

UMASS AMHERST geosciences



The Whaleback anticline at the old Bear Valley strip mine, near Shamokin, PA. "Structural geology in action".

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A LETTER FROM THE DEPARTMENT HEAD



Greetings from Amherst. It has been a beautiful fall, and the leaves were fantastic as usual. Michele Cooke has been on sabbatical in Australia, Richard Yuretich is on temporary assignment at NSF, and Steve Burns is on parental leave after the birth of a second child (a boy this time) but the rest of the faculty are in residence. The semester is in full swing, and many classes are taking advantage of the weather and getting into the field. The NEIGC field conference was held in northern Vermont this year. About twelve students from the department, undergraduate and graduate, attended the meeting along with Sheila Seaman, Mike Williams, and stalwart emeritus faculty members Don Wise and Pete Robinson (back from Norway).

We have two new faculty members to introduce. Eve Vogel is a new faculty member in geography. She joined the department one year ago. Eve's research focuses on the human-environment interactions concerning rivers. She has been investigating the Columbia, but now has plans to begin work on the Connecticut also. Eve got her PhD at the University of Oregon, but had a number of other interesting career experiences before that. We are thrilled to have Eve in the department. See inside for a more complete introduction.

Our newest faculty member, Jon Woodruff, joined the department last spring. Jon is a sedimentologist who is particularly interested in modern sedimentary processes and sedimentary evidence for storm events. Jon earned a PhD from Woods Hole/MIT, and his research already spans the globe (see inside). He has active projects in Japan and Long Island Sound, and Florida. Along with his students, Jon has begun a new project in a particularly exotic location, Puffers Pond in Amherst. Jon has several boats stacked in his office along with a variety of sensors and samplers. And don't worry...John Hubert is still around the department on most days keeping up his research and answering questions from all of us about sedimentary rocks.

There are lots of changes on campus. The new Integrated Sciences Building, mostly chemistry and biology teaching labs, is open. There is a brand new recreation center, design arts building, and another new science building in planning. It looks as if Geosciences will be staying in Morrill for the near future, although we hope to gain some new space when parts of the biology department exit for better lab facilities.

Don Wise led an absolutely fantastic Five College Field trip across the Appalachians last May. We had about 25 graduate and undergraduate students and seven faculty members. We started in the Lancaster area and ended up in Lewisburg, PA. Thanks to some new graptolite research by colleague Bob Gannis and new structural work by Don, the story of the Taconic orogeny in Pennsylvania is one of the best known anywhere. We visited spectacular quarry exposures, new road cuts, old classic road cuts, and had a great day with Marybeth Gray from Bucknell University. It didn't hurt that we had four spectacular weather days for our field trip. Plans are already underway for the 2009 trip. This one will be to the Colorado Plateau, led by Mark Leckie and a cast of supporting faculty. It will be a grand loop from Denver to Mesa Verde, southern Utah, the Grand Canyon, and back.

I am sad to report that Dick Wilkie, a 40-year institution in the geography program, has retired. But I am happy to report that, keeping with department tradition, Dick is still working and continued on inside back page

NEW FACULTY EVE VOGEL

Eve Vogel joined the department in Fall 2008, after completing her PhD in Geography from the University of Oregon. Eve has had an eclectic career, but the theme over time has been trying to merge environmental conservation, social justice, and thoughtful analysis of how the two may be coordinated – as well as understanding the constraints on this coordination. Between her undergraduate degree and her return to graduate school in Geography, Eve worked in international conservation and development and environmental education; taught high school biology, math and Spanish; worked in environmental advocacy and policy; and volunteered for numerous environmental and community groups. She has a B.S. in Environmental Biology from Yale, and an M.Ed. in secondary education from Portland State University.

Eve’s current research investigates the human-environmental dynamics and histories of rivers. She focuses in particular on river governance institutions and policy and their interaction with wide ecological and social processes and needs. She is particularly interested in efforts to protect or restore the natural dynamics of large rivers while also meeting diverse human needs through multi-jurisdictional river basin management. While trained and working as a social scientist, Eve draws also on a background in both ecology and evolution, and fluvial geomorphology. She is persuaded by the argument that long-term protection and restoration of river ecosystems requires retention or restoration of (at least some) dynamic natural hydrological, geomorphological and ecological processes and connections.

Eve’s research has focused for ten years on the Columbia River system. The Columbia River stands out among North American river basins as one of a few large river basins with long-term (75 years) basin-wide coordinated efforts in river development and conservation. Eve’s research has traced the



origins of this basin-wide coordination in the 1930s; its policy, political and administrative evolution over time; and the effects over time on both natural and social systems. She has found that the challenges of holding together an inter-jurisdictional system of river basin administration have forced river management into two repeated patterns. First, river management has prioritized the production of benefits that could be divvied out to constituent jurisdictions. In the Columbia’s case this has meant managing the river to produce hydropower and managing administrative politics to assure funding for desired projects. Both hydropower and project funding have been repeatedly distributed out to the states, the province, and the local communities throughout the basin’s core region. Second, the many groups and interests that have sometimes been excluded by these priorities have challenged basin-wide administration by appealing to state, federal and provincial jurisdictions at key transitional movements. Over time, they have been brought into regional river management as participants and beneficiaries, and so Columbia River management has gradually become more inclusive – though burdened by multiple commitments.

Eve’s research methods include interviews, participant-observation, archival research, policy analysis, and GIS and spatial analysis of changing social and biophysical indicators. She is working toward a project on the Connecticut River, and also a broad comparative river governance project.

Eve teaches a variety of core human geography courses and courses in her specialty areas, including a graduate seminar on River history and policy, the introductory human geography class, Political Geography, and, in fall 2010, a course called “Geography, Policy and the Environment.”

Eve spends her free time with her much-adored 5-year-old son and an 8-year-old dog.

SEDIMENTOLOGIST JON WOODRUFF JOINS DEPARTMENT

Jon Woodruff recently joined the department in February, 2009 after completing his PhD in geology and geophysics from the Massachusetts Institute of Technology-Woods Hole Oceanographic Institution Joint Program (MIT/WHOI), with a focus in sedimentology. Jon also has a B.S. in civil and environmental engineering from Tufts University, and a M.S. in applied ocean physics and engineering from the MIT/WHOI Joint Program. After completing his M.S. he worked in industry as a coastal engineer before starting his PhD in 2004.

Jon’s research interests are on coastal, estuarine and fluvial processes, with an emphasis on the dominant mechanisms of sediment transport within these systems. His studies also include applying quantitative methods and theory to sedimentary

records to improve our understanding of paleoclimate, coastal morphology, sea-level rise, as well as their interconnections. Specifically, his PhD work focused on the sedimentary signatures of hurricane-induced flooding preserved within coastal ponds and salt marshes. These environments are usually protected from the sea by barrier beach systems, with sustained quiescent conditions that promote the deposition of fine grained organic material. During hurricanes and other large scale inundation events these normally calm environments experience high flow and wave conditions which carry sand in from the barrier beach and deposit it as a coarse grained layer. The end result is a sedimentary sequence of fine-grained organic mud, interbedded with coarse grain deposits. These storm-induced deposits serve as natural

NEW FACULTY

archives of past hurricane occurrences and can extend back for many millennia. Although still limited to a few reconstructions, statistically significant trends in tropical cyclone activity are beginning to emerge from the paleo-hurricane records of Woodruff and colleagues. Specifically, prior to approximately 250 yrs BP (or 1700 AD) the W. North Atlantic appears to have exhibited an extended period of decreased hurricane activity, likely driven in part by an increase in El Niño activity and reduced sea surface temperatures. Woodruff has also recently expanded his efforts to the western North and South Pacific, with preliminary paleo-typhoon records from Japan showing periods of increased typhoon activity correlating to periods of reduced hurricane activity in the W. North Atlantic, a relationship consistent with El Niño serving as a dominant



Jon Woodruff shows off a sediment core collected from a New England salt marsh to K-12 teachers. The lightly colored layers in the core were likely washed in by waves and storm surge during past hurricane strikes.

driver for tropical cyclone activity on centennial and millennial time-scales.

Jon is also interested in continuing his M.S. research on the mechanisms of sediment and contaminant transport within fluvial and estuarine environments, with a focus on the Hudson and Connecticut river/estuary systems. These sedimentary environments serve as reservoirs for contaminated material, having inherited a legacy of heavy metal pollution primarily over the last 150 years. Often this contaminated material is only transported by rare and extreme high-discharge events, when shear stresses on the bottom and flood plains are great enough to remobilize material. This summer Jon has begun collecting cores from depositional sites along the Connecticut River, in order to begin quantifying how sediment and contaminants are transported and stored within the river, as well as the role extreme discharge events play in remobilizing and/or depositing material. Since starting at UMass in February Jon has been busy with all the activities that come with setting up a new lab. He is also excited to be teaching Sedimentology this fall, and Coastal Processes in the spring. Over the last few months Jon has enjoyed getting to know the faculty and students in the department. It really is an extraordinary group and he would like to thank them all for their help and warm welcoming into the department.

FIVE COLLEGE GEOLOGY FIELD TRIP SPRING 2009 APPALACHIAN MOUNTAINS OF PENNSYLVANIA

Approximately 30 faculty, undergraduate and graduate students from UMass Amherst, Smith College, Amherst College and Hampshire College attended the 2009 Five College geology field trip to Pennsylvania in May. The trip was led by Don Wise and Mike Williams from the University of Massachusetts, Amherst; consulting geologist Bob Ganis; and Mary Beth Gray of Bucknell University. Our journey covered much ground, ranging from the first stop at the Whitehall Quarry near Allentown where we saw some fantastic nappe folds all the way through to the Bear Valley Strip Mine, otherwise known as the Whaleback.

