potential for a particular state or region for sequestering those emissions.

More Maps at http://mapwv.gov
2012 Achievements

“The hands-on experience at the WV GIS Tech Center really jumpstarted my GIS professional path. I owe them everything!”

- Patrick Corley, GIS Analyst for Kanawha County Metro 911, Tech Center Intern 2011

Outreach & Services

“Photo (Left): WV Senator Dave Sypolt was one of the guest speaker at the WVAGP 2012 Conference held at WVU’s Brooks Hall from May 8-11.

The conference provided attendees with a variety of panel sessions, workshops, poster and paper presentations, and opportunities for networking.

Department Photos

“My early experiences at the WVGISTC sparked my interest in all things spatial and impressed past and present employers.”

- Jamie Lemon, Transportation Planner, Harrisburg PA, Tech Center Intern Summer 2010

“Students from Morgantown High School attended GIS DAY events hosted by the WV GIS Tech Center at Brooks Hall on November 14. Students made their own maps, experienced the 3D geo-visualization lab (CAVE), and learned more about what geography and GIS have to offer.

Department Photo

Training: Over 75 people have received training through the WV GIS Technical Center and WV AGP Sponsored programs. This year six courses were taught consisting of Arc Desktop I, II, III and WVGISTC developed course, Tips and Tricks.

More at www.wvgis.wvu.edu
Bob Behling

GREETINGS!

As exciting as it was last year to contemplate drilling the Marcellus and Utica shale, the harsh economic reality of plunging prices for natural gas has created a slow-down in drilling for “dry” gas in West Virginia. The concerns for air and water quality with respect to drilling, fracking, and disposal of frac-water as well as the plans for new pipelines remains, but I sense a bit of a decline in potential jobs in that market. The slack, however, should be taken up by the truly devastating effects of Hurricane Sandy as it came on shore in NJ and NY. In WV the “wrap around” weather effects associated with the massive system created many, many problems for folks living in the high elevations, as snow fall and downed trees took out power for many thousands of folks for days and even weeks!

The Capstone course during spring, 2013, will focus on the effects of Sandy along with the enhanced concerns regarding $ billion disasters, sea-level rise and the potential for substantial climate disruptions. Once again we will attempt to have a “field-trip” to remember for the Capstone course, and this year we trust it will be for all the right reasons. It is always a ‘Great Day for a Field Trip” and I look forward to having some assistance this spring. We will likely graduate our 100th major in 2013 and the trip should be special to mark that achievement.

Should we be considering an alumni trip in the near future? CHEERS!

Kathleen Benison

This year brought big changes for me as I moved to WVU after 15 years at Central Michigan University. Moving my research lab, including a large and heavy teaching and research collection of rocks, cores, and thin sections, was a big task. My new lab has recently been outfitted with excellent microscopes and a fluid inclusion stage. I am happy to be working with post-doc Dr. Jay Zambito and two new masters students, John Brockman and Frank Karmanocky. Our group’s goal is to determine detailed environmental conditions, including Permian air temperatures and microorganisms in Permian halite (Zambito), the impact of Devonian climate on West Virginia rivers and soil (Brockman), and acid brines and gases trapped in gypsum from Chile (Karmanocky). We also document past fluid flow through rocks, such as identification of oil inclusions in Permian halite.

I continue to work on Eocene – modern acid salinity lake systems in Western Australia and Chile, Paleozoic red beds and evaporites, and Mars geology. A recent research highlight from our lab is Jay’s in press Geology paper, reporting unusually high air temperatures (up to 74°C!) for equatorial deserts ~270 million years ago.

Teaching GEO101 this fall was a great introduction to WVU undergraduates. I am excited to teach Sedimentary Petrology this spring and Geology Field Camp this summer. My research and teaching seem to fit nicely between the department strengths of sedimentology/stratigraphy. I look forward to a long, productive, and enjoyable career as part of the WVU G&G Department!

Tim Carr

The most awarding aspect of my opportunity at WVU is to see students graduate and move into a successful career in the professional world. In addition to the seniors and other graduate students the following graduate students who I directly supervised made it across the finish line: Dr. Gato Salcedo (Univ. Kansas) in Ecuador, Dr. Guochang Wang, with the Chinese Academy of Sciences in Beijing, Anne Steptoe with Chaparral Energy in Oklahoma City and Blake Bergerud. As usual, I saw a large number of alums at AAPG Convention in Long Beach this spring. We hope to see more alumni at the next AAPG meeting in Pittsburgh (May, 2013). We have worked to organize a private reception. I continue to be busy teaching classes focused on subsurface geology and working with ongoing graduate students at WVU (Eric Lewis, Chris Kramer, Taylor McClain, Shuvajit Bhattacharya and Chloe Wornel). I am still involved with carbon capture and sequestration with work in Canada, Mexico, China and the US. However, unconventional resources (oil and gas shale) are taking up an increased amount of my effort and I have become embroiled in the issues from the regional to international levels. International travel included China, Chile and Jordan to work on unconventional resources. Even in the course of a year one can see the amazing energy transition and serious issues in these areas. On the personal side, Margaret and I managed to see Joe my son in several plays and recitals. He had the leads in several musicals. Nine hours of Sondheim in one weekend was the highlight.

Karen Culcasi

During the 2012 calendar year I continued to publish some of my research on the various cartographies of the Middle East and the Arab Homeland, but I also began a new research project on Palestinian Refugees in Jordan. This project was supported through a WVU ADVANCE grant, which allowed me to complete an intensive 8-day summer course on refugee studies at York University’s Centre for Refugee Studies; and to conduct preliminary research in Jordan in August. I visited three different
FACULTY UPDATES...

