UGA Geology News

Spring 2008

Letter from the Department Head

Greetings from Athens –

The Department of Geology is well and we are optimistic that changing economic conditions will lead to increasing enrollment in Geology. For the last few years our undergraduate enrollment has increased or remained stable and I'm pleased to note that our latest tally shows 38 undergraduate majors. These students are the lifeblood of the department, and so we are pleased with the current enrollment. We would like to increase our enrollment to approximately 50 majors and hope in the coming years to achieve that goal given the increase in industry demand for new geology graduates as reported in the press. Our graduate student population remains stable at about 35 students...this is well down from the 70 students we had during the late 1980's but consistent with the current national and state funding situation.

Our faculty numbers remain more or less stable. This past year we had one faculty retirement – Dave Wenner retired after 32 years at UGA. As many of you know, Dave created and was responsible for the day-to-day management of the stable isotope laboratory for many years, advised numerous graduate students and more recently he has played key roles in the Interdisciplinary Field Program – this is the program designed to introduce underclassman to geology, ecology and anthropology in the field by visiting sites throughout the American West. Dave continues to be active in that program, as well as in various environmental advocacy groups in the Athens region. A second notable retirement was that of Pat Hancock, our office manager for many years. Pat was a hard-working, competent and cheerful presence in our departmental office, and is missed. In addition to Dave Wenner, two other emeritus professors, Norm Herz, and Gilles Allard, are in the department nearly every day and maintain offices in the building. Norm received a national award from the Geological Society of America in 2007: the Archaeological Geology Division's Rip Rapp Award for outstanding contributions to the interdisciplinary field of Archaeological Geology and the department is proud of this honor for Norm.

A central event this year was an external review of the Department of Geology. Three distinguished geologists, Dr. Robert Hatcher (University of Tennessee), Dr. Clark Johnson (University of Wisconsin) and Dr. Karl Flessa (University of Arizona) were joined by two UGA faculty, Dr. George Brook (Head, Geography) and Dr. Mary Ann Moran (Professor, Marine Sciences) to review the performance of the Department in research, teaching and service. The committee found areas that should re-

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ceive further attention including the state of external funding and made a very useful suggestion regarding reallocation of space which may result in moving the Riverbend labs over to Geography-Geology. The vulnerability of the Riverbend space has been a headache for many years. The department received high marks for the quality of teaching, and noted that our students were enthusiastic about the department and loyal to it. The committee also suggested that we establish an Alumni Advisory Board which we hope to do this coming fall.

We continue to encourage international collaborations and have two established international agreements with Tunisian and Turkish institutions. Our close Turkish colleague, Dr. Omer Ece returned for 6 weeks this winter, and we have hosted one of our alumni, Dr. Jai Woon Moon, during his sabbatical from the Korean institute for deep sea drilling. Our faculty and students currently have collaborations with colleagues in Turkey, Russia, Tunisia, Venezuela, England and Argentina. These international programs create visibility for the department, and in some cases funding is more accessible than in the extremely competitive US environment.

Given the difficulty of obtaining research grants from national and state sources, we are extremely grateful to our alumni who continue to support our students through donations to the Allard Award, the Berg Scholarship, the Watts-Wheeler Scholarship, the Levy Fund, as well as the general account for Geology. The primary use of all these funds is to support graduate and undergraduate research as well as student travel to scientific meetings. We are thankful for your past donations and hope that you will continue to support the department in the future. Please stop by the department when you are in Athens and visit our website (http://www.gly.uga.edu/) – news events as well as weekly seminar schedules are posted there.

Faculty News

Doug Crowe

I've been pretty busy this past academic year taking classes and working in Dr. Mary Ann Moran's lab in Marine Science here at UGA. I was lucky enough to be awarded a University Fellowship to study for a year in an area outside my discipline, so I've taken classes in Microbial Ecology and Bioinformatics in order to better understand how to characterize the interface between geochemistry and microbiology. I've been able to extract and amplify DNA from a number of hot springs in our study area in Kamchatka, and I've just gotten all the sequence data back and have begun to analyze it to see how the biological diversity relates to changes in the hot spring chemistry. After 29 years of looking at ore deposits, this has been a wonderful change of pace.

Julie and I keep busy going to Matt's lacrosse games (he's now a junior in high school) and Kira's gymnastic competitions, and of course chasing Corinne around wherever she goes (now a year old!). We'd love to see any of you if you make it to Athens!

Erv Garrison

Erv Garrison carried out an active summer of geoarchaeological research on the Georgia coast. For seven weeks he directed the grant-funded excavation of a 15th century prehistoric burned structure. The findings were reported to the funding agency, NOAA, via the Georgia Department of Natural Resources (GaDNR). A journal publication, based on the research is in preparation. The second area of research involved the geoarchaeological characterization of the J-Reef locale (GaDNR), twenty miles off St. Catherine's Island, with studies of the lithology and fossils buried therein. A fossil whale bone was located at the site and carbon dated to 35,000 years before present. Samples for this bone are being sent to a forensic DNA lab at Trent University, Ontario, in hopes of the successful recovery of DNA to compare to their DNA data bases on modern Right Whale populations.

Erv Garrison on a dive at J-reef on the Georgia coast

Susan Goldstein

I spent much of the year continuing my work on allogromiid biodiversity – this is the third and final year of funding for the project (collaborating with Sam Bowser and Andrea Habura at the Wadsworth Center, New York). Field work took me to Sapelo for a couple of weeks and to the Keys Marine Lab for a week last November. I've really enjoyed scuba diving in the Keys to collect allogromiids, and overall we've found that allogromiid biodiversity is often higher at our sites than the biodiversity of all the higher foraminiferans combined! We've found allogromiids with unusual life styles, and some that are truly giants (over a cm long)! I've also been working on dispersal in benthic forams and seeing how many different assemblages I can grow from the same foram "seed bank" using different temperatures and salinities. Deniz Altin is continuing her Ph.D. work on Clade E allogromiids from Sapelo, using both ultrastructure and molecular genetics to better understand phylogenetic relationships. Ellen Brouillette began work on her M.S. with me this past fall and plans to look at the effects of heavy metals on shallow-water benthic foraminifers by culturing them with exposure to different levels of contaminants. She's presenting a paper on her initial results at Southeastern GSA in April. Beth and I traveled to British Columbia last summer for vacation. We had a great time hiking on Vancouver Island and enjoyed our self-guided tour of BC's wine country... My best to all!

Susan Goldstein on a dive in the Florida Keys

Steven Holland

My highlight last year was spending two weeks in the Bighorn Mountains of Wyoming with my old friend, Mark Patzkowsky of Penn State University. After years of nailing down the sequence stratigraphy of Late Ordovician strata in the eastern United States and examining the response of faunas and sediments to climate change, we're now able to study the ecological refuge in the Late Ordovician. The Ordovician of the Bighorn Mountains is fascinating because it preserves a record of climate and faunal change in a nearly equatorial setting. It offers us a chance to test the effects of climate change on the structure of shallow marine invertebrate communities. It's also a fantastic place to work and live for a few weeks. Our days are filled with wonderfully preserved fossils, thin air, legendary hailstorms, moose, and breathtaking scenery.

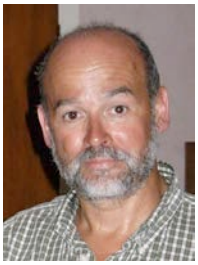
The view from Hunt Mountain in the northern Bighorn Mountains of Wyoming

In the past year, I've started a major push into the biotic effects of sea-level change on shallow marine ecosystems. For the past ten years, my work has focused on how sea-level change can produce patterns in the fossil record that are merely artifacts of preservation. Now that I have a good handle on that, I'm moving to the more pressing question of how sea-level changes truly affect marine organisms and how we can diagnose those changes in the rock record. I've submitted an NSF proposal on this and am keeping my fingers crossed, although NSF support of geology and paleontology has dramatically decreased in recent years.

The coming year will bring many changes. Noel Heim, my Ph.D. student, will graduate this spring, and he's currently looking for post-doctoral and faculty positions. In May, I will be giving a one-week short course on sequence stratigraphy at the Nanjing Institute of Geology and Paleontology in China, followed by a

week of field work in the Hunan and Hubei provinces. Arnie Miller (University of Cincinnati) and I are also spearheading an effort to develop a large Chinese-American collaborative effort on the Ordovician Radiation. So, I'm brushing up on my Chinese!

My family is doing great. Tish was promoted to Associate Professor this past year and also spent six weeks in December and January on an oceanographic cruise in the Southern Ocean. Her photos of penguins, orcas, the massive ice shelves of Antarctica, and giant waves in the Drake Passage were simply amazing. Zack will be seven this spring and is having a great time in his first little-league season. Alex, now four, is enjoying his first year at Montessori. You can see recent pictures of them at homepage.mac.com/stevenholland.



Alberto Patiño Douce

This year has gone by very fast. Late in the spring I signed a contract with Cambridge University Press for an advanced level textbook tentatively titled Thermodynamics of the Solar System. This is a massive 800-page monster full of formulas, that I have to complete by December of 2009. It has taken up most of my time since last Summer, but it is a lot of fun. Late last year we traveled to Argentina with Mike, to lay the groundwork for our project in the Puna high Andean plateau, combining a research effort focused on the area's volcanoes and outreach/educational initiative focused on helping the local inhabitants develop an adventure-tourism industry. Our initial trip was made possible by funding from UGA's President's Venture Fund, a UGA Scholarship of Engagement grant, and additional help from UGA's Vice President for Research and the Department of Geology.

Mike Roden and Alberto Patiño Douce with a Yankees fan (you can't see his cap very well, but it's true) at the Botijuela extinct geyser, lower flank of Volcán Antofalla.

We spent about two weeks chasing ash flows, collecting samples, and getting really stuck in the sand, but we made it back with lots of samples and information to build upon. We are now planning to submit a proposal to NSF's IRES program to continue with this work, in which we have been joined by Marta and Jim Wright. The Geology Study Abroad program is traveling to Argentina this summer with eight students - our new record! You can read more about this in Marta's entry. Next year I also hope to report advances on my efforts to understand the physicochemical evolution of the Hadean atmosphere, an outgrowth of a meeting that I talked about last year. See you then!

Bruce Railsback

Research this year has continued largely to poke and prod at various stalagmites to recover paleoclimate records, in collaboration with George Brook of the Department of Geography. At the boundary of teaching and research, the GEOL 8200 (Carbonate Petrology) class project this year with Rob Crawford and Justin Miller continued the search for evidence of ancient surfaces of subaerial exposure in limestones. However, this year we tried to make our way back in time to the Cambrian, specifically in eastern Tennessee, and eventually we concluded that we had done a nice project on the isotopic systematics of dolomitized limestones, but not one on evidence of subaerial exposure. I'm therefore currently working on a grant proposal to get a student or two to Utah to sample Cambrian limestones that are more pristine.

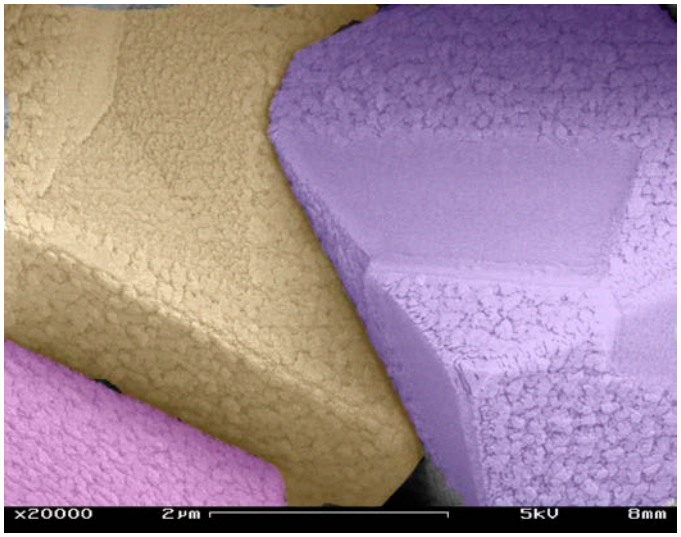
My undergraduate teaching continues to feature GEOL 1122 (Earth's Record of Global Change) with its disquieting message that the resources and lifeforms that have developed over billions of years might not renew themselves or re-adapt themselves in a matter of decades. It also involves GEOL 3030 (Elementary Oceanography) with its whirlwind tour (or perhaps swirling eddy of a tour) of the seafloor, ocean circulation, waves, tides, marine ecology, marine sediments, chemical oceanography, and even a bit of paleoceanography Last summer I also taught, and this summer I'll also teach, an Alpine and Glacial Geology class in the University of New Orleans' summer program in Innsbruck (a program affiliated with UGA too). Teaching in the Austrian Alps is obviously great for the geological setting, even if cultural sensitivity requires that one make the sacrifice of consuming traditional Bavarian and Tirolean beverages with virtually every meal. It's a good gig.