During the 4 day trip we saw (among many other things) the last of the Reading Prong of New England, the Cambrian carbonate platform, and spectacular folding and cleavage at Chickies Rock (the type locality for the lower Cambrian Chickies Formation). We walked a trail along the old Pequea silver mine and saw some very interesting formations at an old slag dump of the Gap Nickel mines. We travelled through the Cocalico Allochthons of the Taconic Orogeny, and visited the Alleghanian age Yellow Breeches thrust.

Our final stop was the truly impressive Whaleback Anticline near Shamokin, an exceptionally well exposed folded structure that has been called "a natural laboratory for teaching structural geology". The folded surface was uncovered by coal



Posing for a photo-op on the Whaleback. (Photo: John B. Brady)

miners and is now a wonderful place to see geology "in action".

The upcoming 2010 Five College geology field trip will be led by Mark Leckie, and will go to several localities on the Colorado Plateau, including the Grand Canyon, Arches National Park, and Bryce Canyon.

IN MEMORIAM
 PROFESSOR JOSEPH HARTSHORN
 (1923 – 2008)



Joe Hartshorn loved field work and generations of students and colleagues benefited from his experience and keen sense of observation.

bomber flight missions during the war earned him the distinct honor of being awarded the Distinguished Flying Cross from both the United States Air Force, and from King George VI. In fact, part of the teaching collection Joe left behind here at UMass includes vintage aerial photos of Greenland, some of which include crayon marks encircling ice contact deltas and large inactive fluvial outwash plains suitable for positioning a landing strip if needed by Allied forces.

Prior to his years at UMass, Joe worked 20 years for the United States Geological Survey. As a student of Kirk Bryan, Joe had a keen perception of landscapes and landforms and his mapping craft of morphosequences is clear on numerous surficial maps documenting Quaternary deposits throughout New England. Carl Kotteff (USGS) claims that Joe is at least partially responsible for the term morphosequence, taken from the longer "morphologic sequence" to prevent confusion with similar terms in pedology. Joe's experience in New England was greatly enriched by fieldwork and excursions in modern glacial settings in Alaska, Greenland, Iceland, and Ellesmere Island. Today more than 22 different surficial and bedrock mapping products authored or co-authored by Joe are searchable on the USGS online database.

Joe later brought his vast experience of the modern environments, field mapping, and stratigraphy to the University of Massachusetts. His teaching reached many, from introductory students to those with doctorates. Over the years, the department has received comments even from non-geology majors who took his introductory geology class and loved it dearly because of Joe's amazing gift as a teacher. He touched everyone as a genuine soul with a big heart. No doubt his students still ponder some of the questions on terraces, two tills, and Dirt Machines that Joe planted as seeds in his lectures and at the outcrop. The term "flow till" that he coined in a paper in 1955 remains in the glacial geology literature today.

Friends, colleagues and former students honored Joe's memory by holding a symposium titled "Modern Glacial Processes and the Glacial Sedimentary Record: In Honor of Joe Hartshorn" at the March 2009 meeting of the New England section of the Geological Society of America. This special session was organized by Carl Kotteff, U.S. Geological Survey; Tom Weddle (MSc 1979), Director of Applied Geology Division at the Maine Geological Survey; and Mike Retelle (PhD, 1987), Professor at Bates

A dear friend to all, Professor Joseph H. Hartshorn, Emeritus of the University of Massachusetts-Amherst, died on May 5, 2008 in Sarasota, Florida at the age of 85. With his passing we remember a passionate, dedicated teacher and quintessential field geologist who was a well-respected member of the Five College community. Joe retired from our department in 1987, where he served as the department head for many years and was twice the honored recipient of the Distinguished Faculty Teaching Award during his 20-year tenure. He was the real thing; a hero, mentor, friend, and someone who would always take time to show that he cared about his students, colleagues, and friends.

Joe was a graduate of The Milton Hershey School in Pennsylvania, and of Harvard University, where he received his PhD in Glacial Geology in 1955. At Harvard he took courses from the renowned geomorphologist Kirk Bryan, and glacial geologist Kirtley Mather, both of whom influenced large numbers of geologists of that generation who, like Joe, had a significant impact on the expanding field of Quaternary studies. Kirk Bryan was the motivating force behind Joe's dissertation on the "Glacial Geology of the Taunton Quadrangle, Massachusetts" (1955). However, Bryan died before the thesis could be completed. Joe accordingly received considerable help from Marland Billings, John Miller, and Charles Stearns (at Tufts) (Mark Van Baalen, Harvard, pers. comm.).

While most of us knew Joe as a geologist, in his early 20's he was, in fact, a decorated veteran of World War II, being one of a few Americans to serve in the Royal Canadian Air Force, the British Royal Air Force, and the United States Air Force. You might be surprised to see that Joe's picture adorns a web site highlighting a book about veterans from this era (<http://www.immigrantsofwar.com/>). Joe's successful Lancaster



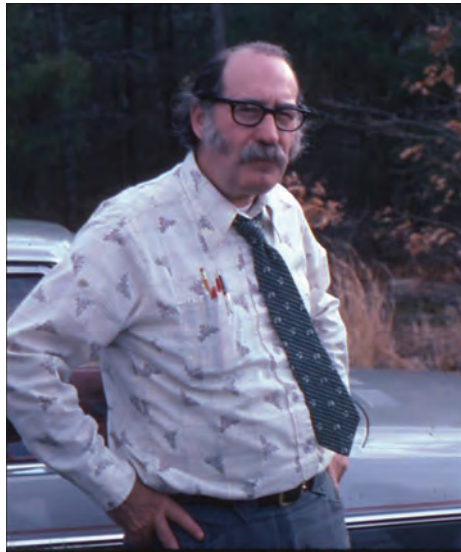
Joe Hartshorn during his time in the Air Force. (photo: www.immigrantsofwar.com)

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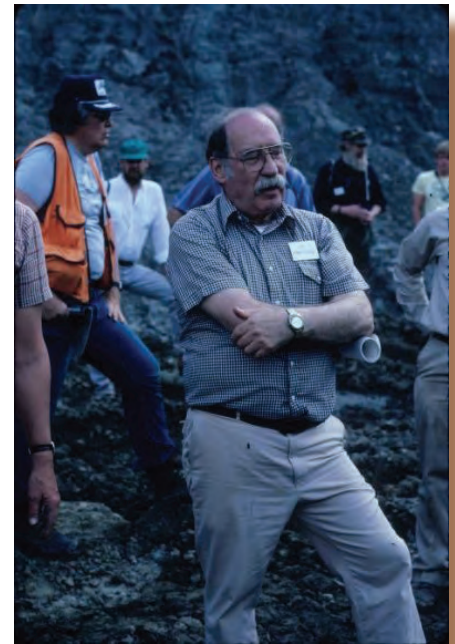
College. Joe never wanted a memorial service, but this professional gathering was an outstanding tribute to the man everyone loved.

During the session, many spoke from the heart of the influence Joe had on their lives and careers. Joe mentored students professionally, taking them on field trips of the Friends of the Pleistocene or NEIGC in addition to supervising them in graduate work. But he also cared deeply about people and struggles they faced. He even let then graduate student Mike Retelle rent his house and host the first Hitchcock Beach Party when he was on sabbatical. Joe is even fondly attributed with some match making in glacial geology class that eventually led to the marriage of Tom Weddle and his wife Susan Corderman (BSc 1979) who was one of Joe’s undergraduate students. We wonder how many other couples emerged from glacial geology?

Joe is predeceased by his two wives, Eleanor Johnson Hartshorn, and Sheila Garvey Hartshorn, and is survived by his loving life partner, Patricia Cohen, formerly of Longmeadow; his children, JoAnn Morrison, John Hartshorn, and Kerry-Beth Garvey; his grandchildren, Nathan and Elizabeth; and his great-great-grandchildren, Alliah and David. Joe and his “Dear Lady Pat” (he always referred to her that way) explored the world together over most of the last 18 years of his life.



Joe in 1979 in SE Massachusetts (photo Tom Weddle)



Joe in 1987 on the Connecticut FOP field trip (photo Julie Brigham-Grette)

For a remembrance from Alexander Woodle, '66, please also see the alumni notes section.

At the request of Joe’s family, our department is privileged to host the Joseph H. Hartshorn Memorial Fund in his honor. We hope that many of you will be willing to contribute so that his legacy may continue to enrich the academic endeavors of students within the Geosciences. Contributions can be sent to the Joseph H. Hartshorn Memorial Fund, Department of Geosciences, University of Massachusetts, Amherst, MA 01003.

D O N A L D A L F R E D P A R K S

Dr. Donald Alfred Parks passed away peacefully on November 13, 2009. He is survived by his wife Barbara. He was born on June 9, 1930, in Jackson Heights, Queens, New York. He enlisted in the Army in 1946, and served until his Honorable Discharge in 1952. His primary service was in the 187th Airborne Regimental Combat Team as paratrooper in Korea from 1950 to 1951. The GI Bill offered an opportunity to attend college. He attended Hofstra University, Hempstead, Long Island, NY, University of Massachusetts, Amherst, and New York University. He earned Bachelor’s, Master and Doctoral degrees, respectfully, in geology, geophysics and geological engineering. He was an Instructor of Geology and Mineralogy here at the University of Massachusetts Geosciences department from 1955 to 1957. He was later employed by several oil exploration companies and began his career as an exploration geologist in Libyan Sahara.