JOE DONOVAN

In April, I toured China as part of a bi-annual Science/Engineering exchange. For 6 days, an invited group of 8 American (from WVU, Colorado School of Mines, and Rutgers), Canadian, and South African academics toured coal mines, subsidence, water resources, and energy production in Anhui Province, 400 miles south of Beijing. We had about 20 companion Chinese experts on the trip, from both academia and industry. After the field tours we spent 3 days in Beijing at the plenary conference in the Great Hall of the People. The Hall has been remodeled resplendently and hardly looks Madame Mao-ish as in the Cultural Revolution days. The Chinese people were our hosts from the Bureau of Foreign Experts, which has their own hotel out by the Olympic site. We toured 3 cities in the mining district (Huainan, Huaiabei, and Hefei) all small towns by Chinese standards, only 3-5 million. Gold is the Chinese lucky color and it bedecks many of their public works. The sunsets are also quite golden, thanks to omnipresent air pollution. While the trip was mostly science and the Chinese showing off their reclamation and energy infrastructure, we did visit a medieval temple in Huainan, the Forbidden City in Beijing, and a quick sprint up the Great Wall in dense clouds. In retrospect, the trip was graphic evidence for how much a role the Chinese will play in the CO2 balance, and the rate at which the country is urbanizing is staggering. China’s future will be intertwined with that of our world. Made some good new Chinese (and American) friends.

GREG ELMES

Important things first! We have a new granddaughter, Owen (February), a new grandson, Leo (June) and new grandniece, Isla (December).

George Roedl and I finished the National Institute of Justice Grant that involved a researcher/practitioner partnership with the WVU and Morgantown Police Departments for geographic data collection, geocoding, and mapping of crime on and around campus. Current and archived maps may be found at http://police.wvu.edu/. A book chapter on our work will appear in Crime Modeling and Mapping Using Geospatial Technologies, edited by Dr. Michael Leitner, Springer Press.

I taught Digital Cartography and GIS in the spring. Teaching only grad students in the fall Geographic Information Science provided different perspectives on teaching the course that I hope to be able to incorporate in future. I also had two visitors from Guangzhou University in China auditing the class.

Ten geography majors had internships in summer and fall of 2012; with positions ranging from planning at the city and county level in West Virginia, Maryland and Pennsylvania, to surveying for gas and oil extraction, and GPS-ing trails and recreation sites. While the students found the placements valuable in extending their skills to the workplace, simply getting the internships during this poor economic climate speaks volumes about the energy and preparation of our students.

Apologies to all those who had to dive for cover as I sped around the corridors of Brooks Hall. I thank the entire department for its support.

DENGLIANG GAO

2012 was another busy year. My 18-chapter AAPG Memoir 100, entitled “Tectonics and Sedimentation: Implications for Petroleum Systems” was published. This volume received 2012 AAPG foundation award. Four papers were published in Geophysics and AAPG Memoir 100. A paper entitled “Implications of Fresnel-zone texture for seismic amplitude interpretations” was selected by Society of Exploration Geophysicists (SEG) as one of the Bright-Spot papers published in Geophysics. New funding was secured from both the federal and energy industry to support research projects on energy exploration and CO2 sequestration.

JONATHAN HALL

My first semester at WVU has been extremely exciting and inspiring. Through various collaborations with G&G faculty and students in Davis College I have established several lines of research. One particular line, a collaboration with faculty in Davis College, will explore a critical need in the conservation of critically endangered vultures in India. In addition to research I have also had the opportunity to receive training in GIS, a skillset that will greatly improve my ability to analyze my data and expand teaching and mentoring opportunities within the department. Finally, I have had the opportunity to attend and participate in various faculty meetings and events this semester. These experiences have been invaluable in getting to know different G&G faculty and their research interests, as well as learn about the department’s teaching, curriculum, and mentoring philosophy and practices.

TREVOR HARRIS

It’s been a busy year……

AMY HESSL

After years of working in relative anonymity, one of my research projects got a lot of press this year. My new project on the climate and ecology of the Mongol Empire has been written up in Science, The Economist, The Smithsonian, MSNBC and several others! For some reason, the press really loves Genghis Khan. It’s been exciting for myself and my lab including new PhD students Kristen DeGraauw and John Burkhart. John even got his picture in Science! It’s been a crazy year!
During 2012 I continued research on my 5-year grant (2011-2015) from the NSF for the project Assembling the Echinoderm Tree of Life. During the spring I traveled to the Geological Survey of Canada in Ottawa. In August I traveled three weeks to collect data from the Swedish National Museum of Natural History in Stockholm, the Netherlands Biodiversity Center in Leiden, and various collections in Germany. At the end of the trip I presented my research at the 14th International Echinoderm Conference in Brussels. 2013 should find me in Birmingham and London, England in June, then at the Russian Academy of Sciences in September.

Geology Field Camp was a blast this year. I lead the first half in South Dakota during late May and early June. There were 34 students and 3 TAs, reflecting the growth in geology majors. Amazingly, there were no logistical problems with such a large group, and everyone was “into” the field geology. I also snapped the string of rainy weather associated with my teaching at our western field camp. We had great weather with a sum total of about three hours of rain during my half of camp. See Joe Lebold’s comments for the second half of camp.

2012 has been a successful year for Dr. Landenberger in the department of Geology and Geography. As Executive Director of America-View Consortium, a position funded by a competitive five-year grant from the US Geological Survey, Dr. Landenberger has lead the consortium in advancing remote sensing science and technology educational initiatives through growth of state partnerships. In addition, several additional state partners are now active in promoting Earth Observation Day, a national outreach and education initiative that involves K-12 students and teachers in the use of remote sensing data for land cover mapping around their schools. In addition, plans are underway to continue to seek external funding for SAT-ELLITES in 2013.

Although Dr. Landenberger’s National Science Foundation grant ended in December 2011 with eleven West Virginia middle and high school science teachers completing their project-based watershed studies focusing on understanding the connections between land cover and hydrology in environments around their local schools. Many of these teachers continue to study land cover and hydrology, while providing professional development for their colleagues in schools across the state.

The Spring semester of 2012 went well for me and after an extended search process, the Geology Program added another new faculty member, Kathy Benison, who is proving to be a wonderful new colleague. During the Summer, I decided to forgo travel and focus on research to get my long-term research on high pressure rocks from North-East Greenland published. I was pretty successful at avoiding distractions and by mid-July had a draft that was ready to share with my collaborator, Jane Gilotti at the University of Iowa. Unfortunately, just after I sent off the manuscript, I tripped while unloading groceries from my car, fell on the cement floor of my garage, and broke my femur. So I didn’t get around to revising and submitting the manuscript and had to teach the largest WVU Mineralogy class in recent memory by Skyping from home, until I could get into the Department regularly. The bad news is that it’s taken a long time for recovery and rehabilitation, but the good news is that everyone in the department has been very helpful, and I’m finally walking without assistive devices and feeling like a regular person again. It’s been a tough Fall, but I’m back! My two M.S. students, Kacey Largent and Sarah Johnson, continue to work on interpreting the metamorphism of samples from northern Idaho, and I should be able to help them more through the Spring semester.

