



The Champlain Thrust

News from the Department of Geology, UVM 2008/2009



Greetings from the Interim Chair (a.k.a Andrea Lini.!) Greetings from Delehanty Hall. Things never quiet down in the Geology Department, and since our last newsletter, there have been several changes in personnel. After being with us for just a little over two years, Courtney Foley-Engelbach, the Budget Manager who replaced Pat Frank, decided to move back to her native Seattle this past spring. Luckily, we were able to hire Srebrenka Schovic as Courtney's replacement. Our "Ice-Man", Tom Neumann, has also left UVM. He joined a research team at the NASA-Goddard Institute for Space Studies, Maryland, in October 2008. We are sure

that he will be as successful there as he was here! Char is on sabbatical leave this fall, but fortunately, we were able to hire a sabbatical replacement, Tim Cook. Tim came to us from UMass, where he is completing a PhD. under the supervision of Prof. Ray Bradley. His thesis deals with late Holocene climate variability in the Canadian High Arctic, based on a record of varved lacustrine sediments. Tim is teaching Intro Geology this fall and will be offering a Geohazards course in Spring 09.

As mentioned in our early 2008 newsletter, in fall 2007 we started a search for a new faculty member in the general area of "geodynamics". The search was successfully completed in spring, and our new faculty member, Laura Webb, joined us in August 08. Laura came here from the Department of Earth Sciences at Syracuse University where she held a research faculty appointment since 2004. Laura will help us strengthen the solid-earth science component of the department. She will be offering coursework in geochronology, petrology and geophysics. To learn more about her exciting research endeavors please take a look at her faculty profile below.

Not surprisingly, Jack and Barry are still very active emeriti. Without Jack's efforts and persistence, we probably wouldn't have a newsletter! In Spring 09 Barry will again help run the UVM Overseas Program in Oaxaca, Mexico. Thanks guys!

What else..... The department has not yet fully recovered from the 2007 Memorial Day fire, but reconstruction of the damaged research facilities has come a long way since then. If all goes according to

plans, Paul Bierman's rebuilt Cosmogenic Isotope laboratory will be fully operational in Jan 2009. For more information on upcoming events and other news please visit the department's website: <http://www.uvm.edu/~geology/>

The next time the UVM Alumni Affairs office calls or sends you a fundraising letter, don't hang up or recycle that envelope! Think about making a donation to support UVM Geology. This can be done either through the Development Office by earmarking it for the Geology Department or donations can be made directly to the department itself. If you would like your donation used for a specific purpose, that can also be indicated. We desperately need funds to cover expenses ranging from acquiring technology that prepares our students for the evolving workplace to sending students to GSA meetings to present papers. This really IS a case of "every penny helps." On behalf of everyone in the Department, thanks to all of you that have been making donations.

Also – don't forget to send your alumni news via email to geology@uvm.edu, and PLEASE include in the subject line "newsletter 09". That way we can quickly get it to Robin and guarantee it won't be lost in the piles of other emails. If you want to include a photo, please attach it as a .jpg file. This will facilitate the cut and paste process. Many thanks in advance!!! We will be updating the newsletter on an annual basis so send in your info, and making it available on the web (rather than hard copy).

Department Faculty



Char Mehrstens, Professor and Chair (Stratigraphy, Sedimentation, Carbonate Petrology):

Hi all! I am on the second half of my split sabbatical leave, enjoying the opportunity to do field work through the autumn and get some writing done. January 2009 it's back to work! For this sabbatical I wrote the field trip guide and co-lead (with Bruce Selleck of Colgate Univ) a field trip through the Ordovician section at Crown Point, NY for the NYSGA fall field trip. I also started doing field work with two new grad students. Lauren Chrapowitzky (who came to UVM from St. Lawrence) is working on the reef paleoecology in the Chazy Group. Lauren's focusing on the reefs in the Valcour Formation. We were able to do field work in late August and have kept it up on Fridays through the fall. Janelle McAtamney (from Smith College) is working with

Keith and I on the sedimentology and stratigraphy of the Jurassic-Cretaceous sediments in the Rocas Verdes Basin in Patagonia, Chile. These units record the basin inversion associated with the onset of uplift of the Andes (the subject of Keith's NSF project). Janelle has been working with me to learn turbidite sedimentology and the techniques for measuring section, using the Austin Glen greywacke in the Albany area. Our field season down south will be late November-early December. I've also been doing field work with undergrads, notably Kirsten Stokes, who is learning how to measure section, collect samples and do carbonate petrography of the Crown Point Formation limestones and Sam Schultz, who is using his GIS class project to generate maps that plot reef distribution on Isle la Motte. In addition to the field work I've been writing. The paper on my work in the Siluro-Devonian sequence in Maine has been sitting with my co-author but is finally submitted to the Canadian Jour. of Earth Science. I'm working on editing a paper with alum Corey Coutu on his Masters thesis work developing a website to teach evolution using fossils (for the Jour. of Geologic Education). I'm also updating the Earth History class for this spring and starting work on a new intro level course on earth resources. In January I go back to being Dept Chair, although I'm going to miss this "tag team" arrangement that I've had with Andrea for the past two years!

Other than these geo things I've been working away on the interior of my new little cabin in the Adirondacks. it turns out that I'm not a terrible carpenter...things look ok and I have all my fingers. When I tire of hammering and sawing I paddle on upper Saranac Lake. To keep active in the winter I've taken up curling, which is a **lot** harder than it looks! My website (follow the link on the dept page) has pictures of recent geology trips to Argentina (Andean foreland basin stratigraphy) and Patagonia (cretaceous inverted basins). Please keep in touch with emails. The best part of this job is hearing from all of you. It is wonderful to hear what everyone is up to.

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Paul Bierman, Professor (Geomorphology, Geohydrology, Isotope Geology Applied to Landscape Change): It's been a very busy last year with loads of time spent getting the new cosmogenic lab built and on-line as well as doing fieldwork in all sorts of places. The new lab is just about finished and we are busy moving in and testing all the systems while piece by piece we replace all the lab gear that was lost in the fire. You can see and learn much about the lab at our new website. <http://uvm.edu/cosmolab>. There you will find summaries of the projects we are working on as well as web pages for everyone associated, past and present with the lab and with Geomorphology at UVM.

This last year took us all to some pretty special places. During the academic year, my students and I were in Seattle and Scotland processing samples as guests in other labs. Luke Reusser and Matt Jungers spent 3 weeks in Israel with former UVM'er Ari Matmon working in his lab. I spent two weeks in Greenland collecting samples with MS students Lee Corbett and Joseph Graly while taking some amazing helicopter rides. That was followed by two weeks of fieldwork in New Zealand and Australia with doctoral student, Luke Reusser.

This coming year will see us in the lab with lots of samples to process as well as planning for more fieldwork in the central and southern Appalachian Mountains.

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Andrea Lini, Associate Professor (Stable isotopes, Limnology and Climate Change): Greetings from the world of stable isotopes and lake mud!

Life has been busy and exciting as always these past few months. Despite my appointment as Acting Chair in Fall 2007 and 2008, my research project on Lake Champlain paleolimnology has made good progress. Just in time for the upcoming Lake Champlain Quadricentennial! As many of you will know, 2009 marks the 400th anniversary of French explorer and cartographer Samuel de Champlain's travels by sail, oar and paddle to the lake that now bears his name.

As I already reported in the last newsletter, the sediments at the bottom of Lake Champlain are rich in information about the lake and its basin. In the upper half-meter or so, we find records of the lake's response to European American settlement and 250 years of changing land use and commerce. With 4-year funding from the USGS Water Centers Program and NOAA, and the support of many collaborators, 11 cores from different regions of Lake Champlain have been collected, extending back thousands of years in some places. Here is an updated summary of the findings:

- During the warm and dry eras of the Holocene Climatic Optimum and Medieval Warm Period, the lake was more productive, suggesting that a warmer lake may also be a more eutrophic lake.
- Most of Lake Champlain was oligotrophic before European American settlers arrived in 18th century, although a few shallow regions (e.g., Missisquoi Bay) were mesotrophic.
- Extensive deforestation (up to 80% of Vermont) in the 18th and 19th century noticeably increased sediment and nutrient inputs to the lake, but resulted in only modest eutrophication. Subsequent rapid eutrophication was a feature of the 20th century.
- St. Albans Bay became fully eutrophic between 1900-1940. The underlying cause was diversion of industrial and municipal sewage from St. Albans City into the lake.
- Missisquoi Bay was the last lake segment to change trophic state. Bridge construction in 1936 had no impact on the lake's mesotrophic condition. Only in the 1970s did nutrient input and algal biomass increase, up to 9 times pre-settlement levels.
- All sites studied have undergone some eutrophication, mostly since 1950.