Mike Roden

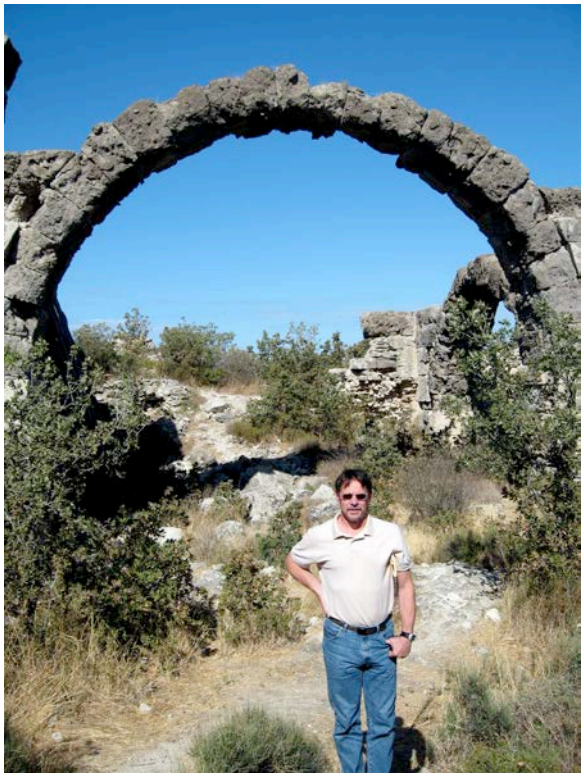
Departmental administration consumed much of my time, so the past year my research has largely been vicarious through the work of grad students Jeff Chaumba (petrology and geochemistry of ultramafic rocks in the Piedmont), Steve Clark (petrology and geochemistry of diabase dikes in the Piedmont), Heath McGregor (petrology and geochemistry of dikes at Spanish Peaks) and undergrad Sara Cox (phosphate mineralogy of ordinary chondritic meteorites, in collaboration with Alberto Patiño Douce). However, I did manage to take three weeks this past fall to initiate a research project on volcanism in the high Puna plateau of northwestern Argentina. This work, of course, is in collaboration with Alberto, and we collected representative samples of very young volcanic rocks ranging from basalt flows associated with cinder cones to ash flow tuffs erupted from a very young supervolcano, Cerro Galan. We also hope to help the indigenous population of Andean Native Americans develop a viable and sustainable ecotourism project. This visit was supported by the President's Venture Fund and the Vice President for Public Service and Outreach.

Paul Schroeder

This past year was marked by my return to the northwestern Turkey. My colleague, Professor Ece from Istanbul Technical University and I have expanded our studies of kaolinite and alunite genesis. This time we focused our fieldwork on the Simav Graben looking at fossil hot spring deposits, as well as modern hot spring analogs. My student, Jay Austin and I are working on capturing the carbon signal of cooler climate trees versus warm climate grasses into the authigenic soil minerals gibbsite and goethite. This work takes place in our own back yard at the USDA-ARS Experiment Station in Watkinsville, Georgia. This fall, at the 1st joint Soil Science - GSA meeting in Houston, I lead a theme session entitled, "Soil respiration: From Human to Geologic Time Scale." Dean Stokes named me Academic Director for the Center for Advanced Ultrastructural Research in Barrow Hall (Dr. Hurst's favor lab). My first move was to hire a new Ph.D.-level Academic Associate, whose line is one-half in Geology. His name is Jianguo Fan and he specializes high-resolution imaging of nano-materials (including minerals). I continue my service as an Associate Editor for American Mineralogist, my collaborations with Glenn Stracher on coal fire minerals, and my ventures with the Kamchatka Russia geomicrobiology team.



False color image of alunite crystals from northwest Turkey. Collaborations with Professors Marion Wampler, Paul Schroeder, Crawford Elliott, and Ö. Isik Ece are developing a new K-Ar dating method to find the age of crystallization for these hydrothermal minerals.



Paul Schroeder standing in ancient city of Alexandria Troas (ca. 310 BC), situated on the Aegean coast at nearly the middle of the western side of Turkey. It is located in the modern province of Çanakkale, near study sites for kaolin and alunites deposits. Photo: Ö. Isik Ece.

Sam Swanson

Sam Swanson spent much of the year working with students on research projects. The Earth Materials class worked on the identification and characterization of zeolites from fractures in the Elberton Granite. Results of that study will be presented at the SE GSA meeting in Charlotte. Two students, Katherine Neder and Alexander Hope, worked on senior thesis projects with Sam. Katherine worked on the mineralogy of REE minerals from a granite stock in the Llano region of Texas and Alexander worked on a talc-bearing mafic schist from Virginia. Both students will present their results at the Charlotte GSA meeting. Jeff Chaumba, a graduate student of Mike Roden's, is working with Sam on ultramafic rocks from the Soapstone Ridge area; a manuscript is nearing completion and Jeff will present his results at Charlotte. Sam is also directing two graduate students working on geoarchaeology projects. Cynthia Hotujec is working on the mineralogy of turquoise-group minerals from New Mexice and Jennifer is doing a study of the mineralogy of mortar from the walls of Pompeii. Jennifer and Cynthia are doing papers on their work at the Clay Minerals Conference in New Orleans this spring.

UGA students on a GGS field trip

Jim Wright

Well, 2007 proved to be a busy year. Two graduate students are working on provenance studies using U-Pb dating of individual detrital zircons. Gabby Izsak is finishing up his M.S. thesis on the Great Valley Group of northern California and Mariela Noguera is in the early stages of a project in Venezuela. In addition, to the students I submitted two NSF proposals this year one of which is still pending. I continue to work on the Paleozoic tectonics of the western North American Cordillera and am in the process on writing a paper with a very different interpretation of the Antler Orogenic event which has defied an adequate tectonic explanation for over 50 years. I also continue to work in the Leeward Antilles islands from Aruba on the west to La Blanquilla on the east (somebody has to map these islands). On the home front, Sandra and I are still the mecca for stray cats in Athens (we have stopped counting) and to date, we have relocated 15 raccoons over the past year that have too much interest in cat food. We are also slowly restoring our turn of the century house and have made good progress this year in the dining room. I have managed to teach myself how to do a complete plastering job on wood lath. The process of learning has given me respect for those who built houses with plaster walls. Well that's about it for this year. Next year also promises to be busy as well.

Sandra Wyld contemplating riding a camel on the steppes of Mongolia

Sandra Wyld

Hi all, This is a photo of the amazing selenite crystal that students Meg Kinsella, Mark Warren and Gabby Izsak brought back from the USG gypsum mine in the Selenite Range (see arrow) just east of the Fox Range where Meg and Mark did their thesis work. It weighs a ton and took 5 or 6 people to get it from the truck to my office. We plan to eventually make it into a display in the Department.

Meg and I finished her field work last summer, and she helped me map some important nearby areas in our ongoing quest to determine how the geology around Gerlach can tell us about displacement along the Early Cretaceous MSNI strike-slip fault, which extends from southern California to western Idaho. Meg will defend her M.S. thesis in a few weeks and then goes off for an outstanding job with an oil company in Oklahoma. Mark finished his Senior Honors thesis last spring and went off to graduate school at the University of Arizona. Along with collaborator Jim Wright, we all presented several abstracts at the Cordilleran Section GSA meeting in Bellingham, Washington. At that meeting, I finished up my stint as Chair of the Cordilleran Section Board, but will soon start my new term on the Academic and Applied Geosciences committee (also GSA).

Over the last year, I also worked with former M.S. student Roni Ciavarella (now teaching at the Pennsylvania College of Technology) on a paper on pluton emplacement related to her thesis work in the Bloody Run Hills, Nevada. That paper is coming out shortly in GSA Special Volume 438. Jim and I also worked with Joe Colgan (U.S.G.S.) on a geologic map from some of our work in northwest Nevada, which will come out this year as a Nevada Bureau of Mines and Geology full-size color map. This is a first for us.

I still teach the usual, Intro Physical in the fall, and Structural Geology in the spring, plus this last year Jim and I taught a graduate seminar on the tectonic evolution of the Caribbean region which was quite a lot of fun. We're convening a Topical Session on Caribbean Tectonics at the national GSA meeting in Houston this fall - if any of you will be there, stop by to say hi. I also continue as one of the undergraduate advisors in the department. As always, we have a super group of students, and, happily, our student numbers are rising again after several slow years.

Emeritus News

Gilles Allard

Gilles carries on the great life detailed in last year's Geology News. He is healthy but aging (the alternative is not so good). The small basement office is not as orderly as Mike, our beloved Department Head, would like, but everything and anything can be found in one minute. Lectures and field trips to various classes and social clubs keep him happy and useful. Last summer, Bern and Gilles did a great tour of Southern France with a Sigma Xi and AAAS group. The trip concentrated on archeology and prehistory, and Gilles did his share to put geology in the proper perspective to this great group. He was not paid as a lecturer, a shame, but he volunteered a geology lecture to posit the group in the proper geological context. In February, another great tour of 20 days in Morocco, a great country undergoing surprising huge developments. Their main resource is phosphate. Morocco is the largest producer and second exporter in the world. They have reserves of 20 to 120 billion tons...it varies with the source of information. Two days were spent under tent in the desert of the southeast. It was very cool, 51° F in the tent in the morning. And the mountain scenery (snow on top of the Atlas and Anti-Atlas Mountains) was not impeded by red saprolite and green vegetation...a return to the beige colors of Riverside, California and surroundings. On both trips, Bern and yours truly served as French translators since the rest of the group was unilingual American tourists.

The Gilles and Bernadette Allard Geology Award Fund is doing well and supporting the field work of one more graduate student. Thanks for your contribution to the Fund! It is a good cause!

Dr. Gilles Allard and a camel in Morocco. Dr. Allard states that the camel is the one with 4 legs.

Gilles and Bernadette Allard in the deserts of Morocco. Deserts can be cold!

Norman Herz

This past year was especially exciting with recognition from the GSA for my contributions to Archaeological Geology and from the government of the Azores Islands for the Portuguese translation of my book on Operation Alacrity, the secret WW II operation that took place on the islands.

In July an international symposium on the subject of foreign bases was held on the island of Santa Maria. My book, entitled in Portuguese Operação Alacrity, was prominently featured and discussed. I was there to present a paper on the operation in Portuguese and also was asked to sign copies of the book. A fringe benefit to being there was to enjoy the fantastic volcanic scenery and geology of the Azores, which sit on a hot spot adjacent to the Mid-Atlantic Ridge.

At the GSA meeting last October, I was given the Rip Rapp Award for contributions to the interdisciplinary field of Archaeology Geology. The citation was delivered by Scott Pike, a Ph.D. alumnus now teaching at Willamette University in Oregon, and Ervan Garrison.

Presentation of Rip Rapp Award to Norman Herz

reprinted from the GSA website at http://www.geosociety.org/awards/07speeches/riprapp.htm

Citation by Scott Pike and Ervan Garrison

It would be wrong to say that this year's recipient of the Rip Rapp Award in Archaeological Geology has always wanted to be an archaeological geologist. Don't take this wrong, but who had? Even by the time he entered graduate school, no one had had the debate yet on whether "archaeology" should qualify "geology" or "geology" should qualify "archaeology". The two disciplines were worlds apart. Even in his first foray into the interdisciplinary world of archaeological geology in the 1950s, our awardee had no idea that his work with the renowned late archaeologist W.K. Pritchett was going to be a major watershed event towards the integration of the natural sciences into classical archaeology. This is not to say our awardee did not have vision or direction. He certainly did. Just as it took Odysseus twenty years to return to his home, it took our wayward traveler nearly two decades to return to academia, leaving the world of hard rock geology at the USGS to take on the Chair of the Department of Geology at University of Georgia.