On a positive note, I will finish my sixth year as Geology Associate Chair and will be stepping down July 1st. I’m happy to announce that Joe Donovan has agreed to be my successor. It should be interesting! 2012 was another exciting year as both a member of the geology faculty and as a father. My son Coban is now 2.5 years old and is starting to show a new interest in rocks. The big change is that the rocks no longer go straight into his mouth. As a member of the geology faculty, 2012 was a chance for me to continue to refine my introductory and upper-level courses. In geology 101, I have added several lectures on the Marcellus Shale designed to help our students understand the new frontier of unconventional resources, and help them understand the issues surface owners face if they or their family members are approached to lease their land for drilling.

My upper-division courses gave me the opportunity to expose our majors to some fantastic geology around the country. In the spring, my Geology of the National Parks class spent two days exploring the rocks (and a bear!) along Skyline Drive in Shenandoah National Park, VA. In the summer, I got the chance to lead the second leg of our geology field camp into Yellowstone National Park and southwestern Montana. This was especially exciting for me because prior to joining WVU, I lived in western Montana and this was a great opportunity to lead a trip in a region that I already had a strong connection with. In the fall, I took my Geology of West Virginia class on several field trips to explore some of the wonderful geologic sites that our state has to offer.

During my half of camp. See Joe Lebold’s comments for the second half of camp.

During my half of camp. See Joe Lebold’s comments for the second half of camp.
BRENT MCCUSKER

Over the past year, Dr. McCusker has been busy with his on-going NSF study into climate change and livelihood systems in Malawi. He traveled there in November 2012 to conduct interviews with local people and finish up mapping farmer’s fields. Dr. McCusker is still working with USAID, where he spent his 2011-2012 sabbatical, on a project to deliver geospatial data on climate change to countries in the developing world. He advises six PhD students, four of whom have received external funding under his guidance, and he continues to teach introductory and advanced courses in development geography to undergraduate students.

BRENDen MCNIEL

It is perhaps the greatest honor when your student’s accomplishments outshine your own. 2012 was a shining year from my students. I taught our Geography capstone course for the first time, and had the pleasure of teaching 30 creative, enthusiastic seniors. My grad students also were shiny. Most notably, my Ph.D. student, Lindsay Deel, won a prestigious EPA STAR fellowship to support our ongoing research (and her dissertation research) on incorporating satellite forest disturbance metrics into tools used by environmental managers of nutrient pollution in the Chesapeake Bay. Lindsay’s success also freed up some grant funds so that I could recruit an M.A. student from U. South Carolina, Stewart Bryant. Working with collaborators, Stewart and I are exploring the “cool-spot” phenomena in central Appalachian forests. Our forests are apparently like my students, shiny and productive, making them a “cool-spot” for mitigating climate change. Our analyses of Carbon-13 and Nitrogen-15 isotopes in tree rings suggest that decades of “acid rain” may have helped shift the forest species composition to this “cool-spot” state of high albedo and uptake of atmospheric carbon. These dendroisotopic signals suggest that during the period of severe acid rain (1950-1990) tulip poplar (a bright, fast-growing tree species) benefited from the nitrogen in acid rain, but red spruce (a low-albedo, slow-growing tree species) declined due to the acidity. My collaborators and I are currently hoping the DOE and NSF will also find these initial results exciting enough to give us some shiny money to continue this research!

JEREMIA NJERU

During the summer in 2012, I took a 10-day trip to Alaska. I camped and hiked in the beautiful Denali National Park and took a road trip from Homer all the way to Fairbanks. It was wonderful to experience what I only knew from reading geography textbooks as a student: that there are locations on the planet where the sun never sets at certain times of the year! Other than the nightly nightmares I had while asleep in my tent of being eaten by grizzly bears, I had a great time. I doubt I would have had nightmares of being eaten by lions if I had camped in the savannas of Kenya, my country of origin! OK. I take that back since I am not a Maasai man.

ANN OBERHAUSER

As 2012 draws to a close, I’m pleased to report that life at West Virginia University is both challenging and satisfying. My sabbatical leave during the fall semester gave me the opportunity to dive into several projects that have been on the back burner for some time. The biggest project involved a co-edited book on gender and development with Ibipo Johnston-Anumonwo from SUNY-Cortland. We submitted a book prospectus to Routledge Publishers which was accepted after a rigorous peer review process. The book has 15 chapters with sections that address economic livelihoods, climate change, land reform, social movements, and cultural landscapes. The book is due to be published in late 2013.

MARIA PEREZ

My first five months at WVU have been focused on kick-starting new research and building a network of mentors. Aside from preparing and submitting an article manuscript to the journal Cartographica and a chapter for the 4th edition of the National Speleological Society’s Caving Basics (accepted), I started two projects in West Virginia. The first is on the issue of cave modification (ie., digging to find new caves). The second examines the politics of collaboration in the creation of the WV cave survey. In June, the National Speleological Society had its annual meeting in Lewisburg. A month later, I joined the biggest cave gathering in the world, Old Timers’ Reunion, south of Elkins. In October, I helped Dr. Steve Kite retrieve data loggers from two caves for his cold trap study, and joined Dr. Henry Rauch’s karst fieldtrip. November began with the West Virginia Cave Conservancy banquet in Lewisburg. One of the biggest joys of new research in West Virginia is that it provides an opportunity to get to know the state and its people. Later in November I coordinated an expedition to Venezuela’s Mt. Roraima with a group of fellow cave scientists and other US and Venezuelan colleagues. After Roraima I headed back to Guácharo Cave to start a second research project. There I also helped a karst geologist from the University of Puerto Rico obtain cave samples for a paleoclimate study. The Venezuela trip ended in Caracas, with a presentation at the national cave science conference.
HENRY RAUCH

My research work continued on monitoring shallow ground water and vadose zone gas for upwards seepage (leakage) associated with injected carbon dioxide gas at two research field sites - Bozeman, Montana and in Marshall County, West Virginia. The first project is in final report preparation, while the second project is still active, and showing exciting signs of carbon dioxide migration occurring from the deep CO₂ coal bed injection zone.