We currently (Nov 2008) have an exhibit illustrating the power of lake sediment research at the ECHO Lake Aquarium and Science Center located at the Burlington waterfront.

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Keith Klepeis, Professor (Plate Tectonics, Structural Geology, Field Geology):

Greetings! I have been very pleased to see many of our alumni at meetings and field trips this past year. It has been an interesting year and it is an exciting time to be in the Department of Geology. We are extremely pleased to welcome Laura Webb to our faculty. Laura is bringing many great new ideas for courses, field trips and research projects. I am continuing a relatively new project in Patagonia with UVM students. On the island of Tierra del Fuego and elsewhere we are looking at how the opening and closing of a back arc basin can create an orogenic belt deep inside a continent, very far from the nearest plate boundary. Patagonia is an amazing place where we use boats and small “puddle jumper” planes to access to the rocks in wilderness areas. It’s also an exciting time to be doing geology in Vermont. Dr. Jon Kim (Vermont Geological Survey) and I are continuing to sponsor UVM students in field mapping and applied geology with a Vermont focus. This year Robbie Charnock is working on the geology of the Knox Mountains plutons area, in Marchfield and Peachum, Vermont. Robbie is the eighth UVM student to do a Vermont research and field mapping project with Jon and I. Most of the students that do this internship and field mapping project have taken Field Geology (GEOL 101) with me (check out some student photos at this site <http://www.uvm.edu/~geol101/>) You can tell by the pictures it is getting cold by the end of the semester, including at Claypoint!). I also have two new graduate students (Janelle McAtamney and Shayanna Romine) who are working on aspects of thrust tectonics and structural geology with me for their Master’s degrees. We will probably be at the Northeastern Section meeting of the Geological Society of America, so I hope to see some of you there.

My best to everyone,
Keith

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Greg Druschel, Assistant Professor (Aqueous Geochemistry, Mineralogy, Sulfur Biogeochemistry):

Hello everyone – The Microbial Geochemistry lab has been busy lately – several new projects are going on and we are continuing work on Lake Champlain redox chemistry-nutrient links, sulfur cycling in hydrothermal systems, caves, and meromitic lakes, and wetland research. Lydia Smith (BS ’07, MS ’09) has wrapped up two very interesting field seasons in Missisquoi Bay investigating nutrient speciation and redox cycling over diel and seasonal scales, new MS student Jessica Sperling (MS ’10) has started some exciting work investigating the iron isotope dynamics of the Fe-S system, and several undergraduate students (Ed Greiner, Christine Leonard, Ian Donovan, Marissa Saccente, Emily Matys) have been working on projects including hydrothermal reservoir chemistry, phosphate immobilization, iron sulfide oxidation, elemental sulfur cycling, and cyanobacterial bloom chemistry. Harry Oduro (MS ’08) finished his thesis investigating iron sulfur molecular clusters and their role in iron sulfide mineral oxidation pathways and start a Ph.D. at the University of Maryland. Harry and several of his new colleagues at UMD joined us last month for some collaborative research at Green Lake near Syracuse in October (and dinner at the Dinosaur barbeque of course!). Aside from SCUBA diving through algal blooms in the lake with Lydia, I have also traveled for new research projects in British Columbia, Italy, and Croatia where we are investigating sulfur cycling and carbonate mineralization involving different microbial communities. We have published several new papers this year, including 2 with Harry Oduro, 1 with Danielle Eastman (BS ’07), and a couple I have with colleagues from other locales.

I continue to teach Earth Materials, Geochemistry, Geomicrobiology, and Regional Geology (the latter of which went to central Italy again this year), and advise the geoclub/SGE chapter. We did a recent field trip this semester to the Sterling Hill Mine in northern NJ, arguably the world’s best place to collect fluorescent

minerals and a fascinating area geologically (yes, in New Jersey!). We collected a number of fluorescent minerals (including willemite, manganese-rich calcite, sphalerite, and hydrozincite) both underground and at night using portable UV lights.

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Stephen Wright, Senior Lecturer (Glacial Geology, Geomorphology, Environmental Geology) Greetings to all. We're in the 2nd third of the fall semester now and I'm leading 3 afternoon field trips every week for the Environmental Geology students and one all-day field trip for the graduate students. As always this time of year, good field days are interspersed with days filled with wind, cold rain, and snow. I've included some photos of a recent field trip to the big gravel pit along Miller Brook in Stowe that some of you may be familiar with. First-year graduate students Lee Corbett, Eric Portega, and Charles Trodick are looking at sedimentary structures preserved in these subaqueous fan deposits. A short distance away and stratigraphically higher in the sequence Charles uncovered a beautiful cross-section of a sheath fold in glaciolacustrine silt and clay that formed as that sediment slumped off the side of an esker.

This coming fall the New England Intercollegiate Field Conference (NEIGC) will be based in St. Johnsbury with the focus being the geology of the Northeast Kingdom and adjacent parts of New Hampshire and Québec. I hope to lead a field trip in the Newport area and I hope to see some of you during that weekend. All my best for the coming year!

During the summer I spent time doing reconnaissance field work in northwestern Vermont familiarizing myself with a sequence of rocks that characterize the dysoxic Franklin Basin, a stratigraphic section quite different than that occurring closer to Burlington. This work included a visit to the long-abandoned workings of the Berkshire copper mine. I also continued mapping the extent of the large-scale potholes and other subglacial fluvial erosional features occurring along the flanks of Shattuck Mountain in Bakersfield. Most importantly though, I got married in early September at the Justin Morrill homestead in Strafford! Janet and I haven't had a chance to travel anywhere to celebrate, but hope to next summer after I return from leading another Regional Geology class on a field trip to Colorado

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Laura Webb: Greetings! It is with great enthusiasm that I joined the department this year as an Assistant Professor. I came here from the Department of Earth Sciences at Syracuse University where I spent the last eight years as the noble gas laboratory manager and have held a research faculty appointment since 2004. My husband, Erich Meisberger, and I moved to Milton in July. We are very much enjoying exploring trails that lead from our doorstep into the woods above southern end of Lake Arrowhead and the Lamoille River. I am originally from California and so I anticipate that my time in Syracuse provided some training for the Vermont winters that everyone likes to warn me about. I am definitely keeping busy this first semester teaching a class in Geochronology, leading the Senior Seminar, trying to keep momentum on my funded research projects, and coming up to speed on the local geology. It's a thrill to be at UVM where there is

such great access to a wide variety of geological environments and I hope to develop some local projects applying new tools to outstanding problems. My background is in combining field studies, structural and microstructural analyses, and thermochronology to study tectonic processes. I'm currently active in collaborative research on the active exhumation of high and ultrahigh-pressure rocks in Papua New Guinea and also on the Mesozoic and Cenozoic record of intracontinental deformation in southeastern Mongolia. I look forward to the coming years here, getting graduate students and undergraduate students involved in research, and also opportunities to meet alumni and friends of the department!

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Tim Cook: Greetings everyone! I joined the department at the start of the semester to teach GEO 1 while Char continues her sabbatical. It has been an exciting fall, getting settled into Burlington and my new role as a lecturer. I am coming from the University of Massachusetts Amherst where I am putting the finishing touches on my dissertation which focused on reconstructing past climate and environmental change on Ellesmere Island in the Canadian Arctic. I had the pleasure of sharing the results of this work with members of the UVM community during a department seminar this fall. GEO 1 has been going well and it has been fun to get to know so many UVM students. In the spring I will be back in the campus theater teaching Earth Hazards and teaching Geological Oceanography as well. With the first fall snowstorms having already passed, I am

looking forward to the coming winter for a chance to explore all of the skiing possibilities which are now within an easy drive of my new home!

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Emeriti Faculty



Barry Doolan, Associate professor emeritus: Greetings to all UVM Geology Alumni! Sandy and I are preparing for the coming winter with the usual Fall chores of wood gathering and buttoning up the old farmhouse in Fletcher. It's been a great year for us. It's been 15 months since I got my kidney from Sandy and we are both doing extremely well; in fact I can't remember when I felt this well. Life is good.