It was at Georgia that our friend, mentor and today's honoree, Norman Herz, established himself as a preeminent visionary in the nascent field of archaeological geology. Looking to discriminate between the many sources of ancient white marble in the Mediterranean, Norm worked to find an analytical technique that was at one end objective and at another end required very little sample. Norm found that technique by delving into the measurement of carbon and oxygen stable isotopes. From the late 1970s through the 1980s, Norm went on "arduous" expeditions to collect multiple samples from the important ancient marble quarries in Turkey, Greece and Italy. Working alongside archaeologists and art historians, Norm was able to show that many quarries had unique stable isotope signatures. Norm was able to assign provenance to many marble artifacts and address important questions regarding the use, trade and quarrying of this important ancient resource. Norm has consulted on numerous projects including studying the marble sources of various temples and monuments at sites such as ancient Olympia, Bassai, the Athenian Agora, and Delos. He has

worked closely on collections from the British Museum in London, the Ny Carlsberg Glyptotek in Copenhagen, The National Gallery in Washington DC and the Metropolitan Museum of Art in New York. Norm's work has been published in over 200 articles. Norm's exhaustive work and his willingness to share his data has resulted in his stable isotope database for Mediterranean white marbles being referenced by researchers throughout the world.

In December, 1986, a Penrose Conference, the first devoted to archaeological geology, was held on St. Simons Island, Georgia. It was organized by Charles Vitaliano, of Indiana University and, our awardee, Norman Herz. The official conference title was "Archaeological Geology: Environmental Siting and Material Use." Fifty-four invited participants, including the namesake of our award, George "Rip" Rapp, were in attendance. The presentations and discussions at this landmark conference, led to the shaping of the discipline we call archaeological geology today. It is a tribute to Norm's vision, and credit, that he was a key arbritrar in the modern definition of our field.

Later, in 1988 Norm spearheaded the organization of the Association for the Study of Marbles and Other Stones used in Antiquity (ASMOSIA). Along with his colleague Marc Waelkens, Norm convened a NATO-sponsored Advanced Research Workshop (ARW) in Tuscany, Italy. This was the first ARW devoted to the Archaeological Sciences in the International Scientific Programmes of NATO. At this first meeting, Norm was elected President. There have now been eight international ASMOSIA conferences bringing together a truly interdisciplinary group of scholars including geochemists, geologists, chemists, physicists, statisticians, archaeologists, museum curators, art historians and others who share research interests and perspectives on ancient stone. By maintaining a single session format the ASMOSIA meetings promote a true interdisciplinary exchange of ideas and research between scholars from diverse academic backgrounds. Since that first meeting of 53 participants, ASMOSIA's membership has grown to over 300 from over 23 countries. The continued success of the biennial ASMOSIA conferences is an excellent testament to Norm's vision and leadership in fostering interdisciplinary research. Norm saw the need for true collaboration across academic fields long before multidisciplinary and interdisciplinary became the buzzwords they are today. The proceedings of each conference have been published and can now be found in archaeology and classics library collections around the world. Norm was re-elected President several times and in 2000 he was elected Honorary President.

Norm's dedication and service to classical archaeology is well renowned. In 1985, the American Journal of Archaeology celebrated its one hundredth anniversary. In a review of the stewardship of Ashton Sanborn as editor, only two articles were cited as "significant events". One was the aforementioned paper by Herz and Pritchett in 1953 which "raised issues that have continued to be of interest to scholars in many specialties, and only recently have sophisticated laboratory techniques begun to answer some of the vexed questions of marble identification." Four years later, in the January-February special issue of Archaeology dedicated to "Archaeology in the 21st Century", George F. Bass, then president of Archaeological Institute of America, further recognized that Norm was the "first to apply his geologic knowledge to archaeological problems". Norm's international reputation was further enhanced where, in 1988, he was invited to be the keynote speaker at the 18th International Symposium of the International Association of Engineering Geology where the focus of the conference was on the engineering geology of ancient works, monuments and historical sites. In 1995 the classical archaeology community recognized Norm's contributions to archaeology by awarding him the prestigious Pomerance Award for Scientific Contributions to Archaeology of the Archaeological Institute of America.

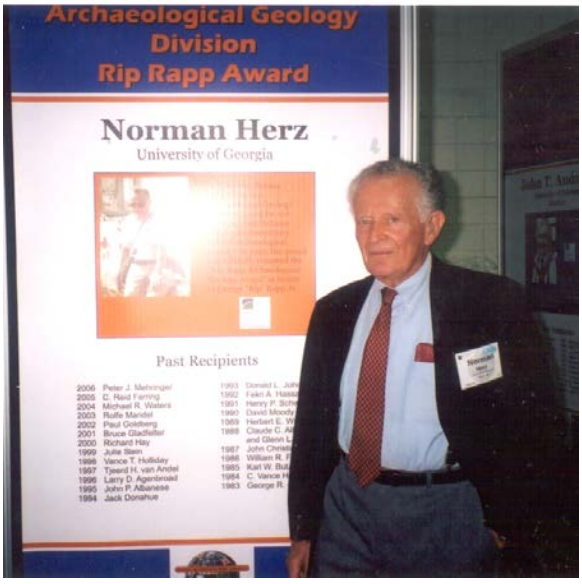
The recognition of Norm's achievements just don't come from the archaeological community. During his tenure with the USGS, Norm spent six years in Brazil as a research scientist studying the country's mineral deposits. Not only did he learn the Portuguese language, he made a significant impact within the Brazilian scientific community. This is reflected by his election in 1981 as a Foreign Associate of the Sao Paolo State Academy of Science followed by his election in 1991 as a Foreign Member of the Brazilian Academy of Sciences.

Norm's great success is further mirrored by his ability to win funding for what was once considered non-traditional research. Organizations that have valued and supported Norm's research include the National Endowment for the Humanities, the National Geographic Society, the National Science Foundation, the Samuel H. Kress Foundation, the American Philosophical Society, the NATO Science Committee and the National Research Council/National Academy of Sciences.

Norm's true nature as a Renaissance man is further exemplified by his recently published historical book Operation Alacrity: The Azores and the War in the Atlantic. The book recounts the top secret operation that led to the construction of an Allied airfield in the Portuguese-controlled and therefore neutral Azores island chain that may well have changed the course of World War II. Norm took part in the operation, but until his research he was unaware of the stakes of his mission. The book has won awards including the 2005 Book of the Year by the Portuguese Tribune.

Despite the accolades that are due him, perhaps Norm's greatest strength is his humility and willingness to share. He has a biting sense of humor and is respected by colleagues throughout the world. Erv Garrison, his co-author on his 1998 Oxford University Press textbook, entitled "Geological Methods for Archaeology", and contributor to this citation, recalls how easy it was to work with Norm on something as difficult as a co-authored textbook. They say if a marriage can survive building a house, then, by analogy, the same should be said of friendships and writing textbooks. Norm and Erv remain the best of friends and present-day colleagues at UGA.

Personally, I give Norm the credit or is it blame for my own professional trajectory. I remember vividly during my first year in graduate school walking down the sidewalk in front of the UGA Law School and running in to Norm. The conversation went something like this: "Hi Scott. I was wondering. I have a project for you if you're interested. Do you want to go to Greece?" Despite all his achievements Norm is generous and modest. He seeks to involve new scholars and averts seeking credit and accolades for himself. In fact, I was a bit nervous nominating him for this award as he would have to sit through this hazing ceremony. And even though I have only given you a small excerpt of his accomplishments you get the idea that this award is almost overkill so I will stop talking and give Norm his chance for rebuttal.



Dr. Norman Herz in front of announcement of the Rip Rapp Award of the Archaeologiical Geology Division of the Geological Society of America.

Response by Norman Herz

On July 19, 1788 Thomas Jefferson representing our new nation in Paris, then in an intellectual ferment with startling new scientific concepts such as the origin of volcanoes, the principles of crystallography and the origin of the solar system wrote to the Reverend James Madison back in Virginia: "As you seem willing to accept the crumbs of science on which we are subsisting here, it is with pleasure I continue to hand them on to you ..."

I was very fortunate to have worked with some great archaeologists and geologists who handed down enough 'crumbs' to enlighten and inspire me throughout my career. Thanks to them I am here today and so in their names I am proud to accept this great honor, the Rip Rapp award in Archaeological Geology.

With the end of World War II which effectively cut short a career as an Air Force 2nd lieutenant I entered the Johns Hopkins University. There I fell under the influence of Professor Ernst Cloos, one of the great structural geologists of the past century. His good friend Professor Homer Thompson of the Princeton Institute for Advanced Study was director of the excavations of the Agora in Athens where, he felt, a geologist was needed to work along with the archaeologists. Thompson despaired of finding anyone, having been rejected by geologists and geology departments at Princeton and elsewhere who could see no possible geological good to come out of such a project. Thompson proposed the idea to Cloos, adding that only a 'rara avis' would accept the assignment. Cloos decided that I qualified as a rare bird and so in 1951 off I went with a Fulbright to Greece to see if a geologist really belonged on a dig.

In Athens I worked on different projects, many designed to show archeologists how a geological approach might help answer some of their most difficult problems. I was fortunate to work also with Professor William "Ken" Pritchett a great classicist then also at the Institute for Advanced Study and later head of the Classics Department at Berkeley. Together we wrote a paper promoting geological applications to archaeology and published it in 1953 in the American Journal of Archaeology. It turned out to be a landmark publication, cited in the AJA when in 1985, it celebrated its hundredth anniversary. In a review of the stewardship of Ashton Sanborn as editor, only two articles were cited as "significant events". One was our 1953 paper "which raised issues that have continued to be of interest to scholars in many specialties, and only recently have sophisticated laboratory techniques begun to answer some of the vexed questions of marble identification".

This exciting start in classical archaeogeology was quickly cut short, followed by 18 years with the USGS as a hard rock research geologist, 8 of which were spent in Brazil. Then in 1970 I accepted a position as department head at the University of Georgia, and settled in to a new life in academia. Several years later came the siren's call from Pritchett to return to Greece now that I was free of governmental obligations and resume a career in archaeogeology. He posed an interesting problem: many fragments of ancient Greek inscriptions on marble he felt had been joined incorrectly following epigraphical rules—according to the joiner—and not paying attention to the physical features of the stone. Could I propose a physical test to check the association of the pieces using a method which needed only milligram-size samples?

Stable isotopic ratio analysis was tried and worked beautifully. The results appeared in an article co-authored with Dave Wenner in Science in 1978, "Assembly of Greek Marble Inscriptions by Isotopic Methods" which proved to be another landmark publication; it was translated and published in the French Encyclopedia Universalis. I was now convinced that much could be done working with archaeologists, that geochemical methods especially stable isotope analysis might help resolve the most intransigent problems of provenance and authenticity of

stone and metal artifacts. Today such analyses have become routine, databases have been accumulated, analytical equipment has been perfected and is widely available, and numerous researchers and laboratories are actively using isotope geochemistry to help solve archaeological problems.

I have also had a large measure of success disseminating "the crumbs of science" encouraging cooperation between scientists and archaeology. Among my proudest achievements are establishing a flourishing program in Geoarchaeology at the University of Georgia, organizing the Center for Archaeological Sciences which brought together members of the UGA departments of Geology, Geography, Anthropology, Classics, and Art History, and helping to start ASMOSIA, the Association for the Study of Marble and Other Stones in Antiquity, an international society of archaeologists, museum people, scientists, and others working together cooperatively.

Again I thank the GSA for this great honor, as well as my mentors for pointing out the way. I cannot conclude without acknowledging a great debt of gratitude to my colleagues and students for their encouragement and assistance which made the way both much easier and more enjoyable.