I decided to start phased retirement in August 2012, and am now working at 60% of my former full time level. I’ll become fully retired in 2 ½ years, as of May 2015. I taught three geology courses last year, the most challenging of which was karst geology; I had my biggest class ever, and our field trips involved encounters with electric fences, and testing of some students and guests to their ultimate limit during caving trips.

My most exciting trip for the year was attending the National Speleological Society (NSS) annual meeting in June in Lewisburg, WV. It was my best convention ever in terms of meeting people and partying, but the travel back to Morgantown was a nightmare. I encountered the huge derecho storm then, June 29th. Electricity was knocked out to over half of West Virginia, I had to drive around dozens of large trees fallen across major roads, and was trapped overnight at a gasoline station when my fuel ran out (no gas without electricity). Relatives, including wife Dottie, had to drive long distance to come rescue some of us, using gasoline cans, but most other folks were trapped for days without gas, and it took over two weeks to restore electrical power to devastated residents.

My former students are welcome to contact me by email, phone, or visit me in Brooks Hall; I often wonder about many of you. If you’d like to participate in a retirement party in about two years, please let me know, for planning purposes.

SHIKHA SHARMA

Some highlights of this year were two of my very first students at WVU Michon Mulder and Andrea Sack graduated, a few grants got funded, and, 5 new students along with a PhD. level Laboratory Manager joined my research team. It was really encouraging when our group’s research was chosen to be highlighted by WVU President Jim Clements in his speech at the annual “Capital Classic Luncheon” in Charleston. In addition, we were invited to present our results in several regional, national and international meetings. Our research team is working hard towards the goal of making our isotopic research program and laboratory a hub for interdisciplinary energy-environment research.

JAIME TORO

This year I learned that rocks are harder than human heads. Maybe my training in structural geology should have prepared me for this, but when I hit that rock at the bottom of the Savage River, I knew that I had to bail out of the boat. Luckily I did not lose consciousness and my fracture, although severe, was more or less stable so I managed to swim to shore. The other important lesson was that I am surrounded by caring people who immediately stepped in to fill in for me in my classroom and service duties. Aside from my family, who had to put up with me lying on a hospital bed for weeks and weeks, Dan Harris and Chantelle Parrish did more than what is right to expect from graduate students, and Steve, Helen and Tim Carr took care of many loose ends. All in all, I am back to doing my normal activities which is just short of a miracle. I even managed to pull off one of the most enjoyable field seasons in the Northeastern Brooks Range in the company of new PhD student Ben Johnson. We plan to spend the next few summers floating down the rivers of the Arctic National Wildlife Refuge trying to unravel its Paleozoic tectonic history and being careful to hit the rocks only with a hammer.

DOROTHY VERSPER

I spent most of the year focused on research projects and working with graduate students. Two MS students – Johnathan Moore and Jim Adams – completed their degrees and have moved on to greener ($$) pastures. Highlights of the year in field work were a couple of big-group sampling trips: one to the Chesapeake & Ohio Canal National Historic Park and one to the thermal springs regions of VA and WV. On the first trip we were looking at springs and caves that are homes to rare-threatened-endangered species. One very special site was an abandoned underground limestone mine where thousands of calcite rafts floated on the pool for us to see. They’re like beautiful snowflakes of calcite. The thermal spring trip was in December which provided the fun of seeing steam rising from the sampling sites – if you’re going to water sample in December, there’s nothing like hot water and pre-warmed rocks. My other major task for this year has been continuing as chair of the Geology Grad Committee from Joe Donovan – no small task given what a great job he did. One last highlight? Attending the Capital Classic Basketball Tournament at the ESPN center in Orlando in November.

TIM WARNER

The highlight of 2012 for me was being invited to participate in a long-range planning workshop at the International Atomic Energy Agency (IAEA), at the UN complex in Vienna,
AMY WEISLOGEL

In 2012, my research group included 6 graduate students and 5 undergraduate students. They traveled to localities far and near in pursuit of their science, including South Africa, Tibet, Arizona, Oklahoma, Alabama and Mississippi. Fei Shang (Ph.D. ’15) completed his inaugural field work in my NSF-funded project to study the Mesozoic uplift and deformational history of Tibet’s beautiful southeastern corner; unfortunately my permit to enter Tibet was denied so at this point I can only drool over the photos of his amazing field area. I hope to have better luck in 2013. Marcus Jesssee (M.S. ’14) joined Andrea Lisi (M.S. ’13) in studying Mesozoic depositional history of the Eastern Gulf of Mexico in a project funded by Murphy Oil Company in collaboration with colleagues at the University of Alabama. Keith Coffindaffer (M.S. ’12) became my first WVU graduate student to complete his degree by successfully defending his thesis on the lithologic and petrologic variability of the Rodessa Fm., a carbon sequestration target in southern Alabama. Keith moved on to working for Chesapeake Energy. congrats Keith! Matt McKay (Ph.D. ’15) was joined by Justin Dean (B.S. ’12, M.S. ’14) in study of the evolution of the Karoo basin. I joined Matt for a part of his inaugural field work in South Africa; we had to remind ourselves we were working between snapping shots of baboons and zebra, driving on the “wrong” side of the road, and taking in the dramatic coastal scenery along the “Garden Route”. On the homefront, my youngest boy, Alden turned 1 and my older son Emmett turned 3 this year. My husband, Phil, and I are getting pretty good at a zone defense!