My younger daughter Katie (UVM '00, yes she's 30!) is doing public service work in Kenya and was there during the recent election. What a great place to witness the election of Obama! Her emails have reminded us that there is reason for great hope not only here but internationally. Even with the recent economic downturn and continuing stresses world-wide I (as usual) remain optimistic.

Older daughter Kristan (UVM Geology '92) is doing well in nearby Bakersfield running Does Leap organic cheese farm with her family. We see the grandkids often (but not TOO often) and enjoy having a big role in their upbringing. I don't see a geologist in either one of them yet, but I still have time to add some influence!

Heard from Kenny Bannister via email who is doing well In Ghana and I quote:

"I am doing some field work in Ghana and got to thinking of all that I learned from you in igneous petrology way back when I could barely grow whiskers. You just never know when something you learned years ago will come in handy.

I am working in the Birimian Supergroup of metavolcanics and metasediments. Field work is in the Sewfi Belt of metavolcanics on a large shear zone with gold bearing hydrothermal deposits. Finally using all that stuff I learned decades ago about basalts.

Rocks have been metamorphosed to greenschist facies, and intruded by granitoid plutons and dioritic dikes. Also have cataclasite, tectonic breccias, mylonites, and others. Thanks for all you taught me".

If any of you want to reach Ken his email is:

"Bannister, Kenneth" Kenneth_Bannister@golder.com

Like to hear what the rest of you are doing. Email or communicate through the newsletter or better yet visit when you have a chance to return to Vermont.

Best wishes,

Barry

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Jack Drake, Associate professor emeritus: Greetings again to all of you former students. Life here continues to evolve after my retirement in Dec. 2002. We now have two granddaughters (compliments of our oldest son Nathan) in Denver (ages 3 and 1) whom we see not as often as we would like. But they were here this past summer as Nathan celebrated his 20th reunion from high school (for all of you alums who knew him as a little kid). Matt, our other son, who still lives in Los Angeles, is now married and works at the Getty Art Museum. Ruthie and I continue to occupy ourselves in Burlington (April through December) by taking courses (certainly not for credit) during the fall semester) and spending lots of time at our camp on Lake Champlain during the summer. This semester I am sitting in on "Macroeconomics" and course called "Politics

and the Media", both certainly currently relevant and they remind me how hard you all had to work as students!!!! Summer on the lake is filled with lots of recreation – golf (often with Char and Barry in addition to Ruthie – quite the foursome!!), kayaking, canoeing, sailing and other outdoor adventures. Ruthie has decided that she has experience enough of the Vermont winter, so we now head to warmer climes for Jan, Feb and March. This year we are returning to Carpinteria, CA, close to Santa Barbara so we are not garnering very many sympathy votes.

Stay in touch – we will try to update this newsletter again next fall with more alumni news, so send it in (put "newsletter 09" in the subject line so that we can get your info sorted into the appropriate place), and if you are ever in town give us me and/or the department a call. Very best to all of you – you are the best of my memories of UVM

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Dave Bucke, Associate professor emeritus: Hello to all. Looking back over the two most recent editions of our news letter, it seems that we Buckes have, for the most part a monotonous life. This is true if you just look at the basic “headings” of what we’re doing each year: taking care of our acres, spending time with family, and traveling. But you know what? It’s far from boring – it’s totally enjoyable – even at our advanced and increasingly decrepit ages.

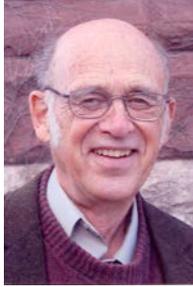
We did yet another RV journey out through Utah, to the Pacific, and back along the Gulf Coast as well as a brief Aruba trip for some late winter warmth. But Vermont is still our favorite. I have come to appreciate its surficial geology, literally right here in our own back yard. I need to have Steve come to Sleepy Hollow Road and straighten out the glacial story for me. We have eskers, till, erratics, varved clays, and a variety of water-sorted sediments hanging around. Ahh to have a stationary satellite time-lapse movie over our place for the past 18,000 years or so!

Family news progresses. Our youngest, Katherine, is one of the local town planners for Essex and is expecting a little girl any moment. That’ll be our sixth grandchild and the second girl. The grandchildren come in various sizes up to Joey who lives down the road. He’s 6’5" including 255 pounds of solid muscle. Harvard and The University of Richmond are courting him for football next fall. I could go on about them all but this isn’t a family Christmas letter. Let’s just say we’re very proud of every one of them. So, as you can see, family, homesteading, RV’ing and church keep us busy. Life is good

We hope all is well out there and, once again, we would really enjoy having you stop by!

Dave and Donna Bucke
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Allen Hunt, Professor emeritus: Nancy and I have been busy on the Prospect Hill Farm in Bakersfield where we have been breeding registered Angus cattle. We now have three grandchildren. Our son Jesse, who lives in Utah, has a boy and a girl. Our middle son Harry, who recently moved here to Stowe from Colorado, has a little girl. Our oldest son Edwin is still not married. Our travel is limited because of the responsibilities of the farm, but we do go to our cottage in Maine at least once in the summer, and to Utah and Colorado in the winter. I have not been skating but we do have a fitness center nearby where I have become a member of the million meter Concept 2 rowing club. Should you ever be in our area be sure to contact me, and we will show you around Prospect Hill Farm

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Graduate Students



Luke Reusser: I am currently a doctoral student in the School for Natural resources and the Geology Department at the University of Vermont, having completed my masters in the Geology Department. Many of the projects I am working on for this degree include estimating drainage basin-scale erosion rates along both the east and west coasts of North America, as well as along the east coast of the North Island of New Zealand. The aim of my research is to understand better the relative influence of tectonics and human land use on rates and styles of landscape change.

Prior to my current research, I completed a Masters Degree here at UVM considering the rate and timing of fluvial incision through bedrock along several large rivers draining the central Appalachian Mountain Belt. I earned my Bachelors degree from Skidmore College where I studied both Geology and Studio Art. Besides playing with rocks, I occupy myself with the usual hiking, camping, traveling etc, and I also enjoy growing a good garden.

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Beth Collier: Hi everyone! My name's Beth Collyer and I'm originally from Glens Falls, NY, where I spent my days playing in the waters and bogs of the lower Adirondack Park. I received my Associates Degree in Ecology and Environmental Technology and Bachelors Degree in Conservation Biology from Paul Smith's College in the northern Adirondacks. I then crossed the mighty Champlain and entered a Masters Program in Geology where I'm studying paleolimnology, more specifically the diatom species composition of Lake Champlain. After I receive my Masters Degree I plan on entering the field and working for a private company that does water quality testing of contaminated waters.

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Will Hackett: I am a second year Masters candidate here working with Dr. Paul Bierman. Originally from Tully, NY, I graduated from St. Lawrence University in 2007 as a double major in Geology and Environmental Studies before coming directly to UVM. I am currently working with Paul on an analysis of weather and USGS discharge records as well as conducting a land use analysis using historical aerial photos in the Winooski River Basin here in VT."

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Tiffany Larsen: I am a 2003 graduate of Carleton College, with a BA in Geology. I am finishing up my Master's degree this semester. I've been studying forest structure and topographic influences on snow accumulation and melt in high-alpine, mixed northern hardwood forests, and also looking at the impacts that recreational land-use changes (ski resort activity) have on the hydrologic cycle, specifically on the snowpack. I look forward to seeking a humble lifestyle in the western US, promoting sustainable living, buying local, and minimizing my personal impact on this amazing planet... and shredding fresh tracks in the western powder, of course!

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I have been continuing my work on Missisquoi Bay, Lake Champlain which experiences toxic cyanobacterial blooms during the summer months as a result of eutrophication. Although nutrients entering the Bay from the watershed significantly contribute to the onset of the "blue-green algae" blooms, my study focuses on the mechanisms that drive internal loading of nutrients from the sediments; particularly, redox fluctuations and organic phosphorus recycling. My field work took place during the summers (May – October) of 2007 and 2008.

Missisquoi Bay did not experience a bloom in 2007 but did in 2008. Therefore, the 2008 study was much more detailed and consisted of four overnight sampling events throughout the course of the bloom; specifically, pre-bloom, bloom onset, peak bloom, and bloom waning. During each sampling event, redox fluctuations at the sediment water interface were monitored using *in-situ* electric voltammetry for 24 hours. Sediment cores were also obtained throughout the diel cycle and electrochemically profiled then sectioned for lab determination of Fe, Mn, and P. The nature of this study required technical SCUBA diving skills as all sediment cores and instrumentation were placed via diving.