Our Staff

Julie Cox

Julie is responsible for operation and maintenance of our department's stable isotope mass spectrometry laboratory. She ensures data integrity, develops analytical methods, and trains and assists students and faculty in stable isotope research methods. Her routine duties are to prepare and process outside samples to provide income to stable isotope lab. She maintains and repairs analytical equipment and extraction lines to insure highest operating efficiency and accuracy. She develops and designs extraction lines to obtain the desired gas from rock and water samples. She procures lab supplies and equipment parts in a manner that minimizes lab downtime. She also maintains analytical records in the computer and on hard copy. She is married to Doug Dvoracek (Ph.D., 2003).

Chris Fleisher

Chris is responsible for the supervision and daily operation of the Geology Department Electron Microprobe Laboratory and associated sample preparation facilities. His routine duties include oversight of the daily probe operations and sample preparation, monitors instrument performance daily, conducts routine maintenance, and oversees major repairs when necessary. He prepares samples and performs analyses for commercial users and unskilled lab users. He helps users interpret results, assess quality of analyses, and optimize electron and X-ray images. He also identifies, locates orders, prepares, and maintains analytical standards.

April Fowler Myers

April Fowler Myers took Patti's position and has stepped in like she has been here for years. She has been with Geology for six months now and we hope that she will be around for a long time. She is responsible for maintaining all financial records for restricted accounts, preparing purchase orders, and assisting the Principal Investigators manage their grants. She also prepares and processes all Travel Authorities and Expense Statements and keeps the Travel Budget balanced. Her other tasks include assisting with the scheduling of classes and classroom assignments for all Geology courses taught and ordering textbooks. She also assists the Department Head with faculty promotions by preparing dossiers, making copies and putting them in the correct format. She serves as the back-up person for payroll and personnel responsibilities. She doesn't presently have children, but she does have seven nephews and is waiting for the day that a niece comes along. She is married to Rodney Myers who is self employed in the commercial and industrial electrical business.

Michael Lewis

Michael provides the departmental Information Technology support. He installs and maintains our computer systems, student computer labs, and departmental servers and data communication network. He diagnoses and resolves issues related to personal computer security, hardware, operating system, application software, software utilities, data communications / connectivity devices, hand held devices, and other related peripherals. He provides consultation and guidance to clients regarding the procurement of Information Technology goods and services. He assists the department with standards development and best practices. He researches emerging technologies and recommends hardware / software products that may help improve efficiency and effectiveness of technology for clients. He has a broad knowledge of operations and objectives across the unit and recognizes new problems and determines working solutions routinely and accurately. He is the department's IT liaison to college and university IT operations.

Patti Patterson-Gary

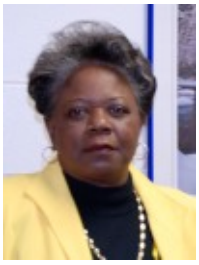
I took over Pat Hancock's position, after Pat retired September 30, 2007 and I assumed her position. I still talk with her a great deal and she is absolutely loving retirement. She has seven grandchildren that keep her extremely busy and she seems to be in the road most of the time going here and there. Taking on her role has been a challenge to say the least, but I'm learning something new every single day due to most of the policies and procedures changing at UGA on a daily basis. I'm responsible for running the departmental office on a daily basis. I distribute work to the staff, manage the payroll, leave time, supervise two staff and two hourly students. I'm the Sectioning Officer for the department. I create the textbook orders each semester for every faculty member teaching a course(s) to ensure availability of books needed. I'm the Inventory Control Officer for the department and serve as the contact person for Property Control in matters relating to Inventory. I coordinate the GEOL 1121 extra credit field excursions. I assist twenty-one faculty and thirty-six graduate students with questions involving UGA policies and procedures that would apply to their specific needs. I assist the Department Head with the departmental and foundation budgets and maintain all financial records for these accounts and four income accounts. I'm the liaison between the department and Dean's Office. My daughters, Kristin and Kaylin, are doing fine. I now have two grandsons (Gage and Braxton, shown below) and what great joy they bring to my life. Gage is 3 ½ and Braxton turned 1 in January. If you're ever in Athens, please stop by and visit us in Geology. I started here in 1984 at age 18. I would love to hear from those students who participate in the TGIF's.

Robert Phares

Robert's duties and hours are evenly split between the Department of Geology and Geography. His primary responsibilities are web technologies development and maintenance, and database plus associated application development to support the departmental needs. Robert also acts as a technical liaison between the two departments, helping to coordinate available computing resources and technologies.

Barbara Ruff

Barbara retired as an Instructor in the department on May 7, 1999. Since that time, she has been employed as a temporary, less than half time, curator. Her primary responsibility focuses on the maintenance and acquisition of instructional collections and materials used in all the teaching labs of Geology. Her main duty is to assemble materials used in weekly labs, repairs and replaces materials as required and curates teaching collections.



Beatrice Stephens

Beatrice serves a dual role as a receptionist and assistant to the Graduate Coordinator. She maintains graduate student records, keeping their file current and informing students and major advisors of their status. She plays a critical role in graduate student recruitment, by sending out information packets, informing applicants of the requirements to be admitted to the program, and setting up itineraries for visiting applicants. She also helps students in residence by monitoring graduate school deadlines, assisting graduate students with Graduate School procedures and forms, preparing personnel statements, and keeping records of many aspects of graduate students. She also assists faculty in numerous aspects of administration. Beatriz serves as liaison between the Department and the Graduate School. She mans the switchboard, directs calls to the appropriate person, takes messages, answers a variety of questions, and greets visitors. She just celebrated her birthday on March 5 and now she is on the countdown for retirement. Tom, her husband, is doing great. Beatrice has seven grandchildren, and now has a great-grandchild. She says she has two years left. We will see if she's really able to leave this wonderful establishment after 2 years.

Graduate Student Research

Environmental Geosciences

Jim Muckler is currently examining nitrogen transformations in a zero-order watershed in Watkinsville, Georgia, for three separate depths in the vadose zone. He is using three unique suction lysimeters to sample nitrogen species in groundwater and three tensiometers to continuously monitor water movement through the vadose zone to the water table. He is testing the amount of change of several different nitrogen species below the surface for three different depths as nitrogen is transformed to different nitrogen species by microbial activity at the root zone, below the root zone, and just above the water table.

Lysimeter installation at Jim Muckler's field site in Watkinsville, Georgia

Brian Price's field site in located in Watkinsville, Georgia at the J. Phil Campbell Sr., Natural Resource Conservation Center. Currently, nitrate travel times in groundwater are being investigated using a numerical model and naturally occurring groundwater tracers.

Jason Thomas is currently investigating pressure wave generation of runoff in a convergent zone. He is using subsurface gutter systems installed in a vegetated Piedmont catchment to collect subsurface stormflow generated during large rain events in order to gain a better understanding of the mechanisms, areas of the watershed, and conditions that cause runoff.

Subsurface gutter system & tipping bucket rain gauge used to collect stormflow at Jason Thomas' field site

Geoarchaeology

Sheldon Skaggs received a GSA Research grant to travel for 40 days to Tunisia and sample galena and host rock samples from North Africa. The focus of the research was to sample ancient lead mines of Northern Tunisia and return the samples for lead isotope analysis using TIMS at the University of North Carolina at Chapel Hill. While in Tunisia, he was invited to give a lecture on Geoarchaeology at the University of Tunis, El Manar.

Sheldon Skaggs at the entrance to his Jebel Ressas (Lead Mountain) field site in Tunisia

A galena sample from Sheldon Skagg's field work in the lead mines of Tunisia

Jennifer Wehby has been working as an archaeologist in Pompeii, Italy, since 2002 and has recently shifted her focus from excavation to the study of ancient architecture. She is studying the composition of lime-based construction mortar from an ancient house to aid in the archaeological interpretation of the structure. She is using x-ray and infrared spectroscopy, including non-destructive portable equipment for the analysis of mortar in situ.

A view of Jennifer Wehby's research area on mortar composition in Pompeii, Italy

Geochemistry

Jay Austin is currently investigating the utility of carbon occluded in the soil minerals gibbsite and goethite found in paleosols as paleobarometers for atmospheric pCO_2. He is using a combination of numerical modeling and field research to compare results for a modern soil to a paleosol.

The Neda Formation (maroon zone) is an Upper Ordovician paleosol, from which carbon occluded in goethite was first used as a paleobarometer. Samples from this site are being used by Jay Austin to compare modeling results with those from a modern soil.

Dan Bulger is currently developing a diagenetic model within a high-resolution stratigraphic framework of carbonate rocks to identify relevant geochemical sequence boundaries that aid in the discovery and recovery of petroleum sources in subsurface environments. Dan's primary objectives are to: 1) identify diagenetic minerals that convey relevant information concerning the position of sequence boundaries and 2) delineate the conditions that influence the occurrence of relevant diagenetic horizons.

Paleobiology

Deniz Altin is currently investigating the phylogenetic relationships among a group of new, undescribed allogromiid Foraminifera conspicuously found along Sapelo Island, Georgia. She will be implementing both molecular and morphological based ultrastructural techniques to test the cohesiveness for the group. She intends on sequencing both protein-coding and ribosomal genes, in addition to examining the fine structure of the test wall and cell body using both transmission and scanning electron microscopy.

Deniz Altin collecting samples in the salt marshes of Sapelo Island

Eleanor Gardner is investigating the roles of sex and age on taphonomic alteration in avian leg bones. She will examine changes in bone density, porosity, and diagenesis (mineral precipitation and dissolution) and attempt to correlate them with physical weathering patterns. Her goal is to link these micro- and macro-level aspects of avian taphonomy to develop a better understanding of the fossil record of birds.

Eleanor Gardner documents fossil avian remains in a cave on Royal Island, Bahamas

Noel Heim is investigating the spatial variation in the diversity of Paleozoic invertebrate ecosystems. He is using a combination of numerical modeling, field research, and a literature-based database to test the hypothesis that global scale biodiversity patterns are not good predictors of regional and local patterns. Noel's field research is being conducted in the Ozark Mountains of Arkansas and Oklahoma and incorporates an aspect of global climate change associated with the Mississippian/Pennsylvanian boundary.

An algal mound from Noel Heim's field area in the late Mississippian Pitkin Formation near the town of West Fork, Arkansas

Petrology and Geochemistry

Heath McGregor is doing research in the Spanish Peaks area in Colorado. He is investigating the sub-parallel lamprophyric dikes surrounding the peaks for possible petrogenetic relationships. He plans to travel this spring to gather samples and begin analysis this summer. His research will help to understand better the early stages of the opening of the Rio-Grande rift.

Structural Geology and Tectonics

Gabby Izsak is currently finishing his masters thesis titled "A Translational Model for the Great Valley Group, California: A Detrital Zircon Analysis Comparing the Klamath and Coast Range Great Valley Group". His research builds on the research of Jim Wright and Sandra Wyld by comparing the detrital zircon signatures of the Great Valley Group in the Klamath Mountains and the Coast Range. The detrital zircon distributions in these regions supports the hypothesis that the two basins were far apart during the Late Jurassic to Early Cretaceous and have been juxtaposed to their present positions by strike-slip faulting. This evidence makes the new model of oblique subduction for the Western U.S. convergent margin during part of the Mesozoic much more plausible than the "classic" model of orthogonal subduction.

Meg Kinsella is currently finishing her masters thesis work entitled “The Fox Range, Northwest Nevada; Displaced Fragment Along An Early Cretaceous Dextral Strike- Slip Fault”. Her work focused on field mapping, zircon geochronology and an intense structural analysis of the Fox Range in order to determine its displacement and origin along the Mojave-Snow-Nevada-Idaho Fault.

Meg Kinsella taking structural measurements in highly deformed mica schists of the Fox Range in northwestern Nevada

Mariela Noguera is doing her research on the Caribbean and Northern Venezuela. She is currently studying the provenance of flysch units along the Caribbean / South American plate boundary by using U/Pb dating methods on detrital zircons and grain counting of framework minerals. Her objective is to determine the age of initiation of arc magmatism of the Leeward Antilles and Aves Ridge and its implications in the evolution of the Caribbean plate.