BRADLEY WILSON

Aye, Nicaragua Nicaragua. This past year I had my first opportunity to introduce students from geography to my home away from home, Nicaragua. In May 2012, I hosted a seminar called Alternative Development in Central America which took 7 WVU students to visit Coop La Hermandad the first partner of our global development project Fair Trade 2.0. The trip was a tremendous success and everyone walked away inspired by the efforts of rural communities to build alternative economies even in the face of tremendous adversity. Over 2012, Fair Trade 2.0 has raised $6,500 through coffee sales to invest in a community garden project that will ultimately serve as the centerpiece of a Center for Environmental Education and Experimentation at the Coop La Hermandad. My travels to Nicaragua over the Summer also resulted in faculty affiliation with the National University’s new M.A./Ph.D. program in Rural Development. Over the year I’ve also continued my work on the politics of ethical labeling and quality coffee certification in Central America with two papers coming out entitled “New Terrains of Taste” (w/ Conley, Harris and LaFone) in the Journal of Applied Geography which focuses on coffee quality and “SolidarityTM” in Antipode which focuses on the role of student activists as guerilla marketers of Fair Trade Certified products. In addition to this research I embarked on a new project funded by the Land Deal Politics Initiative (LDPI) that explores large-scale land acquisitions and resistance to land-grabbing in Nicaragua. Next year I am looking forward to returning to Nicaragua, once again, to continue research.

TOM WILSON

Activities during the first half of 2012 were devoted to research activities on a semester long sabbatical. The opportunity to get some papers published and submitted, and help get some students graduated was a welcome break to the routine. Matt Weber finished his M.S. this spring and we published a paper on his work titled “Impact of Geological Complexity of the Fruitland Formation on Combined CO2 Enhanced Recovery/Sequestration at San Juan Basin Pilot Site.” Joel Follmeyer completed his M.S. studies on Time-Lapse Multifrequency Terrain Conductivity Surveys over Mine Spoil and Mine Refuse Areas. Brian Toelle completed his Pd. D. studies on Use of 3DSeismic Azimuthal Iso-Frequency Volumes for the Detection and Characterization of High Porosity/Permeability Zones in Carbonate Reservoirs with formal graduation this coming spring, 2013. It was certainly very rewarding for me, as always, to work with these students; congratulations and compliments to them for their efforts. Altogether the year yielded four journal publications, two proceedings papers and an additional paper submitted. Efforts continued on two grants through NETL/URS. The research conducted under these grants focused, and continues to focus on development of fracture models and up-scaling of discrete fracture network properties into gridded models. I look forward to bringing a new research assistant on board this Spring (2013). Fracture modeling of seal and reservoir intervals continues. This coming year, we will also develop capabilities to analyze frac-induced microseismic activity using new software that allows us to integrate microseismic, 3D seismic and well-log based subsurface interpretations. The year also brought some very enjoyable family visits to Venice Beach, Fort Lauderdale and the Scottish highlands. Best wishes for a peaceful, healthy and prosperous new year.
Walter Ayers (BS Geology 1969, MS Geology 1971) is a visiting professor in the Harold Vance Department of Petroleum Engineering at Texas A&M University. "I have enjoyed a career in the oil and gas industry, working with conventional and unconventional reservoirs. My present focus is on training petroleum engineering and geoscience students for industry careers. Also, I teach industry short courses on unconventional oil and gas reservoirs, internationally. Who would have thought, as we dug fossils from the Marcellus Shale in field camp decades ago, that someday we would be producing hydrocarbons from that black, tight rock?"

Matt Boyce (PhD Geology 2010) works as a petrophysicist at Exxon Mobil.

Martin Lee Collin (MS Geology 1967) works at Israel’s Hydrological Service in Tel Aviv. He is in charge of national land-use as it affects groundwater quality and also teaches English. He and his wife have two daughters and a granddaughter. In his free time, he likes to sing in a large choir for a church in Tel Aviv.

Lacoa Corder (MS Geology 2008) and John Sampson (BS Geology 2007) eloped in October 2012 on a mountaintop in the Bridger-Teton National Forest overlooking the Tetons. The couple own a farm in Tucker County. Lacoa is working in the engineering department at CONSOL in Jane Lew doing statistical analysis using Minitab.

Brent Cunningham (BS Geology 2003): I serve dual roles as a GIS Analyst and Project Geologist for water/wastewater projects primarily in the southeast at Jacobs Engineering Group. My geology-related roles include geologic mapping of underground excavations including vertical shafts and tunnels, geotechnical investigations, geophysical logging and interpretation, and 3D subsurface modeling. I married my wife, Anne, in June of 2007. My first son, Logan, was born in February 2009. We moved from Atlanta, GA to Chattanooga, TN in September 2010 for a job transfer. We are currently expecting twins which are due in December 2012.

Chad Cunningham (BS Geology 2004) is now Senior Geologist at Energy Corporation of America.

Tom Donahoe (MS Geology 2011) and his wife are expecting their first child in March of 2013.

Cristine Finkenbinder Vinciguerra (MS Geology, 2008) moved to upstate New York and began her career working as a geologist for an international engineering and environmental consulting firm, AECOM. In 2010 she married fellow WVU alum Matt Finkenbinder and relocated to Pittsburgh, PA. She was able to transfer to AECOM’s Pittsburgh office.

Matt Finkenbinder (MS Geology 2008) is enrolled in the PhD program in Geology at the University of Pittsburgh, and is a Teaching Fellow in the Department of Geology and Planetary Science at Pitt. His research involves using lake sediments and multiple geochemical and stable isotope proxies to reconstruct late-Quaternary climatic change in the Alaskan arctic and Canadian subarctic.

Michael Garner (BS Geology 1969): After graduation, I accepted a job with Texaco as a geophysicist in Houston, Texas and I have never left. At Texaco I worked as both a geophysicist and geologist during my 6 years with them. I left Texaco and worked for J. M. Huber Corp. for 21+ years holding various positions with the highest being manager of geophysics. After J.M Huber Corp., I worked for Meridian Resource Corp for 5 years. After Meridian I began my consulting career. I worked for Clayton Williams for approx. 7 years. Now, I am consulting for Integrated Exploration Corp. which is part of Goldston Oil Corp. I am married to my wife Sue and have 3 children: Kristi, a homemaker, Ryan, a graduate from the University of Houston and Grant, a hotel and restaurant graduate from the University of Houston. I have one granddaughter, Karley. She may be my only hope for another geologist in the family. She loves science and rocks. I still fondly remember my geology field camp at Camp Arthur Wood guided by Dr. Wells and Dr. Renton. We went places and saw areas that I will never see again.

