UMASS AMHERST geoSCIENCES
Summer 2006
University of Massachusetts Amherst
College of Natural Sciences and Mathematics

The Connecticut River from Mt. Sugarloaf in S. Deerfield, MA. Visit www.geo.umass.edu for photos in all four seasons by Richard Wilkie.

A Letter From the Department Head

We have come to the end of another academic year. Faculty and graduate students have dispersed for summer research, and the pace in the Department has slowed a bit. Jim Hafner is heading to the Philippines; Julie B-G has already been to Russia and Svalbard; Laurie Brown is in Norway. Researchers and students from the climate group have gone to the Arctic; Sheila Seaman is preparing for a Five-College trip to Iceland; Piper Gaubatz and Stan Stevens have gone to Tibet; and I headed to northern Canada. The isotope, microprobe, biogeochemistry, Quaternary, and XRF labs are going strong as students and faculty make the most of long days with no classes.

The Department is thrilled to welcome two new faculty members. David Boutt, our hydrogeologist, joined us in January, 2005. Qian Yu, a specialist in GIS and Remote Sensing, joined us in January, 2006. Dave got his Ph.D. at New Mexico Tech and then was a Postdoctoral Fellow at Sandia National Lab. Dave combines field hydrogeology with numerical and analytical modeling in a way that will keep our program modern and broad. Qian (pronounced "Chen") Yu received a Ph.D. from the University of California, Berkeley. She has broad interests in using GIS, remote sensing, and spatial modeling to study environmental systems. Her specialty involves "VHR" (very high resolution) multi-spectral image analysis and information extraction.

It seems that the pace of student and faculty research has only increased in recent years, and that means even more travel, more meetings, and more visibility for the department. Michele Cooke is now well into her NSF Career Grant research with fieldwork, new sandbox experiments, and numerical fault simulations. Rob DeConto is gearing up for the ANDRILL Project, a multi-university drilling effort in the Antarctic. Piper Gaubatz will be studying the changes taking place in China as it prepares for the next Olympics. Ray Bradley and the climate group are going strong, despite the best efforts of some politicians in Washington. Laurie Brown is well into a new funded paleomagnetism project in South America. George McGill has several NASA grants, and Tony Morse is still working on experiments at Smith. Who said anything about retirement?

Everyone in the department and all alumni are saddened by the loss of Tom Rice and Charlie Pitrat. They both helped to make the

Continued on page 4

The UMass Amherst Geosciences Department tradition of donning field boots and fancy clothes on April Fool's Day continues. *Photo by Chris Condit*

Meet Our New Faculty Members

David Boutt, Assistant Professor of Hydrogeology

I arrived in January of 2005 after a postdoctoral position in New Mexico at Sandia National Laboratories where I taught and performed research in the field of hydrogeology. I hail from Michigan originally, and received my Ph.D. from New Mexico Tech (NMT) in Socorro in Hydrology with Brian McPherson. At NMT I studied the role of fluid pressure, maintenance and origin in the genesis of opening mode fractures in the shallow (< 5km) crust. This work combined theoretical and numerical analysis of the conditions conducive to fracturing as well as laboratory experiments. We have been pursing the suitability of a new technique to model the coupled fluid-solid physics of rock. This technique "builds" rocks from the grain-scale on up and is successful at capturing a variety of complex behaviors (such as stress sensitive permeability and poroelastic phenomena) using relatively simple interaction laws. I will continue to work with and develop these models and algorithms for application to geological phenomena while at UMass Amherst.

My interests in hydrogeology range from the role of fluids in various geological processes to aspects of watershed hydrology, including the influence of land use change on physical hydrological processes in urbanizing watersheds. I specialize in the application of discrete based numerical models (such as the discrete element model and lattice-Boltzmann models) to geological problems. As alluded to above, discrete-based simulation of certain geological phenomena more accurately captures the inherent variability and heterogeneity found rocks compared to continuum-based models. My group is currently using these types of models to simulate things like the transport of colloids through real fracture geometries and the formation of fractures in overpressured sedimentary basins.

Spring 2005 stream gauging lab at Amethyst Brook. Dr. David Boutt is on the right.

Laurel Goodwin (University of Wisconsin Madison) and I are combining a laboratory based analysis of natural hydraulic fractures with a coupled numerical analysis of the fluid-rock system. Work with collaborators at Sandia National Laboratories is currently focused on

Continued on page 4

Qian Yu, Assistant Professor of GIS and Remote Sensing

Qian Yu, a recent Ph.D. from the University of California Berkeley, joined us in January as an assistant professor of GIS and remote sensing.

Qian grew up in Lanzhou, along the Yellow river in Northwest China. In 1995, she started her undergraduate study in a program for honor students in physical geography at Nanjing University in southeast China. After four years of study, she realized the importance of a new spatial technology in Geography and decided to continue on for her master's in Geographic Information Sciences. In her thesis, she proposed a spatial data structure to implement the storage of spatial data in a traditional relational database.

The 1990s was the decade of GIS boom. The integration of GIS (spatial data analysis) and RS (spatial data source) became an important research topic. More and more applications required users to have knowledge in both fields. Her interests were extended to remote sensing image analysis. Qian came to the U.S. in the fall of 2001 for her Ph.D. at the Department of Environmental Science, Policy and Management at University of California-Berkeley. Her research focused on VHR (very high resolution) multi-spectral image analysis and information extraction. VHR remote sensing imagery had just become available in the late 1990s and the methodology of information extraction was in the exploratory stage. Her dissertation was on object-based image classification for vegetation, which extracts species information and biophysical parameters from images based on GIS polygons. Her work also involves the image spatial variation theory and classification uncertainty analysis. She received a grant from the National Park Service among others to support her research. Her work in this area appeared in Photogrammetric Engineering and Remote Sensing and the International Journal of Remote Sensing.

Qian has broad interests in using GIS, remote sensing and spatial modeling to study environmental systems. Besides her dissertation topic, she also has journal articles published in Hydrological Processes: Cellular Automata approach of modeling the impacts of animal trampling on hill

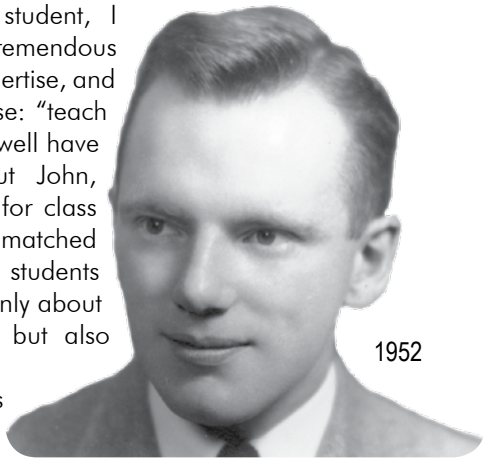
Continued on page 4

"Morale is high!" A Tribute to John F. Hubert

John Frederick Hubert (b. November 28, 1930, Quincy, MA) attended Newton High School in Massachusetts, and Harvard College, where he played "first board" on the chess team (meaning that he was their best player). Having never collected rocks before, John's interest in geology was nonetheless set in stone in Harvard's GEO 100 class taught by Kirtley F. Mather. "Harvard had the best teachers teaching the intro classes, which stressed lab work and the importance of field trips," John relayed during a recent conversation – a rationale that he wishes colleges today would follow. John graduated from Harvard in 1952, obtained a Master's from the University of Colorado in 1954, and Ph.D. in mineralogy and petrology from Pennsylvania State University in 1958.

At Penn State, John met his beloved wife of more than 50 years, Mary Alice, at a dance for graduate students, for which the advertisement, John whimsically recalls, was, "come and meet your future wife!" Mary Alice was working on her Master's degree and is now a retired pre-school teacher. John studied under Paul. D. Krynine, a famous pioneer sedimentary petrologist, trained by the igneous petrologist Adolph Knopf at Yale. Nearing graduation, John was offered a job in an oil company research lab, but his true love was teaching, so he declined. Subsequently John accepted an Assistant Professorship at the University of Missouri in 1958, advancing to Associate and Full Professor. He came to UMass Amherst in 1970. John, and Mary Alice, who often goes in the field with John, have two daughters, Amy Susan and Nancy Beth, a son, John Frederick, Jr., and five grandchildren.

John learned much from Paul Krynine and John C. Griffiths, and he blended the best of their teaching into the excellent courses he taught at University of Missouri and UMass Amherst, including Introductory Physical Geology, Sedimentology, Statistical Geology, Sedimentary Petrology, and Sedimentology Seminar. John's courses were always of the highest order, and underscored John's belief of the importance of the professor teaching the labs and leading the field trips as opposed to having their graduate students take on this responsibility themselves. As John's TA for Sedimentology I saw first hand some of John's habits that made him a beloved teacher and an outstanding researcher. As John's last Ph.D. student, I benefited from his tremendous insight, wisdom, expertise, and patience. The phrase: "teach by example" could well have been written about John, whose preparation for class or the field was unmatched and from whom his students learned much not only about the subject matter but also about life.


1952

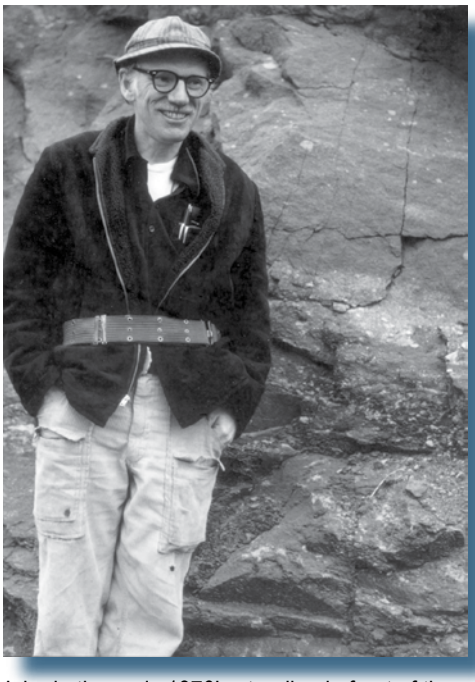
John has supervised 55 graduate students, including 48 master's candidates and 7 doctoral candidates. All benefited from John's help in writing grant proposals and their theses. All learned about thorough preparation of concise annotated graphics, around which one writes the dissertation or article. Indeed, one of the hallmarks of the John and his students' work through the years has been the effective use of carefully drafted figures and well-written or oral summaries of sedimentary processes. John is a master of this technique, and my friend and colleague Richard Bailey in the Department of Earth Sciences of Northeastern University, says that he always seeks out presentations by John or his students because they are "always of the highest quality ever."

John's 60 papers and guidebooks cover many types of sediments, concentrating in recent years on the Newark Supergroup, with 15 field seasons studying the Bay of Fundy strata: eolian, fluvial, playa-sandflat, alluvial fan, lacustrine, debris-flow, and paleosol. John's Ph.D. dissertation on the Fountain Arkose, was published in 1960 by the Colorado School of Mines as a Monograph and quickly sold out! For several years, John studied the Morrison Formation, and one of his favorite articles is the 1996 interdisciplinary study of the taphonomy, petrology and diagenesis of dinosaur bone tissue as it transforms to fossil bone. John has served for many years on the editorial board of *Sedimentary Geology*.

When I asked John what his retirement plans were, somewhat expecting an answer that involved travel and vacations, John immediately shot back: "I'm moving into 254" a small room off the Student Common Room, where there will be a "Don and John Show," as he and another great geologist, Don Wise, educate even more students and continue doing research.

Indeed, John has had a long and fulfilling career, and when John does something he is "all in!" Two of John's favorite expressions are: "You've got to go in the field!" and "Is morale high?" which he often asked students at critical times in his classes and field trips. Students immediately know that John is concerned not only about their education but also about their life and well being. Thank you, John for caring, for being such an exemplar, for your outstanding contributions to Sedimentary Geology and for your inspiration to those of us who love to teach!

(Prepared by Ken Galli, Boston College).


John in the early 1970's standing in front of the central Connecticut caliche soils in redbeds.

Dinner Honoring John Hubert

September 15 at 6:00pm
Campus Center Amherst Room
(10th Floor)

Please contribute reminiscences about John even if you cannot attend.