I now have most of my lab work (sediment analysis) completed and am in the process of piecing all of the data together. So far it seems that the sediments were more reduced during 2008 and therefore possibly played a significant role in nutrient release into the water column. I am aiming to compile the mountains of data that I collected over the past two summers in order to formulate a master's thesis by next spring!

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Greg Druschel and Lydia Smith diving in an algal bloom, Mississquoi Bay, VT., 2008



Lee Corbett: After graduating from the Middlebury Geology department in 2007, I began working on my master's degree at UVM in January of 2008. My primary interests are Paleoclimatology and Quaternary Geology, and I'll be working with Paul Bierman, Tom Neumann, and Joseph Graly on a project that aims to investigate the response of the Greenland Ice Sheet during past interglacial periods. I spent this past summer in Greenland collecting clasts of rock from the western margin of the ice sheet, and the rest of my time at UVM will be dedicated to analyzing the concentration of cosmogenic nuclides in these clasts to study their exposure history.

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Joseph Graly: I started my master's degree in January of 2008, working with Paul Bierman, Tom Neumann, and Lee Corbett on the history of the Greenland Ice Sheet. Having traveled to Greenland this summer to collect englacial clasts, we are now working to assess their cosmogenic isotope inventories. I am focusing on ice modeling and basically trying to figure out what our isotope data will tell us about the exposure, burial, and erosion of rocks under ice. I finished my undergraduate degree in geology and philosophy from Carleton College in 2004. In between then and now, I worked in geotechnical engineering for two years, and spent a year teaching English at Inner Mongolia Nationality College in Hohhot, China. Like all geologists, I like hiking and skiing and such. But my chief hobby is dancing. I practice contact improvisation, which is a form of modern dance. But I also do more folk and popular forms, such as contra, swing, or tango. I have recently taken up the piano accordion and try to practice every day, much to the joy of my roommates no doubt.

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Shay Romine: I graduated from the University of Wyoming in 2005, with a degree in Geology. I have moved to Burlington from State College, PA. I worked as a geologist in the non-metal mining industry in Pennsylvania, and consulted across parts of the east coast. Prior to working in mining, I worked in environmental consulting in the Powder River Basin in Wyoming.

I am working with Keith Klepeis, and we will be traveling to our field area in southern Chile this spring. I am really looking forward to doing field geology in such a remote and exciting area.

I am learning Spanish in my spare time, doing international field work will be such a great opportunity to learn a new language. In the rest of my spare time I run, hike and do a little road biking. I am really enjoying living in Vermont, and am looking forward to a winter full of skiing.

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Lauren Chrapowitzky: I am a first year master's candidate here at UVM having graduated from St. Lawrence University with a BS in Geology this past spring. While at UVM I'll be working on the sedimentology, paleoecology, and paleoenvironments of the Valcour Formation (Middle Ordovician, Chazy Group) in Vermont and New York with Char Mehrtens. Char and I have been working on some spectacular outcrops this fall, trying to make the most of the remaining field season. As for the coming winter, I'm hoping for as much of the white stuff as possible so I can spend most of my free time skiing!

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Jessica Sperling: I completed my BS in geology at the University at Buffalo. There I completed an undergraduate research project entitled "Comparison of perchloroethylene sorption behaviors in a downwardly coarsening channel-like feature from the Borden Aquifer." From Buffalo I came to Vermont, where I am a first year graduate student pursuing a Master of Science degree in geology. I work under Greg Druschel, where I am working on a project that is investigating Fe isotope fractionation associated with aqueous species and minerals in the iron-sulfur system.

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Charles Trodick: I graduated in 2007 from Cornell College with as a double major in Geology, and Economics and Business. I spent 2007-08 at Vanderbilt University in Nashville, TN doing Master's work. During the summer of 2008, I transferred to UVM. I grew up on the Mississippi in Iowa, I spent last year in Nashville, and I moved to Burlington, VT in August of 2008. Currently, I am a first year graduate student working with Paul Bierman on a project involving the study of pre-human sediment fluxes down the Potomac River, near Washington, DC. I will be making at least two trips to the Potomac to gather samples for running in the Beryllium lab here at UVM. I will use this data along with previously gathered data to compare pre-human with modern sediment loads on the Potomac. Then I hope to come up with a recommendation to get our

modern sediment loads back to the pre-human amounts. Outside of school, I enjoy biking, hiking, camping, socializing with friends and family, and many different sports including soccer, football, and baseball.

Email: ctrodick@uvm.edu



Eric Portenga: I am a first year Masters Student originally hailing from Muskegon, MI. These next few years I am working with Paul Bierman, using cosmogenic nuclides to study bedrock erosion rates throughout the Appalachian Mountains. Before leaving the Great Lakes, I completed my undergraduate studies in Geological Sciences from the University of Michigan, where I worked as a lab assistant in the Biogeochemistry & Environmental Isotope Geochemistry Laboratory and in my spare time, I served as Public Relations Manager for the University of Michigan Men's Glee Club. I enjoy the outdoors and am looking forward to skiing on actual mountains for the first time this winter!

Email: eric.portenga@uvm.edu



Janelle McAtamney: I am a first year MS student working on structural basin analysis in the Southern Andes. I am currently preparing to head south for my first field season in Patagonia to map the evolution of the inversion of the Magallanes Basin, with Keith Klepeis and Char Mehrrens. I graduated from Smith College with a BA in Geology and have since spent my time teaching horticulture in an alternative high school in Winooski, VT. I keep busy working on the rescue squad in Richmond, VT, fixing bikes for Bike Recycle Vermont, and climbing rocks that I might or might not be studying.

Email: jmcatamn@uvm.edu

Staff



Robin Hopps: The past two years in the Geology Department flew by. It's a ten-month position, so June and July I'm still off landscaping and hand mowing. I enjoy working with other Geology Department staff members, faculty and, of course, students. At present, we have 13 Geology graduate students, and 29 major, and 15 minors students. Among other administrative assistant responsibilities, I have a work-study-student dedicated to the Perkin's Museum. He is making the Museum handout materials in pdf, so they will soon make them available on the Museum website:

<http://www.uvm.edu/perkins/>

Email: robin.hopps@uvm.edu



Srebrenka Sehovic: I'm the new Department Administrative Coordinator in the Geology Department. Courtney moved to Seattle after having her second baby. I started May 15th and I love working here. I feel so welcome by every single person in the Department.

I like the atmosphere and being around young people and watching them develop; I'm glad that I can help them if they need me. I am also a new grandmother. My grandson, Desmond, brings me joy on a daily basis. I'm fortunate that my daughter and her husband live nearby. My husband and I have two teenage girls living at home and a fourth daughter who is completing a master's degree in art in New York City. Life is good.

Email: srebrenka.sehovoc@uvm.edu



Gabriela Mora-Klepeis, Senior Research Technician: Greetings! I am happy to report that we are pretty much settled in Delehanty Hall. Our great facilities attract a lot of visitors. The Museum continues to be a popular spot across campus and the Burlington area. This year I had the pleasure to host a group of Japanese high school students that came as part of an exchange program. Being able to speak the language was something that the students really appreciated. We have also received personal collections that include fabulous rock, mineral and fossil specimens from all over the world. We are working to get the donated materials incorporated into our teaching collections. I'm still working on setting up a geochemical laboratory that will separate radiogenic isotopes for Sr and Nd analyses in a variety of geological materials. This is a joint effort with colleagues from the TIMS facility at Boston University. As you know, Vermont summers are short but I enjoy them spending time outdoors riding my bicycle. In the winter months I enjoy pottery and knitting. If you are in the area, please stop by for a tour of our building, I'll be happy to show you around! I have included a photo of my newest hobby, biking in triatholons, this past summer in the Colchester Triatholon with Jack and a friend.

Email: Gmora@uvm.edu



Jennifer Larsen, Senior Research Technician: It was interesting to review my greeting from the last version of this newsletter and recognize I was talking about working in the new Delehanty facilities. Well here we are again! We are about to imminently resume science in the Cosmogenic Lab, after two long years and a new room number. Frankly, no one is more excited than I am to get back to melting rocks, oh except perhaps for Paul Bierman, or Luke Reusser! It is a well-equipped, state of the art lab both in terms of its application to the science we do and the safety of those of us directly working in the lab and the rest of the systems in the building.

When not in the lab I have found some new beautiful places to hike in Vermont this year, including Mt Ascutney, and, my partner, Kara, and I got a new tent which is just fabulous-- a little bit more room, more doors and windows and the same weight as our previous tent. You get the idea we are loving it,

though, with one of the rainiest summers in a long while, we only got out to use it a few times. And yes, it does keep us very dry!