Professor Franco Urbani, from Universidad Central de Venezuela in front of a beautiful outcrop of Matatere Formation, North-Western Venezuela, from Mariela Noguera’s field area

Jay Austin receives the blessing of department head Mike Roden on Stone Mountain. While Dr. Roden believed this represented a conversion to petrology, Jay was really looking for signs of weathering.

Student Accomplishments

Deniz Altin

Women and Minorities in the Geosciences Travel Grant, Geological Society of America

Student Travel Grant, Geological Society of America

Student Research Award, Friends of the UGA Marine Institute

Loeblich and Tappan Student Research Award, Cushman Foundation for Foraminiferal Research

Advisor: Susan Goldstein

Jay Austin

Schroeder, P.A., Austin, J.C. , and Dowd, J.F., 2006, Estimating long-term soil respiration rates from carbon isotopes occluded in gibbsite: Geochimica et Cosmichimica Acta, v. 70, p. 5692-5697.

Austin, Jason C., Schroeder, Paul A. , and Cox, Julia, 2007, Radiogenic carbon In goethite from the Upper Ordovician Neda Formation: Implications for re-crystallization, The Clay Minerals Society Annual meeting, Santa Fe, New Mexico. Abstract with programs.

Austin, Jason C., Schroeder, Paul A., and Dowd, John F., 2006, Aluminum substitution in goethite from the late Ordovician Neda Formation: Implications for environment of formation and post-burial weathering. GSA Abstracts with Programs, Paper No. 221-12, Philadelphia, Pennsylvania.

Student Travel Grant Clay Minerals Society

Student Research Grant Clay Minerals Society

Advisor: Paul Schroeder

Dan Bulger

Bulger, D., Chemical characterization of glaucony within a sequence stratigraphic framework: Braggs K-T boundary locality, Lowndes County, Alabama: American Chemical Society 235th National Meeting & Exposition, New Orleans, Louisiana, April, 2008.

Bulger, D., Wehby, J., Freeman, J., Dunbar, K., Cary, R., Parriuello, Augie, Hamilton, D., Gardner, E., Fleischer, C., Swanson, S., Mineralogy of zeolites from the Keystone Blue Quarry, Elberton Batholith, Northeast Georgia: GSA Southeastern Section - 57th Annual Meeting, Charlotte, North Carolina, April 2008.

Advisor: Chris Romanek

Steve Clark

Clark, Steven D., and Roden, Michael F., 2008, Mineralogy and bulk-rock geochemistry of olivine-normative dikes in Georgia and South Carolina: Southeastern GSA Conference.

Advisor: Mike Roden

Eleanor Gardner

Bulger, D., Wehby, J., Freeman, J., Dunbar, K., Cary, R., Parrinello, A., Hamilton, D., Gardner, E., Fleisher, C., Swanson, S., 2008, Mineralogy of zeolites from the Keystone Blue Quarry, Elberton Batholith, northeast Georgia: GSA Abstracts, v. 40, p. 8

Advisor: Sally Walker

Noel Heim

Heim, N. A. 2008. A null biogeographic model for quantifying the role of migration in shaping patterns of global taxonomic richness and differentiation diversity, with implications for Ordovician biogeography. Paleobiology 34(2): 195-209.

Heim, N. A. 2007. GSA Annual Meeting. Delta diversity, migration and global warming during the Late Ordovician. GSA Abstracts with Programs, 39(6): 91.

Advisor: Steven Holland

Jennifer Wehby

Compositional analysis of construction mortar from Pompeii, Italy, Clay Minerals Society Meeting, April, 2008.

Co-chaired symposium with UGA Geology graduate student Sheldon Skaggs on “Archeological clay source materials: Their chemical, mineralogical, and physical characteristics” at the April, 2008 meeting of the Clay Minerals Society.

Advisor: Sam Swanson

Sheldon Skaggs

Received GSA student research grant to sample lead mines in Tunisia.

Co-chaired symposium with UGA Geology graduate student Jennifer Wehby on “ Archeological clay source materials: Their chemical, mineralogical, and physical characteristics” at the April, 2008 meeting of the Clay Minerals Society.

Advisor: Ervan Garrison

Graduate Theses & Dissertations: 2006-2008

2006

Mary Rhonda Cranfill, M.S., Colonial ceramic wares: Comparison based on mineralogical, petrological, and compositional data. Advisor: Sam Swanson

Elizabeth R. Hollingsworth, M.S., Elemental and isotopic chemistry of the Uzon Caldera: The evolution of thermal waters, gas, and mineral precipitation. Advisor: Doug Crowe

Chris R. Kelson, Ph.D., Geochemical and geochronological constraints on mineralization within the Hilltop, Lewis, and Bullion Mining Districts, Battle Mountain-Eureka Trend, Nevada. Advisor: Doug Crowe

Dawit Yifru, Ph.D., Phytoremediation and enhanced natural attenuation of the emergent contaminants perchlorate and N-nitrosodimethylamine as a single and co-contaminants. Advisor: Valentine Nzengung

Lina K. Kodjo-Wayo, Ph.D., Biodegradation and phytoremediation of polycyclic aromatic hydrocarbons using mushroom compost. Advisor: Valentine Nzengung

Michael S. Baker, M.S., Investigation of the crust and uppermost mantle in the Carolina Terrane and Blue Ridge, southern Appalachians, using receiver function analysis of broadband earthquake data. Advisor: Robert Hawman

Monica Carroll, Ph.D., Memoirs of river life: A clam shell's view. Advisor: Chris Romanek

Robert J. McKinnon, M.S., A mechanism for storm runoff generation during large rainfall events. Advisor: John Dowd

2007

Karen J. Layou, Ph.D., Paleocommunity response to extinction: An example from the Late Ordovician (Mohawkian) of the Appalachian Basin of the Eastern United States. Advisor: Steven Holland

2008

Julie M. Fiser, M.S., Organic biomarkers in active and fossil travertine deposits: Linking the present with the past. Advisor: Chris Romanek.

Noel Heim, Ph.D., The spatial structure of biodiversity in the fossil record: global, continental and regional responses to climate change. Advisor: Steven Holland.

Adam V. Kiehn, M.S., Geochemically fingerprinting specular hematite artifacts and prehistoric mines in southern Africa. Advisor: George Brook (Geography).

Jason D. Nail, M.S., Dithionite-mediated degradation of 2, 4, 6-trinitrotoluene in soils from a former Department of Defense Army Ammunition Plant. Advisor: Valentine Nzengung

Christian Schrader, Ph.D., Alkaline igneous rocks of Big Bend, Texas: Bone Springs and Rattlesnake Mountain sills. Advisor: Alberto Patiño Douce

Eric Wysong, M.S., Hurricane effects on molluscan death assemblages and their facies. Advisor: Sally Walker.

Departmental Awards to Graduate Students

Allard Fund

Justin Miller: Is there a relationship between paleopathology and diversity in burrowing echinoids?

Jennifer Wehby: Compositional analysis of mortar from the House of the Vestals in Pompeii, Italy

Watts-Wheeler Fund: Research

Jay Austin: Assessing the sensitivity of paleo-pCO_2 modeling to variations in soil characteristics and biomass input using a finite difference model

Ellen Brouillette: An experimental approach to understanding the impacts of heavy pollutants on benthic foraminifera

Daniel Bulger: Distribution of diagenetic alterations of Mg-rich clay minerals in late Mississippian carbonates within a high-resolution sequence stratigraphic framework: Evidence from the Appalachian Basin

Jeff Chaumba: A Sm-Nd age of the Russell Lake Allochthon, southern Appalachians

Steven Clark: Fractionation of Central Atlantic Magmatic Province dike magmas in Georgia and South Carolina as evidenced in their chill margin mineralogy

Eleanor Gardner: Linking micro- and macro-level taphonomic alteration in avian leg bones as a function of sex and age

Cynthia Hotujec: Establishing artifact provenance from mineralogical and compositional variation in prehistoric turquoise mines

Heath McGregor: Petrogenic relationships between the Camptonite and Minette Dikes of the sub-parallel dike systems in the Spanish Peaks area near Walsenburg, Colorado

Jim Muckler: Modeling nitrogen transformations with depth in the vadose zone for a small Piedmont watershed

Mariela Noguera: Provenance of Late Cretaceous-Eocene flysch sequences in Northern Venezuela: Tectonic implications for the evolution of the Caribbean Plate and associated arcs

Jason Thomas: Pressure-wave generation of runoff in a convergent zone

Jennifer Wehby: Compositional analysis of mortar from the House of the Vestals in Pompeii, Italy

Watts-Wheeler Fund: Travel

Jeff Chaumba: Geological Society of America, Denver, Colorado

Cynthia Hotujec: Establishing artifact provenance from mineralogical and compositional variation in prehistoric turquoise mines (Clay Minerals Society/American Chemical Society 235th Annual Meeting, New Orleans, Louisiana)

Jennifer Wehby: Compositional analysis of construction mortar from Pompeii, Italy (Clay Minerals Society, New Orleans, Louisiana)

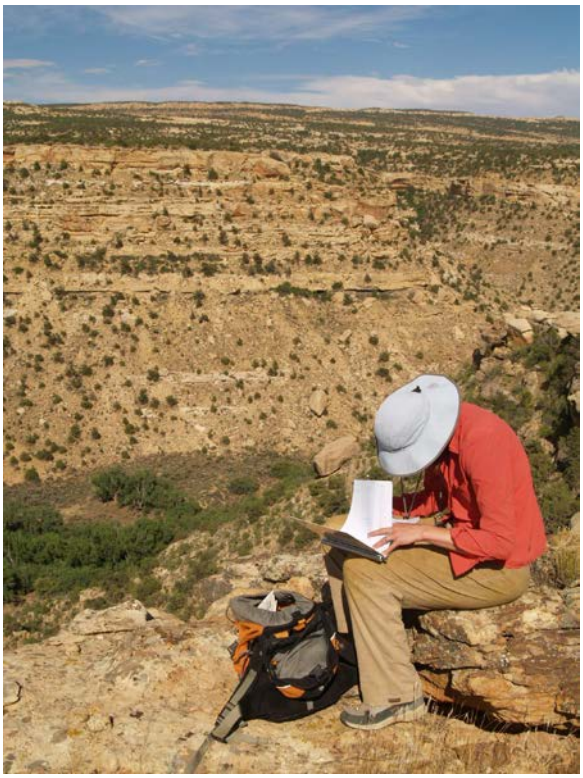
Excavation of 15th century structure on the Georgia coast

Dr. Ervan Garrison recovering a gourd at an excavation.

Alumni/Alumnae

Jessica Allen (M.S., 2003)

I am still working on my dissertation at the University of Utah. This is my third year and am on target to finish next spring or summer. I am working on some transgressive deposits observed within marginal marine deposits in the Straight Cliffs Formation found in southern Utah.



Jessica Allen taking notes in southern Utah

Brad Allgood (B.S., 2003)

I am currently in grad school at American University in Washington, D.C. pursuing an MFA in film and video production, with a focus on documentary and social media. After graduating from UGA, I spent 3.5 years in the Peace Corps in Nicaragua as a community health volunteer and then traveled for months throughout Latin America. I moved to D.C. in January of this year and am in my first semester of grad school. I hope all is going well in Athens, and I would love to receive updates about what everyone is doing.

Dan Askren (M.S., 1986; Ph.D., 1992)

Nice to see two of our Georgia Southwestern alumni (Matt Jarrett & Justin Miller) pictured working at Sapelo Island in the last newsletter. Since that edition, I've departed Georgia Southwestern State University after 14 years. I am now at EPA's National Air and Radiation Environmental Laboratory in Montgomery, Alabama. I'm working on a project developing a near-real-time radiation monitoring network. The project's goal is to install up to 180 monitors around the country, and each monitor will send hourly gamma spectrometry data to our lab. A definite change of pace from the world of academia.