Donald continued to work overseas for sixteen years and was instrumental in the discovery of several oil and gas fields and was helpful in the discovery of the Mabruk oil field, offshore the United Arab Emirate of Sharjah. While in the area, he did some work in Iran. He was posted for about three years to

Indonesia where he was involved in the oil and gas discoveries on Kalimantan (Borneo), Java and Sumatra, as well activities in Thailand and Malaysia. He also did exploration in the jungles of Central America and some work in South America. He worked briefly in other areas, such as the North Slope of Alaska, the North Sea, Australia, the Gulf of Mexico. Donald decided to stay in the US and formed his own exploration company. After retirement, he continued to do consulting work. He was a Senior Fellow of the Geological Society of America, a member of the American Association of Petroleum Geologists, and past president of the Eastern Section, past president of the Petroleum Exploration Society of New York, member of the Association of Professional Geological Scientists, the Independent Petroleum Association of America, a certified Petroleum Geologist, and the American Institute of Mining, Metallurgical and Petroleum Engineers. He was a past president and Lieutenant Governor of the Kiwanis Club of Carefree. He also was a 3rd Degree Mason, and a 32nd Degree Scottish Rite and a Master Craftsman.

In lieu of flowers, donations may be made in Donald’s name to the Arizona Humane Society, 1521 West Dobbins Road, Phoenix, AZ, 85041.

NEWS FROM AROUND THE DEPARTMENT

Geography news:

2008-2009 was an eventful year for geography at UMASS – from the Fall arrival of a new faculty member, Eve Vogel, to the end-of-year retirement of Richard (Dick) Wilkie (see detailed entries elsewhere in the newsletter). We continued our regular “World on Wednesdays” pizza and film nights for students and faculty with a wide range of films, from “Source to the Sea: the Columbia River Swim” to Disney’s “Earth.” UMASS geography was well-represented at the Fall NESTVAL (New England-St. Lawrence Valley) regional geography conference. In

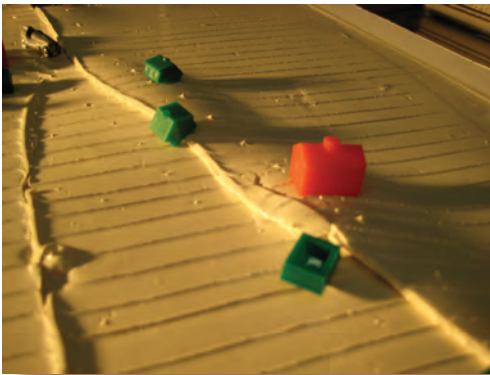
Spring 2009, faculty members Piper Gaubatz, Stan Stevens and Qian Yu traveled to Las Vegas for the Association of American Geographers’ Annual Meeting, where Gaubatz and Yu participated in sessions and Stevens presided over a “mini-conference” in the

form of a sequential set of sessions centered on indigenous peoples and protected areas. Spring 2009 also marked the beginning of a new core course for Geography majors (a complete restructuring of “Writing in Geography”). As part of this course, Geography majors/minors Jessica Brooks, Tyler Fogg, Greg Hanson, Michael Judge, Jonathan Kerry and Patrick Scannell worked together to produce a new set of web pages for the geography program (http://www.geo.umass.edu/geography_web-site/).

Ray Bradley writes: here’s some news from the Climate

Research Center: **Carrie Petrik** (BS, ’09, now MS student) received a Climate Fellowship from the non-profit Clean Air-Cool Planet. Climate Fellowships pair outstanding students with challenging projects aimed at moving the US towards a low-carbon future. Carrie will work with Sustainable Nantucket’s Volunteer Green Council, and various town agencies and departments to draft a Climate Protection Action Plan for Nantucket.

PhD candidate **Nicholas Balascio** was awarded a Fulbright Fellowship to spend a year at the Bjerknes Center for



Michele Cooke and Mariel Schottenfield’s clay box fault development experiment

Climate Research at the University of Bergen in Norway. While there, he will be continuing his research reconstructing climate over the past 14,000 years utilizing lake sediment cores from the Lofoten Islands in northwestern Norway.

Billy D’Andrea, NOAA post-doc in the Climate System Research Center has received a 2-year post-doctoral fellowship from NSF’s Office of Polar Programs for his research on biomarkers in Arctic lakes.

Lucien von Gunten is visiting from the University of Bern, Switzerland, to work on Arctic lake sediments. He is a Post-Doctoral Research Associate,

supported by the Swiss National Research Foundation.

Zhaohui Zhang has left the Climate Center, where he was a post-doc, to take up a faculty position at Nanjing University, China.

Mark Besonen has also left the Climate Center, where he was a post-doc, to take up a faculty position at the University of Texas, Corpus Christi.

Ambarish Karmalkar defended his PhD in the summer and will remain in the Center as a post-doc.

Tim Cook defended his PhD thesis in the Spring and is now teaching at Lafayette College, PA.

Ted Lewis defended his PhD thesis in Spring and is now a post-doc at Queen’s University, Kingston, Ontario, Canada.

Kate Sowder defended her MS thesis in the Spring & is now beginning a PhD at the University of Colorado.

John Hubert continues to occupy a small office off the student common room, keeping a hand in teaching by answering student questions about sedimentology. A multi-year effort with **Jim Dutcher** and **Matt Walsh** was recently published as “Tectono-sedimentary history of the Late Triassic Sugarloaf Arkose, Deerfield rift basin, Massachusetts,” in *Northeastern Geology and Environmental Sciences*. Matt completed a Master’s thesis with me and works for Exxon-Mobil in Houston.

Julien Allaz started a post-doctoral position in the department in July. He is collaborating on two projects with Mike Williams, the Eastern Athabasca Mylonite Triangle (Saskatchewan, Canada): granulite facies mafic and felsic rocks, lower crust; and Grand Canyon (Arizona,

USA): amphibolite to granulite facies felsic and pelitic rocks, middle crust. In addition, he is partly responsible for the electron microprobe facility with Michael Jercinovic.

Michele Cooke: Greetings from down under! I’m spending 5 months of my sabbatical in northern Queensland. It is a great place to live with plenty of distractions from research. Despite the beach, tropical rainforests, and the Great Barrier Reef nearby, I’ve managed to keep up with several projects with current and former students. Former PhD **Scott Marshall** finished his first year at Appalachian State and we are continuing our fruitful collaborative investigations into the mechanics of active faulting of southern California.

Former PhD student **Ryan Shackleton** and I are working on several papers on folding and fracturing, with focus on the Sant Corneli anticline in the Pyrenees. Meanwhile, I am also working with former MS students **Laura Dair** (doing very well at ExxonMobil) and **Fariha Islam** (PhD candidate at Nevada Reno) to write up their thesis work. I’m also continuing to collaborate with **Heather Savage** (MS UMass 09, PhD Penn State) on the development of damage zones around faults. Over the past year, **Mario Del Castello** (former post-doc), **Mariel Schottenfield** (BS ’09 and now non degree grad) and I made a lot of progress on the analog modeling of fault development. We are using clay in a motorized rig to investigate how faults grow and die. Very fun to watch!

This past year marked the end of my NSF CAREER grant sponsored outreach project with high schools for the Deaf. One of the teachers and I are running a workshop for

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K-12 teachers on deformational sandbox experiments at the 2009 GSA meeting. It is called "Watch faults grow before your very eyes!" This is the start of a new phase of outreach for me that will likely involve sandbox activities within hearing classrooms. This GSA will be a busy one for me as I 'graduate' from 1st vice chair to chair of the Structural Geology and Tectonics Division. Interesting note: 2010 is the 30th anniversary of the Structural Geology and Tectonics division. Guess who was the first chair of the division back in 1980? None other than **Don Wise!**

Professor **Lynn Margulis** was honored recently by the Linnean Society of London with a 2008 Darwin-Wallace Medal. The Darwin-Wallace Medals are awarded at 50-year intervals since 1858 to mark the anniversary of the reading of the joint Darwin-Wallace paper "On the Tendency of Species to form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection". Medalists are outstanding scientists who have made significant advances in the study of natural history and evolution. Professor Margulis joins distinguished recipients that include Alfred Russel Wallace and Ernst Haeckel in 1908; J.B.S. Haldane, Ernst Mayer, Julian Huxley, and G. Gaylord Simpson in 1958. This year's recipients included among others Stephen Jay Gould FRS and John Maynard Smith FRS, FLS.

Professor **David Boutt** has just returned 2 month IODP expedition to off the southeast coast of Japan to investigate the role of fluids in seismogenesis and the earthquake cycle. This expedition was the first riser-based drilling aboard

the D/V Chikyu. Chikyu, meaning the Earth Japanese, is the worlds largest scientific ocean drilling vessel and has the capability to drill to at least 10 km into the Earth in water depths up to 3 km. Professor Boutt sailed as a down-hole measurement specialist which include some IODP first use of inflatable packer tools that enable hydrologic testing in 2 km of water 1.6 km beneath the sea floor. First results suggest that the these accretionary prism sediments are much more permeable that previously assumed due to the presence of perme-



David Boutt aboard the Chikyu ocean drilling ship, summer 2009

able fracture networks. Yes, people do drill into the ocean for important scientific reasons other than past climate records. On other fronts Professor Boutt recently finished 4 MS students who have all gone on to pursue careers in the geosciences including: **Patrick Diggins** (at ERM), **Brandon Fleming** (USGS), **Kathleen Plourde** (Exxon), **Phillip Villeneuve** (Sovereign). A new batch of students have just arrived to work on funded projects (including that described above) from DOE, NSF, and NIWR. MS and PhD students will work on projects covering diverse spatial and temporal scales of fluid flow in the upper crust.