Joe Hannett (BS Geology 2001) works as a high school Earth Science Teacher at Prince William County Schools in northern Virginia. He is married with one son, Gavin.

Daniel Harris (MS Geology 2011) is currently working as adjunct faculty in the Geology and Geography department at WVU as well as at the Petroleum and Natural Gas Engineering department. He and his wife are the proud parents of a one year old and a three year old, both boys.

Dr. Paul “Mitch” Harris (BS Geology 1971; MS 1973) received the Eberly College of Arts and Sciences’ Departmental Alumni Recognition Award on October 13 for his worldwide research in carbonate reservoirs and hydrocarbon exploration in most carbonate basins. Mitch is a senior research consultant and Chevron Fellow with Chevron Energy Technology Company in San Ramon, California.

William Harris (MS Geology 1968) is a Geology Professor who is in phased retirement, ending June 2013, at the University of North Carolina in Wilmington.

Virginia Hebert (MS Geology 2003) is Senior Geologist at Talisman Energy USA. After bouncing around for various jobs, she has finally settled in Pittsburgh and hopes to stick around a while with her husband and two dogs and continue working in oil and gas.
Andrew Herod (MA Geography, 1988) is a Distinguished Research Professor of Geography, Adjunct Professor of International Affairs, Adjunct Professor of Anthropology, and Director of UGA à Paris Study Abroad Program at the University of Georgia. He was elected as a County Commissioner in Athens-Clarke County (a consolidated city-county government), and is serving a second term as Mayor Pro Tem. The MPT is elected by the other Commissioners as a kind of Chamber leader. He also worked on a couple of books and came back from his annual spring trip to Australia and a trip to China in October 2012.

William Kanes (MS Geology 1958, PhD Geology 1965) has been consulting, since retirement, in the International Petroleum Industry, with an emphasis on North Africa, Southern South America, and West Africa. He also is a consultant for the University of South Carolina and the University of Utah. He is also the President of W. H. Kanes & Associates.

Lynn Kessler (BS Geology 1994): I am the Eastern Operations Manager for HydroGeoLogic (HGL), an environmental consulting firm. HGL provides comprehensive Environmental Engineering; Environmental Modeling; Remedial System Design, Remedial Systems Construction and Operations; LTO/LTM; Optimization; Construction; D&D; Military Munitions Response Program (MMRP); and Architect Engineering (A/E) Title I and Title II services to HGL DoD, EPA, and State Clients. I am married and have three boys (2, 4, and 5).

Kory Konsoer (MS Geology, 2008) took a job with Dominion Exploration and Production, Inc. as a geologic technician. In May 2009, he married Samantha, and soon after moved to Champaign, Illinois to pursue a PhD in the department of Geography and Geographic Information Science at University of Illinois. Although he has been involved in many different research projects at UIUC, his dissertation research is focusing on the influence of riparian and in-channel vegetation on flow structure and bank erosion on large meandering rivers. Last September, Samantha and he were blessed with their first child, William.

Heather McComas (BS Geology 1999) is a technical assistant at SGS Minerals Services, North America Inc. and a mom to 9-year old, Emily. She also coaches her daughter’s soccer team in her free time.

Julia Dare McConnell (MS Geology 2011) is working as a geologist in the Eagle Ford for EP Energy (formally El Paso Exploration & Production) since January 2010. She currently resides in Houston, TX. She finished their professional development program (training) this past summer and was permanently placed in the Eagle Ford division. She’ll be getting her own rig to manage and drill horizontal wells in the Eagle Ford (oil) on October 1, 2012.

Kalin McDannell (MS Geology 2011) is seeking a PH.D. at Lehigh University while working as a research assistant/teaching assistant at Lehigh University. She works in the Noble Gas Geochronology lab with advisor Dr. Peter Zeitler. She is currently doing research in central Mongolia investigating the uplift history of the Hangay Dome using U-Th-He thermochronology. Other research areas focus on looking at how old, stable landscapes persist in relative stasis throughout geologic time and developing 40Ar/39Ar techniques for dating pyrometamorphic clinker deposits in the Powder River Basin of Wyoming and the possibilities of using these young cooling ages to assist in refining and expanding the paleomagnetic record for the Quaternary.

Matthew Mitchell (BS Geology 2001) is a Senior Geologist at Moody & Associates, Inc. He manages groundwater development projects and evaluations of longwall mining & natural gas-related that impact private water supplies. He lives with his wife, Kelly, and their two kids in Pittsburgh, PA.

Indran Naidoo (MA Geography 1993) has been named Director of the United Nations Development Programme (UNDP) Evaluation Office. Since July 2009 Naidoo served as Deputy-Director General, Monitoring and Evaluation, Office of the Public Service Commission, Pretoria, South Africa. Prior to this, he served as Deputy-Director General, Leadership and Management Practices, (2008-2009); Chief Director, Governance Monitoring (2000-2008); Director, Monitoring and Evaluation, National Department of Land Affairs (1995-2000); and Educator, Senior English and Geography (1987-1995). He has worked as an Evaluation Manager for the last 17 years. He is a visiting faculty for the International Program for Development Evaluation Training (IPDET) and a former board member of the International Development Evaluation Association (IDEAS) and the South African Monitoring and Evaluation Association (SAMEA).

Naido holds a Ph.D. in Evaluation from the University of the Witwatersrand, South Africa, a Masters of Arts in Geography from the West Virginia University (USA), a Bachelor of Education from the University of South Africa, a Bachelor of Arts (Hons) in Geography and a Bachelor in Pedagogics both from the University of KwaZulu Natal (South Africa).

Mr. Naidoo has taken up his new assignment as of 1 February 2012. Except from Evaluation Cooperation Group at ECGLnet.org.

Mollie Pettit (BS Geology 2009) completed her master’s degree in hydrogeology at Stanford University in summer 2012. She plans to work for a year and take prerequisite courses in order to apply to medical school in 2013.
Amy Pratt, (PhD Geography 2006) is now the Associate Director at the Office of STEM Education Partnership at Northwestern University.

Heather Ramsey (BS Geology 2001): After graduating from WVU, I went to graduate school at UNC-Chapel Hill and did work in Antarctica for my thesis. I am a petroleum geologist with Shell working in the Appalachian Basin currently. I work with Clay Wilcox, a fellow classmate (B.S. 2001) and we proudly display our WVU gear at our office!