Lisa (Miller) Baldini (M.S., 2001) and James Baldini (M.S., 1999)

In 2006 James and I moved from Dublin, Ireland (where we each did our Ph.D.), to Lanchester, a small village close to Newcastle in NE England, where we have just purchased our first home. We are both working in the Department of Earth Sciences at Durham University. James is a lecturer teaching geochemistry and paleoclimate courses and is also supervising several undergraduate and graduate research projects. James's work continues to focus on using stalagmites as climate proxy records, and he is becoming increasingly interested in how carbon dioxide variability in cave air affects stalagmite-based paleoclimate reconstructions. I successfully defended my Ph.D. dissertation last November and have just started a two-year Marie Curie Research Fellowship to reconstruct paleo-atmospheric circulation using stalagmite proxy records from southwest Poland. James and I will soon be going caving in Poland to find my stalagmites! We have a busy summer planned. In May we will help lead a 4th year undergraduate field trip to California and Nevada, and in July we will be presenting our respective research at Goldschmidt in Vancouver, British Columbia. Hopefully we'll see some of you there!

Polly Bouker (M.S., 1996)

Lately we are busy with fundraising efforts for Autism Speaks as "Team Bouker", in honor of our son Jonathan, who is now 9 years old. Our daughter, Hannah, is 10 and keeps us on our toes!

Here's a photo of my family at Yellowstone National Park in September, where we travelled to celebrate mine and Larry's 20th anniversary. It was a terrific geologist's vacation!

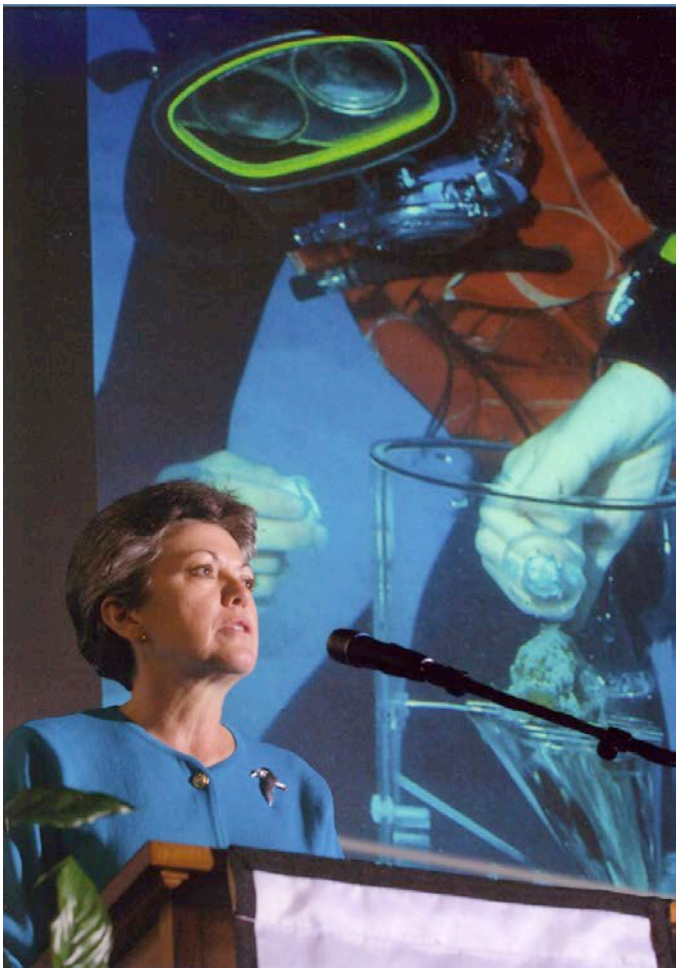
All is well at Georgia Perimeter College where Deniz Altin and I are working hard to build up Geology at the new Newton County Campus in Covington. We're always looking for a new adjunct faculty to take on a course or two!

Robert Cook (M.S., 1968; Ph.D., 1971)

I retired last June and am now an alumni professor, still coming in a 7:00 but without pay. I have been buying property in the Leadville, Colorado area with the thought of developing a field camp there that could be shared by schools not fortunate enough to be in the Rockies. I am still an avid gold specimen collector and have gotten another departmental alumnus, Vince Mathews (the Colorado State Geologist) interested in looking for these elusive specimens. The wife, son, and grandkids are all doing fine. I have wonderful memories about the department and the "good old days".

Dorinda Dallmeyer (B.S., 1973; M.S., 1977; J.D. 1984)

Dorinda presented the lecture, "Turning the Tide: Saving the Seas" to mark the 223rd anniversary of the founding of the University of Georgia on January 24 at the UGA Chapel. Dorinda, who currently serves as director of the Environmental Ethics Certificate Program, covered a wide range of environmental issues at stake for the oceans. The Founders Day Lecture is organized each year by the UGA Alumni Association and the Emeriti Scholars. Emeritus Scholar Gilles Allard introduced Dorinda. If you would like to have a copy of the talk, please contact Dorinda at dorindad@uga.edu.



Dorinda Dallmeyer presenting the Founders Day lecture

Eric Davis (B.S., 2000)

After leaving Athens in 2000 with a B.S., I headed down to New Orleans to pursue work in the environmental business. I took a job as an entry level geologist with a company called ERM and worked mainly with the petro-chemical industry doing entry-level type work. I spent countless muggy days in oil refineries and parasitic chemical plants in the bayous along the Mississippi doing environmental compliance and remediation work. I got to see things in person that most people only get to see on the Discovery Channel. After about a year of inhaling fuel and styrene vapors I decided to leave NOLA and go back to school to focus on hydrogeology and water resources. I spent the next 3 years at The University of Florida. That decision shocked the entire Bulldog Nation. I promise I did my best to represent. I successfully defended my thesis and graduated with a M.S. in geology with a minor in environmental engineering in February 2004. My thesis was entitled: Submarine groundwater discharge and nutrient loading to Feather Sound, Tampa Bay. I must have been possessed when I wrote it because I whipped it out recently just to reminisce and it was way over my head. It was fun though, because I spent a summer on a boat in the bay. I immediately took a job with CH2M HILL in Atlanta in February 2004, so I just had my 4 year anniversary. The first year or two was a little rough as they slung me all over the country to lead field efforts for site characterization and remediation, but things have settled down quite a bit as I find myself in the office most of the time. These days I can't wait to get in the field. I've worked for all kinds of clients from Nestle Bottled Waters of America to biofuels companies to the Department of Homeland Security to every branch of the military, and I've been able to take some cool overseas jobs too (Curacao and Ecuador). Oh yeah, I got my P.G. last December. A word of advice for those who get away from pure geology and into hydro and engineering: take the first exam (FG) as soon as possible. I knew I was in for some hardcore studying when I broke out the study manual and realized that I had to re-learn all my rocks and minerals!

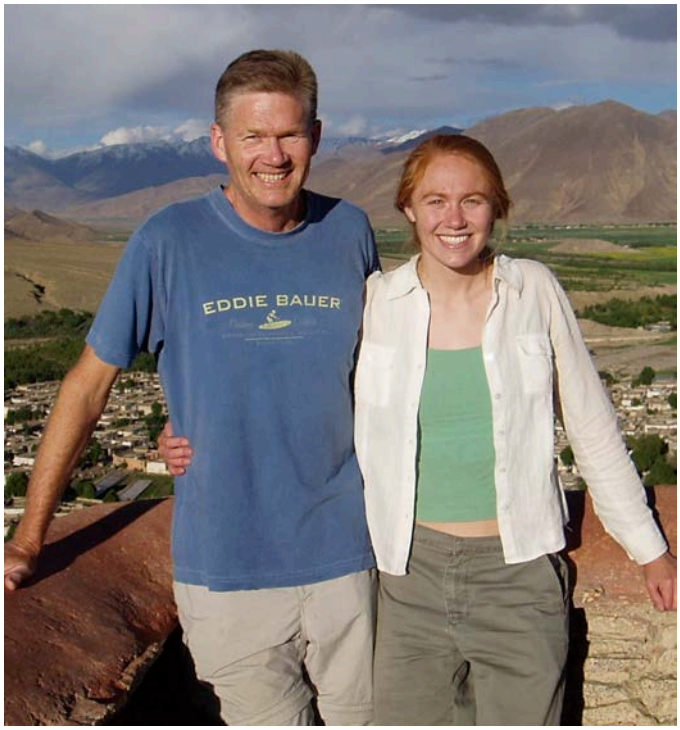
Chad Downey (B.S., 1996)

I did not pursue a career in geology, however it remains a hobby and my kids love for me to tell stories about how the landscapes around us were formed. I have been working for Equifax for 10 years. I am currently a Strategic Account Man-

ager for Equifax Commercial Sales. I work from a home office and only travel in the Southeast.

Mac Duncan (B.S., 1968)

I retired from the kaolin business in June, 2007. A few weeks later I joined my younger daughter, her fiancé, and his father for a month of travel and trekking in Tibet and Nepal (photo below). Despite some problems with the Chinese military in Tibet, we had a great trip.



Julie and I are in the process of moving from Thomson, Georgia to my childhood home in Athens. We should have that completed in a year or so. I plan to work as a geological consultant part-time, combined with a healthy dose of travel and working on houses. Currently I am working every other month on a gold project in Peru. I would love to hear from old classmates. Please give me a call (706-340-5474).

Wesley Hardegree (B.S., 1986; M.S., 1990)

Wesley and his wife Maureen B. Hardegree (UGA English; M.A. 1991) are pleased to announce the recent delivery of their first WaterSense toilet, an Eco Drake by Toto. The new addition to the family arrived just after Wesley's 44th birthday. They named her Flo, and she was installed on March 8th with the help of Wesley's father-in-law. With an elongated rim and using just 1.28 gallons/flush, Flo replaced a 27 year old cantankerous and unnamed 3.5 gallons/flush toilet that the family just never connected with very well. Wes and Maureen's 13 year old daughter, Cynthia, is not impressed at all with Flo. She wanted a kitten. The happy couple is so pleased with Flo (and her SoftClose seat) that they are anxiously awaiting the delivery of their second WaterSense toilet, probably a rounded rim, in late April.

In lieu of presents, the couple is asking that others investigate WaterSense, a partnership program sponsored by Wesley's employer, the U.S. Environmental Protection Agency. WaterSense makes it easy for Americans to save water and protect the environment. Look for the WaterSense label to choose quality, water-efficient products. Many products are available, and they don't require a change in your lifestyle. For more information, please visit http://epa.gov/watersense/.

EPA WaterSense

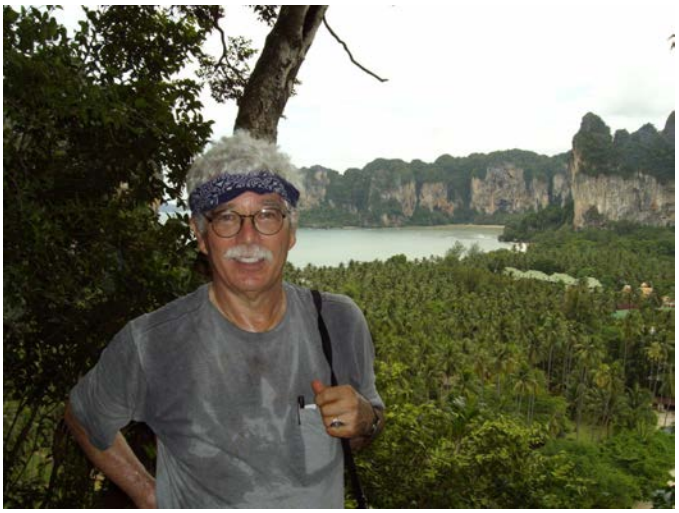
Steve Harper (Ph.D., 1996)

For those of you have wondered why my title has remained "Visiting Assistant Professor" after being at Eastern Carolina University for more than a decade, you need wonder no more! Due in part to some recent nomenclature changes by the ECU Faculty Senate and in part to a decision by the Department of Geological Sciences Personnel Committee, my title is now "Teaching Associate Professor".

On the teaching front, my typical teaching duties include sections of Physical Geology and Environmental Geology each semester and Geomorphology every other year. In addition, I will be teaching an Honors course in the Fall Semester of 2008 entitled "The Geologic Environment and Resources of Southeast and East Asia".