Stan Stevens : (senior lecturer in geography) continues research and advocacy for Indigenous rights, new paradigm protected areas, and community conservation stewardship globally, in Nepal, and in the Mt. Everest region. He currently is working with leaders of IUCN's Theme/Strategic Direction on Governance, Communities, Equity, and Livelihood Rights in Relation to Protected Areas (TILCEPA); the ICCA (Indigenous Peoples' and Community Conserved Area) Consortium; Forest Action Nepal, the Sagarmatha (Mt. Everest) National Park

Buffer Zone Management Committee, and the Khumbu Sherpa Cultural Conservation Committee. Together with Sherpa leaders he gave a featured presentation on Sherpa ICCAs at a special event at the IVth World Conservation Congress in Barcelona, Spain in Oct. 2008, the foremost international

conservation meeting. Stevens also gave presentations on ICCAs and indigenous rights at an event at the UN Permanent Forum on Indigenous Issues (UNPFII) in New York in May and at a workshop hosted by UN Development Programme for UNPFII participants. At the 2009 annual meeting of the Association of American Geographers in Las Vegas he presented a paper on new paradigm protected areas and ICCAs and organized and chaired three sessions on Indigenous peoples and protected areas. Recent publications include "Seeking Respect for a Sherpa Community Conserved Area: Responsibility, Recognition and Rights in the Mount Everest Region of Ne-

pal;" a monograph on "The Mount Everest Region as an ICCA: Sherpa Conservation Stewardship of the Khumbu Sacred Valley, Sagarmatha (Chomolungma/Mt Everest) National Park and Buffer Zone;" "Recognizing and Supporting Indigenous and Community Conservation," (with G. Borrini-Feyerabend and others); and "Cross-Cultural Research: Ethics, Methods and Relationships" (with R. Howitt). Over the past year Stevens has also made field visits to ICCAs, collaboratively-governed protected areas, and community ecotourism development sites in Nepal, Peru, Spain, Arizona, and California.

Piper Gaubatz is continuing research on what happens to local urban form and environment when planning practices formulated to capture investment, guide land development and mitigate problems of rapid growth in Beijing and Shanghai are applied in China's impoverished western interior regions. A preliminary version of this research appears in Gaubatz (2008) "Xining's Wangfujing? Commercial Redevelopment, Globalization and Regional Inequality in Urban China," *Eurasian Geography and Economics*, 49(2): 1-20. She also published an article on new forms of public space in Chinese cities in the leading French journal on Chinese studies (Gaubatz (2008) "Les Nouveaux Espaces Publics en Chine Urbaine," *Perspectives Chinoises*, 105(4): 78-90) (an English version of this article was also published in an English version of the journal, (Gaubatz (2008) "New Public Space in Urban China: Fewer Walls, More Malls in Beijing, Shanghai and Xining" *China Perspectives*, 76(4): 72-83.) In 2009 she and co-author Weiping Wu (Professor of

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Urban Studies and Geography, Virginia Commonwealth University) were awarded a contract for a new book with Routledge Press entitled *The Chinese City*. In August she traveled to Guangzhou, China to present the keynote address at the bi-annual conference of the International Seminar on Urban Form (previous ISUF conferences have been held in a number of different countries, such as Sweden, Brazil, and Italy; this was the first to be held in China). At the Spring Association of American Geographers Meeting, she was elected to a three-year term as secretary (2009-2010), vice-

facts of the wide provision of cheap Columbia River power between 1945 and 1980. The results will help to inform several local and regional articles as well as the middle chapters of her future book on the 70-year history of regional Columbia River management.

Mark Leckie writes: I think it's been a couple of years (2003?) since I last checked in with you via our Newsletter: much going on, past, present, and future. Regarding the future, I am a reluctant warrior, but have accepted the role as our next Department Head. Please know and appreciate

I continue to be actively involved in scientific ocean drilling from the perspectives of research, service, and education and outreach. The US ocean drilling vessel, JOIDES Resolution (JR) was significantly rebuilt recently; I participated on the Science Design Team for the new labs, and then sailed on the shake-down cruise last February following the JR's 2-year stay in a Singapore shipyard. Since 2005, I have been the co-lead instructor for the Consortium for Ocean Leadership's 'School of Rock' (SOR), which is a hands-on discovery workshop for Earth and ocean science educators associated with the Integrated Ocean Drilling Program. The SOR links educators to the active research conducted aboard the JR and the legacy of over 40 years of scientific ocean drilling results. More recently, I have been working with several colleagues to write teaching modules about past climate change based on authentic data from deep-sea, Arctic, and Antarctic cores; the project is sponsored by NSF and is called 'Building Core Knowledge'. Since 2008, I've joined **Rob DeConto** as an instructor in the Urbino Summer School for Paleoclimatology. This is an intensive 3-week course features a parade of top paleoclimatologists, paleoceanographers, and modelers in a beautiful setting at the edge of the Italian Apennines.

I can't resist the opportunity to mention what current and former students are up to. Current MS students **Sere-na Dameron** and **Kendra Clark** are working on aspects of Late Cretaceous (Maastrichtian) paleoceanography based on ODP cores collected in the northwest Pacific. PhD student **Emily Browning** is a specialist in calcareous nannofossils

and is working Miocene paleoceanography based on ODP cores from the western tropical Pacific while moonlighting as a consultant for BP in Houston. PhD student **Khalifa Elberdak** came to us from Libya via Carleton University in Ottawa; Khalifa is working on Oceanic Anoxic Event 2 in Upper Cretaceous rocks of Kansas, Colorado, and Montana. PhD student **Andy Fraass** recently joined UMass micropaleo team from the University of Wisconsin; Andy will be working on Oligocene and early Miocene paleoceanography. MS student **Chris Lowery** came out of Neil Tibert's lab at the University of Mary Washington; Chris is working on Miocene sea level reconstruction based on cores off northeast Australia. Former PhD student **Steve Nathan** has worked as a post-doc with the Office of the Massachusetts State Geologist (housed in our Department) and is also doing some consulting work for the oil patch. Former MS student **Nick Venti** is now well along in his PhD at the University of Delaware, while **Jeff Salacup** is piling it higher and deeper at Brown. I keep bumping into **David Finkelstein** (MS way back when) at GSA and AGU meetings; Dave is an Assistant Professor at the University of Tennessee. **Neil Tibert** recently joined the ranks of tenured faculty at the University of Mary Washington. After finishing a PhD at Rice University, Geosciences alum **Brooke Carson (Olson)** (MS 2002) now works for Chevron in Houston. **Desiree Polyak** (MS 2003) works as a minerals commodity specialist for the USGS in Reston, while **Erica Sterzinar** (MS 2005) works for an engineering and environmental firm in New Jersey, and **Paul McLain** (MS 2005) teaches at Westfield

continued on inside back page



Rob DeConto and Mark Leckie at the famous K-T (now K-P) boundary near Gubbio, Italy. The boundary claystone has been excavated by so many geologists who visit this important locality. Rob and Mark teach at the Urbino Summer School for Paleoclimatology in July.

chair (2010-2011) and chair (2011-1012) of the 250 member China Specialty Group.

Eve Vogel won a Faculty Research Grant last spring and went back to the Pacific Northwest over the summer to continue her research on the long-term consequences of organizing river basin management as a regional basin-wide endeavor. Her work this summer investigated the social, environmental and spatial ef-

the fact that **Mike Williams** has done a fantastic job at the helm for the past 6 years, and his are indeed large shoes to fill! I'll do my best, and would love to hear from any of our alums as to how we can do a better job of interfacing and connecting with our broader UMass Geosciences community. **Steve Petsch** will assume the chores as Chief Undergraduate Advisor for the Geology Program.

RETIREMENT: PROFESSOR RICHARD W. WILKIE

It is a pleasure to write a short statement about my career of nearly 41 years in the department after retiring this past June. I feel honored to have had my career in our department and I want to thank my many colleagues who over the years have helped to make this 'the best job in the world.' I am excited about the opportunity over the next stage of my (retired) career to complete a number of ongoing projects, to continue working with my graduate students and to teach at least one course a year.

Looking back over my time here, little did I know as I joined our faculty in January 1968 that someday I would carry the torch as the professor with the most years in our department among active (non-retired) faculty, which I have done since Peter Robinson retired in 1999. The new torchbearer is Ray Bradley, who came 36 years ago in 1973. Changes in our department over 41 years have been impressive: The department before 1968 had only one geographer—Terence (Terry) Burke—and no geography degree. The undergraduate major in geography (BA and BS) began in 1970, and the name of the department was changed to Department of Geology and Geography. The geography graduate program began in 1980, and by May 2009, 117 Master's degrees had been awarded. The name of the department changed again in 1996 to Department of Geosciences, thus allowing geographers to join the geologists in granting geosciences Ph.D. degrees.

In my own case, I have had the fortune to direct 3 Ph.D., 32 Master's and 6 Honor's/BDIC students to completion, and am still directing or co-directing 3 Ph.D.s (1 is co-directed) and 1 Master's and serving on another 7 Ph.D. and 3 Master's committees (in 6 departments). Prior to these 14 current committees, I served as outside member on 92 graduate student committees in 17 different departments or programs (41 Ph.D., 39 Master's, and 12 Honor's). Fifteen students that I directed or mentored currently hold academic or research positions at universities or colleges in three countries, and four of my students were Fulbright Scholars. Finally, I served as Geography Graduate Program Director for 20 years (1980-86 and 1996-2009), and Geography Program Director between 1996 and 2002. Publications that I authored, co-authored or edited include 3 books, 8 monographs and over 50 chapters in books, articles or other academic publications.