RSVP or for more information:
lorna@geo.umass.edu or 413-545-1806

David Boutt con't

understanding grain-scale mechanical behavior of siliclastic rocks through detailed laboratory experiments with an emphasis on rock porosity and permeability. This is funded by a grant from the Department of Energy's Office of Basic Energy Sciences. This work has important implications for things like compressive storage in large aquifers. I also plan to expand my research to the fractured bedrock of the region. I am setting-up a lab to explore detailed aspects of fluid flow and mass transport in fractured rock. This research looks at the role of anisotropic stress in a fractured rock's ability to transport contaminants through bench-scale experiments in naturally fractured crystalline rock. Together with the Office of the State Geologist, my group is studying the role of groundwater storage in bedrock and surficial aquifers on the watershed hydrology in the Deerfield River watershed near Charlemont, MA. I hope to hear from many of you soon and encourage you to visit my faculty webpage for more details of my research and teaching at UMass Amherst.

Dr. Boutt is teaching several graduate-level and undergraduate courses. These include a seminar on Hydrogeologic Processes and intro and advanced level hydrogeology courses. The advanced courses will emphasize the numerical modeling of groundwater flow and transport of contaminants using state of the art software.

Qian Yu, con't

land sustainability and on surface runoff, Atmospheric Environment: Modeling spatial allocation of PM2.5 Emissions from Residential Wood Combustion in the State of California, and the Soil Science Society of America Journal: Quantity and spatial variability of soil carbon and analysis of controlling factors in the conterminous United States. Based on her quantitative and spatial analytical strengths, she specializes in using spatial and temporal modeling to understand spatial variation and their interactive processes.

Since Qian started her work at UMass Amherst, she has endeavored to collaborate with colleagues in geosciences. She is involved in a project linking remote sensing and storm water modeling in order to quantify the spatial and temporal distribution of dissolved organic carbon (DOC) from landscapes to coastal waters in collaboration with UMass Boston. Also, she has recently started to explore vegetation-aided bedrock mapping in collaboration with Millersville University, PA.

Qian serves as the GIS lab manager and makes an effort to promote the GIS program on campus. She is also the vice president of the International Association of Chinese Professionals in Geographic Information Sciences. She enjoys serving in the GIS community and promoting the exchange of ideas and knowledge.

Qian teaches introductory and advanced GIS and remote sensing courses. She is also planning a course of quantitative environmental data analysis and geostatistics. All her courses emphasize both theory and computer implementation to enable students to put what they learn into practice. She actively encourages students to link quantitative skills to the geographic phenomena that interest them in their final projects.

Dept Head Letter (con't.)

department what it is, and we will miss them.

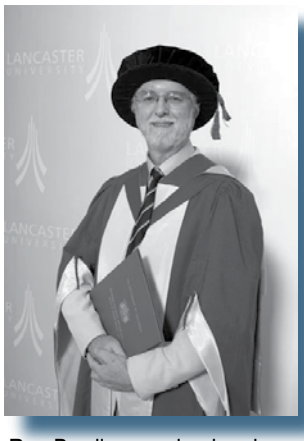
We have had a busy year (or two) of renovations in Morrill. Ceilings and lights have been replaced in many parts of the department. Asbestos has been removed, and new fire alarms and higher-speed networking installed. I am afraid that we have lost the stained record of some of the great Morrill floods of the past. It's not a brand new Geosciences building, but the old place is looking great.

During the spring 2005 semester, we had our periodic review. The so-called AQAD review involved five outside reviewers and a complete evaluation of department activities from undergraduate and graduate teaching to research and the use of department space. The review was very positive, and there were some great suggestions, the results of which you will be hearing about in future newsletters. Of course, we welcome comments, suggestions, and news from all alumni and friends. Please check in on the web site when you can. We have a new look and information about happenings in the department.

It was great to see alumni and friends at the UMass Amherst-Geosciences reception at GSA in Salt Lake City. We hope to see as many people as possible at the GSA in Philadelphia this fall. The UMass Amherst Geosciences reception will be Monday night (10/23) at 8:00 PM, and you don't need to attend the GSA meeting to come to the reception. Please stop by and say hello. Also, watch for the second annual Department of Geosciences calendar, coming this fall. Best wishes for fall and winter of 2006.

Faculty Notes

Ray Bradley was recently elected a Fellow of the American Geophysical Union. A book he co-edited (with Henry Diaz), *The Hadley Circulation: Present, Past & Future,* was recently published by Kluwer Academic. He returned to Ellesmere Island, northern Canada this summer to continue his research on varved lake sediments.



Ray Bradley received an honorary Doctor of Science from Lancaster University, England

Julie Brigham-Grette continues to focus on several projects. The Lake El'gygytgyn (Lake E) Drilling program is on the cusp of being funded by NSF, given the momentum from a $1.5M award from the International Continental Drilling Program. Along with colleagues from Germany, Russia, Austria and Canada, Julie plans to drill during Jan-May 2008 to recover sediment cores dating back to 3.6 Ma from NE Russia. Eleven papers summarizing results from the pre-site survey work are now "in press," filling an entire issue of the *Journal of Paleolimnology*. In July 2005, Julie participated in a pilot Research Experience for Undergraduates program (REU) based out of Ny Alësund, Svalbard run jointly with alums Steve Roof and Mike Retelle, along with Al Werner (Mt. Holyoke) and Ross Powell (Northern Illinois Univ-NIU). Senior Luke Trusel finished an honors thesis based on modern process research of an active tidewater margin near Ny Alësund and is now off to graduate school at NIU.

Graduate students continue to teach Julie new tricks. Zach Lundeen worked on the deglacial history of the Chukchi shelf and is now at the University of Utah. Beth Caissie finished her M.Sc. and will continue on for a Ph.D. on the sea ice history of the Bering Strait. Caitlin Majocka is finishing up her M.Sc. on understanding variations in the magnetic susceptibility record from Lake E.

A past president of the American Quaternary Association, Julie continues to serve as chair of the PAGES International Science Steering Committee until 2009.

Chris Condit continues to work on his Dynamic Digital Map project - visit the DDM web page at http://ddm.geo.umass.edu where you can download more than 10 DDMs posted there. He'll be teaching a course on making DDMs this fall. As you can see from the department calender, Chris is still flying his Cessna 170B and shooting pictures. He continues to be interested in volcanic rocks out in the southwestern United States, and took a trip out to Arizona in June to assess the possibility of continued work in the south-central Springerville field, where mapping has not been done. He also has accompanied Laurie Brown on several paleomagnetic sampling trips to Chile and Argentina, and looks forward to another trip in January.

Michele Cooke continues to work on active and ancient fault systems. With Ph.D. candidate Ryan Shackleton, she is investigating fractures along a fault-cored fold in the Spanish Pyrenees—a wonderful region to do field work in! In the realm of active faulting, she and Ph.D. candidate Scott Marshall are investigating fault geometry and slip rates within the Ventura and Los Angeles basins of California. Although there is not much field work there, they enjoy helping to constrain seismic hazards in the region. To better understand these ancient and active faults, post doctoral researcher Mario Del Castello and Michele have developed a new project of analog experiments of fault system evolution where they grow faults in sand and clay. This last project has a fabulous outreach component and they have been running sandbox workshops and field trips for students from six high schools for the deaf around the country. This project has been described in *Geotimes, SignNews, AP news* and the UMass Amherst web page.

Michele Cooke signs with a student during "Faults in the Field"

Julie Graham has a new book, *A Postcapitalist Politics,* co-authored with her longtime Australian collaborator, Katherine Gibson, under their pen name J.K. Gibson-Graham, and published by the University of Minnesota Press. Julie and Kathie continue their work on alternative economies (see www.communityeconomies.org) and have given many keynote and public lectures during the past year, including the *Progress in Human Geography* lecture at the Chicago AAG in March. Julie's current research focuses on the extraordinary proliferation of alternative economic activity in the Pioneer Valley over the last several years. In January, students joined her in forming the Community Economies Research Group (CERG), to analyze and chronicle the local community economy. They received a small grant from the American Sociological Association to study community enterprises in the Pioneer Valley as a contribution to a larger international study of community-oriented enterprises. CERG researchers and geography Ph.D. candidates Janelle Cornwell and Ted White are documenting the local economic impact of the "buy local" campaign of Community Involved in Sustaining Agriculture, a successful NGO that asked CERG to assist them. An undergraduate CERG researcher also participated in a telephone survey of potential depositors in the Common Good Bank, a community-oriented bank that is starting up in the Valley. Julie's Ph.D. student Stephen Healy recently completed his dissertation on the community economy and health care reform, with a very successful and well attended defense.

The Eastern Mindanao Conservation Collaborative (EMCC), directed by **Jim Hafner,** supports a biodiversity archiving project in Mindanao, Philippines. EMCC is working to finalize 18 months of analysis of endangered species distribution, habitat characteristics, and threats to the sustainability of those species and habitats. This has been a collaborative effort with the Philippine Eagle Foundation and the University of the Philippines Mindanao who

Continued on page 6

Faculty Notes cont.

are responsible for field data collection and hosted a two week GIS training program run by the UMass Amherst Geosciences department in June 2005. The department's contributions to this project can be credited primarily to Sean Fitzgerald, Lecturer (Geography, M.Sc.), Don Sluter (Geography, M.Sc.) and Alicia Johnson (Geography, M.Sc. candidate).


Durian Fruit in the Philippiunes

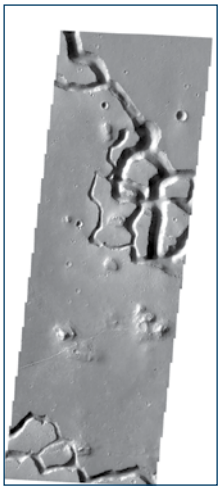
John Hubert will retire this summer after 36 happy years in the department. Thanks to everyone who made this possible! He remains active, continuing work with Jim Dutcher on an ongoing project on the early Mesozoic fluvial redbeds of the Sugarloaf Arkose, and supervising Matt Walsh who is a master's candidate doing sedimentary petrology on the arkose.

Lynn Margulis spoke with many colleagues including Vandana Shiva at Conde Duque Cultural Center in Madrid at Banquete, an international program on "Communication and evolution." Banquete, a two year celebration, creates a dialogue between art, science, technology, and society. A catalyst of dynamic relationships, the Banquete symposiums took place inside vol. 2 of Miquel Cervante's book, Don Quixote (1605-2005). Some 300 artists, scientists, authors and other intellectuals participated in response to a sixteen page supplement in the newspaper *El Pais*, distributed to 130,000 readers. Her article, "Gaia and the Evolution of Machines," received two full well-illustrated pages in this wonderful supplement.

Her most recent publications include: "On Syphilis and Nietzsche's Madness: Spirochetes awake!" in The American Academy of Arts and Sciences, *Daedalus*, and "Serial Endosymbiotic Theory (SET) and Composite Individuality: Transition from bacterial to eukaryote genomes", in the UK publication *Microbiology Today*. With Dr. Michael Dolan and UMass Amherst honors undergraduate Hannah Melnitsky "Cysts and symbionts of *Staurojoenina assimilis* Kirby from *Neotermes,*" their research paper appeared in the latest issue of *European Journal of Protistology*. After two years of work, Dr. Michael Dolan, Jessica H. Whiteside and Lynn submitted their comprehensive paper "Origin of the Nucleus: Attraction spheres and the Chimeric Karyomastigont" to the special 2005 issue of *Paleobiology* in memory of Stephen J. Gould: Macroevoluton: Diversity and disparity.

This summer **Bill McCoy** will continue his loess research in Europe with Dr. Eric Oches (past M.Sc. and Ph.D. student). He will be picking up ground temperature dataloggers at several sites in Central Europe and collecting snail shell samples from loess at sites in Hungary. The ground temperature data will be useful for understanding the kinetics of amino acid racemization in fossil snail shells, for determining differences in present-day temperatures between sites, and for estimating the range of thermal diffusivities of loess at various sites. Fossil shells will be collected at many new (for Rick and Bill, at least) loess exposures in Hungary with the cooperation of Dr. Erzsebet Horvath of Eotvos Lorand University (ELTE) in Budapest. Of particular concern this year is collecting shells near the middle-Pleistocene Bag Tephra horizon found in many sites from Slovakia to Serbia. After the field season, Dr. Oches, an Associate Professor of Geology and Chair of the Department Environmental Science and Policy at the University of South Florida, will be spending his sabbatical year (2006-2007) in our department.