I am still the Director of the North Carolina Summer Geology Field Course. I will be teaching the Geology Field Course in New Mexico and Colorado in May and June 2008 for the 10th straight year. For the 2008 field course, our enrollment in the Geology Field Course will be ~25 students. Currently, these students hail from ECU, Appalachian State, NCSU, JMU, UT-Chattanooga, Middle Tennessee State University, Elizabeth City State University, Temple University, Concord University, and Midwestern State University.

After the Field Course concluded last year, I travelled to Southeast Asia and Hong Kong. My travel was supported by a $4000 travel grant from the Asian Studies Program. The purpose of my trip was to gather information and photographs to incorporate into specific case studies on geological hazards and resource problems in Asian countries into my section of Environ-



mental Geology. My 25 days of travel took me to Bangkok, Krabi, and Phi Phi, Thailand, Singapore, and Hong Kong. This was my first trip ever to Phi Phi Island, which seems to be back to its normal tourist tropical beach resort mode after having more than 3000 people killed there by the December 26, 2004 tsunami.

Beth Kinstler (B.S., 1979)

I am starting an auction company with a partner as an adjunct to my antique appraisal and estate liquidation business. My business name is Avalon Appraisals and my website is www.avalonantiques.com.

Personally, I have committed to doing a half marathon run to benefit the Leukemia/Lymphoma Society. If anyone wishes to make a contribution they can make it out to the Society and mail it to me at PO Box 14208, Savannah, Georgia 31416. I should have a website up shortly showing how much I have collected. I am aiming for $3,900 and I have to raise it by mid-May to qualify.

Kristie Lawrie (B.S., 2006)

Hello, everyone! I graduated in May 2006, and just wanted to update you on what's been going on with geology and me. I did the consulting thing for a year with ECS Southeast in Marietta, and now I'm working with the Georgia EPD's Hazardous Waste Department - Commercial Facilities Unit. I'm really enjoying using geology (finally) in my work. I just wanted to thank you all for everything at UGA. I had such a wonderful experience there, and I definitely learned a ton. Thanks again, and keep in touch.

Gayle Levy (M.S., 2003)

It's been an exciting and busy year for me. I'm still in my same position at Revolution Health managing content for various areas of the website. Work has gotten busier as the site grows, but I'm still enjoying it.

Brian and I got engaged in the fall while on a trip to France and Italy. It was a fabulous trip and very romantic. We got married in a small family wedding this winter and we are expecting a baby girl in July. We're really excited that it happened so quickly, but terrified at the same time!

I hope everyone else is doing well and I'd love to hear from everybody.

Tony Martin (Ph.D., 1991)

This past year was a very good one, paleontologically and personally. First of all, another UGA alumnus (David Varricchio, M.S. 1989) and I were coauthors on a paper that documented the first known burrowing dinosaur from the geologic record; the paper came out in Proceedings of the Royal Society of London B in March, 2007 and made a good splash in the international media. The dinosaur was a new species (*Oryctodromeus cubicularis*), and Dave and his field crew were lucky enough to find an adult specimen in its burrow with the remains of two juveniles of the same species: evidence of denning behavior! Dave presented these finds to the Society of Vertebrate Paleontology (SVP) meeting in October 2007 (he did a fabulous job with that), and it will be the subject of a one-page story in an upcoming issue of National Geographic.

Surprisingly, fame came again with another dinosaur-related find in October 2007, when a poster I presented at the same SVP meeting garnered a lot of press, too. This one was about two large dinosaur tracks I found in the Cretaceous of Victoria, Australia (the first ever found there) in February 2006 at the "Dinosaur Dreaming" dig site. The tracks were made by large carnivorous dinosaurs and this part of Australia was near the South Pole during the Cretaceous, so I guess a story combining the words "large", "carnivorous", "dinosaurs", "polar", and "Australia" inspired members of the media to follow up on this story with a ferocity only superseded by a breaking story of Britney coming out of rehab (again). Anyway, the best part of this story is how an Australian undergraduate student (Tyler Lamb) found a third such track last year near the dig site, thus providing a great example of how students contribute to paleontological discoveries, too!

Nonetheless, the study of which I am most proud, and which finally came to fruition in February 2008, was the publication of a paper documenting the oldest known fossil crayfish from the Southern Hemisphere, and the oldest fossil burrows attributable to crayfish in Australia. This study, published in Gondwana Research, had combined implications for plate tectonics and evolution, and helped to solve a 130-year-old mystery about the origins of Southern Hemisphere crayfish, first pondered by Thomas Huxley in the 1870s. Appropriately, two of my coauthors were biologists from Charles Darwin University (the other coauthors were from Monash University and the Museum of Victoria), so it felt as if we were contributing to a scientific legacy of sorts. The study was nearly two years in the making, originating with my serendipitous discovery of the fossil cray-

fish burrows while on sabbatical at Monash. As a side note, Australia is a wonderful place to do a sabbatical, with great outcrops, nice people, and very good beer and wine. What more could any geologist ask for?

Other than that, my wife (Ruth) and I are happily living in Decatur, Georgia, well within biking distance of Emory University, where I've been teaching for 18 years now. When she's not teaching English as a Second Language at Georgia Tech, she's creating folk-influenced paintings, some of which (oddly enough) include paleontological and evolutionary themes. We like to think of ourselves as the proverbial "cool couple" and are hoping to keep up that appearance for as long as possible.

Bill McLemore (B.S., 1963; M.S., 1966; Ph.D., 1971)

Since my retirement as Georgia State Geologist in August, 2005, I have split my time between the mountains of north Georgia and Gainesville, Florida, with about a third of my time traveling, a third working on two houses, and a third consulting. Some of the larger consulting projects have involved sinkhole inducement, sand and gravel exploration, carbon-dioxide sequestration, and water resource development. I can be reached at rockdoc2005@msn.com.

Mark Mitchell (B.S., 1982; M.S., 1986)

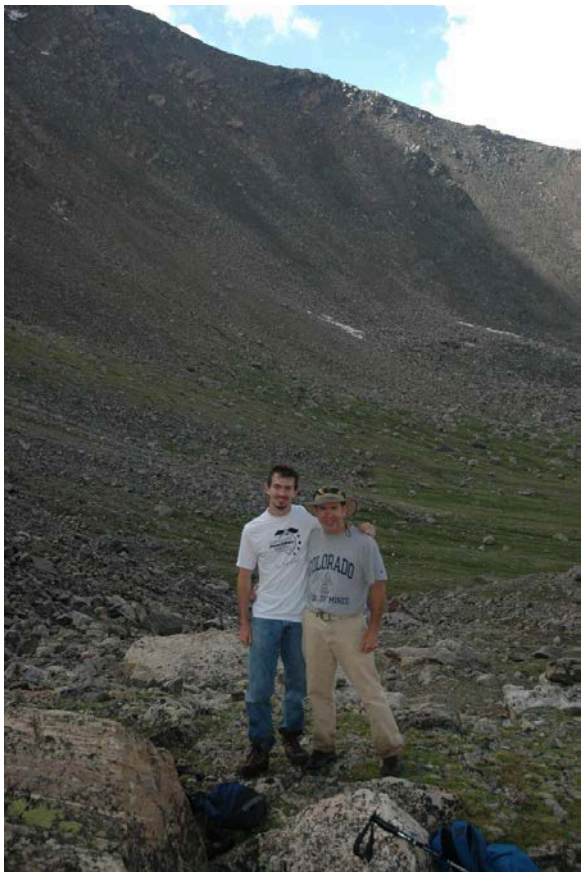
I am beginning my 12th year as an entrepreneur/environmental geologist at Genesis Project, Inc in Smyrna, Georgia (and no, we are not Trekkies, at least not much) where we specialize in environmental assessments throughout the southeast United States. My personal focus is on contaminant fate and transport modeling in groundwater.

The big news is that my son, Will Mitchell, has decided to change his major at UGA to Geology. He is currently a sophomore and just getting started in the program. So to the faculty who remember me, please do not hold that against him; you know we cannot pick our parents.

Otherwise life has been wonderful with my wife and two children.

Karen Obenshain (M.S., 1981)

I am now working at the Edison Electric institute (EEI) in Washington, D.C. EEI is the trade association for the investor-owned electric utilities. I am Director, Fuels, Technology and Commercial Policy and handle mainly coal-based electric generation issues. For the past 2 years or so, I have become assimilated into climate changes issues, primarily carbon capture and storage technologies and am putting my geology degree and oil/gas experience to use again. I had the pleasure of seeing Kathy (Fitzpatrick) Sanford (M.S. 1982) at a recent conference in Washington, D.C. on carbon capture and storage and it was great to catch up after a more than 25-year gap. On a personal note, I will be celebrating my 25th wedding anniversary with Bob Simon this coming November. We live in Spotsylvania, Virginia with our Siamese cats, 2 horses and a lot of dinosaur bones. Bob's business is finding, restoring and selling dinosaur fossils!



Mark Mitchell and son Will on a 14,000'+ peak in Colorado

Tori (Hanson) Press (B.S., 2003)

I was so busy last spring and summer, I didn't have a chance to update the department on my goings-on, but I wanted to let you know I have had a number of changes in my life in the last 6 months – the biggest being that I am back in Georgia. I couldn't take those brutal Chicago winters anymore, so my husband, David, applied to and was offered a fabulous job as a video game developer in Stone Mountain. We are now in Clarkston, Georgia, a tiny one-square-mile town sort of in between Decatur, Tucker, and Stone Mountain and one exit south of 78, so it's a straight shot into Athens for me. I have my own business as a freelance graphic designer – a far cry from geology, I know, but it was a longtime hobby of mine throughout college and grad school. I worked as an in-house designer at the University of Chicago for a couple of years after leaving the Ph.D. program and freelanced on the side, and just decided to give

running my own business a shot full-time when we moved. So far it's been going very well and I'm so happy with what I'm doing.

Marith Reheis (B.S., 1972)

It's hard to believe that I've now worked for the U.S. Geological Survey for more than 33 years! It's been a great career that took me far from the wet warm South along a progressively drier gradient. Currently I'm heading up a project on Late Quaternary paleohydrologic environments of the Mojave Desert, involving coring of lake and playa deposits, surficial mapping, and all the attendant uses of paleoclimate proxies and dating approaches. I'm still maintaining studies of eolian dust deposition in the desert Southwest – a record at some monitoring sites that now exceeds 23 years! This year I achieved my long-held personal goal of receiving GSA's Kirk Bryan Award for previous work on pluvial lakes of the western Basin and Range, and it was a delight to encounter Norm Herz in the same awards lineup at the GSA meeting in Denver. Our three children are grown and mostly out of the house; I'm contemplating retirement in 2-3 years; and John and I are looking forward to a lot more travel, starting with our private-permit rafting trip in the Grand Canyon – 25 days beginning in late April this year, and our second on the big rio. Come look us up at our hacienda in the Colorado foothills if you come this way.

Andrew Rindsberg (M.S., 1983)

In August 2006 I left the Geological Survey of Alabama to become Associate Professor of Environmental Geology & Paleontology at the University of West Alabama in Livingston. As the only geologist in a biology department, I might have felt out of place, but paleontology is just another branch of biology to these people and they have given me a warm reception.

Livingston is located within the Black Belt, a region of dark and fertile soils that formerly supported a cotton plantation economy. It's now one of the poorest regions in the country, but UWA is trying to change that. Many of the university's programs focus on the land and its heritage, including prairie conservation with the Nature Conservancy, for which I am vetting geologic sites. Last fall I organized a course on the "Natural History of the Black Belt" with several guest speakers. Mostly, of course, I'm here to teach Earth Science, Physical Geology, Environmental Geology (thanks, Dr. Wenner), and so on.

My researches on trace fossils continue, often in collaboration with Georgia alum Tony Martin (Emory University), and I usually get out of the country once a year to attend a meeting: Bahamas, England, Argentina, Denmark, Germany, Poland, the Czech Republic. If "the best ichnologist is the one who's seen the most trace fossils", I'm definitely in the running.