My immediate plans center on two projects: The first continues my research looking at the importance of "place" in peoples' lives, and how one's life experiences in places, connections to family and friends, knowledge of history and folklore and one's 'sense of place' often leads to having emotional attachments to certain special places. Most people have emotional bonds with a range of places varying in scale from one's childhood swimming hole or family traditional vacation place to reverence for a national shrine like the Gettysburg battlefield—with its symbolic feelings of nation and sacrifice—and landscapes like the Grand Canyon. Along this research line, I have a forthcoming publication [with George Roberson (UMass M.S.2003,

Ph.D.2006)] that defines the geography subfield 'Sense of Place' in the Encyclopedia of Geography, and we have been asked to define the subfield 'Attachment to Place' as one of 100 geography subfields for the future to be covered in a forthcoming book 21st Century Geography. On a related topic, I have been exploring how "light" and "the quality of light" helps influence how humans view and respond to places. Artists and photographers often attempt to capture the special qualities of light that



are often unique to places in different ecologies of the world and at different latitudes and elevations, as well as at different times of day or during seasonal changes and year to year evolving landscapes. This form of visual thinking is both realist and abstract, and these images provide individuals with an evolving 'sense of place and time.' I am working on a book on the theme Light and Landscape that is partially based on my conference presentations and two invited month-long solo photo exhibitions that I had in 2008.

Secondly, I am at a point in my life where I see the importance of synthesizing aspects of my research and teaching in different ways. I have had a longtime interest in visual, spatial, and creative thinking and how conceptual models help us to better understand complex behavioral, ecological, and theoretical relationships. In recent years I have put more of my teaching and research into exploring these issues, resulting in early drafts of a book that explores visualizing ideas and conceptual models and using a series of frameworks in which complex relationships and approaches can be contrasted and more easily understood. Along related lines, I am working with Lynn Margulis to develop a seminar for the coming spring entitled, "Evolution Geography." A case can be made that it is time to look at evolution through a new filter, and geography is an important way to look at how both the physical systems evolved in earth history and how humans have increasingly impacted those systems.

Beyond that, I want to continue traveling and experiencing the world with my wife, family and friends, and to enjoy life on our farm in South Amherst and our beach cottage on Martha's Vineyard. Having little to do will never be my problem.

FEATURED ALUMNI TOM MCCRORY, P.G.

I started at UMass in the spring of 1978, just six weeks before my 28th birthday to work on a Master's degree. I had previously gotten a bachelor's degree in biology, and worked in an emergency room for several years, but I had to start over from scratch with all my undergraduate geology courses. I mention this because non-traditional students should not feel intimidated. You don't have to start doing geology at 18 or 19 to have a wonderful career (though there's nothing wrong with starting then if you're ready).

I had the great good fortune to have superb professors, especially my thesis advisor, Don Wise. I was also blessed to have fellow graduate students who were brilliant then and have gone on to achieve amazing things, including Lee Allison, Art Goldstein, and Matt Golombek. (If I didn't mention you by name, please don't be insulted, there's a page limit). The formal coursework and informal discussions that filled those years were wonderful preparation for a career doing geology.

My academic focus was structural geology, and my thesis was on patterns of fracturing in basement versus sedimentary cover in the Sunlight Basin of the Beartooth Mountains in Wyoming. Little did I know that 15 years later, my knowledge of fracture patterns would enable us to stop a gasoline leak that had required the emergency evacuation of part of a town. However, I have used something from every course I took at UMass in my professional career. I cannot emphasize too strongly the importance of having the broadest possible academic background.

I graduated from UMass with a master's degree in the spring of 1982, which unfortunately was at the peak of the worst economic conditions (until now) since the Great Depression. My first post-graduation job was a year selling sandwiches door-to-door in West Hollywood, California, and there were many times I wondered if I would ever get work as a geologist. However, in the spring of 1983 I signed on as an exploration geologist for a small mining firm with projects in Nevada and the Mojave Desert.

The next three years were a sort of wonderful postdoc, traveling all over the Basin and Range, learning how to find mineral deposits and stay alive doing solo exploration tens of miles from the nearest human being. It turns out it's not all that hard to find gold and silver, but finding enough of it in one place that you've got some money left over after all the expenses of mining is a whole different proposition. And believe me, in the hunt for the elusive ore body you will use every bit of geology you've learned.

In the mid 1980s, Dean Witter was looking for brokers with specialty expertise, and with my background in mining, I

was soon the precious metals specialist for their office near Disneyland. I didn't like the telephone sales aspect of the job at all, but I learned a lot of things about the economics and investing in precious metals and mining companies that have come in handy since then. Among other things, I can see that the next couple of decades will see a huge increase in exploration and mining activities, so if you want to increase your chances of getting a job, be sure to learn something that can be utilized in the mining industry (which includes environmental, hydrology, engineering geology, geophysics, and geochemistry).

In 1990 I switched gears again and started in environmental geology. I joined OHM in 1991, which was bought by IT Corp. in 1998 (corporate motto: No Price Too High To Pay For The Competition), and which in turn was bought by Shaw Group in 2002 out of bankruptcy court (corporate motto: Let Bad Management Run Good Companies Into The Ground And Then Buy Them For Pennies On The Dollar). My 19 years in environmental geology have included an incredible diversity of projects. I've been involved with eight different major trichloroethylene plumes, which we remediated using such diverse techniques as interceptor trenches, hydrogen releasing compound, electro-resistive heating, and steam injection. I've worked on investigating and remediating petroleum releases at over a dozen service stations and bulk storage terminals. We discovered that in many cases, you can remediate a petroleum site much more quickly and thoroughly by using horizontal wells. One of my favorite experiences was serving as an expert witness, where I was able to use the presence of trace amounts of MTBE in groundwater to prove that the previous owner was responsible for the release of 30,000 gallons of gasoline in Memphis.

I've worked on projects from Massachusetts to Arizona, for clients ranging from the Department of Defense and Department of Energy to state governments and numerous corporations. I've worked in Level D, C and B personal protective equipment at Air Force fields, Marine Corps bases, Army depots, mines, Superfund sites, DOE nuclear facilities, and chemical storage plants. I've dealt with health and safety hazards ranging from drilling in dumps of buried chemical warfare munitions and medical waste, to working near explosive concentrations of petroleum vapors, to sites containing cactus, rattlesnakes, Gila monsters and rabid bobcats. However, the closest I've come to dying was at 3 am one morning at Hartsfield Airport, when a Lear jet took off on the wrong runway while we were installing an aviation fuel remedial system.

During this time, I married my wife Marlene, and we had twin boys. Without Marlene's encouragement and support, I would not have even remotely accomplished what I've been able to.



FEATURED ALUMNI

The boys are a delight, except, of course, when they're not. I'm aware of the old saying that children keep you young, but in my experience it's more accurate to say that they keep you exhausted. However, it's usually a happy exhaustion.

My most recent extended field assignment was in Ajo, Arizona, where I spent nine months in 2008 running the investigation and remediation program next to the old open pit copper mine. Currently, I'm in charge of Shaw's Albuquerque office, where we work on federal munitions cleanup programs and have a growing mining remediation business. The munitions cleanup is especially tricky, because for most environmental contaminants the lethally disastrous health and safety effects are a by-product, but with munitions it's a feature, not a bug. We're also doing more work on projects where insurance policies provide guaranteed cost remediation for clients, which looks like the wave of the future.

ADVICE

- 1) Never give up.
- 2) Everything else being equal, the more different kinds of geology you see and work on the better geologist you will be.
- 3) Don't be surprised if you wind up doing something completely different from what you expected when you were a student. Take a very broad course load and remember that you'll need to keep learning as long as you work. It's much easier now that the Internet exists.
- 4) For a variety of reasons too long to go into here, the next 10-20 years are likely to see a huge growth in mining activity. This

should present numerous opportunities for you to get your career started. Every March the Prospector and Developers Association of Canada has an enormous convention in Toronto with hundreds of companies represented – not just mining, but in mining support (e.g., environmental, geophysical, etc.). Plan now to load up a van, bring a briefcase full of resumes, and work that thing. And don't wait until you're ready to graduate – they need lots of summer interns, and it can be great experience.

5) Expect that you will have to take on field assignments and travel, probably a great deal, especially in the first couple of decades of your career, but to some extent as long as you are an active geologist. The earth is not going to come to your office, and you have to get out where it is to be any good.

6) Understand that all that travel puts a tremendous strain on relationships, especially marriages, and most especially once children come along. All of the electronic communications that have become available in the last 25 years have made it easier to stay in touch, but it's no substitute for being there, and lots of the time you won't be. Plan in advance – there are lots of creative solutions to reduce some of the strain. I know of one case where a young geologist packed his wife and pre-school kids in an RV, which they used to migrate from field project to field project.

7) Most important – if you refuse to give up, stay excited by geology, and work hard, you'll be amazed at what you ultimately accomplish. And if you're meant to be a geologist, there's nothing that is more gratifying.

DR. M. LEE ALLISON

Dr. M. Lee Allison (UMass PhD'86) received the Department of Geosciences Distinguished Alumni Award this October.

While Dr. Allison was on campus, he presented two talks and gave a workshop on Geoinformatics.

"Intelligent Design and the Assault on Science and Religion" was the title of Dr. Allison's talk that was part of the Geoscience Lecture Series. Dr. Allison, currently State Geologist of Arizona, was Policy Advisor for Science and Energy to Gov. Kathleen Sebelius of Kansas in 2005 when the Kansas State Board of Education put Darwin on trial as the culminating event in a six-year long battle

to impose the teaching of certain religious beliefs, including Intelligent Design, in primary and secondary science classes. Dr.

Allison worked together with others in the state and nation to help assure that science classes covered scientific topics and did not include supernatural explanations of natural phenomena. The circumstances surrounding this case focused national attention of the teaching of Evolution, Creationism and Intelligent Design. Dr. Allison discussed the nature of the controversy and provided commentary on this important topic.

Dr. Allison also gave a Professional Seminar talk about the problem



L-R: Steve Goodwin (Dean of the College of Natural Sciences), Dr. M. Lee Allison, Laurie Brown, and Mike Williams.

of earth fissures in Arizona, which are caused by land subsidence from excessive pumping of groundwater.