Our garden loved the rain, however, and produced some prize orange, yellow and red bell peppers some of which we have chopped waiting in our freezer for a future occasion this winter. We also were blessed with an abundance of hot peppers which we have been drying, thanks to our hot water heater and for the first time a great harvest of onions and leeks!

With bags of fabulous local veggies in the freezer and in the pantry, we are looking forward to many days of snow. I have new snowshoes from last year that need some miles on them.

Back to the ordering of supplies for the new lab, but when you have a minute check out what I spent last winter creating in collaboration with Paul: <http://www.uvm.edu/cosmolab/>

Email: Jennifer.Larsen@uvm.edu

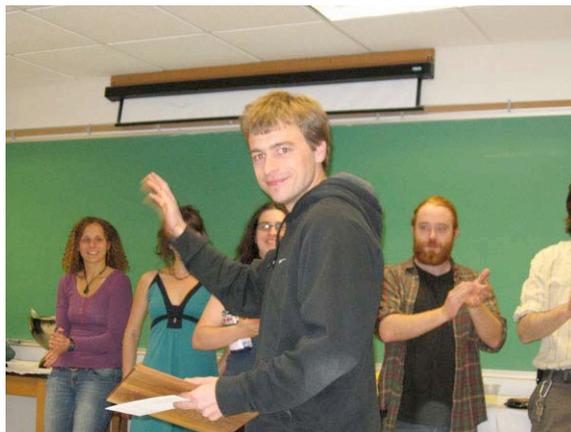
Recent Graduate Student Presentations at GSA

Reusser, L., Bierman, P., and Finkel, R., 2008, Estimating pre-disturbance rates of sediment generation and erosion with in situ and meteoric ¹⁰Be: Waipaoa River Basin, New Zealand: Geological Society of America Abstracts with Programs, p. 299 http://www.uvm.edu/cosmolab/papers/Reusser_2008_3863.pdf

Hackett, W.R., Bierman, P.R., Rizzo, D.M., and Besaw, L.E., 2008, Increasing precipitation and runoff over the last 70 years, the Winooski River Basin, Vermont: Geological Society of America Abstracts with Programs, p. 301-1 http://www.uvm.edu/cosmolab/papers/Hackett_2008_3861.pdf

Betka, P., Klepeis, K.A., De Paoli, M., and Clarke, G. 2008, Three- Dimensional Finite Strain and Kinematics of Flow from a Lower Crustal Extensional Shear Zone: Fiordland, New Zealand: Geological Society of America Abstracts with Programs, p. 343.

Klepeis, K., Betka, P., Alvarez, J., Poblete, F., Thomson, S., Gehrels, G., and Clarke, G., 2008, Tectonic Evolution of a Doubly- Vergent, Thick-Skinned Fold and Thrust Belt in the Patagonian Andes: Southernmost South America, Geological Society of America Abstracts with Programs, p. 322.



Paul Betka - Recipient of 2008 Graduate Student Teaching Assistant of the Year

RECENTLY COMPLETED M.S. THESES

2008

Paul Betka - Evolution and tectonic significance of ductile deformation in the middle and lower crust during contraction and extension in Cordilleran-style orogens.

Jane Duxbury - The determination of millennial scale erosion rates using cosmogenic analysis of ^{10}Be in the Shenandoah National Park.

Julie Rumrill - Using GPS to assess the spatial and temporal variation of seasonal velocity changes on the Greenland ice sheet, near Swiss Camp Greenland.

2007

Corey Coutu - Using the fossil record as a vehicle for teaching evolution: A web based teaching module.

Amanda Getsinger - Coupling physical and chemical studies to assess TTG petrogenesis.

Harry Oduro - The formation, oxidation, and characterization of $\text{FeS}(\text{aq})$ molecular clusters - decoupling iron sulfide mineral surface dissolution and oxidation reactions

Colleen Sullivan - Cosmogenic ^{10}Be erosion history of the Blue Ridge Escarpment - A long-lived feature of the southern Appalachians

2006

Heather Burgess - Trophic status of Lake Champlain over 400 years of changing land use: a paleolimnological study.

Bethany Zinni - Effects of Ski-area Development on Hydrology and Water Quality at Mt. Mansfield

Phoebe Judge - Fault motions, earthquakes, and cookies: Stress states along the Alpine Fault, New Zealand.

Daniel King - Shear zone processes in the mid to lower crust and the structural evolution of central Fiordland, New Zealand.

Gregory Lorenson - Application of in situ Au-amalgam microelectrodes in Yellowstone National Park to guide microbial sampling.

HURRAY FOR THE LIBERAL ARTS!!

**RECENT AWARD RECIPIENTS
UNDERGRADUATE AWARD WINNERS!**

Congratulations for successful Hawley-Mudge Award applications to support undergraduate research to: Robbie Charnock for his work with Keith Klepeis and Jon Kim (VT State Survey) for his project, **“Geology of the Knox Mountains plutons area, Marchfield and Peachum, Vermont”**

Congratulations for successful Pieratti Award Applications to support advanced field work to:

Rebecca Hammer-Lester of Georgetown, New York
Christy Leonard of Burlington, Vermont

Both Becky and Christy attended summer field camps.



**Char with Doll Award Co-recipient
Karen Derman**



**Doll Award Co-recipient
Maartje Melchiors**



The class of 2008: Marjie Melchiors, Tyler George-Minetti, Paul Montane, Karen Derman and Patrick Niggel; Claire Leonard absent from photo, as are the B.S. Environmental Science Geology concentrators

NEW UNDERGRADUATE SCHOLARSHIP IN GEOLOGY!

Thanks to a donation to UVM by Claire and Arthur Heiser, the Geology Department is able to offer the Joseph Tinker Award to an outstanding senior majoring in Geology. Mr. Tinker, the father of Mrs. Heiser, was a Vermont resident, farmer and amateur geologist. The first winner of the Tinker Award in 2008 was Becky Hammer-Lester of xxx New York.

CHANGES TO THE UNDERGRADUATE CURRICULUM

In response to the feedback from our ten year program review, and the alumni survey results that many of you helped us with a few years ago, the Geology Department recently revised the requirements for the B.A. and B.S. degrees. One comment we received from the external reviewer was that our B.A. degree was more rigorous than most of our competitors (more math and ancillary science), and that there was not a lot of difference between our B.A. and B.S. requirements. In response to this feedback we made several changes. You can see these on the website at

http://www.uvm.edu/geology/?Page=undergraduate/degrees.html&SM=undergraduate_menu.html

But to summarize the differences: (1) we've added a requirement for at least one semester of independent research to the B.S. (2) we've added a new "capstone" class, Senior Seminar (GEOL 190,191) for the B.A. (3) we've eliminated the one semester of physics for the B.A. The 2008-09 academic year is the first year that the new curriculum is in effect, so we won't really see any difference in enrollment patterns in the two degrees for at least another two years. We are not sure which degree will be more popular since the College of Arts and Sciences also changed the general education distribution requirements so that B.A. students must fulfill course work in all distribution categories. If we see any trends we'll be sure to report them in upcoming newsletter editions.

COME SEE US AT THE FOLLOWING:

NATIONAL GSA Meeting:

2009 Portland, OR; 18-21 Oct. 2010 Denver, CO 31 Oct. – 3 Nov.

National AGU Meeting:

2009 San Francisco, CA; 14-18 Dec. Check AGU website for specific dates

NEGSA Meeting:

2009 Portland, Maine; 22-24 March

NEIGC 2009:

October 2009 Check: <http://kilburn.keene.edu/neigc/> for information regarding dates and location

Alumni/Reunion Weekend at UVM!!!!

4-7 June 2009; check <http://alumni.uvm.edu/reunion> for more information
Make sure that you get in touch with us so we can show you around!!

Visit our website for links to more department information and activities

<http://www.uvm.edu/geology/> and <http://www.uvm.edu/perkins>

ALUMNI DONATIONS: What your donations have purchased

Thanks to all of you who target your gifts to UVM to the Geology Department, or who have sent us donations directly. Thank you! Thank you! This year we have used your gifts to purchase a portable UV short wavelength light for Greg Druschel to use in Earth Materials, especially on his field trips to mines in the region. Greg also used this lightsource on his recent trip to the Sterling Mines in Franklin, NJ with the Geology Club. In addition to the UV light, your donations enabled the department to purchase chemical standards for calibration of the ICP. Thank you again for thinking of us. Your gifts are greatly appreciated!