George McGill writes: I have been among the "working retired" for nine years now, and very little has changed, except I keep getting older (I hit 75 in June of 2006). His NASA grants support his research, and also three graduate students: two Ph.D. candidates (Dianna McMenamin and Eileen McGowan), and one M.Sc. candidate (Fariha Islam). There were two successful defenses in the past year or so, M.Sc. for Carol Ivers, and Ph.D. for Debra Buczkowski. Carol teaches high school in Milford, CT, and Debra has a post-doc at the Advanced Physics Lab, Johns Hopkins University. His three current graduate students all want to study Martian geology, whereas he attempts to tackle research problems on both Mars and Venus. Some of his Mars research is as a Co-PI on a grant to geophysicist Sue Smrekar at NASA's Jet Propulsion Lab and he thinks that interacting with a geophysicist is rather fun. He enjoys working with graduate students and expects to continue doing so for at least a few more years. He writes that his overall health is good, but he has been physically slowed down somewhat by a couple of dramatic falls, one of which broke his left hip. This has not affected his research or graduate mentoring, however.


18 km wide image from the Mars Odyssey orbiter.

Rud Platt was the keynote speaker at the Tenth Anniversary celebration of Chicago Wilderness at the Field Museum in Chicago on May 17. Chicago Wilderness is an alliance of over 190 public and private organizations working to restore, protect, and manage natural ecosystems in the greater Chicago region. Its membership includes federal, state, county, local, and private agencies which collectively manage over 225,000 acres of protected natural areas. Rud organized a series of four speakers on "Disasters, Environment, and Public Policy" held on the UMass Amherst campus between February and May of this year. He gave the concluding talk in the series: "Learning from Disasters: The Synergy of Geography and Public Policy." He presented a shorter version of this talk at the Phi Beta Kappa graduation ceremonies at UMass Amherst on May 27.

Under his direction, the Ecological Cities Project (www.ecologicalcities.org) has completed an edited book: *The Humane Metropoli: People and Nature in the 21st Cen-*

Faculty Notes cont.

tury City, to be published with a companion 22-minute DVD in October by the University of Massachusetts Press in association with the Lincoln Institute of Land Policy. Launch events are planned for the Boston area and New York City in November.

2004 saw the publication in G-cubed of **Mike Rhodes'** mammoth paper on Phase-2 of the Hawaii Scientific Drilling Project. This is a multi-institutional, multi-national project that he has been involved in for the last six years. The idea behind this project is to document changes in volcanic output and magma composition as the Island of Hawaii moves over the inferred Hawaiian plume. In the paper, Mike Vollinger (grad student) and Rhodes report on the geochemistry of systematically sampled lavas from the 3.1 km diamond drill hole. The top 245 m provided information on Mauna Loa's eruptive history over the last 100 thousand years, whereas the rest of the hole provided information on about 400 thousand years of Mauna Kea's eruptive history.

Mike Rhodes working in Hawaii.

The most exciting part of the research is the recognition, near the bottom of the hole, of lavas that are chemically similar to Loihi lavas inter-layered with typical Mauna Kea lavas. Loihi, a submarine volcano south of the Big Island is the newest addition to the Hawaiian chain. So, what does this mean? Stay tuned, drilling will hopefully resume sometime, and they expect to be analyzing more samples within the near future.

Last summer (2005) Mike organized two field trips. One to Hawaii for Five College students taking his Volcanology course, and the other to Maine for senior petrologists interested in magma chambers and layered intrusions. The trip for the scientists, which was organized and lead by Marshall Chapman and Mike Rhodes, was to look at the interaction of mafic and granitic magmas on Isle au Haut and Vinalhaven, Maine. The problem was logistics. How to accommodate and feed thirty scientists and their spouses, not to mention transport them from island to island. The answer: charter a schooner!

At the end of last summer, Mike was invited to give a keynote talk at a conference in Fort William, Scotland, on the geochemical arguments supporting a mantle plume for the origin of the Hawaiian Islands.

Sheila Seaman is enjoying working with five graduate students on a variety of projects. She is working with Ph.D. student Paul Low on geochemistry and mineral chemistry of ultramafic rocks in the Grand Canyon and with Ph.D. student Chris Koteas on magma dynamics and crystallization history of the bimodal plutons on the coast of Maine. With M.Sc. student Anna Keskula-Snyder she is studying the behavior of water as a trace compound in feldspar, with a focus on lava flows in Iceland. Anna has become an expert on the use of Fourier transform infrared spectroscopy at Brookhaven Lab to measure small amounts of water in minerals. M.Sc. student Katie Niman's work is also based in Iceland, where she's studied the geochemistry of hot springs and sinters, and how it reflects the local igneous rock compositions. Don Lac's M.Sc. research is a study of the oxygen concentration of magmas, also using the facilities at Brookhaven Lab on Long Island, in collaboration with Darby Dyar of Mt. Holyoke College. Sheila ran a Five-College field trip to Iceland for 39 students and faculty in August 2006.

Dick Wilkie had a year off from Geography Grad Program Director, but will resume the post this fall. He taught UMass Amherst courses in Switzerland (July '05) and Singapore (March '05 & Jan. '06), as well as his regular classes. His chapter "Dangerous Journeys: Mexico City College Students and the Mexican Landscape: 1954-1962" was published in *Adventures Into Mexico: American Tourism Beyond the Border*, (Rowman & Littlefield 2006) in the Jaguar Series on Latin America. Five of his grad students finished degrees in the past year--four Master's (Donald Sluter, Meredith Gray, Walker Korby and Jennifer Bonin) and one Ph.D. (George Roberson). Two of his Ph.D. students (Jeffrey Blankenship and Alan Marcus) have advanced to the ABD stage.

Mike Williams continues to study lower crustal rocks exposed in northern Saskatchewan, mid-crustal rocks in the southwestern U.S.A., and the spectacular Paleozoic rocks of western New England. In addition, he is heavily involved with the effort to develop the techniques of microprobe geochronology (with Mike Jercinovic). The new techniques allow ages to be determined for small portions of monazite crystals, and constraints to be placed on timing of deformation and metamorphism. Kevin Mahan has finished his Ph.D. and is working on a post-doc at Cal Tech. Ph.D. student Greg Dumond is doing superb research in Canada and in the Southwest. M.Sc. student Nancy Price is spending the summer in northern New Mexico taking a new look at the thick quartzites and Mn-horizons. Post-doc Philippe Goncalves has gone to a permanent job in France, but Callum Hetherington (post-doc) is now going strong on the monazite dating research projects.

Don Wise has continued his "retirement" by being around the department most days and now has his office in Marie Litterer's old drafting room. In the last year, he managed to get out papers on new interpretations of rift and grain in the basement of the Rockies, use of the Biemsderfer plotter, and the Pequea Silver Mine. He also helped organize three different runnings of a field trip across the Pennsylvania Piedmont, and a two day trip for the department (Chickies Rock, Rheems Quarry, etc.). He was outside examiner on two Ph.D. committees at the Univ. of Rome and, while there, become involved in some new interpretations of the structure of the Antarctic ice sheet. This summer he again taught field camp at the Yellowstone Bighorn Research Association (YBRA) in Red Lodge, MT.

Look for notes from the following faculty members in upcoming newsletters: Laurie Brown, Steve Burns, Rob DeConto, Piper Gaubatz, Mark Leckie, Tony Morse, Peter Panish, Steve Petsch, Pete Robinson, Stan Stevens, and Richard Yuretich

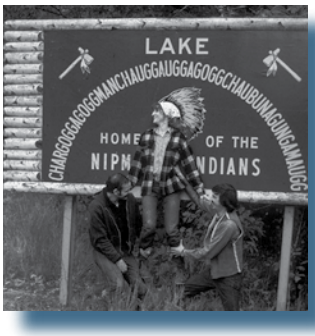
Alumni Notes

Bob Walker (M.Sc., '66) After twenty years doing oil and gas exploration in the Gulf Coast and Mid-Continent areas, I tried the environmental/geotechnical field; first as a drilling contractor in Dallas, then Baton Rouge, and finally migrating to Los Angeles. This month I celebrated ten years at the Army Corps of Engineers working flood-control design and environmental projects in Nevada and southern California. Within the last month I found myself initiating a groundwater study at Edwards Air Force Base (Muroc Lake) and reconning a huge alluvial fan in the Pahrump Valley of Nevada for a flood control structure. Both areas are but a "stones throw" from Big Smoky Playa in Nye County (NV) where Ward Motts guided my field work in the summer of 1965. Who would ever guess that I would retrace my steps forty years later? My email is robert.f.walker@usace.army.mil for anyone who would care to write.

Tom Baillieul (B.A., '71; M.Sc., '76) Just received the latest newsletter from the Department; my compliments to all those who contributed and put it together. I especially appreciated Tony Morses' eulogy for Howard Jaffe. I was one of Howard's early grad students, and Tony's words brought back a rush of memories.

As an update, I retired at the end of 2003 from 25 years' service with the Federal Government. Over that span of time I worked as a geologist with the Botswana Geological Survey (Peace Corps); helped with the siting studies of high-level nuclear waste repositiories; served as the government's geology and tunneling expert in the site selection for the Superconducting Super Collider, and led a multi-year project to clean up former nuclear research facilities in central Ohio.

I thought I was going to have more time for art, but these first three months of retirement have kept me busy battling the Ohio Board of Education which has fallen under creationist influences. We are starting to see the unraveling of the success achieved two years ago when a new set of public school science curriculum standards were approved which—for the first time ever in Ohio—mentioned evolution and made understanding it a central theme of 10th Grade Biology.



Laurie Brown is held up by Art Goldstein (now at NSF) and Bill Kelly (now State Geologist of NY) in the late 70's.

I would urge every student to become familiar with the cultural war between rationalism and conservative religion that is being fought in this country on many different levels. How soon will it be before we have political appointees with anti-evolution and anti-science leanings sitting at the head of governmental funding bodies like the NIH or the NSF?

Deb and I are still going strong after 31+ years; eldest son, Alex, has taken up nuclear engineering and brewing beer (a Geologist's dream come true!). Younger son, Ben, is finishing up at Ohio University as a Philosophy major (EarthFriendArts.tripod.com).

George McGill had a note from **Bert Stromquist (M.Sc., '77).** He wrote, "Today I am living in Abu Dhabi and working for the Crown Prince, Sheikh Mohamed bin Zayed al Nayhan, within a company he chairs called Mubadala Development www.mubadala.ae. Long gone are the days of practicing geology. Today I am in the fast paced corporate world of high stakes project development and mergers and acquisitions (the Enron collapse was the final straw – after 19 years with Enron's E&P businesses). I still have a very active hand in the energy industry managing and building this company's oil and gas portfolio, but it's equal measures of aviation and aerospace, automotive, petrochemicals, basic metals, precious metal mining, and a lot of advisory on re-inventing and re-engineering the government of Abu Dhabi.

My biggest preoccupation during the last year has been to lead the development of a new economic sector in Abu Dhabi centered on renewable energy and sustainable development and creating in Abu Dhabi, a global center of excellence in this space with supported R&D, new graduate university programs, the whole works. It's a go. While in New York last Fall at a Columbia University conference, the President of Iceland took me aside, sat me down, and said, "Albert, wouldn't it be sexy (he used the word sexy) if Iceland and Abu Dhabi could combine their respective expertise in developing natural energy resources from underground, and with Abu Dhabi's stature in the Middle East, African and South Asian region, bring low grade geothermal power to aid the development of impoverished peoples, a proposition that I think would be irresistible." "Phenomenal idea Mr. President," I said. "Let me check with my people and get back to you (wink!)." I am now leading- with my UAE national colleague, next week, the first official UAE delegation to Iceland - ever - at the invitation of President Grimsson. It's going to be great…"

Rusty Gilbert (M.Sc., '80) is working for Chevron's Energy Technology Co. (ETC) in San Ramon Calif. and is team leader of ETC's shallow marine (clastic and carbonate) stratigraphy group. "Most of the work we are involved in is international based and includes sequence stratigraphy studies (utilizing core, logs, seismic, biostrat.), field work, and leading field schools." He also noted, "FYI, **Alan Reed (B.Sc., '73)** (Bakersfield) is working in my team and **Brook Olsen (M.Sc., '02)** will report soon, both alumni of UMass Amherst. Say hi to all including Dr. Hubert. Sorry to hear about John retiring but it will be good for him. He's one of the few professors I have seen who really understands the rocks."