FEATURED ALUMNI

JON CHILD (MS '95) AND LIZ ROSENBERG (MS '96)

We continue to enjoy life in Hadley after completing graduate studies at UMass – especially the open spaces and time in the yard next to the amazing new “bluehouse.” Our solar bluehouse is compliments of (PV)2, the renewable energy worker-owned cooperative that Jon joined in mid-2005 after a decade of environmental consulting. It’s blue because Jon designed and built it, and Liz needed to partake somehow (blue seemed the obvious choice in the farm fields of green). It’s the outdoor dining room we have always wanted. What a bonus that it provides all our electricity! Jon’s work with Pioneer Valley Photovoltaics Cooperative keeps him “electrified” with green ideas. We are continually amazed to see our collegiate paleoclimatology seminar topics as front page news 20 years later and Jon is very happy to be involved professionally with something of significant personal interest.

Elsewhere, in Amherst, Jon also builds -- but this time for The Toy Box, Liz’s toy store since 2003. An unplanned endeavor, the store has provided an enormous sense of pride and immense flexibility for Liz and our whole family. Within the last year we started a program called The Language Lounge where families bring their children to Spanish, French, Mandarin, German, or American Sign Language immersion sessions – it has been a blast! The toys are unique and inspire imagination and creativity, not your mass-market offerings at all. It’s a joyful place to work (and not a bad place for the kids to grow up ei-



ther).

Speaking of the kids, both have December birthdays with Rita turning 4 and Celia 9 on the last day of 2009! Celia is in 4th grade at Leverett Elementary and loves her days immensely! She’s quite the mathematician, writes great descriptive poems and stories, adores playing the piano and violin, and swims like that fish we all know. She, like the rest of us, is becoming proficient in American Sign Language, as Rita is deaf. Celia delights in having this “secret” language with her sister – it has played a part in fostering an intense bond that is apparent and beautiful. Rita splits her week with three days at the Hampshire College Children’s Center and two days at The Learning Center for the Deaf in Framingham (1 and 1/2 hours

from our home). As her chauffeurs, we have learned about the cleanest most amicable rest stops, best places to re-caffeinate and set up the mobile office, and how to entertain a deaf child at 6:30 am in the cold dark wintry car (thank you Apple for the iTouch). The climb has been steep to acclimate to Rita’s communication needs – and it has been monumentally rewarding. She is a dynamo!

We love life in the Pioneer Valley, although getting away (without phones and computers) is the ONLY way to relax. As Rita approaches kindergarten in 2011, we are also working out a future involving both Framingham and the Valley. If anyone has a helicopter for use over the coming decade, let us know.

ALUMNI NOTES

Gilbert F. La Freniere (Gil), BS, '55: Thanks to you and the Department for keeping Alumni informed about UMass Geosciences. When I received my Geology BS in 1955, Professor L. R. Wilson (With whom I climbed Mt. Washington as a freshman in 1951, on a below zero day at the summit in mid March) steered me towards a teaching fellowship and Masters Degree in Geology at Dartmouth College (1955-1957). I have been practicing and teaching Geology ever since. Travel also introduced me to the discipline of history, and I have been an intellectual schizophrenic ever since. I have been independently studying

photography and lecturing about the structural geology of the Canadian Rockies since 2003, and would be happy to share ideas and/or graphics with anyone in the Department with similar interests.

Alexander Woodle, BS, '66: I am a 1966 BS graduate in geology. I was sorry to hear of the passing of so many of my former teachers over the years. I remember well my classes in mineralogy with the late Dr. Nelson, my beginning class and field trips with Tom Rice, and who could forget Dr. Pitrat and his great knowledge and artistry of drawing invertebrates. Their passing tells me how quickly

time goes by. Terence Burke, the only geographer at the time, became an inspiration to me in my junior year, and I went on to receive a Masters in that field. He, too, recently died in Arizona.

However, it is Joe Hartshorn I would like to write a few words about. In 1967 I took a summer job as an assistant to Joe, then still working for the USGS. Our assignment was to map the surficial geology of the Ashfield Quadrangle. To my knowledge this work was not completed and therefore remains unpublished, however the summer of 1967 still resonates in my memory.

Joe was a real gentle-

man who treated his field assistants as equals and not inexperienced recent graduates. I have always enjoyed Pleistocene geology and its resulting geomorphology (I live within the Ayer Quadrangle amongst drumlin swarms, eskers, kettle holes, kames, kame terraces, etc). Joe was struggling with back problems and had been approached by UMass to come teach in the fall of that year. He was having trouble making up his mind, because he loved the field. In the meantime, he taught his field assistants a lot about mapping Pleistocene geology. He was always affable and easy to approach. My most memorable lesson was how to finally de-

ALUMNI NOTES

cide on the boundary between outwash and unstratified drift. We knew we were close by the topographic expression, but the samples we dug up were inconclusive. Joe reached into his pocket and pulled out a coin. "Heads it's drift, tails it's outwash." I learned there and then how inexact a science it was.

Joe talked about his wartime experiences. As I remember he left Harvard and joined RAF as a teenager! Eventually he flew in US Army Air Force as a pilot of a bomber flying many harrowing missions through German anti-aircraft fire. He was quite the adventurer. Later as a geologist he helped lay out airfields in Greenland and other northern outposts.

I had the pleasure of hosting Joe at our summer cottage that season where I proudly introduced him to my whole family. I followed his quickly rising career at UMass, but unfortunately never saw him again.

My thoughts are with his family and I will always remember Joe for his kindness and his skills as a teacher.

Pete Discenza, BA '70:

Greetings from Minnesota. I graduated in 1970 with a BA Geology (I suspect the staff didn't want to deal with me any longer) and went on to a career in the Air Force, with my first assignment out of pilot training being a tour in S E Asia. I eventually left active duty (though I stayed in the reserves) and flew for a southern department store chain out of Little Rock. In '85 Northwest Airlines offered me a position and I've been with them ever since, flying the 727, 757

and DC10 in various crew positions. I often tell my long-suffering co-pilots that I've avoided rocks (on a professional basis) for these many years but I can still appreciate the gross structure apparent from my office window some 6 to 7 miles up. I'll be retir-



University of Massachusetts geology students at work on a shallow refraction seismic survey at the site of the proposed dam for the Lake Amherst recreation area east of North East St. Standing, left to right, are Barbara Skerky, Joseph Caggiano, Paul Mushovic and Obadiah Bwerinofa. Kneeling from left to right are Joseph Infascelli, John Moser and Gary Robitaille. Eugene Rhodes is kneeling in the foreground. Dr. Randolph W. Bromery (far right), UMass associate professor of geology, directed the group.

Joseph Caggiano, Ph.D., (1978) attended the alumni reception at GSA in Portland, OR in October, and sent along this newspaper clipping and the following: "I mentioned a photo and an article from an October 1968 issue of the Daily Hampshire Gazette (I believe, not the campus newspaper) that featured Bill Bromery and beginning Geophysics students (I was one and am in the photo). The class conducted a shallow seismic refraction survey to locate the buried bedrock surface at the proposed site for Lake Amherst (wherever that was). All parties are identified, although the bottom row is identified right to left (not left to right as the caption states). Thought you might enjoy this for the department's historical records and perhaps a newsletter."

ing from the airline soon--not sure what I'll be doing once I've grown up but the wife has promised to wring my neck if I hang around the house. She's gotten used to my being gone 16-18 days per month. I've tried to interest the last child in attending UMass but she says she'd rather go where there's no legacy to deal with. I've assured the kid that there is no plaque for me on campus...

About Minnesota ...

the variety of features we have at the surface in the state, from Canadian Shield 'up north' to glacial remains from the twin city area south. Early/late light shows the orientation of moraines as seen from altitude which is not so apparent from the highways. My guess is that

Paul along the Mississippi, but the rock is limestone and too porous. Too bad--it's a neat system. We toured the project in Structure 2, with Leo Hall and George McGill.

Farrukh I. Ahmad, MS, '71; PhD, '75:

I am in Yemen where I am working on an overseas assignment. I have been overseas for the last few years (different countries).

Joseph (Joe) Maddox, '75:

Joe was a UMass graduate and a friend of Gloria Radke. Joe noticed that we remember Gloria with the Gloria Radke Memorial Award each year. Gloria Radke was 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. The award was established in 1984 from gifts given by family and friends. The award is typically given to graduate students in support of field research. Joe made a contribution to the Gloria Radke fund and remembered Gloria with these words:

"Gloria... was an amazing individual. She was brilliant, beautiful, loved life and geology. Anyone who knew her would attest to this and would consider themselves blessed to have known her. Gloria died at 26 years of age in 1981 from injuries sustained in an automobile accident, a victim of a drunk driver. She was a graduate student in your department at the time of her death. Had she lived she would have contributed much to this world. She is still remembered and missed by her friends."

150 years of farming has softened the topography where the soil is most fertile and farm-market roads then evolved into county and state routes. There's still a lot of iron to be had in the Mesabi but it's deep enough to make extraction uneconomical. A hydrogeologist friend has been involved with a search for other minerals in that area. Pumped storage a la Northfield was proposed for the bluff region, south of St

ALUMNI NOTES

Rusty Guilbert, MS, '80: (Get Year from Laurie) I'm working as an Earth Science Advisor in Chevron's Business Development Group based out of San Ramon, Calif. I'm doing quite a bit of travel overseas.

Tom McCrory, MS, '82:

My wife Marlene and I decided that the twins were old enough to go see Yellowstone without wandering off into a thermal pool, so we spent two weeks at the end of July and beginning of August on vacation in northwest Wyoming. Of course, being trapped in a car with 2 13-year-olds for 2 weeks hardly does justice to the concept of "vacation" ("If you don't turn off that iPod and look at this geyser I'm going to throw it in!"). Nonetheless, everyone survived and had a good time.