Regional Geology in Recent Years



**Regional Geology 2003
Enjoying the Maine coast**



**Iceland Crew enjoying summer sun
August 2004**



**Regional Geology 2005 in front of the “Maroon Bells”
near Aspen Colorado**



**Regional Geology Class enjoying the good life in Italy
Summer 2006**



Regional Geology, Colorado, 2007: Pat Niggel, Gary Peters, Pat Tobin, Corey Coutu (TA, partially hidden), Jessica Schechter, and Kirsten Stokes studying the contact relationships between Paleozoic carbonate rocks and Laramide intrusive rocks near Cumberland Pass, Colorado



Regional Geology, Italy, 2008

ALUMNI NEWS

Please send your news to us at geology@uvm.edu with “newsletter09” in the subject line. Photos should be included as a jpeg attachment to facilitate cutting and pasting. We plan to put an expanded “Alumni News” on the web next fall, '09) If you are aware of any alums who may not be aware of this website, can you let them know of its existence? If you'll send us your email address we will let you know when the next addition of the Champlain Thrust comes out.

Mike Abbott (M.S. 997)

Greetings from Tuberville!

The fields have been turned under, the flock of about 20 wild turkeys that comes by every other day or so seems to know they are safe from ovens or deep-fryers, and it is once again time to see what resources we have for next year's project.

As we at Tuberville prepare for the holiday season, we hope that you find a sense of belonging and happiness in your family and community, however you define them.

We also would like to take a moment to pause and thank you for being a part of this interesting adventure.

Peace, Love, Potatoes,

Team Tuberville.

Dayna Adelman (B.S. Env Sci Geo, 2002) has been working for the Wildlife Trust in NYC and was accepted into the Columbia University grad program in science writing. Dayna can be reached at daynaadelman@yahoo.com

Hello Char, I hope this finds you well!

I see that you are now the Department Chair, congratulations! Also, the new building looks amazing. How wonderful for the Geology Program. I noticed you were on sabbatical last semester. Where did you go? Honduras? I have yet to make it to Roatan, how is your research going? I went up to Burlington for my five year reunion, but I did not have an opportunity to stop by the new department. I can't believe its been that long, time really flies!

To catch you up on my life: after graduation I moved to Crested Butte, Colorado where I worked for a ski area in the winter and the Forest Service during the summer for 4 years. I was on a trail crew doing resource management and maintenance. I was also a wild land fire fighter! I got to fight fires in northern California, Wyoming and Colorado. I learned how to cut down trees with a chainsaw and a cross cut saw, and we even got to ride motorcycles to some of our job sites. It was an amazing time for me, I really learned a lot about myself and what I am capable of. About a year ago I returned to the New York area (where I grew up) and I am currently working for a conservation Non-profit called Wildlife Trust. (Check out our website www.wildlifetrust.org.) We focus on conservation medicine, specifically the interaction between ecosystem, wildlife and human health. Many emerging infectious diseases are coming from compromised wildlife populations, and we work to support local conservation scientists worldwide in their research. I am the office manager and do a good bit of accounting and finance.

I have recently become interested in an MPA program at Columbia University. It is a one year intensive program in Environmental Science and Policy. Because it is only 3 semesters beginning in June, the application deadline is January 15th. I realize this is very short notice and I apologize for any inconvenience. Eventually I may pursue a PhD in Sustainable Development, but for now I want to return academia and this program seems like a really good fit for my interests: finding and funding sustainable solutions to environmental problems. I can forward the abstract from my thesis, as I realize the work we did together was some time ago! Also, I included my resume for your reference.

I have been meaning to write you for sometime; I apologize my first communication in ages is to request a recommendation to grad school. Please let me know if you have the time. Thank you for your consideration, and best wishes for a happy and healthy 2008!

Lisa Borre (B.A. 1986) continues her global sailing trip with husband David. When last heard from they left Portugal and Spain and were heading for Italy. Lisa does email when they make landfall and can be contacted at lisa@gvatso.net

Sarah (Brown) Lewis (M.S. 1999) Now lives in Corvallis Oregon with her husband and son Simon. Her address is:

3200 SW Jefferson Way
Corvallis OR 97331

Heather (Burgess) Lapoint (M.S. 2006) moved back to Vermont and is teaching at the Lyndon Institute.

Amy (Church) McDonough (M.S. 1997)

Jennifer, Thank you for sending the letter with the details of the project you are doing for the UVM cosmo website. I checked out the link you sent and have some additional information to pass on. I've probably provided more info than you need, so I'll understand if you pick and choose from it. It was nice to hear from UVM - Hi Paul! and now I have a place to go to for info on the folks I went to UVM with, which is great.

Miami University Bachelor of Arts, Geology, 1993

Currently, I work for Tighe & Bond, an engineering and environmental consulting firm located in Westfield, MA. Here is the blurb from my company resume:

Amy McDonough is a hydrogeologist who has conducted site investigations and environmental site assessments for many private and municipal clients throughout New England. Her field experience includes supervising and performing sampling and assessment activities as well as site remediation. She has also prepared numerous reports in accordance with state and federal regulations. As a risk analyst for the insurance industry for over four years, she has performed compliance assessments and third-party reviews of historical and current operating procedures and remediation programs for a wide variety of private and municipal clients.

Prior to T&B I worked at AIG Environmental in Boston for four years, and prior to that I was at Haley & Aldrich in Boston for three-plus years. The blurb above is pretty generic, but depicts what I did up to a little over a year ago. That was when I started working on energy permitting projects, and specifically on the environmental impact assessment of a proposed biomass power plant here in western Massachusetts. I'm also on a team made up of engineers, geologists and a planner that has provided a survey of potential alternative heating and energy sources for a local academy, and an assessment of their applicability to the current school systems and resources. Tighe & Bond is focusing on energy projects, including renewable energy, as a market sector, so I plan on doing more work in this area in the future. I've also been involved with developing Disaster Debris Management Plans for communities in this area, in response to the FEMA pilot program that can provide additional funding to qualified towns if they have a FEMA-approved Debris Management Plan in place. Because of my work on energy and disaster plan projects, I have moved away from EPA Brownfield assessment and Massachusetts Contingency Plan compliance work.

BTW, my company uses the title "Hydrogeologist", although I clarify to anyone who cares that I'm not a hydrogeologist, but a geologist.

On a personal note, I was married in 2002 to Steve McDonough, an environmental engineer, while we were living in Boston. We have a daughter named Liza (b. 2004) and a son named Isaac (b. 2007). We moved to Florence, MA (a village of Northampton) in 2005 and love living in the "Happy Valley".

Hope this helps!

Amy

Amy C. McDonough Senior Hydrogeologist Tighe & Bond, Inc. 53 Southampton Road Westfield, MA 01085 Direct Tel: 413.572.3259 Fax: 413.568.9764 ACMcDonough@tighebond.com
www.tighebond.com

Danielle Eastman (B.A. 2007) and **Amanda (Gets) Getsinger** (M.S. 2008) are both working for environmental consulting companies in the Pittsburgh area. Gets is consumed by the grad school application process. she's still using agetsing@uvm.edu

Agnes Fung (B.S. 1991) Hi Char, It is always great to receive the Champlain Thrust newsletter. It is hard to believe that it has been such a long time since I graduated from UVM. You are the only geology professor I know who is not 'Emeritus'. I am happy with all the wonderful changes in the department and wish you the best.

I hope I am not too late in submitting a write-up for alumni news. I believe that the deadline was sometime in May. I am also using my husband's email right now, that's why it is not coming from my email address. Anyway, here are our info:

Agnes Fung
294 Raven Drive, Kelowna, British Columbia V1W4T6, Canada
1-250-764-2045
Email: ylwm0162@direct.ca
Work: C.F. Mineral Research Ltd. at 1677 Powick Road, Kelowna, British Columbia V1X 4L1, Canada
Work tel: 1-250-860-8252

Our son, Andrew, is 4 years old now. He is in a Montessori preschool here in Kelowna and really enjoys it. He is bilingual in English and Cantonese Chinese. This is my 14th year working for C.F. Mineral Research which is a heavy mineral processing lab for diamond and gold exploration companies. My focus continues to be on the geochemistries of diamond indicator minerals. I chose to work part-time since Andrew was born and regrettably had not been to the field since. I do miss conducting field work (mainly running drilling/exploration programs in Europe and Arctic Canada) and attending international conferences. I hope to go back to work full-time when Andrew is older. My husband, Jon Carlson, is also a geologist and is the Strategic Development Manager at the Ekati Diamond Mine. I had spent a number of field seasons there and it truly is a unique place to work. Although the mine is quite remote in the Northwest Territories, Jon is based in Kelowna so he gets to spend most of his time in town with us. We are happy with our work and are enjoying parenthood very much. Enclosed are 2 pictures of us taken recently.