Elizabeth Rhenberg (PhD Geology 2011) moved to Columbus, OH where she is working at the Ohio State University as a postdoctoral researcher with Bill Ausich on Assembling the Echinoderm Tree of Life.

Valerie Smith (MS Geology 2008) is working as a Reservoir Geophysicist for Schlumberger Carbon Services. “Schlumberger has kept me very busy building subsurface reservoir models. My office is in Columbus, OH. I frequently travel for work and training, usually to Houston and Calgary, and more recently to Champaign, Illinois. My home is near Norwich, OH where we live on a farm. We currently have 2 steers, 3 pigs, and 34 chickens on 15 acres.

Ellen Snyder (BS Geology 1976, MS Geology 1983), after a life of moving around and various jobs, she has ended up living in San Miguel de Allende, in the center of Mexico. You can contact her through Facebook.

Jason M. Sturms (BS Geology 2005, MS Geology 2008), after moving to Oklahoma City for a position at Devon Energy in 2008, he and his wife had their first child in the Spring of 2010. He was born 3 months premature and spent that time in NICU. While it was a struggle to balance work and family for those 3 months, he is now a typical two year old. Sturms is currently working on a new exploratory play along the Eastern Shelf of the Permian Basin as Geologist II at Devon Energy.

Matthew Valentine (MS Geology 1990): I am a project manager for a private environmental consulting firm. We investigate and remediate impacted soil, groundwater, and other environmental media. I’ve been married for 20 years in July 2012, and we have 3 kids. I am a partner in our company but we were recently acquired by Woodard & Curran (based in Portland, ME). My career in geology has been rewarding and has taken me all over the world including, Sweden, Slovak Republic, Argentina, Puerto Rico and throughout the U.S.

Zak Wall (BS Geology, 2009) is an economic consulting geologist, specializing in hard-rock exploration at Childs Geoscience Inc. He currently resides in Missoula, MT.

Anne Yanni (MS Geology 2008) accepted a job with Maersk Oil in Houston. She worked as part of the Brazil exploration team while they drilled two wells in the Campos Basin and also did some regional seismic mapping; in Copenhagen, Denmark as part of the petroleum engineering department shadowing operations and doing developmental well planning and regional seismic mapping. Her current posting is in Luanda, Angola where she primarily works offshore as a wellsite geologist while drilling deep water exploration wells.

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(In the photo above) Taking a break while working on an oil platform offshore Angola, She is holding a mahi mahi. At the time of this photo, she is the record holder for the biggest mahi mahi caught. She returned the USA in October 2012.

Andrew Zell (BS Geology 2012) has a new full-time job in environmental geology, at Joist Engineering, in Richmond, Virginia. He’ll be dealing mostly with sanitary landfills permitting and monitoring.
The Department of Geology and Geography is dependent on alumni giving, and we are fortunate in having a supportive group of graduates. Alumni donations have traditionally sponsored speakers for our colloquium and AAPG Distinguish Lecturer series, helped with expenses of field trips and student travel to professional meetings, and provided much needed grants for student summer research and field work. Many student research projects are supported by your donations. Donations in support of undergraduate and graduate students greatly enhance the Department’s ability to attract high-quality students.

Gifts by cash or check should be made payable to

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PO Box 1650
Morgantown, WV 26507-1650

Please indicate that your gift is for the Department of Geology and Geography in the memo line of your check with the fund number on the next page.

To make online gifts, visit
https://www.mountaineerconnection.com/sslpage.aspx?
pid=501&section=Geology%20and%20Geography

If you have any questions on making a gift, please contact Amanda Dymacek at Amanda.Dymacek@mail.wvu.edu or call 304.293.4611.
<table>
<thead>
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<th>Account Number</th>
<th>Account Name</th>
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<tr>
<td>2R033</td>
<td>Geology Research</td>
<td>Non-endowed fund to support geology research activities, including support of students, clerical employees, technicians, draftspersons, faculty travel, visiting experts, supplies and equipment.</td>
</tr>
<tr>
<td>2V021</td>
<td>Department of Geology &amp; Geography</td>
<td>Non-endowed operations fund to be used at the discretion of the chair of the department.</td>
</tr>
<tr>
<td>2V265</td>
<td>Geography Field Camp</td>
<td>Fund to support overseas field experiences for WVU students. Funds remaining (if any) after course will be used in the development of present and future field camps.</td>
</tr>
<tr>
<td>3R078</td>
<td>Robert C. and Beverly M. Shumaker Geologic Research</td>
<td>Used to support geological research and travel for faculty and students of the Geology department.</td>
</tr>
<tr>
<td>3V227</td>
<td>Marshall S. Miller Geology Endowment</td>
<td>The income from this fund support the Department of Geology in the College of Arts and Sciences, including an award to the outstanding student in Geology Field Camp.</td>
</tr>
<tr>
<td>3V609</td>
<td>Geology Graduate Fieldwork Endowment</td>
<td>Income will be used for support of the Geology Program at WVU, especially research expenses for geology graduate students.</td>
</tr>
<tr>
<td>3V617</td>
<td>Trevor and Sylvia Harris Student Support Fund</td>
<td>Funds will be used to encourage students who are studying in the area of Geographical Information Science and majors in Geography.</td>
</tr>
<tr>
<td>3V782</td>
<td>Milton Tidd and Doris E. Heald Promising Researcher Award</td>
<td>The award recognizes the significant contributions that Milton Tidd Heald, a WVU professor of Geology, and his supportive wife, Doris Ethier Heald, gave to the geology community in the research areas of quartz cementation and sedimentary digenesis. The award supports Geology Graduate students who show an aptitude and desire for advanced research in geology at the M.S. or Ph.D. level.</td>
</tr>
<tr>
<td>3S006</td>
<td>Wilcox Geology Scholarship</td>
<td>Endowment income is to be used towards scholarships for Geology students.</td>
</tr>
<tr>
<td>3S686</td>
<td>Alan C. Donaldson Scholarship</td>
<td>Scholarship award to an undergraduate Geology major based on academic achievement and interest in Geology. Preference is given to freshman and sophomore pre-majors.</td>
</tr>
<tr>
<td>3Z111</td>
<td>Environmental GeoScience Scholarship</td>
<td>Fund will be used for various graduate and undergraduate scholarships awarded in the department for students interested in environmental geoscience.</td>
</tr>
<tr>
<td>3Z112</td>
<td>Geography Undergraduate Endowed Scholarship</td>
<td>Funds shall be used to make awards to Geography pre-major or major undergraduate students.</td>
</tr>
<tr>
<td>3Z228</td>
<td>Kenneth C. Martis Undergraduate Geography Scholarship</td>
<td>A scholarship resource for at least one outstanding geography major in the junior year.</td>
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**G&G LIBRARY FUNDS**