As for me, I'm on long term field assignment in Ajo, Arizona ("Where summer spends the winter", Ajo Chamber of Commerce; "Where hell spends the summer", Tom McCrory). It is giving me the opportunity to get familiar with porphyry copper deposits. It also gives me the opportunity to see Lee Allison, who is revitalizing the Arizona survey. Best wishes to all of you at Zoo Mass.

Cheryl Johnson Moss, MS, '82:

I thought I'd pass on a bit of alumni news featuring my "15 minutes of fame". After getting my M.S. in 1982, I've been with Mueser Rutledge Consulting Engineers in New York City since 1983. I am now their senior geologist. After working on all sorts of projects around the region, even some high profile, I finally uncovered some geology as news-worthy as the project. I was quoted in a New York Times article from Septem-

ber 2008 ("At Ground Zero, Scenes From the Ice Age") describing a glacial feature at the World Trade Center site that I've been studying. I've been married to my husband Paul for the past 24 years and we have 2 daughters, Alex (20) and Stephanie (16). I've been with Mueser Rutledge for almost 25 years, originally starting out in the soils lab (taking soil mechanics at UMass was probably key to my getting the job). I've worked on a wide variety of projects from all over, but with the building boom in recent years I've worked all over NYC. In the course of our geotechnical investigations, I've had a chance to see all the soil and rock under the new Yankee and Mets stadiums, in addition to some of the other local sports facilities built in recent years. With the exception of the WTC, most of the jobs with the interesting geology are the projects nobody would recognize. To keep things interesting, I've been presenting papers on them over the past few years, mainly at the Long Island Geologists conference at Stony Brook every April. I've written about the WTC before, so if there are any questions about the pictures shown online I'm free to answer them.

Steve Herzog, BS, '91:

I'm now at AMEC in Westford - working in environmental impact assessment and permitting, mostly for energy projects, including renewable energy (wind), and linear projects (pipelines, electric transmission lines, railroads). We also have a strong GIS/remote sensing group with whom I often work. I've been here for a year and a half. I like it very much - very good people and really cool work.

Ed Demling, BA, '95: start-

ed out teaching English conversation for two years, and is now a full-time translator and consultant to Ricoh Co., Ltd. in Tokyo, Japan. Before going to Japan, he studied Japanese in an intensive program at Middlebury College in Vermont, wherein participants pledge to have no contact with English for two months, and two years worth of material is covered. He doesn't have the opportunity to apply his two degrees from UMass (Geology, Anthropology) on a daily basis, save for frequent small earthquakes and gradually learning more about the culture of



Ed Demling with Japanese baseball player Eri Yoshida

Japan. After working in Tokyo for 7 years, he began doing film subtitles and other translation work, which led him to becoming one of the finalists interviewed to be the translator for the Boston Red Sox when they were in Tokyo. Though he didn't get that job, he did meet longtime announcer for the Red Sox Joe Castiglione, and he presented the team with a well-wishing gift (a daruma). Ed's latest project was an interview with Japan's first female professional baseball player to play in a men's league - 17 year old Eri Yoshida, who was inspired to go pro after seeing a video of Tim Wakefield

pitch. (She's a knuckleballer too.) He's working on bringing her to Boston for her first game at Fenway, and hopefully she'll have a chance to finally meet Tim Wakefield himself.

Sue Howle, MS, '98: is still working as an Environmental Coordinator for the US Forest Service, but left the Green Mountain National Forest (VT) in April 2007 to accept a promotion with TEAMS Enterprise, a US Forest Service Enterprise Program unit. TEAMS Enterprise is a group of about 120 Forest Service employees, who live throughout the U.S., and travel to their jobs (primarily to a National Forest or Bureau of Land Management (BLM) Field Office). Sue said she loves her job because of the challenge it offers, the flexibility to work from a home-based office, and the travel to some pretty nice places. Sue has led the environmental analysis process on projects ranging from a gold mine expansion in Nevada to a timber sale in SE Alaska. She is currently serving as a BLM Project Manager for an Oil and Gas exploration project in Meeker, CO. She is planning a move back to the Great Basin (Ely, Nevada) in late December and looks forward to smelling sagebrush again.

Mark Baker, MS, '00: My wife and I recently relocated to the Carolinas to escape the cold New England winters. I miss being able to take short drives to Amherst for campus strolls and the obligatory visit to Mount Sugarloaf.

Jay Driscoll, BS, '08: I graduated from UMass last spring... and was a Geography major. I have since moved to CT where I actually am working as a full time musician with my band Barefoot Truth.

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KEEP US IN THE FIELD

Field experiences enrich every part of our undergraduate and graduate education. The key is having department vans available so classes can head out into the field during afternoons and weekends. We continue to seek funding for new vans through all possible means. As in the past, alumni gifts greatly strengthen our position. Thanks to alumni donations and a match from our Dean, we will add a new 12-passenger van this summer. Now, it is time to replace another of the aging vans: Van 340 (George) is over 15 years old. Your contribution will help us keep our field component as strong as ever.



Please use the attached envelope or www.geo.umass.edu to contribute on-line.

If you are considering a larger gift, please contact Mike Williams (head@geo.umass.edu).

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

We apologize if we have omitted anyone from this list. We are actively updating our records and will include new names in the next newsletter.

GRADUATE SUPPORT – THE CRITICAL CHALLENGE

Perhaps the greatest challenge for the future of the Department is maintaining support for graduate students. The Department currently has 12 University- and Department- supported TA positions. We currently have many more applications to the graduate program than we can support, and many students end up choosing another program because we can't offer support or can't compete with other programs. We feel that developing endowed graduate support is essential for maintaining a strong

and broad graduate program into the future. This is one of our main development goals. 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. Please consider helping us to endow future graduate positions. And please feel free to let us know if you have ideas for developing enduring graduate student support.

JOSEPH HARTSHORN ENDOWED GRADUATE SCHOLARSHIP IN QUATERNARY GEOLOGY

Joe Hartshorn was a passionate, dedicated teacher, scientist, pioneer, and leader in his field. He came to UMass in 1968, retired as professor emeritus in 1987, and, sadly, he died on May 5, 2007. Although his interests were broad, Joe was particularly interested in glacial geology, and his studies of the glacial geology of New England set the standard for all who followed. He took a personal interest in the lives of students, and was always available to chat and share his wide experience, both in geology and life. His influence lives on in the successes and contributions of all of his former students. In order to pay tribute to his memory, we have established the

"Joseph Hartshorn Endowed Graduate Scholarship in Quaternary Geology". The scholarship was established in 2009 through gifts from Joe's family and friends, Department faculty, and alumni. We now hope to grow the fund so that it can significantly support student research and ultimately support a graduate fellowship in the department.

In addition to the Hartshorn Scholarship project, our next goal is to fully establish the "Charles Pitrat Memorial Endowment Fund". Watch for notes in the next newsletter, but please contact us if you would like to help.

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. This fund is intended to support students, especially students from diverse backgrounds, and it is also intended to support and enhance student field research. 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 shorten the time until proceeds from this fund can support a graduate fellowship and thus be used to attract new graduate students and increase the diversity of our program.

MEMORIAL FUNDS SUPPORT STUDENT RESEARCH

The Department of Geosciences has six relatively modest Alumni Memorial Funds. 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 possibly make 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.

MEMORIAL FUNDS SUPPORT STUDENT RESEARCH

Andrew D. Wise Memorial Endowment Fund--Andrew D. Wise was an undergraduate geology major in the department (BS-1983). After graduating, he worked as a hydrogeologist with Weston & Sampson in Peabody, MA. He played the trumpet and was an avid skier and cyclist. In 1998, he traveled through the country for six months on a motorcycle, visiting many of the National Parks, and finally settling in San Diego, California where he was employed by Gradlent Engineers. He died on July 18, 2006. In June of 2007, Richard and Geraldine Wise established the Andrew D. Wise Memorial Endowment Fund in memory of Andrew. The purpose of the Fund is to provide support to students in the Geology Program for expenses, programs, and experiences for which other support is not available. We welcome contributions to this important fund.

CONGRATULATIONS TO THE 2009 STUDENT AWARD WINNERS!

OUTSTANDING SENIOR AWARDS

L.R. Wilson Award for an Outstanding Undergraduate in Geology : Michael Christensen

Geology: Mariel Schottenfield, Emerald Shirley
Geography: Michael Judge
Earth Systems: Franklin Sullivan

OUTSTANDING TEACHING ASSISTANT AWARDS

Geology: Jason Kaiser
Geography: Colleen Kelley

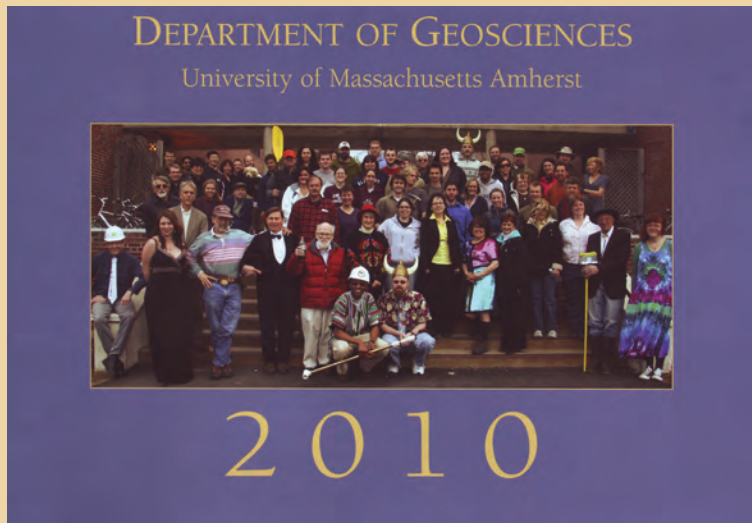
MEMORIAL AWARDS

H.T.U. Smith Award: Ariana Popik, Mandy Toong
Elinor Fierman Award: Karen Van Wagner, Heather Clark
Gloria Radke Award: Celeste Asikainen, Timothy Sime
Leo M. Hall Award: Heather Clark, Janelle Cornwell, Sebastian Koenig, David Vaillencourt, Ted White and Weining Zhu

Geography Alumni Award: Colleen Kelley and John Legrid
Andrew Wise Memorial Scholarship: David Vaillencourt
Joseph Hartshorn Award: Serena Dameron



Back row: Janelle Cornwall, Emerald Shirley, Dave Vaillencourt, Jason Kaiser, Heather Clark, Michael Judge. Middle row: Serena Dameron, Colleen Kelley, Heather DeRoy, John Legrid, Mariel Schottenfield, Sebastian Koenig, Tim Sime, Weining Zhu. Front row: Mandy Toong, Karen VanWagner, Ariana Popik.