Sean Gallen (B.A. Political Science 2004) emailed, "Hey Char,

It's Sean Gallen here from the good old class of 2004. I'm writing because I wanted to see how things were going back in Vermont. What have you been up to lately. I hope that your summer is going well. How did the regional geology trip go this year? Is the new building satisfying all of the departments needs? I was looking at the web site and it looks great. I hope I can get back to Vermont some time soon to get a tour of the place. As for me I'm still in Washington but I'm going to be leaving in about a month. I finished my Master's and am now looking toward the future. Its been a busy summer for me. I was fortunate enough to be working on a well funded project and was asked to stay up in Washington to wrap up some lab work that was related to my thesis. So I've been up at Western Washington running paleomagnetic samples most of the summer and applying for jobs and researching PhD programs (I found one at University of South Carolina that I'm applying for). I'm not sure what I want to do for a career yet but I really enjoy doing all this research stuff so I guess I'm just going to see where the wind blows me next. I'm looking forward to hearing from you. Tell everyone back in VT that I send my regards." Sean's address is sgallen22@hotmail.com

Alex Geller (B.S. 2007) recently biked the Burlington "Tour de Cure" for diabetes. Alex can be contacted at alex.geller@gmail.com

Hey everyone,

I am participating in the tour de cure cycling event to help raise money for diabetes research again this year. I will be pushing for a metric century (100 kilometers)!!! Last year a lot of you helped me raise over \$300 and I hope to reach that goal again. Any donation you feel comfortable contributing will be appreciated immensely.

Diabetes currently affects more than 20 million in the US alone. There is a lot of groundbreaking beta cell research to help find a cure to both type 1 and 2 diabetes, but money is desperately needed. So please help me and the millions of less fortunate fight this disease.

Click the link below to make an online donation.

Thanks!!!!

[Click here to visit my personal page.](#)

If the text above does not appear as a clickable link, you can visit the web address:

http://main.diabetes.org/site/TR/TourdeCure/TDC051788030?px=3332908&pg=personal&fr_id=5001&et=5Xo5b-y872G0rJI4DAxQAg..&s_tafId=165982

Donna Gerace (B.S. 1991) is a lawyer working for the State of Florida and is still trying to figure out how to return to Vermont. Her email is donnagerace@earthlink.net

Amanda (Gets) Getsinger (M.S. 2008) and **Danielle Eastman** (B.A. 2007) are both working for environmental consulting companies in the Pittsburgh area. Gets is consumed by the grad school application process. she's still using agetsing@uvm.edu

Jonathan L. Goldberg, M.D (M.S. 1996. M.D. 2002)

Char, Just reading the Champlain Thrust and thought I would drop you a line with good news. Laura gave birth to a baby girl on February 9th, Sophia Rhea Goldberg. She's growing and feeding (97th % for height and weight). Thinking she may be a power forward or center. She is wonderful and a ton of fun.

Other than that not much else is happening. My five year M.D. reunion is this summer but I don't think we'll be able to make it up to Burlington. However, I'll be looking for a position in about a year and we're trying to get back to New England. I'll look both in the world of academics and private practice. I do feel drawn to academics and teaching but I'm not interested in dealing with all of the B.S. We'll see whats out there.

Jeff Frederick (M.S. 1998) and I keep in touch regularly and he is doing well. Consulting in New Jersey, working for NYC on a cool groundwater project below the Hudson. Needless to say he has spent an

enormous amount of time on a barge in the middle of the Hudson drilling through bedrock.

Hope all is well with you. Send regards to Jack and Barry.
Cheers, Jon jgoldbe@yahoo.com Jonathan L. Goldberg, M.D.

Carey Hengstenberg (M.S. 2000) was invited by the Geo club to talk to them about how to translate a geology degree to the “real world” of employment. Carey is working for the Vermont State Solid Waste Management Program and really DOES apply field skills to her work! Carey is at Carey.
Hengstenberg@state.vt.us

John Humphrey (B.S. 1982) After receiving my graduate degrees at Brown, I took a faculty position at the University of Texas at Dallas. I moved to Colorado in 1991, where I am now Head of the Department of Geology and Geological Engineering at the Colorado School of Mines, one of the world's premier applied science and engineering institutions focused on the Earth's resources. With 110 graduate students, we have one of the largest graduate programs in the geosciences in the country. Any UVM undergrad or M.S. student or alum interested in furthering their education for employment in the resources industries (petroleum, mineral deposits, hydrogeology) are encouraged to contact me directly (jhumphre@mines.edu). I know the excellent geological education you get at UVM and you are well qualified to take it to the next level. The picture shows the Grenadier Range in the volcanic San Juan Mountains of southwestern Colorado, a location where we run part of our field camp.



Jessica Anne Kuonen (B.A. 2007) Hello Char!

I hear you are on sabbatical this semester and hope you are enjoying your time off. I thought I'd write to let you know all that is going on with me (and it's a lot), mostly because you are much of the reason I am where I am.

I waitressed at Taste all summer and was going to go live with Dad back in Syracuse for a year or so. Shortly after graduation I sent my resume to a company where my dad's longtime friend works – a mining company called Imerys. (He's on the business side of things but heard they needed a geologist.) I didn't expect much from it, but turns out they mine the largest deposit of kaolin in the world, located in Georgia and they loved that I was a “soft rock” geologist (Strat Sed & my senior project). They flew me down for an interview and gave me an offer I couldn't refuse – so here I sit, a real employed geologist, at an amazing first job - mining clay.

My boss is Jessica Kogel (formerly Elzea), is a PhD and has worked with Sam Pickering to better define the extensive, but very complex, Georgia kaolin. She is really cool (she would fit in well in Burlington) and will be a great mentor to me. Imerys mines many industrial minerals, but our division of higher quality kaolin uses it mostly for paper coating purposes (the glossy covers of magazines), filler grades, tiles, paint, and

ceramics. They've been around since 1940s, and have mined out most of the best quality "Buffalo China" deposits, so we have to do a lot of processing and engineering, where 30 years ago there was practically no processing. Our main specs are brightness (white!), viscosity, particle size, and shape factor. There are two plants, one for processing hydrous clay and the other for "calcine" clay – rich in organics. I got to tour all the facilities and I won't get into processing, but it's pretty interesting. Though the company has been around for a long time, they base nothing on geological properties of the kaolin – which blew my mind at first. Everything is based on industry and demand, and the different grades are based more on what they are used for (ex. paper coating machines).

So that's why I'm here. My main objective is working with Jessica to provide

- geologic reports of all of our mines and properties including descriptions of clay quality, volume estimates of ore grades, descriptions of lithology and stratigraphy, cross sections, and process constraints.
- Overseeing exploration drill hole programs including proposals, core logging, and core analysis.
- Conduct mineralogical evaluations and design experiments for special testing
- Maintain and develop a geological database (Techbase is the outdated system we use and we are switching over to SURPAC, really cool 3D modeling)
- Calculate volumes for current tracts, as well as annual resource and reserve calculations

So far I have been calculating volumes and telling the miners how deep to dig in a pit to recover a layer. The mine manager took me to a mine yesterday where they laid out stakes from my calculations and will mine it this weekend –I am anxious to see how close I was to getting the correct volume.

I still don't know much about the regional stratigraphy (Jessica's house burned down right before I started work so she's just back to work after 3 weeks of being gone). That is what I'm most interested in right now. There is a Cretaceous layer of "soft" kaolin – the Buffalo Creek Formation. There is also a Tertiary layer of "hard" kaolin – the Oconee formation with two separate members. The Upper Paleocene is the Marion member, and the Lower-mid Eocene is the Jeffersonville Member. The depositional environment includes deltaic environments, and lagoonal and tidal flats of marginal marine. The clay occurs in discontinuous lenses and there are fining up sequences.

Overall the job is very fast paced and I have a lot of responsibility. Jessica tells me the workload will probably get overwhelming since I'm doing so many different things for so many people, but we will work it out. It can definitely suck working for an international corporation (headquarters in Paris), but I guess that's just the real world. I should also mention that they have an amazing reclamation program – most of the surrounding forest and landscape has been mined but you would never know it.