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<th>Account Number</th>
<th>Account Name</th>
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<tr>
<td>3L057</td>
<td>Geosciences Remote Sensing Library Endowment</td>
<td>Endowment acquires new remote sensing journals (i.e., International Journal of Remote Sensing) to support the academic and research programs at WVU.</td>
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<tr>
<td>3L093</td>
<td>M. Duane and Ruth C. Nellis Library Endowment</td>
<td>Endowment acquires geography and remote sensing resources and materials to support the academic and research programs at WVU.</td>
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<tr>
<td>3L110</td>
<td>Frank J. and Jo Ann Calzonetti Endowment</td>
<td>Endowment acquires geography resources and materials to support the academic and research programs at WVU.</td>
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<tr>
<td>3L513</td>
<td>Department of Geology &amp; Geography Book Plate</td>
<td>Funds used for book plates for Dept of Geology and Geography.</td>
</tr>
</tbody>
</table>
## G&G Thanks

### Individuals:
- Anonymous
- Mr. & Mrs. Ralph C. Anderegg
- Mr. Adam C. Boone
- Dr. Thomas W. Bjerstedt
- Dr. & Mrs. Charles W. Buffington
- Mrs. Sarah C. Buffington
- Mr. William A. Brown
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- Chesapeake Energy Corporation
- ExxonMobil Foundation Matching Gift Program
- Hess Foundation, Inc.
- Schlumberger Technology Corporation
- Talisman USA

Thank you to all of our 2012 Donors!
Dr. John A. Clendening received B.S. (1958), M.S. (1960) and Ph. D. (1970) degrees in geology from West Virginia University. He was employed as a Palynologist-Coal Geologist at the West Virginia Geological Survey from 1960 until 1968, where he co-authored "Plant Fossils of West Virginia" (with Bill Gillespie) and many other publications.

He joined Amoco in 1968 and remained with Amoco as a senior geological associate until 1992. Dr. Clendening has served as President and other offices of the American Association of Stratigraphic Palynologists and the Society of Organic Petrolgists. From 1992-1998 he was engaged in association with Laird Exploration Co., Inc. of Houston, Texas, directing exploration and production in south central Kentucky. In 1999, he purchased all the assets of Laird Exploration in south central Kentucky and operates independently. While with Amoco Dr. Clendening was instrumental in Amoco’s acquisition in the early 1970’s of large land acreage holdings in Northeast Tennessee, based upon his geological studies and recommendations. His work led directly to the discovery of what is now the Company’s Paul Reed # 1 well. He further recognized the area to have significant oil and gas potential and is credited with discovery of the field that is now known as the Company’s Swan Creek Field. Dr. Clendening previously served as a Director of the Company from September 1998 to August 2000. He was again elected as a Director of the Company on February 28, 2003. John A. Clendening who resigned as a director of the Company for health reasons on April 3, 2012.

John passed away in Virginia on October 2nd and is survived by his wife, Cleo, and three daughters.

Charles Robert McFadden, 80, of Morgantown, died on May 6, 2012, at Monongalia General Hospital, with his wife and oldest son at his side. He graduated from West Virginia University with a degree in geology. He was employed with the Coal Research Bureau, WVU College of Mineral and Energy Resources, for 25 years as an engineering scientist, technical editor/illustrator and co-author.
American Association of Geographers (AAG)  
Los Angeles, CA  
April 9-14  
Alumni & Friends Reception on April 11 at 5 PM. Details at http://goo.gl/maps/v5ua0  
Dr. Eungul Lee, Assistant Prof. in Geography Program  
Tel: 304-293-8485  
Email: eungul.lee@mail.wvu.edu

American Association of Petroleum Geologist (AAPG)  
Pittsburgh, PA  
May 19-22  
We will have a reception for alumni, students, faculty and friends of the department. Check our website for more information.  
Dr. Tim Carr, Prof. in Geology Program  
Tel: 304-293-9660  
Email: tim.carr@mail.wvu.edu

Join us for WVU Homecoming Weekend!  
WVU Downtown Campus, Brooks Hall  
Morgantown, WV  
October 18-19  
Check our website for event updates: www.geo.wvu.edu

The Geological Society of America (GSA)  
Denver, CO  
October 27-30  
Check out our welcome reception table. Details will be posted on our website: www.geo.wvu.edu  
Dr. Helen Lang, Prof. in Geology Program  
Tel: 304-293-5469  
Email: hlang@wvu.edu

West Virginia Association of Geospatial Professionals (WVAGP)  
Stonewall Resort State Park  
Roanoke, WV  
May 13-14  
More information at www.wvagp.org  
Frank LaFone, WVAGP Board Member  
Tel: 304-293-9466  
Email: frank.lafone@mail.wvu.edu

Drs. John “Jack” Renton and Henry Rauch, both in the Geology program, have begun their 3-year phase retirement.  
Details regarding their retirement celebration will be posted in the near future at www.geo.wvu.edu.

We need your help!  
Do you know where these M.I.A. Alumni are now?

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
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<tbody>
<tr>
<td>1999</td>
<td>Keith Stuart</td>
<td>1996</td>
<td>Jessica Biggs</td>
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Please let us know if you recognize anyone on this list. Remember to protect yourself from becoming a M.I.A. Alum by updating your information online at www.geo.wvu.edu, calling our office during normal business hours (Monday—Friday, 8 AM-4:45PM), e-mailing us at geo_alumni@mail.wvu.edu or sending a quick note to our main office (address on back cover). We love hearing from you!