Peter Jacobson, (M.Sc., '80) wrote, "Thank you for sending the UMass Amherst Geosciences calendar; it is exciting to see the variety of field activities underway in the department….Greetings to all. I have practiced in the environmental consulting field for the past 26 years and the field is as stimulating, challenging


Jack Wishart hones his Brunton skills in Geo231--Field Methods.

Alumni Notes con't.

and varied as it was in the beginning. I have the pleasure of working with other UMass Amherst geo-grads (e.g., **Scott Laird (M.Sc., '74), Bob Day-Lewis (M.Sc., '80)** amongst the professionals I interact with regularly. I hope other geoscience graduates have the same robust career opportunities I have enjoyed. My wife, Julie, and I have three boys: Jascha (21, junior at RIT), Alex (15), and Sam (11). All three are very different, which, together with their age spread, has made our lives frenzied at times, but almost always fun. We live in the suburbs of Philadelphia, PA. I welcome hearing from others!"

Eric Oches (Ph.D. '93) examines a loess/paleosol exposure in Ruma, Serbia with his grad student Richard Walther (standing).

Jane Bolton (B.Sc., '81) writes: I really enjoy reading the department newsletters and hearing about what everybody is doing. I am in my sixth year working as a civil engineer for the Army Corps of Engineers in Sacramento, CA. Work wise it's the best job I've ever had, but I doubt I will finish up my career here. My male co-workers are so rednecked they make Omaha, Nebraska look like San Francisco, and the central California heat makes outdoor recreation in the summer virtually impossible for a cold-blooded Yankee like me. I recently returned from an adventure tour of New Zealand's south island. AWESOME, although I had to skip the glacier hike due to knee surgery six weeks before the trip. Keep the newsletters coming!

We enjoyed seeing **Jim Davidson (B.Sc., '85)** at our Denver GSA reception last year. He is a Senior Managing Scientist, at Exponent in Boulder, CO, specializing in hydrology.

Lee Allison (Ph.D., '86) is now the State Geologist of Arizona. Congratulations Lee … not in Kansas anymore!

Rob McClure (B.Sc., '86) writes: It makes me feel old that so many of the professors I had the pleasure of learning from have retired or passed on. I had classes with Steve Haggerty, and David Alexander. David's Geomorphology class was a favorite of mine. I am glad to hear Don Wise is still taking the students out into the field. He was a great teacher, and a lot of fun to be with out in the field.

I was saddened to hear of Howard Jaffe's passing. I remember Howard Jaffe fondly mostly because after having done well (A- I believe) in his Petrology class, he said I had a good chance of leaving UMass Amherst with a Geology degree. I still remember the Steinman Trinity, and his discussions about "American Rice Beer."

After graduation, I was a Bombardier in the USAF flying B-52 aircraft. I am now living in Nashville, TN and work as a salesman for Nalco, a specialty chemical company that provides chemicals for boiler and cooling systems.

I am very sad to hear of Tom Rice's passing. I took a Surficial Mapping class with him instead of going to Field Camp in the summer of my Junior year. He was working on a Pleistocene glacial deposits map for the quadrangle that covers UMass Amherst down towards Northampton. I had a section of the quadrangle to map south of UMass Amherst that covered the north side of the Holyoke range. I remember a time I spoke with Tom after graduation. I was home on leave and made a visit to the campus. I ran into Tom in the department and told him I was flying B-52's. He was very excited. He grew up near Westover Air Force Base in Springfield. It was a base for B-52s until the early 70s, so Tom remembered watching the aircraft take off and fly in the local pattern as a kid. He was so happy to finally get some answers about the aircraft he had seen years ago as they few around his home. That conversation will be my memory of him.

Joe Hartshorn was my first professor (Geo 101), and he is probably why I changed my major to geology. He was also a bomber pilot, and had a lot of great war stories about the RAF and 8th AF in England during WWII. He also taught a kick-ass Glacial Geology course.

Mike O'Connor (BSc, '86), a registered geologist in Oregon and Washington, has launched Assessment Associates, Inc., an environmental consulting firm in Portland, Oregon. He's been in Portland since '88, and is married with two children. He would love to hear from his UMass Amherst friends. Please email him at mike@aaiconsulting.com or visit his website at www.aaiconsulting.com.

Greg Walsh (B.Sc., '86) wrote, "I am continuing bedrock mapping efforts for the USGS in New England. I'm currently finishing some work in 7.5-minute quadrangles in Connecticut and Vermont. In cooperation with Steve Mabee, I recently started mapping again in MA: the Grafton 7.5-minute quadrangle. My efforts in New England are focused on ground water in fractured bedrock, tectonics, and geochronology. I'm also working in the Anti-Atlas Mountains of Morocco as part of a multi-agency geologic mapping effort for the Moroccan Ministry of Mines and Energy. If you're ever in Morocco, I strongly suggest a trip to the Anti-Atlas, the geology is spectacular!"

History of the Earth field trip to Canajoharie, NY in April 2005.

Peter Mazzone (Ph.D., '88) is the co-founder and partner of Phillips and Mazzone, Lawyers in downtown Everett, WA where he focuses his practice on criminal law. On February 2nd, 2003 Peter married Amy Monnin in Boca Raton, Florida. Peter and Amy currently live in Mill Creek, Washington. Peter also recently co-authored a book entitled "Pages From Another World" in 2002 which is currently available on the internet.

It was great to see **Steve Herzog (B.Sc., '87)** when he was in the Department for a visit in June. He and family are now living in Petersham, MA. On the side, Steve and Lynn work as host/guides at the Fisher Museum at Harvard Forest.

Mark Leckie heard from

Continued on page 12

Alumni Spotlight

Steve Carey, B.Sc. 1975

I entered UMass Amherst in the fall of 1971 intent on becoming a geologist even though I really wasn't sure exactly what they did. I only knew that I didn't want to sit behind a desk in some office for the rest of my life. My experience with backpacking in the White Mountains of New Hampshire had sparked my curiosity of the processes that form such interesting features. The early seventies were a very stimulating time in geology because of the dramatic plate tectonics revolution and its impact on virtually all fields of geoscience. One could sense that something exciting was happening but being an undergraduate often limited my sense of the scope of its importance. During that time I also had a keen interest in the ocean and when I found out there was a course called marine geology, it sounded like the perfect match.

I graduated from UMass Amherst in 1975 with what I now realize was a remarkably broad background in earth sciences. I was fortunate to have selected my major early and consequently was able to take several graduate level courses from Pete Robinson and Tony Morse in my senior year. I applied and was accepted into the marine geology program at the Graduate School of Oceanography, University of Rhode Island. My advisor, Haraldur Sigurdsson, was a volcanologist from Iceland who had recently joined the faculty. This would be the beginning of a collaboration that has lasted for some 30 years.

I initially began working on volcanic ash layers in deep sea sediments around the Lesser Antilles island arc. We had several cruises and fieldtrips to the area. This reinforced my interests in volcanology and petrology. In 1980, as I was working on my PhD, Mt. St. Helens erupted and we were at the volcano about a week after the big event. This was a real turning point for my career. Standing within the blast zone of what looked like a nuclear explosion I realized that explosive volcanism was what I wanted to study.

I got my Ph.D. in 1983 and continued on as marine research scientist (which is just a fancy term for someone who has to raise all of their salary money). During that time I was a visiting scientist at Cambridge University in England. I thought this was pretty exotic but was quickly brought back to Earth when I walked into their computer lab on my first day and there was Tony Morse sitting at one of the terminals. You can never get away from the long arm of UMass Amherst! Turns out he was there for a sabbatical.

In 1987 I joined the faculty at the Graduate School of Oceanography, URI and have been here ever since. I crossed paths again with

Continued on page 17

Dr. Linda A Tompkins, BSc 1980, MSc 1983

During my studies at UMass Amherst I was the odd one out in wanting to work in minerals exploration. My opportunity came soon after graduating with an M.Sc. in 1983 when I was offered a job with BP Minerals, Brazil to work in their diamond exploration program. I didn't even have to think about the offer – I just went.

I ended up spending seven and a half years in Brazil, the first five working as an exploration geologist full-time in the Brazilian bush. I didn't know a word of Portuguese before I started. For my first field trip I was sent into the bush with five Brazilian workers who didn't know a word of English and told to "go find kimberlites" and basically don't call back until you find one. Needless to say the first few months were incredibly difficult but within three months I could communicate one-on-one in Portuguese.

I am absolutely petrified of snakes and for me field work in Brazil was a great step forward because, in contrast to West Africa where I worked with Haggerty as an M.Sc. student, at least the snakes in Brazil were on the ground (and not in the trees). A good "no snake day" was only seeing about six to eight snakes in and hearing about the same number squirming in the bush. But on some days we would encounter dozens of snakes. I am amazed that no one ever got bitten.

During my time in Brazil I managed to see quite a bit of the country. Although we never found any kimberlites our team did find many alkaline rock intrusions some with close affinities to kimberlite. Most of my time was spent working on diamond exploration projects throughout Brazil but I also worked for one year on a gold project in western Matto Grosso near the Bolivian border within the Amazon proper.

Politically, the time I spent in Brazil was also very interesting as the country was emerging from a dictatorship and moving towards a democracy. These transition years were very difficult for all involved as Brazil re-wrote its Constitution and just about every single piece of legislation including its Mining law. This time of uncertainty led many mining and exploration companies to leave Brazil and invest elsewhere.

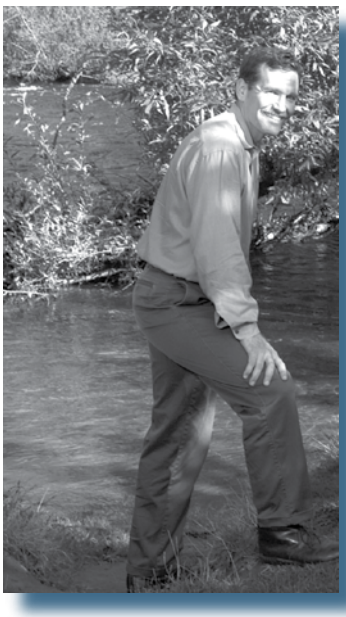
I then moved to Perth to begin my Ph.D. at the University of Western Australia in 1990. Before leaving Brazil I organized to have the 5th International Kimberlite Conference held in Brazil in 1991. It was a fantastic success.

I completed my Ph.D. on a Mississippi-Valley type Zn-Pb deposit in the Kimberley region of Western Australia. I chose this project for two reasons: it was a new deposit that no one had worked on yet and it was half way between the Argyle and Ellendale diamond deposits. I managed to get myself invited to both diamond areas

Continued on page 13

Alumni Spotlight

Peter Scott, B.Sc. 1991



After graduating in 1991, I drifted west to help an old friend build a cabin in the Packsaddles near Driggs, ID. The cabin has a direct view of the Tetons, so I stayed and spent most of the next two years hiking up or skiing down every hill I could find. I worked mostly for the US Forest Service as a firefighter and field hydrologist. The next three years were spent in Bozeman, MT in the graduate program at Montana State University. I continued to fight fires in the summer and worked for a groundwater engineering firm off-season, doing mostly site inspections, which consisted of soil testing and some GIS based modeling.

Every fall Jeremiah Raymond ('91) visited for some fly fishing and scenery. In March, 1996, Jeremiah came out to be my best man. That was the last time I saw him. Jeremiah died of cancer the following September. I've never stopped missing him. By that time we were living near Portland, Oregon, because I had the idea of going to law school and both Suzan and Lewis and Clark College decided to let me. We ended up staying for five years so I could clerk for Paul DeMuniz at the Oregon Supreme Court. Our son Ted was born in July, 2000. After ten years of college, I had to get a real job, so I talked the Judge into signing a favorable letter of recommendation and applied to a bunch of firms (stranger things have happened, Tony Morse successfully recommended me for an NSF funded research project once by expressing suspicion about my checkered past--takes one to know one).