UMASS AMHERST DEPARTMENT OF GEOSCIENCES 2010 CALENDARS ARE IN!

This calendar features many beautiful photos showing geoscientists in action, submitted by various folks from the department.

You can purchase your calendar for \$15.00 by contacting us at 413-545-2286, or you can receive one as a gift when you make a contribution to any of the department funds.

Please use the attached envelope to send your gift to us, or navigate to www.geo.umass.edu to contribute online.

NEWS FROM THE OFFICE OF THE STATE GEOLOGIST

It is hard to believe, but in September we began our eighth year of operation here in the Department of Geosciences. We have accomplished much; rejuvenated the geologic mapping program, developed collaborative research opportunities with other faculty at UMass as well as other Universities, and increased the visibility of the office through our web page and public outreach efforts. To date, the Office of the State Geologist has secured just over \$2.0 million in outside funding. Despite the gloomy economic climate, this year has been our best year yet in terms of funding, securing over \$990,000.

Despite the funding success, we have not caught the attention of the State. We still remain a "soft money" organization hiring post-docs, graduate students, undergraduates and contractors to complete the work. This puts us at a disadvantage as a Survey since many of our grants require a state match. It would be nice to have some full time, benefited employees that we could use as match on our federal grants. As a result, we are leaving money on the table because of our inability to achieve match.



Joe Kopera mapping along the I-495 corridor.

Joe Kopera begins his seventh year with the Office and is our chief bedrock mapper. He oversees all bedrock mapping efforts and maintains the web page. Joe is supported through STATEMAP funding and is a valuable member of the Survey staff. Steve Nathan has been working on and off with the Office for several years as a Post-doc using support from various grants. He has basically been the office manager as well as helping with public outreach and education. Maria Fernandez continues as our GIS assistant. She tackles all the difficult GIS mapping projects. She has been working with the Office for about 6 years on a contract basis.

Some of the recent activities of the Office are highlighted below.

- We secured an eighth year of STATEMAP funding to support continued bedrock geologic and fracture mapping in the Billerica, Attleboro and Mt. Grace quadrangles. We are also preparing a new seamless surficial geologic map of the northern half of Plum

Island that will link landside surficial mapping by Byron Stone (USGS) with offshore mapping by the USGS group at Woods Hole. The two areas will be tied together by nearshore mapping that will be completed by Duncan Fitzgerald (Boston University) and his student Chris Hein.

- We just completed final publication of Peter Robinson's seminal work in the Orange quadrangle. This map consists of five sheets and represents the culmination of over 40 years of work.
- Alex Manda, who was working on the development of "porous-media like" type curves for fractured rock aquifers that are derived from outcrop-scale field measurements in the Nashoba terrane, completed his Ph.D. in May 2009. He has taken a teaching position in the Geological Sciences Department at East Carolina University.
- We are just completing the final report for the borehole geophysical project we conducted in cooperation with the USGS on rocks in the Nashoba terrane. We logged 17 boreholes and examined the variation in hydraulic properties in crystal line metamorphic rocks as a function of depth. An open file report summarizing the results is in preparation.
- We are working with Steve Petsch to examine the feasibility of terrestrial carbon sequestration in the Connecticut Valley and unmineable coal beds of the Narragansett Basin. This work is funded by the Massachusetts Clean Energy Center.
- We will be working with David Boutt on a project in the Assabet River Basin. The project will examine the flux of water across the bedrock-overburden interface. This is a major source of uncertainty in most groundwater models. There is movement across the interface but few studies have ever tried to measure it.
- We also will be starting a new mapping project with the National Park Service. We will be mapping the Boston Harbor Islands National Recreation Area and the Saugus Iron Works National Historic Site. This will provide a unique opportunity to integrate all the borehole data collected from the numerous tunnel projects underneath Boston Harbor with some of the best exposures of Boston Basin geology available on the outer harbor islands.
- We have upgraded our web page substantially and have included a section on geothermal resources

NEWS FROM THE OFFICE OF THE STATE GEOLOGIST

- We are currently developing a new map for Massachusetts called the “Tourist Guide to Massachusetts Geology”. We are following a model developed by the New Mexico and Colorado Geological Surveys. The map is being developed in an effort to promote geological education and to showcase some of the wonderful geological features of Massachusetts.
- We are cooperating with Dick Little on a tourist guide to the geology of Franklin County. It will draw on Dick’s extensive geological knowledge to develop a map that individuals can use to explore the geology of the county.
- Steve Nathan is also working with Chris Condit to develop Dynamic Digital Maps of a couple of state parks. The intent is to create virtual field trip guides of various parks that visitors can explore online when selecting a park to visit.
- We are collaborating with Kevin Maher (Thermonexus), Paul Kastrinos (Haley and Aldrich) and Paul Blain (MADEP) on a one-credit workshop called “Ground Source Heat Pumps – Concept to Completion”. The intent is to develop a course that is specific to ground source heat pump design needs in Massachusetts. It will include geological site evaluation, system design, drilling and installation and Massachusetts permitting requirements. It is being offered through the University of Massachusetts Continuing and Professional Education program.

NEWS FROM AROUND THE DEPARTMENT, CONTINUED

State College.

Julie Brigham-Grette:

Her biggest achievement of the past year was the successful drilling of Lake El’gygytgyn in NE Russia after 14 years of pushing a ball uphill to make it happen. Read the weekly reports from the field and see the press releases via links at http://www.geo.umass.edu/lake_e/index.html.

Dave Vaillencourt writes: This summer I got to spend 3 weeks as part of a Research Experience for Undergraduates conducting research on lakes, rivers and a glacier on Spitsbergen, Svalbard, a remote island about 600 miles north of Norway at 78 °N. It was an incredible experience, with 24-hours of sunlight, we saw a polar bear (twice!), numerous reindeer, and arctic fox, as well as awesome geology like sorted circles and glacial moraines. Before heading out in the field, we had to get rifle training and practice jumping into the Arctic Ocean



Dave Vaillencourt working in Svalbard, summer 2009.

in survival suits, huge orange waterproof suits that will keep you warm in the frigid waters for up to 24-hours (luckily our swim in the ocean was limited to 5 minutes). As part of my senior thesis, I took three sediment cores from Kongressvatnet, one of the lakes in our study area. I’ll be spending my fall and spring analyzing the mud samples, working in Steve Petsch’s Biogeochemistry Lab where I’ll be looking for biomarkers produced by unique algae blooms. With analysis of these biomarkers, I will be able to produce a temperature proxy record that will help better understand recent warming events in the High Arctic. Thanks to Al Werner of Mt. Holyoke College, Steve Roof of Hampshire College, the Keck Consortium as well as the Leo M. Hall Memorial Award and Andrew Wise Memorial Scholarships, I was able to take part in this rewarding experience. Please see <http://www.geo.umass.edu> for ongoing news updates, photos and stories from around the department.

DEPARTMENT HEAD LETTER, CONTINUED

teaching in the department. See inside for a summary of some of his future plans.

Lee Allison was back on campus in October (PhD 1985). He gave a series of talks and received a distinguished alumni award from the department. Lee is currently the State Geologist of Arizona and is involved with a number of national initiatives involving science literacy, geoinformatics, and geothermal energy. We also had a fine UMass-Geosciences alumni reception at the Geological Society of America Meeting in October. Several local alumni attended, along with many from around the country. It seems that the UMass spirit and ‘last-reception-to-close’ tradition is still alive and well. We’ll see everyone in Denver next year.

Inside this newsletter you’ll find notes and stories from

alumni, faculty, and students and summaries of many activities around the department. There is a special remembrance of Joe Hartshorn and information about the kickoff of our Hartshorn fund for student support. Please keep in touch by e-mail or regular mail and watch for the new 2010 department calendar.

Oh, one more piece of news. In January, I will be stepping down as Geosciences Department Head. Mark Leckie will be taking over. We are all thrilled that Mark has agreed to take the job. We are looking forward to great things under Mark’s leadership in the future. Thanks to everyone for the help and friendship during the past six years.

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DEPARTMENT HIGHLIGHTS:

- **New faculty members, Eve Vogel and Jon Woodruff, join the department (p. 2,3)**
- **Don Wise leads Five College field trip to Pennsylvania (p. 3)**
- **Joe Hartshorn – remembered (p. 3,4)**
- **Lake El'gygytyn drilling successful (see Julie B-G, p. 19)**
- **Dick Wilkie retires and is busier than ever! (p. 9)**
- **Lee Allison – Distinguished Alumni Award (p. 11)**
- **2010 Department calendar is out!**
- **Lynn Margulis awarded 2008 Darwin-Wallace Medal! (p. 7)**
- **Stan Stevens spoke at the United Nations on May 26, 2009 as part of the UN Permanent Forum theme: "Implementing the UN Declaration on the Rights of Indigenous Peoples"**
- **Ray Bradley honored as Fellow of the American Association for the Advancement of Science**

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.

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