Marty Robinson (M.S., 1975)

I am still working for Saudi Aramco in Daharan, Saudi Arabia. I am involved with a team charged with evaluating and risking all the oil and gas exploration prospects in the Kingdom. Aramco has a very active exploration program across the Kingdom and it has been a rewarding experience to have been part of this effort. David Bacchus (B.S., 1976) is also here at Aramco where he is part of our Geological Technical Services group providing geological support to both exploration and reservoir development. In the last year I have also had opportunity to meet another Georgia alum, Karen Romine (Class of 1975?), who has been to Dhahran a couple times reporting on some consulting work her company (Frog Tech in Canberra, Australia) has been doing for Aramco.

Marty Robinson and fellow climbers atop Africa's highest point, Uhuru Peak, the highest peak of Mount Kilimanjaro

All is well with the Robinson family. Annie and I are looking forward to retiring in 2010 to our house on Vashon Island in the Puget Sound between Seattle and Tacoma. Annie's son Merle met me in Tanzania last October and we spent two weeks checking out the wildlife at some of their excellent national parks (Serengeti, Ngorongoro, Lake Manyara, Tarangire, and Arusha) and climbing to the summit of Mount Kilimanjaro (19,341 feet). It was a wonderful and memorable trip. Merle's wife Sarah graduates in May (2008) as a nurse anesthetist from Gonzaga. Peter continues his graduate studies in astrophysics at the University of Colorado in Boulder. He is engaged to Katie Montgomery (also a grad student studying voice - a mezzo-soprano), but the poor and busy graduate students have not yet set a date for their wedding - maybe the summer of 2009? Youngest son Kai transferred this year from Brown University to Amherst College when Brown condemned their swimming pool and he couldn't continue his springboard diving. His diving has improved at Amherst under the coaching of Mary Ellen Clark and he was this year's (2008) New England Small College Athletic Conference champion on both the one and three meter

boards. He followed that up Easter weekend by winning the NCAA Div III Swimming and Diving National Championship on both boards. So, Annie and I are the proud parents of a NCAA National Champion!

Kathy (Fitzpatrick) Sanford (B.S., 1981; M.S., 1982)

Still working in the Bureau of Oil and Gas Regulation at the New York State Department of Environmental Conservation (NYSDEC). New challenges this year included time spent learning about geologic storage of carbon dioxide, to make recommendations for regulating it in New York if proposed in conjunction with new coal-fired power plants. That work took me to conferences in New Orleans and Washington, D.C., in early 2008. In D.C., I enjoyed meeting up with Karen Obenshain.

We're also anticipating increased gas drilling activity in New York, targeting the Middle Devonian Marcellus Shale which has been identified from West Virginia to central New York as a potential super giant gas field, with perhaps 50 trillion cubic feet of probable reserves (see the March 2008 AAPG Explorer). The prospective area in New York extends from the Catskills to Lake Erie, and heavy leasing activity by exploration companies has prompted many phone calls to my office from curious and concerned landowners in areas not accustomed to oil and gas activity.

On the personal side, my husband, Jim, retired in August 2007 from his 30-year career as an environmental engineer for NYSDEC. Now he spends his time on hobbies, caring for two young foxhounds we adopted in December 2007, grocery shopping and housework. It's great having a "house husband" who has dinner cooking every night after work! Recent travels have been to Salzburg, Austria, in September 2007 and a tour of Italy in April 2008, along with as much time as possible on the coast in Rockport, Massachusetts.

Jason Shiflet (M.S., 1999)

Not much newsworthy information to report. I'm still with Zapata Incorporated in Charlotte, North Carolina and still working on my Ph.D. at UNC Charlotte. I do, however, now have a working dissertation title (albeit a tentative title) that may spark interest among some alumni, "Using compound-specific stable isotopes analysis (CSIA) and fate and transport modeling to quantify the contribution of co-mingled chlorinated ethene plumes". In part, I'm working with Dr. R. Paul Philp of the University of Oklahoma and Dr. Anne Jefferson of UNC Charlotte.

Don Thieme (Ph.D., 2003)

I am teaching at Valdosta State University this year. Last semester I taught a large "Introduction to Landforms" class (150 students). We teach all of our labs here with only a little assistance from advanced undergraduates.

This semester I have smaller classes, including a soils class for majors with only 20 students. We are working on a bisequal spodosol profile from Trail Ridge with soil scientists from the NRCS office in Waycross. I am also teaching GEOL 1121 and a "Natural Hazards" course listed as GEOG 1110. This has been some of the best teaching experience that I have had, but once again I have had little time to spend on research.

I continue to work with Fernbank Museum archaeologists along the Ocmulgee River, and we are presenting our findings from Coffee Bluff at the Southeastern Section of GSA in Charlotte.

Don Thieme examining a spodosol in Hoboken Pit

Greg Vaughn (M.S., 1995)

Greetings to all. What have I been doing lately? Well, after leaving Georgia I moved to Reno, Nevada and worked in the mineral exploration industry for about 4 years – for a company called North American Exploration, and also as an independent consultant. Then I returned to school at the University of Nevada Reno and received my Ph.D. in 2004, where my research focused on using hyperspectral remote sensing data and infrared spectroscopy to map surface minerals related to ore deposits, geothermal activity, and weathering mine dumps. My research was funded by a NASA graduate student research fellowship, which was my foot-in-the-door for my next job as a Caltech postdoc at the Jet Propulsion Laboratory. While at JPL, I mostly worked on monitoring active volcanoes using space-

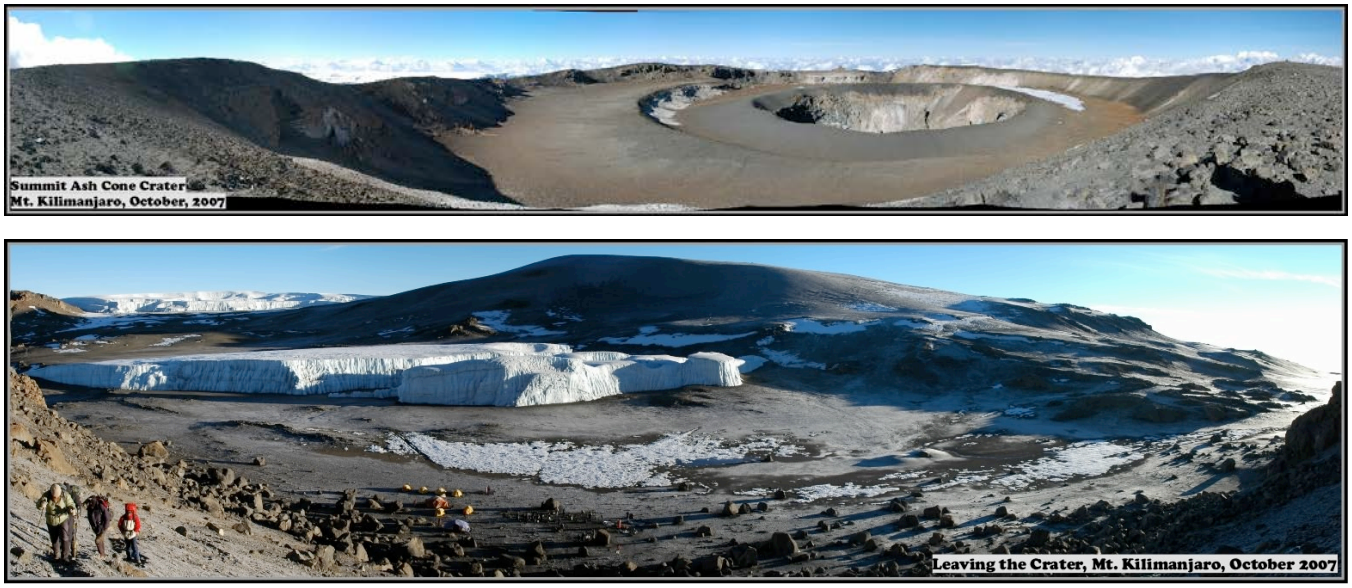
borne thermal infrared sensors, like ASTER, and I also worked on the validation and calibration of satellite TIR data.

Now, I must go back to my time in Reno to introduce Alicia, the fellow graduate student at UNR who I became great friends with and eventually married. Alicia was an Arkansas Razorback geologist, but I never held that against her. She came to UNR to do an M.S. degree, also in geologic remote sensing and spectroscopy, though she focused her attention on another planet – Mars. We had the same advisor, the same office, and as it turned out, the same path. She graduated in December 2003 just in time for the Mars Exploration Rovers to land (January 2004) and she has worked at JPL on the MER mission since their beginning – and as of this writing they are still roving! So, it was more than convenient when I got the postdoc at JPL. We've lived in Pasdena for more than 3 years now. Alicia and I got married in October 2005 and had a beautiful baby girl (Virginia Kaylee) in April 2007.

As my JPL postdoc was winding down, I started teaching part time, at both Pasadena City College and Cal State University Northridge. In my, thus far futile, search for the elusive tenure-track position, I am still enjoying teaching at PCC and CSUN, and my continued research (satellite monitoring of active volcanic thermal features and remote spectral mineral mapping) is funded through my assistant research scientist position with the Planetary Science Institute.

All of this will change, however, in October 2008, as I have just accepted a USGS Mendenhall fellowship. I will be studying the thermal characteristics of Yellowstone National Park using TIR satellite images, and will be based at the USGS in Flagstaff, Arizona. We are really looking forward to leaving the big city behind to move to Flagstaff in September.

OK, that's it for now. Hello to all my fellow students and colleagues at UGA.



Two views of the crater at the summit of Mount Kilimanjaro, from Marty Robinson (M.S., 1975)

Field School 2007

Crossing a very low Medano Creek at Great Sand Dunes National Monument

Mark Stanley measuring section along Skyline Drive, with Twin Mountain in the background

Josh Massey measuring strike and dip in the Dakota Group on Skyline Drive

Ankylosaur and theropod tracks in the Dakota Group on Skyline Drive, first discovered in 1999, then excavated in 2000.

For the full story of this discovery, go to http://www.dinosaurdepot.com/tracks_p1.htm

A great view of Twin Mountain from Skyline Drive. Does this back mapping memories? Can you pick out Nasty Knob and Twin Gulch?

A very wet spring brought everything into bloom by our arrival in May

An early monsoon season made this view from the Dakota hogback a familiar site most afternoons

Visit our website at www.gly.uga.edu

Want to see a color version of this newsletter?

Go to www.gly.uga.edu to download a color pdf of this newsletter. The photos look much better in color!

Have news or photos?

Send any contributions for the next newsletter to Steve Holland at stratum@uga.edu.

Have suggestions?

Please contact Mike Roden at mroden@gly.uga.edu or Steve Holland at stratum@uga.edu.

Would you like to donate?

The Geology Department appreciates your financial help. Your donations benefit the department and especially our students. Endowments directly aid the work of graduate students. For example, the Berg Fund supports students conducting research in geophysics and the Levy Fund supports students whose research is in Marine Geology. The Gilles and Bernadette Allard Fund supports field-based research and was awarded this year to fund field studies in paleobiology and geoarchaeology.

The Watts-Wheeler Fund is instrumental in supporting many of our graduate students in their research and in presenting their work at professional meetings, such as the Geological Society of America. In the past year alone, the Watts-Wheeler Fund has supported the research of twelve graduate students and the travel of three graduate students. As always, our General Fund for undergraduate and graduate programs has benefitted all by supporting invited speakers and our open house program for prospective graduate students.

For donations to the Geology General Fund, checks should be made out to the ARCH Foundation, and please include the code AFASGOL208 and Geology General Fund on the designation line on the check. For donations to all other funds, please call Patti Gary at the Department of Geology at (706) 542-2652. Please direct checks to: c/o Patti Gary, Department of Geology, University of Georgia, Athens, GA 30602-2501. If you would like to donate online, please go to Geology's home page (www.gly.uga.edu), choose Alumni ... Donate. Click the link for The Georgia Fund and select the Geology Department in the Franklin College of Arts and Sciences from the menu. We appreciate your generous support of the Geology Department!

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University of Georgia

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