Anyway, it worked and we moved to Spokane, WA in August, 2001. I'm working for Preston Gates & Ellis, a Seattle-based firm with a great record of public service. My practice focuses on environmental law, land use planning and related litigation, with an emphasis on water rights and water quality. I am working to build a mining practice too. I have several clients (gold miners) and just got myself elected to a three-year term as Trustee to the Northwest Mining Association. It's funny, I moved away from geology because there were so few opportunities for hard rockers; now I'm working with them all the time and they don't seem to mind that I'm a lawyer because they know the UMass Amherst geology program. Simon, was born last April. I'm a really happy man that is both proud and humbled to be recognized as an alumnus of the UMass Amherst Geosciences Department.

Contact Peter at: pscott@prestongates.com

Margaret Carruthers, M.Sc. 1996

Unable to ignore the distractions of Amherst and complete the writing of my maars on Mars thesis, in the spring of 1995 I decided to retreat to the quiet hamlet of Manhattan. (My apartments there was actually quieter than the one on North East St. next door to the Bawbs and across from the all-nite combine harvester.) There I took a lowly yet glamorous job as scientific assistant in the Department of Earth and Planetary Sciences at the American Museum of Natural History (AMNH).

In addition to dusting off rock samples beautifully chiseled to shapes even Don Wise would admire, I was also involved in the development of AMNH's new Hall of Planet Earth. Heeding Don's advice to never miss a chance at a boondoggle, I put my remote sensing and image processing skills to work mapping and harvesting the black smoker chimneys of the Juan de Fuca Ridge. These chimneys now reside at AMNH, along with a huge polished boulder of banded iron, hand selected by me (and two others).

It was at AMNH, when I was asked to edit a number of Earth science books for children, that I began to fully appreciate all that I was taught at UMass Amherst. Pete Robinson's crystal chemistry, for example, came in handy when editing a rock identification guide for 5th graders. Perhaps more importantly, I realized why George McGill made such a big deal about writing. It turns out that very few children's science writers have mastered the fine art of putting sentences together to make a coherent story (let alone that of going to the library to learn something about the subject). Slowly I was able to worm my way into science writing and science education.

In the fall of 1999, I left NYC for Oxford, England, on the arm of my new husband, the handsome and brilliant Dr. Richard Ash. While Richard vaporized relics of the early Solar System, I took on a steady stream of writing and editing jobs. Among other things, I finally completed *Pioneers of Geology: Discovering Earth's Secrets*, a book of biographies for young adults, and wrote the Earth science portion of the *Oxford Illustrated Encyclopedia of Science*.

In 2001 we decided to move to a place with a bit more history. Los Angeles was everything we thought it would be, and more. While Richard worked at UCLA, I spent my time rollerblading at the beach, walking with our new dog in the Hollywood Hills, and hanging out on the corner trying to get discovered. In my free time I wrote *The Moon*, and *The Hubble Space Telescope*.

Nine months after we moved to Los Angeles, Richard got a real job at the University of Maryland, and we fled. Not long after that, we moved into a 12-foot-wide rowhouse near the Inner Harbor in Baltimore. The house needed many improvements, and after working on it for a year, we decided it was a bit too big for just two people

Continued on page 13

Alumni Notes con't.

Gary Jaroslow (B.Sc. and L.R. Wilson award winner, '90). Gary went on to the MIT-WHOI Joint Program for a Ph.D. in marine geology. He is working and "happily" teaching in the SEA program at Woods Hole.

Larry Tanner (Ph.D., '90) wrote, "After spending a year as a Visiting Professor in the Department of Biological Sciences at Le Moyne College in Syracuse, I have been offered a tenured position there. So, my association with Bloomsburg University of Pennsylvania has come to an end. I am continuing my line of research and publication in the paleoclimate, paleogeography and biotic events of the early Mesozoic, but my main focus is now the documentation of the effects of climate change in the modern world, specifically on soils. I will start research on this topic in field sites as diverse as Iceland and Costa Rica. Overseeing and coordinating this work will be a new Global Environmental Change Institute that I will direct. Climate change and the ecological consequences are at the heart of the new undergraduate major in Natural Systems Science that I am helping to develop. All in all, this a very exciting opportunity. Wish me luck! Best regards."

Mike Hamilton (Ph.D., '93) runs the geochronology labs at the University. of Toronto.

Howard Frank (B.Sc., '91) is currently working for an environmental firm in South Carolina (General Engineering & Environmental, LLC).

We see **Bart Martin (Ph.D., '91)** now and then when he is in the Department to use the XRF. The big news is that he was promoted from Associate to Full Professor of Geology at Ohio Wesleyan. Congratulations Bart.

Ed Weagle (B.Sc., '91) is a Project Manager at OReilly Talbot & Okun Associates, a small environmental engineering company in Springfield, MA.

Rebecca Buswell-Woolley (B.Sc., '92) has successfully used her Geology and Geography degrees (plus a subsequent Masters degree in Management) in the environmental consulting world for the past 12 years. She is a Licensed Site Professional and a Manager at AMEC Earth & Environmental in Westford, MA.

Christopher P. Hamilton (B.Sc., '92) has been seen around the Department lately. He is Coordinator & Marine Science Instructor for the SEAmester Program, now at UMass Dartmouth.

Agnes Fung (M.Sc., '94) is still working for C.F. Mineral Research Ltd. in Kelowna British Colombia. She wrote, "I just received the department calendar. It looks great and reminded me of the good old days at UMass Amherst. It is great to read about the exciting research you are doing, particularly the ones being carried out by students."

Frederick Goodrich (B.A., '95) Greetings from Seminole country. My peripatetic career continues, as I've relocated to sunny Florida. I am now a Planner with the Florida Department of Community Affairs in Tallahassee. I'm enjoying the warm weather, but I'm not looking forward to the extreme heat (but it does get cool here). My best to all.

Rud Platt received a note from **Ginny Haller (M.Sc., '95)** who took his Water's Edge class in the early 1990s. She did her thesis with Julie Graham. Ginny is now a senior planner with the city of Key West, FL.

Margaret Caruthers (M.Sc., '96) and husband, Richard, had a baby daughter last year, Abigail Somerset Woolverton Ash. Congratulations! (See featured alumni pages).

Rumor has it that **Erwin Melis (B.Sc., '96)** has successfully completed his Ph.D. at the University of Maine. He also has an M.Sc. from New Mexico Tech. Congratulations Erwin!

Nathan Bridges (Ph. D., '97) is still at JPL. He wrote, **"**Thanks for sending me the UMass Amherst Geosciences calender. It's on my wall here at work and reminds me of all the great things going on in the Department. From tundra to volcanoes to the lower crust (and maybe to Mars one day?), things sound good."

Dan Mackie (B.Sc., '97) wrote recently. He is working as a Hydrogeologist and consultant at SRK Consulting Inc. in Vancouver, BC Canada.

Julie B-G heard from **Amy Patrick (B.Sc., '98).** "Amy was our first Earth Systems major who also majored in Geology. To combine her love of writing with geology, she received a M.A. in English (University of Nevada) and is finishing a Ph.D. in Environmental Science Writing at the University of Minnesota (Dept of Rhetoric). She has had several job offers and interviews to work as an Assistant Professor at places with strong environmental sciences programs."

George McGill recently heard from **Beth Addington (M.Sc., '99) and Dave Korejwo (M.Sc., '99)** "Dave and I are doing great! We wanted to introduce you all to our daughter, Zoe Elizabeth, born on October 12th, 2004. I'm still working for EarthSat doing mostly GIS support these days, and Dave is loving his job at the FBI (working in the crime lab as a geologist). Living in Arlington, VA is still lots of fun—no plans to relocate in the near future (although I'm still holding out for ending up in the Pacific Northwest eventually)."

Chris Condit heard form **Melinda Kennedy (B.Sc., '00)**, "I recently got email at home and checked out the UMass geosciences webpage. I was thrilled to read the article about Michele Cooke leading a group of deaf students on a geological study. I felt the article did a wonderful job at describing American Sign Language (ASL) and how it can help understand some of the three dimension explanations in geology. Anyway, it tickled me to see the department sparking some geological interests in the deaf culture. Right now I am a stay at home mom with three beautiful daughters, but I recently applied to be a middle school science teacher at a private school."

Howie Koss (B.Sc., '01) was back for a visit this spring. Howie has been working as an environmental geologist in New York City, but the big news is that he is heading back to graduate school. If all goes well, he plans to go to Queens College to work on ANDRILL-related research, and he will probably go to Antarctica next year. Good luck Howie.

Rud Platt heard from **Karen Olson (M.Sc., '01)** just as she was heading off to help with Tsunami relief in Somalia.

Martin Briggs (B.Sc., '02) "Upon a recent trip to my

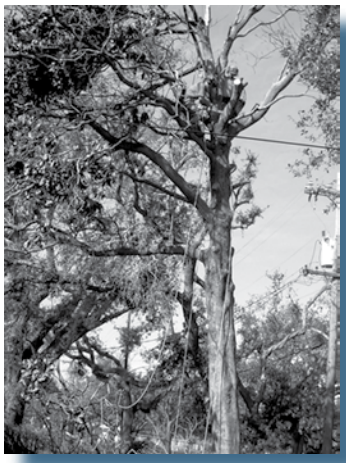
Alumni Notes con't

parents' house I discovered your newsletter, and I really enjoyed it. It definitely boosted my sense of connection to the Department, which seems to be distant sometimes living out in Boston. I am especially happy that things worked out for Steve Mabee; he has certainly accomplished much in 15 months. For the past year I have been working at a biotech firm in South Boston doing lab work. It's interesting, but I really miss dealing with the natural world and just being outside." And in a more recent update, he wrote: "I am currently working on a dive boat in the Florida keys which has been great, but it is definitely getting a little warm down here. I will be attending the Colorado School of Mines in the fall after a two month stream study in Montana this summer. I am really looking forward to this next step"

Lesleigh Anderson (Ph.D., '05) is now working at the USGS-Earth Surface Processes Team in Denver. See you at GSA and AGU!

Christopher Mira (B.A., '05) wrote, "Hey there Geoscientists, I thought I would say hi from Skagway, Alaska." He says, "Enjoy the semester. Thanks to all those who inspired me to follow my dreams!"

Anja Mueller (M.Sc., '05) wrote from New Zealand where she is beginning a Ph.D. program. "It has not taken me long to settle into my new environment. The department has a wonderful British touch in that morning tea is a very important social event for all, professors, staff members and students alike - there is, however, no safety committee, for those who were wondering). After working on geochemistry and hazards of basaltic lava flows, I now have to tune my brain to physical processes on volcanic slopes focusing on emplacement mechanisms of volcanic debris avalanches. I also took on teaching structure labs-haven't done much structural geology since Goettingen thus it'll be quite a challenge. I have encountered a lot of new and exciting things since placing foot on New Zealand shores. And it is not all work and study(!): I thoroughly enjoy vegemite toast for breakfast, riding my bike to Uni on the wrong side of the road, the close proximity to beaches and volcanic hills, Speights ale, a lovely city centre with lots of parks and, of course, the weekly rugby games (may even go watch the local team play in the stadium instead of following the events on big screens in the greatest sports bar ever). It was a wonderful time (almost three years!) at UMass Amherst.



Chris Mira helps with the post-Katrina clean-up.

Michele Kelly (Brower) (MSc. '00) wrote to the department office: "I got married in September 2000 and now have three children. Maren and Stephen (Girl/Boy twins) are four and Michael is 15 months old. My husband is in the Navy and we have made Virginia Beach, Virginia our home. I am currently enjoying my time as a stay-at-home Mom."

Linda Tompkins (con't)

during my studies and was offered a Senior Geologist position with Australian diamond explorer Ashton Mining (also JV partner in the Argyle mine)

Since finishing my Ph.D. I have worked full-time in diamond exploration for several diamond exploration companies. Two of these years involved traveling back and forth to China; however, most of my exploration efforts have been in the Australian outback which is the harshest and most difficult area to explore of anywhere I have ever worked. There are few animal predators or snakes but the Australian bush itself is very unforgiving and there is no room for mistakes or error when you get into a helicopter or Toyota to go sampling.

In 2000 I decided to put several new irons in the fire which included starting up my own exploration company to explore for diamonds in the Northern Territory (also known as the "red center") and begin a law degree. I am currently Technical Director of Elkedra Diamonds NL a publicly listed diamond exploration company on the Australian stock exchange. I am also wrapping up law school.

My undergraduate years at UMass Amherst were certainly my formative years. The field mapping, geology and navigation skills I learned in "Field and Structure I & II" as well as in other courses have proven to be a very solid and reliable foundation during my geology career. Despite today's world of GPS navigation and satellite technology I still have had to revert to basic map reading and compass navigation methods to get myself back to camp. Unfortunately many universities do not teach these "primitive" skills and today's generation strongly relies on modern technology only to completely "freak out" and require rescuing when the batteries run out.

To future graduates I can't stress enough the importance of getting as much practical field experience as possible. My experience has taught me that satellites come and go and batteries often fail but the Earth's magnetic field is always there and it will never let you down.

Margaret Carruthers (con't)

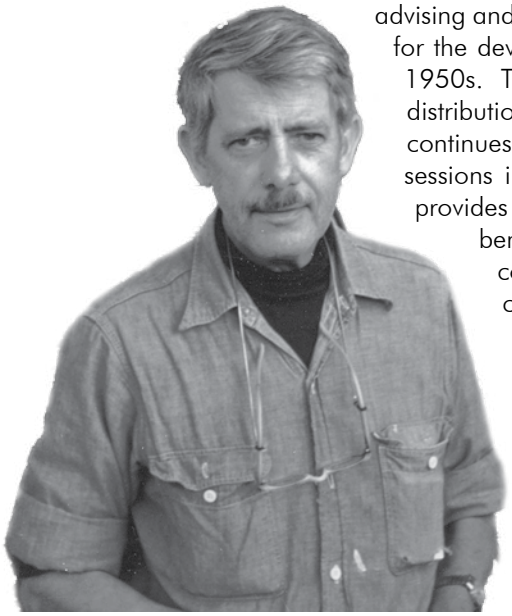
and a dog. In May, 2005, our daughter Abigail Somerset Woolverton Ash was born. We could not have asked for a nicer addition. I have since published two more children's books, *Glaciers* (with the help of Doug Hardy) and *Tsunamis*. My first "adult" book, *Beach Stones*, came out this past April. I also now have a real job—as Executive Editor for science at Words & Numbers, an educational development company in Baltimore. Words & Numbers is contracted by major educational publishers to write textbooks, workbooks, standardized test questions (thanks President Bush!), and other educational materials. It is a great job. Whenever I get a chance, I write about maars, nappe folds, and light switchplate design, but I do miss the afternoons spent scattering colored pencils throughout the woods while reminding myself that skin is, in fact, waterproof. UMass Amherst is hard to forget, especially with Marshall Chapman bombarding me with bad jokes several times a week.

P.S. If you can write well, know science, and would like a job, send me a note. I am always looking for good people.

In Memorium

Tom Rice

Tom Rice, who joined the Geology Department in 1954, and retired in 1991, died on December 27, 2003. Tom was held in great affection in the Department. He tirelessly spent large amounts of time advising and helping undergraduate students, both majors and non-majors. He was responsible for the development of the Physical Geology course for potential geology majors in the late 1950s. This course was also popular with liberal arts students needing a laboratory science distribution course. Although many faculty have taught the course over the past 50 years, it continues to include important elements initiated by Tom. In particular, the course laboratory sessions include a number of field excursions in the Amherst area. This field component provides important "hands-on" experience for the students in the course. The field trips benefited greatly from Tom's intimate knowledge of the local geology, and this benefit continues today. Tom put his vast familiarity with local geology to work as a geological consultant for various town boards and commissions.



Tom was born in Springfield, and served in the U.S. Navy during World War II as an electronic technician on ships in the North Atlantic Fleet. He joined the Geology Department faculty at the University of Massachusetts Amherst, where he then remained until his retirement.

Tom was active in the community of Pelham, where he lived since 1954. He served for three years as the town moderator, and for seven years on the Pelham and Amherst Regional School Committees.

Our sympathy goes to his wife of 30 years, Marian, to his sons, Thomas and Christopher, to his daughters, Corky and Mickey, and to his nine grandchildren and eight great-grandchildren.

Peter Robinson and Don Wise, colleagues of Tom Rice for many years in the Department of Geosciences, had these recollections of Tom's camaraderie and scholarship in the Department:

From Peter Robinson:

My recollections of Tom Rice go way back to my first semester at UMass Amherst. in fall 1962, when Tom, George McGill and I were in charge of teaching three sections of Geology 1. At that time Tom was already a permanent member of the Department.

Tom always impressed me as having a great deal of innate intellectual curiosity, and also a strong drive to explain his understanding of things to students. Among other things he was in control of the lab organization, and it worked very well. In those days, each of the "Professors" also taught one lab section. This had the great benefit that we were able to get some first-hand knowledge of what was and was not coming across in the lecture sections. Tom had also organized a good set of field trips, which were very popular with many students, although, of course, we were continually making modifications. It was through these field trips that I gained most of my basic early knowledge of the Mesozoic, Quaternary, and Recent Geology of the Amherst region. Usually the three of us got together to coordinate joint multiple-choice examinations, and this also was an educational experience for all of us.

In later years Tom developed a program in environmental geology, working one on one with student research problems. Through the years, he kept up his wide interests in geology as a whole, with particular interest in anything related to the Amherst region and particularly the Town of Pelham. This included keeping me well informed whenever there were interesting water-well cuttings to be examined, or giving ideas about where to look for outcrops of the Pelham diabase dike, about which he was very well informed.

It was Tom who first introduced me to the mysteries of the Pelham Asbestos Mine, which at present, still remains as a tectono-stratigraphic and petrologic challenge. This was only a short walk from his house on Butter Hill. In 1972 we instituted a course entitled "Advanced Geologic Mapping" and began detailed bedrock mapping in the interior of the Pelham Gneiss dome, beginning on the east limb in Shutesbury. Each year for several years, with groups of six to ten students, we worked our way southward and then westward around the southern hinge of the dome, closer and closer to Butter Hill. Tom kept saying how much he looked forward to the time when we reached Butter Hill, and could tell him the correlation of the rocks he had been living on. Eventually we got there and after a great deal of uncertainty, involving the very complex structure (a recumbent fold with much of the geology upside down), we proudly told Tom. "Yes, we have identified the rock at Butter Hill and we call it the Gneiss of Butter Hill!!" After still further thrashing, it is presently identified on the Bedrock Map of Massachusetts as part of the Late Proterozoic Dry Hill Gneiss.

Aside from all these contacts related to our mutual interest in geology and science in general, Tom was a very kind and concerned person when it came to personal relationships. I particularly remember his present of a small silver cup on the birth of my oldest son Chris. His role especially in my earliest years in the Department was important to me and our relationship remained close for very many years.

From Don Wise:

Tom was one of those delightful people who go about their business with quiet good humor to keep an organization running smoothly. For many years he was the

Continued on page 16

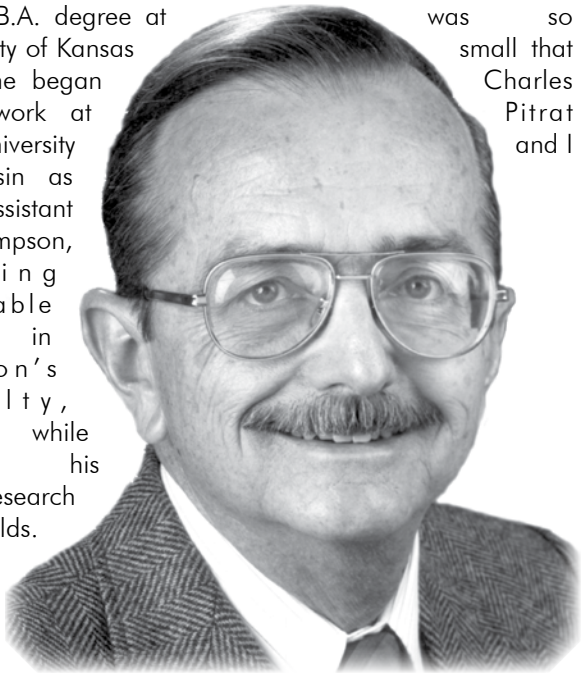
In Memorium

Charles William Pitrat

by Mark Leckie (with input from Fred Rogers, Dillon Scott, Joel Sparks, and Professors Steve Haggerty, Tony Morse, and Don Wise)

Charles W. Pitrat was our colleague, friend, teacher, and mentor in the Department of Geology and Geography from 1964 to 1991. Many of our older alums will remember his humor in the classroom and the impeccable detail of his chalkboard drawings of fossils. Rumor has it that he also did some good trilobite impersonations. His colleagues remember his wry humor, funny stories, sound judgment, and easy-going personality. When I applied for the job to replace the late Greg Webb in February 1984, I phoned Charlie's office to ask some questions about the job and was happy that Dillon Scott answered the phone (Charlie's assistant and my future first graduate student); I learned that his last name was pronounced 'pee-tra', not 'pit-rat'. Charlie was always quick with a smile and a light-hearted laugh. He died at home on April 30, 2004.

Charlie was born in Kansas City, Kansas on June 1, 1928. He grew up in Kansas. After earning a B.A. degree at the University of Kansas in 1949, he began graduate work at the University of Wisconsin as Research Assistant to M.L. Thompson, acquiring considerable expertise in Thompson's specialty, fusulinids, while conducting his personal research in other fields. His M.Sc. thesis (1951) was on the rugose corals of the Devonian age Cedar Valley Formation of Iowa. Charlie stayed at Wisconsin for his Ph.D. (1953), but he made a temporary foray into the field of geochemistry to work on the thermoluminescence of the Mississippian age Madison Group of the Wyoming and Montana Rockies. This research was done under an Atomic Energy Commission (AEC) contract. After receiving his Ph.D. he worked full time for a year and a half on another aspect of the AEC contract: the recovery of uranium from low-grade ores. Having had his fill of geochemical matters, he joined the faculty of the New Mexico Institute of Mining and Technology as a paleontologist in January 1955. In a recent article about the history of the geology department at New Mexico Tech (www.ees.nmt.edu/TECHtonics/Jan2004.pdf), emeritus Professor Clay T. Smith recalled a dire situation of very low enrollments at the school. According to Smith, "the department was so small that Charles Pitrat and I taught all of the courses". This may explain why Charlie quickly moved on to his alma mater, the University of Kansas, in 1956. At Kansas he was closely associated with famous American paleontologist R.C. Moore in the editing of several volumes of the *Treatise on Invertebrate Paleontology*. He came to the University of Massachusetts Amherst in 1964.



Charlie had a long-standing interest in the general problem of extinction in the fossil record, and the Permo-Triassic extinction in particular. He had a major synthesis paper published in *Palaeogeography, Palaeoclimatology, Palaeoecology* entitled "Vertebrates and the Permo-Triassic extinction." However, his main area of research was spiriferid brachiopods. This interest was kindled by his work on the *Treatise* in the early 1960s and remained his primary research activity until he retired from UMass Amherst. He and his students worked extensively on the spiriferids of the Devonian age Traverse Group of the Michigan Basin. By all accounts, Charlie was an excellent teacher. He taught courses ranging from introductory to advanced graduate, including History of Life, History of the Earth, Invertebrate Paleontology, Paleoecology, and Stratigraphic Paleontology. Also noteworthy was Charlie's long service to the Society of Economic Paleontologists and Mineralogists (SEPM; now called the Society for Sedimentary Geology); he served as Editor of the *Journal of Paleontology* from January 1980 to December 1985.

Fred Rogers (B.A., 1980, M.Sc., 1984) conducted research with Charlie as an undergraduate and then stayed on to work with him for his M.Sc. degree (two papers were published in the *Journal of Paleontology* from their collaborations). Fred describes Charlie as an "exceptionally bright man with a sharp intellect." He was an "exceptionally kind person," especially from Fred's perspective as a student. Charlie's "extraordinary patience" really made a difference in Fred's life. Fred recalls the always hot and humid conditions in the office that he shared with Charlie when he was assisting with editorial tasks for the *Journal of Paleontology* (Rm. 247, near the rear entrance, now occupied by Julie Brigham-Grette); Charlie always had a good sense of humor about the "large cockroach fauna" in that office. After Fred moved on to the University of Iowa for a Ph.D., Dillon Scott (M.Sc., 1989) stepped in to assist Charlie with the *Journal of Paleontology*. According to Dillon, "he was one of the most good humored and good natured people I ever met. Our work was pretty dry, editing papers and writing letters to authors and printers. But he always made the task pleasant and was very nice to the authors. He wrote wonderfully polite letters even to authors of a few really bad papers." Joel Sparks (Ph.D., 1990) took Charlie's Stratigraphy course: "I loved his comment that most of stratigraphy could be summed up by 'the seas slosh in, and the seas slosh out.'"

Tony Morse fondly recalls Charlie's "lovely sense of

Continued on page 17

News from the State Geologist

by Steve Mabee

The State Geologist has now been in operation and located in the Department for four years. A summary of some of the accomplishments over the last 12 months include:

- A fourth year of STATEMAP funding to support fracture mapping and vectorization of the bedrock geologic map of the Rockport and Gloucester quadrangles and new bedrock and fracture mapping in the Milford quadrangle.
- Completion of a new bedrock map and fracture map of the Ayer quadrangle.
- Vectorization of 25, 1:24,000-scale, published surficial geologic maps and conversion to GIS products. We have now digitized a total of 88 published surficial geologic maps. These products are being submitted to the USGS for edge matching and compilation. This is a continuation of our effort to work with the USGS to complete statewide surficial geologic mapping at 1:24,000 scale and to bring some of the unpublished surficial geologic quadrangle maps up to a level where they can be released to the public as open-file reports in digital form.
- Continuation of an ongoing study with Ph.D. candidate, Alex Manda, to investigate groundwater in bedrock in the Nashoba terrane. We have collected over 4000 brittle fracture measurements at 79 outcrops across the terrane. Discrete fracture network modeling to estimate bulk hydraulic properties of the bedrock is commencing.
- Completion of a series of seven workshops across the state to: (1) train water well drillers in the use GPS technology to locate wells; (2) standardize the description of soil and rock materials in Massachusetts; and (3) introduce a new online well data entry protocol to streamline and improve subsurface data capture from water well drillers. Training provided to over 340 water well drillers. Work done in cooperation with the Department of Conservation and Recreation, Department of Environmental Protection and MassGIS.
- Compilation and release of digital, georeferenced raster images of 1:24,000 scale, 10-foot contour topographic maps for the entire state.
- Commencement of a groundwater study to better define the extent and productivity of the West Charlemont aquifer. Working with the Franklin Regional Council of Governments and Dr. David Boutt, Department of Geosciences.
- Continuation of a project to examine sand and gravel resources off the north shore of Massachusetts as a source of beach nourishment. Also examining the practicality of using microfauna as a proxy of environmental health and a tool for evaluating post-dredging recovery. Working with Dr. Mark Leckie, Steve Nathan (post-doc) and Boston University.

We are still looking for a permanent home for the Massachusetts Water Resources Authority core collection. We need about 15,000 to 20,000 square feet of space to house the 70,000 linear foot collection. We need any help we can get. If you have any information that may help us find a new home for the core, please contact me. You can find out more about the "Save the Core" campaign by visiting the State Geologist web page at www.geo.umass.edu/stategeologist.

Mapping in the Marlborough quadrangle

Memories of Tom Rice (con't)

underpinning of our beginning course, doing the lectures, keeping the labs updated and organized, seeing that field trips hit the highlights of local geology, and also giving students their first taste of field work in his special introductory course in field techniques and environmental geology. It was these courses that helped recruit several generations of students into the field of geology and geology in the field. Many must recall with pleasure those early days with Tom as instructor.

From a personal view, I was always pleased to have him as a resource for details of local geology as well as material for my beginning courses. He was more than generous with his time and information and always a pleasure to talk to. In addition to his departmental contributions, Tom served a very important town-and-gown function. As a state institution, we are bound to provide some service to our local communities and Tom was one of our most prolific contributors to these areas, be they town meetings, someone's water well, or somebody with a box of rocks that needed identification.

Tom served the Department long and well and was a good friend to many of us: students, faculty, and staff. Like many, I retain very warm memories of him and his contributions. He is missed.

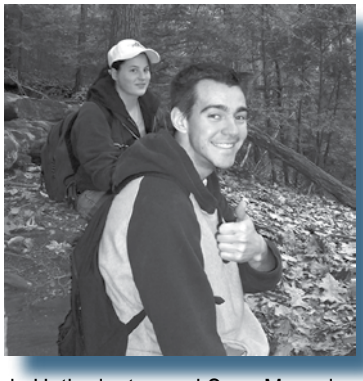
Congratulations to the 2006 Student Award Winners

Outstanding Senior Awards

Geology: Alicia M. Hetherington
Sean D. Musselman
Geography: Aleta J. Mills
Earth Systems: Jeffrey M. Salacup
Excellence in Undergrad Research: Luke D. Trusel

Outstanding Teaching Asst. Awards

Earth Systems: Caitlin E. Stewart
Geology: Chris Koteas
Geography: Jennifer L. Bonin



Alicia Hetherington and Sean Musselman

Memorial Awards

H.T.U. Smith Award

Evan C. Gearity	Fieldwork in the Snowbird tectonic zone, Saskatchewan.
Kenneth W. Christle	Fieldwork in Iceland.

Elinor Fierman Award

Steven Gaurin	Chemistry and isotopic analysis of speleothems, Bermuda.
Sean Faulkner	Analysis of possible microbialites from Morocco.

Gloria Radke Award

Matthew P. Walsh	Sandstone petrology as a monitor of the source area for the Sugarloaf Arkose.
Caitlin Stewart	Humbolt Field Research Institute course on chironomids.

Leo M. Hall Award

Beth E. Caissie	Fieldwork to develop a modern diatom training set to predict sea ice duration.
Nancy Price	Fieldwork to investigate orthoquartzite as an indicator of Precambrian tectonics in the Southwest.
John R. Shackleton	Fieldwork and sample collection, St. Corneli anticline, Spain.
Scott Thomas Marshall	Fieldtrip and workshop, North Anatolia Fault, Turkey.
Kinuyo Kanamaru	Sediment coring, North Bering Sea.

Geography Alumni Award

Theodore Allen White	Geography field research concerning "Keeping local farmers' money in the Pioneer Valley".
Alan Patrick Marcus	Geography field research concerning Brazilian immigration, Miami.
Brian W. Conz	Geography field research, Guatemala.
Janelle Cornwell	Economic geography of local agriculture.

Memories of Charlie Pitrat (con't)

humor and long memory. Once when I recognized the family Formicidae as ants, he cried out in admiration and frustration, "How in the world does an igneous petrologist know THAT? He was a delight, a warm and faithful colleague." Steve Haggerty offers the following story: "I came for my faculty interview just before Thanksgiving in 1970 and on our way to coffee in the Student Union, after the first round table of introductions (aka grillings), Charlie, on learning that that I was colonial, kicked a couple of loose rocks in the pathway and said: 'You know that if the founding fathers had landed on the west coast, this would be an untouched nature reserve; there are more stones than potatoes.' It took a while to appreciate Charlie's point, and his comment reverberated throughout the years. Of colleagues who preferred to kick rocks, he would always have an interesting question on what we did, and a question moreover, that was at times difficult to defend. It was impossible to ask the same question in reverse because he was the sole paleo-person, and a good one at that." Don Wise contributed the following observation: "Charlie was one of those unsung heros that underpinned a lot of the Department's success through his many years of service."

Charlie was a very private person, but he is missed by the people who had the opportunity to get to know him in our Department lives. He inspired us by his intelligence, gentle demeanor, and humor.

Steve Carey, (con't)

UMass Amherst geology types in 1995 when we wrote a proposal for an Ocean Drilling Program leg in the Caribbean Sea and Mark Leckie joined the expedition as a co-chief scientist. The expedition was a great success and it was fun being at sea with Mark. I returned to Amherst in 1997 to give a lecture on the Krakatau volcano in Indonesia. It was great to see the old department and some familiar faces. When I left UMass Amherst in 1975 I never guessed I would be returning to the campus 22 years later to give a research lecture.

For the past twenty years I have been studying explosive volcanic eruptions and their impact on society. I have been fortunate to work on the deposits from some of the largest events in historical times: the 79AD eruption of Vesuvius, the great 1815 eruption of Tambora, and the 1883 eruption of Krakatau in Indonesia. I've worked at 12 volcanoes in 10 different countries. I'm indebted to the National Science Foundation who has supported our work for so long and provided such unique opportunities to explore this fascinating process. I distinctly remember one afternoon when I was at UMass Amherst walking back to my dorm from a geology lecture in Morrill Hall thinking wouldn't it be incredible to have a job studying volcanoes. Who knew that such dreams could come true. I'm very grateful that my education at UMass Amherst provided me with the foundation to pursue such an interesting path.

We are Grateful to our Donors

Mr. Alexander O. Abbott
Ms. Elizabeth Addington
Dr. M. Lee Allison
Ms. Susan J. Alston
Mr. Russell W. Anderson III
Mr. Seth J. Andrews
Dr. Richard H. April
Mr. Herbert L. Arold
Ms. Elizabeth R. Arriaza
Mr. David D. Ashenden
Mr. Steven W. Baer
Mr. George Baldwin, III
Bamag Industries
Mr. Peter S. Barrows
Dr. Gail L. Batchelder
Dr. Paul W. Bauer
Bechtel Foundation
Mr. Edward C. Beckles
Ms. Sonja L. Benson
Berkshire Highlands Group
Mr. Mark E. Blackey
Mr. Belden Bly III
Mr. Alexander H. Bonnar
BP America Inc
Ms. Micaela A. Brady
Mr. James P. Brandon
Mrs. Susan M. Brandon
Dr. Randolph W. Bromery
Mrs. Shelley M. Brooks
Mr. Timothy M. Brooks
Mr. Stephen H. Brown
Mr. Jonathan M. Bull
Dr. Jonathan Burr
Ms. Gloria A. Caballero-Roca
Dr. Joseph Caggiano, Jr.
Mr. Kerry J. Campbell
Dr. Steven N. Carey
Ms. Margaret W. Carruthers
Mr. Sean C. Chapel
Mr. Steven D. Charron
Mr. Jonas H. Chaves
ChefBill, Inc.
Mr. Nicholas R. Chrisman
Mrs. Paula Clebnik
Dr. Sherman M. Clebnik
Ms. Barbara T. Clement
Cobble Mountain Land Service
Cold Spring Enviromental Cnslts.Inc
Mrs. Laura Truettner Coles
Mr. William S. Collins
Ms. Susan Corneliussen
Mr. Gilbert M. Davis
Mr. Robert E. Day-Lewis
Ms. Gratia C. Deane
Mr. William F. DeLorraine
Mr. Douglas R. DeNatale
Mrs. Valerie J. DeNatale
Dr. Carol B. DeWet
Mr. Bruce H. DeWyk
Miss Katherine C. Dietz
Dr. Margaret M. Dillon
Mr. Richard C. Dils
Mr. Peter M. Discenza
Diversified Developments
Mrs. Mary-Frances Doiron
Mr. Robert C. Doiron
Mr. John D. Donnelly
Mr. Edward A. Drabek
Mrs. Natalie E. Drake
Mr. Dean P. Dubois
Mr. Bruce B. Duffy
Mr. James A. Dutcher
Mrs. Linda D. Dutcher
Ms. Suzanne M. Dwyer
Ms. Karen D. Dzendolet
Mr. James C. Eacmen Jr.
Mr. John C. England
Mrs. Susan C. England
Mrs. Diane M.A. Eskenasy
Exploration Services International
ExxonMobil Foundation
Dr. S. Page Fallon
Mr. Oswald Farquhar
Mrs. Devra F. Feshbach-Meriney
Mr. Allan J. Filipov
Dr. David B. Finkelstein
Mr. James Fitzgerald, Jr.
Mr. Michael F. Forlenza
Mr. Howard J. Frank
Mr. Luis A. Fuentes
Ms. Agnes Fung
Mr. Andrew D. Gale
Mr. Ralph Garraffa
Mrs. Elizabeth R. Gee
Mr. John R. Gilbert, Jr.
Ms. Nancy B. Goddard
Dr. Matthew P. Golombek
Mr. Abe Gomel
Mrs. Michelle A. Goncalves
Mr. Donald J. Goodwin
Lois T. W. Grady Trust
Mr. Gerald J. Grady
Dr. Lois W. Grady
Mr. Jeffrey S. Greenwood
Mr. Benjamin P. Gregson
Alexander & Ljilsdna Grkovich
Mrs. Bette A. Gustavson
Dr. Thomas C. Gustavson
James A. Hafner
Ms. Virginia C. Haller
Dr. Susan D. Halsey
Mr. Richard P. Hamilton
Hangar 9, Inc.
Mrs. Diane Flint Hardy
Mr. William H. Hart
Mr. Douglas L. Heath
Ms. Silvia M. Heinrich
Mr. Jason F. Hicks
Mr. Kurt C. Hinaman
Dr. James R. Hinthorne
Mr. Garrett G. Hollands
Mr. Robert D. Homan
Mrs. Kristin A. Hovey
Ms. Anna M. Howley
Ms. Renee J. Howley
Dr. Michael J. Hozik
IBM International Foundation
Dr. Jon D. Inners
Inst. For Sci., Eng. & Public Policy
Ms. Virginia A. Irvine
Mr. Don J. Irwin
Mrs. Nancy H. Irwin
Mr. Peter R. Jacobson
Mr. Philip J. Jelatis
Mr. Peter P. Johnson
Ronald & Barbara Joki
Mr. John J. Josephson
Ms. Lisa R. Kanter
Dr. William M. Kelly
Mr. Paul W. Kendra
Kick Geoexploration
Dr. John F. Kick
Mr. Thomas M. Kilroy Jr.
Ms. Melissa A. King
Mr. James P. Kirwin
Mr. Peter B. Klejna
Dr. Allan Kolker
Mr. James M. Kozlowski
Mr. Richard L. Kroll
Mrs. Candia L. Kruse
Dr. Fred A. Kruse, Jr.
Mr. Gilbert F. Lafreniere
Mr. Wesley J. Laparl
Mr. Arthur J. Latham
Dr. Daniel N. Leavell
Mr. Bruce R. Leeds
Ms. Marcy Dobkin Lelacheur
Mr. Paul A. LeMay
Mr. Joseph W. Lemieux
Mrs. Lisa J. Lemieux
Mr. Nicholas S. Lesnikowski
Mr. Gary A. Lesslie
Mr. Mark H. Levitan
Dr. Timothy N. Lincoln
Mr. Orville B. Lloyd Jr.
Mr. Edward P. Lombardo
Dr. Nancy E. Long
Mr. Richard E. Lussen
Ms. Martha E. Mackie
Ms. Julie P. Maney
Dr. Lynn Margulis
Marine Biological Laboratory
Massachusetts Inst. of Technology
Mr. David L. Maynard
Lt. Robert M. McClure
Mr. Bernard McCourt
Mr. Thomas A. McCrory
Ms. Ann McManamon
Mr. Richard J. Meczywor
Mr. Paul E. Meriney
Mr. Karl A. Mertz, Jr.
Mr. David G. Milkey
Mrs. Nancy E. Milkey
Mr. George W. Milkowski
Ms. Kathryn E. Miller
Dr. Thomas L. Millette
Mr. Gregory A. Mischel
Mr. Christopher B. Mitchell
Mr. Cameron M. Mooney
Mr. Robert C. Morse
Mr. Christopher C. Morton
Mr. Scott Muir
Mrs. Arlene K. Murray
Mr. Joseph R. Murray
Ms. Janet Muzzy
Mr. Thomas G. Nagy
Mr. John Naso
Mr. Stephen A. Nathan
Mr. William S. Nechamen
Mr. Robert L. Nelson
Mr. Nestor Nicholeris
Mr. Robert D. Nolte
Ms. Tracy Norman
Mr. Thaddeus A. Nowak
Mr. Curtis M. Obi
Mr. Keith M. O'Brien
Dr. Eric A. Oches
Mr. John B. O'Connell
Dr. Paul W. Ollila
Ms. Sharon B. O'Loughlin
Mrs. Elinor S. O'Neil
Dr. Brent E. Owens
Mr. Michael L. Page
Dr. John R. Pappalardo
Mr. Mark H. Parrott
Ms. Virginia Peterson
Mr. William C. Phelps
Philippine Eagle Foundation
Mr. Edward A. Pinto
Mr. Scott J. Plotkin
Mr. Keith S. Pomeroy
Dr. Donald B. Potter, Jr.
Mr. Paul A. Principe
Dr. William A. Ranson
Mr. John L. Reynolds
Mr. S. G. Richards
Mr. John W. Richardson
Deanne and Christopher Riddle
Mr. Timothy B. Robbins
Mr. Brian E. Rogan
Mr. Charles N. Rogers
Mr. Michael J. Roh
Mr. Jean-Stephen Rovani
Ms. Heather Lynn Ruel
James L. Ruhle and Associates
Mr. James L. Ruhle
Mr. Mark J. Rypysc
Angelos & Susan Sakelarios
Kevin & Debra Sanders
Mr. Walter E. Sands
Scientific Comm on Antarctic Research
Mr. Franklin S. Shear
Mrs. Rena G. Shear
Mr. Edward D. Shearer
Mr. Michael F. Shepard
Dr. Steven B. Shirey
Dr. Catherine H. Shrady
Mr. Jay N. Silverman
Ms. Alison C. Simcox
Mrs. Ellen Skryness
Mr. Richard S. Skryness
Ms. Sheila A. Smith
Mr. William R. Smith
Dr. David A. Sommers
Dr. Joel W. Sparks
Ms. Martha R. Spengler
Dr. Kevin J. St. Martin
Mr. John F. Steeves
Mr. Joshua C. Steinlage
Ms. Lynne E. Stopen
Dr. David M. Straus
Mr. Frank L. Stringi
Mr. Frank P. Sweeney
Mr. Frank R. Sweet III
Dr. Lawrence H. Tanner
Mr. Bruce D. Taterka
Tauber Fund Inc
Mr. James N. Taylor
Mr. James L. Therrien
Ms. Anita L. Thompson
Tighe & Bond
Mr. Albert M. Tonn
Ms. Katharyn L. Umstot
Robert & Virginia Venti
Verizon Communications
Verizon Foundation
Vintage Petroleum, Inc.
Mrs. Maria N. Waller
The Walter Group
Mr. Kenneth L. Walter
Rev. Robert K. Walty
Mr. Philip E. Warner
Mr. Lee R. Warren
Mr. Alan E. Weiss
Mrs. Barbara B. Weiss
Mr. Paul M. Wernau
Wexford Partners LP
Mr. Scott B. Whitney
Mr. Gerald C. Wickham
Mr. Peter R. Wieczorowski
Dr. Richard W. Wiener
Ms. Katherine W. Williams
Mr. Mark B. Wingsted
James & Shirley Winslow
Mrs. Joanna Wishart
Mrs. Beverly A. Woods
Mr. Bradford M. Wye
Wyomissing Foundation
Mr. Alan E. Zavalick
Mr. Herman B. Zimmerman

** We apologize if we have omitted anyone from this list. Please contact us if you recognize an omission.*

Keep Us In The Field – Part-II!

The first "Keep Us In The Field" fund drive was a great success. Thanks to alumni donations and a match from our Dean, we replaced our old van with a new 12-passenger van. Now, we are saving for another replacement. Van 340 (George) is nearly 15 years old. *Your contribution will help us keep our field component as strong as ever.*

Graduate Support – Our Future Challenge

One of the great challenges of the Department is maintaining support for graduate students. The Department currently has 12 Campus and Department supported TA positions. We have many more applications to the graduate program than we can support, and some students end up choosing another program if we can't offer support. We know that developing endowed graduate support will be key to maintaining a strong and broad graduate program into the future. This will be one of our main development goals in the future. Making a contribution to a graduate research or teaching endowment can enable a student to attend graduate school, and provide an opportunity to become a career geologist or to use geology to build a better career in any field.

The Randolph and Cecile Bromery Fund

The Randolph and Cecile Bromery Fund is currently growing and will soon be our first endowed Geosciences student support fund. The fund has already helped to support several graduate students; it has partially supported field excursions, and it has brought guest speakers to the Department. We sincerely thank Bill and Cecile Bromery for their generosity. Additional contributions will help us increase diversity and graduate student opportunity in our program.

Tim Cook taking GPS-bathymetry measurements on Langevatnet, Lofoten Islands, Norway.

Memorial Funds Support Student Research

The Department of Geosciences has five Alumni Memorial Funds (see listing). The proceeds go directly to students, most commonly helping to support field expenses, attendance at field camp, or other costs associated with student research. Many alumni, at one time or another, have received some support from these funds, and many claim that the funds were critical in allowing them to complete their thesis or senior research.

Please consider contributing to one of the memorial funds or making a general contribution in support of student research, visiting lectures, or field excursions.

Elinor Fierman Memorial Fund--Established in 1983 by a gift from Jack Fitzpatrick (B.Sc., '76; M.Sc., '78). Elinor Fierman graduated in the class of '76 and went on to Duke University. In the spring of 1977, she was killed by a car while studying roadside geology. This award in her name is given to a student researcher (undergraduate or graduate) with a preference given to laboratory studies.

Geography Alumni Award Fund--Established in 1995 from gifts given by Geography alumni, the award is given either to support Geography graduate student research or to any student in the Geography program for other worthy purposes.

Gloria Radke Memorial Fund--Established in 1984 from gifts given by family and friends of Gloria Radke, a graduate student interested in Pleistocene geology. At the end of her first year here, she was killed by a drunk driver on the S-curve by Atkins Farm Stand in South Amherst. This award is given to graduate students in support of field research.

H.T.U. Smith Memorial Fund--H.T.U. Smith was Head of the Department from 1956-1969. This award in his name is given to support field work with preference to undergraduate students (including enrollment in a field course).

Leo M. Hall Memorial Fund--Leo Hall was Professor of Geology in this Department from 1967 until his death on December 26, 1985. Among many other qualities, Leo was noted for his devotion to field study and to the teaching of field methods. This award in his name is given to graduate students in support of field research.

Please use the enclosed envelope or visit www.geo.umass.edu to contribute. If you are considering a larger gift, please contact Mike Williams (head@geo.umass.edu).

Alumni support makes a critical difference for students in the Department of Geosciences.

Department of Geosciences
University of Massachusetts Amherst
233 Morrill Science Center
611 North Pleasant Street
Amherst, MA 01003-9297

NONPROFIT ORG.
U.S. Postage
PAID
Permit No. 2
AMHERST, MA

Department Highlights

PhD Candidate, Greg Dumond at Chickie's Quartzite, PA on the Department's tectonics field trip.

- **Michele Cooke** led a group of high school students and teachers participating in "Faults in the Field", who learned about geological faults. A blog detailing their experience can be found at: http://clercblog.gallaudet.edu/mass06/index.html.
- **Steve Petsch** and the biogeochemistry group received a nice write-up in *New Technology Magazine*, on gas farming and sustainable natural gas production from microorganisms. The article covers their efforts to understand critical organisms and environmental conditions necessary to support subsurface methanogenesis.
- **Mike Rhodes** has signed an agreement with Information Television Network (iTV) to host a public television program on "The Science of Volcanoes."
- Perhaps a first for the GSA, **Don Wise** had the audience singing his "Evolution" song at the GSA last fall. Even the New York Times picked up the story!
- Ph.D. candidate (Geography) **Brian Conz**, has been awarded a Fulbright-Hays Doctoral Dissertation Research Abroad (DDRA) fellowship from the U.S. Dept. of Education for political ecology fieldwork in Guatemala. He will carry out six months of fieldwork on indigenous peoples, conservation, and protected areas in the Ki'che Mayan highlands of Guatemala.
- **Lynn Margulis** and Dorion Sagan will codirect *Sciencewriters Books*, a new imprint of Chelsea Green Publishing Company which aims to develop outstanding works of science for the general public.
- Maybe you saw **Ray Bradley** on TV a few weeks ago. He was on Lou Dobbs/CNN on June 26 answering questions about the recent National Academy of Sciences report on temperature trends of the last 2000 years.
- **Mark Leckie** was one of the main organizers and teacher/mentors at the "School of Rock", a seagoing teacher workshop on board the JOIDES Resolution from Victoria, B.C., Canada, to Acapulco, Mexico. Teachers were mentored and taught by scientists, actively engaged in IODP research, and by the USIO Education Director, and staff.

Please contact the Department of Geosciences if you have any questions or comments about this newsletter. We plan to publish this on a regular basis, so please let us know if you have suggestions for improvement. We would love to hear from you, please send news updates to: **head@geo.umass.edu.**