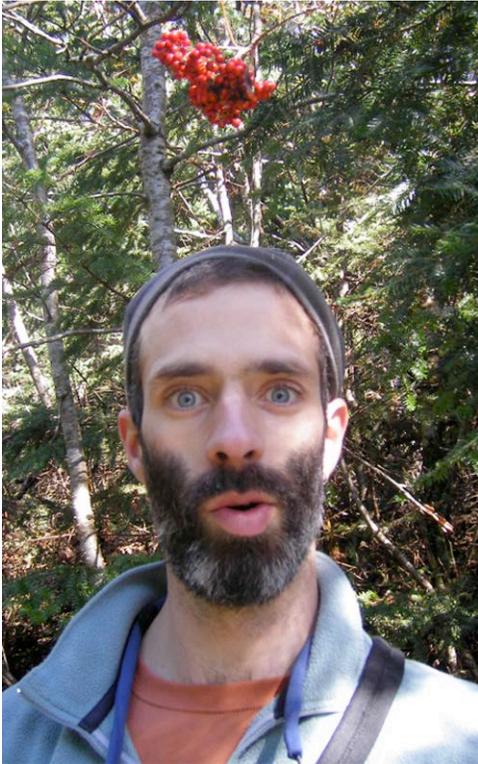
I feel very confident and think I will do well here mainly due to my educational background in sedimentology and the use of so much analytical thinking, problem solving skills, and logic to this very real life application where time and money is always a factor. Using my skills in this type of setting definitely gives me confidence and makes me want to go back to grad school in the future. I have to stay with Imerys for 2 years to not have to pay back my relocation costs, but the benefits are great and I work with great people. And hey, I'm still young.

Georgia is fun, it's a different way of life but that's not necessarily a bad thing. Everyone is friendly and welcoming. Everyone goes to church and many of my co workers have invited me to mass and bible study, etc. Though I doubt I will take part, the community it builds is really impressive. I'm not the type of person to debate matters of faith, so we all get along and joke about our differences and I am accepted. Right now I am living in Sandersville, 20 minutes from where I work. It is a tiny town with nothing to do so I come home after work, do some errands, cook a good meal and watch a lot of movies. (I flew my cat down so he keeps me company). In December I am moving to Augusta, where there is more of a young, hip, artsy community. The commute will be 1 ½ hours each way, but it's worth it for me. (My boss, Jessica, lives in Augusta as well so we can carpool) Most of the reason I'm moving there is because my boyfriend (by the way, I also fell in love this summer) is moving down and it would be better for us to be in more of a real city.

So life has taken a crazy turn for the better. I graduated having no idea what I was going to do with my life, and in a matter of months everything seemed to fall into place. I love being a geologist and I want to thank

you so much for all the skills I gained in the geology department at UVM. Hope all is well with your research and in the department and I plan on keeping in touch. (Jess can be contacted at jessica.kuonen@gmail.com)

-Jess



JP Lavoie, (M.S. 2004)

Katherine (Kitty) Leonard (M.S. 1985) keeps in regular email contact. Kitty is living in Cazenovia, NY where she is a nurse in an oncology ward and also has a private massage practice. She relaxes by paddling her kayak in the Fulton Chain of lakes in the Adirondacks.

Li Lin (M.S. 1996)

Hi, Jennifer

So nice to hear from you! I have been the lost child for the department, but I think about the times I spent to UVM Geology from time to time, my advisor Paul and all fellow classmates, how I came to this great country of United States. I am so glad that I am back in the loop. I can't wait to check out everyone else's page to see what they are up to. There is so much I want to say here. Let me begin with my web page.

MS Thesis (1996)

- MS thesis Quaternary environmental changes inferred from pollen analyses and 14C ages of pond sediments, Green Mountains, Vermont
- MS thesis proposal (not yet available 2)
- MS thesis progress report (not yet available3)
- MS thesis (not yet available4)

I graduated from UVM Geology at the summer of 1996, and then moved to University of Utah Geography Department for a M.S. in GIS. Graduated in 1999, and started working for ESRI in 1999.

Undergraduate Degree

Place: Beijing Normal University, Geography Department

Type: B.S.

Year: 1992

Other Related Links

I am working as a Java Developer in ArcGIS Java Server team at ESRI. ESRI is the world leader in GIS (Geographic Information System).

Email Address

llin@esri.com

Current Position and Contact Information (3/2008)

Software Engineer

ESRI, Inc.

380 New York St.

Redlands, CA 92373

Please help me update my page. I hope to hear from you again. Someday I will bring my family back to visit Vermont. It is the most beautiful friendly place I have ever been. I miss it a lot.

Talk to you later.

Lin, Li



Greg Lorenson (M.S. 2006) recently married Devon

Laura Mallard (M.S. 2000) recently had her first child, Asa. Laura works at Appalachian State University in Boone, NC. and she moonlights with her spouse running a rafting company.



Anthony (Buddy) Modugno (B.A.1999) emailed, “Hey Char-How's things. I called up to UVM and they told me you're on sabbatical so I hope that's going well for you. I'm writing just to let you know what I've been up to. Last we talked I was trying to get into NYC DEP, which I did and had a great year. I learned a lot and made some good friends. I worked in the hydrology unit collecting samples, building remote sampling sites, taking discharge measurements and developing rating tables, and running special investigations for any contamination spills that occurred in our watershed.

A little over a year there the powers that be changed the organizational structure around so I grabbed an opportunity to work with the USGS down in Baltimore, which is where I am now. I'm diggin it. I work under a really cool hydrologist who thinks I do great work so she puts me on as many projects as she can. I'm getting involved in some really technical science here, more than with the DEP, so we'll see where this goes. Right now I'm working with a crew to set up early warning sites along the Potomac- TOC analyzers hooked into SCADA systems at treatment plants along with fish monitors, etc.

I have a fiance (no date yet) who moved with me, and a dog, who's getting used to the city but happy to be with us. So all is well.

I really need to thank you for the recommendation you gave me. It meant a lot. I was pretty much told as I left UVM I wouldn't get into the field or that I wouldn't do all that well if I did. I'm proving 'em wrong. Thanks again. I'll drop you another note should anything else really cool happen...” Buddy’s email is:

aamodugn@usgs.gov

Ron Parker (M.S. 1986) - Ron left Earlham this year and is not working the "oil patch" for Fronterra Geosciences. He went on a field trip with fellow Coloradoan **Paul Myrow** (M.S. 1983) and sent the following picture. Ron can be reached at parkero@gmail.com Ron is at far right in above photo, Paul (who teaches at Colorado College) is in the center with white hat



Dave Peel (B.S.1984, M.D. 1991) was featured in a recent New York Times Sunday magazine article (12/8/2008) in the "Diagnosis" section, a weekly column that features particularly enigmatic medical emergencies. Dave was the ER doctor at Providence Portland Medical Center when a critically ill patient arrived. Dave ordered the correct tests and, with a colleague, correctly diagnosed his condition and saved his life. Way to go, Dave! Medicine runs in the family; spouse Annie Pyke Peel (M.A. 1985) is doing her residency in medicine. Both docs and their three children live in Portland. Prepare for an invasion of geologists when next year's GSA meeting comes to town!

Peter Perkins (B.A.1980) Peter Perkins "Grateful member of the greatest geology department on earth" :-)

Dear All,

Well, after 28 years somehow the geology department zeroed in on me with a newsletter. I was happy to read that all of you are leading predictably full and exciting lives "post Perkins Hall". Your news prompted me to share some anecdotes that you might find amusing, and also a bit about my post-grad journeys related to geology.

So first: Allen, I came across the meticulous columnar section you had us create of the palynology and forams of the Lake with respect to isostatic rebound and the desalinization process over time. I must say, it still looked pretty good, although regaling my family with it over dinner wasn't the box office smash I thought it might be...

Dave, I found myself in the Gas Hills district in central Wyoming, working for Anaconda Copper as the mud-logging, core sample retrieving, laboring geologist during the summer of 1980, terrorized by drillers, developing fence diagrams of roll front uranium deposition on Green Mountain. The mucky mucks were impressed with my presentation, and wondered what marvelous course I had taken to create these diagrams.

Sed Pet, says I, at UVM. Says they, UV what? Go figure...I didn't attempt the explain the HERM scale, either :-)

Jack, I have been through West Yellowstone a number of times subsequent to Regional Geology of the Northern Rockies, summer of 1979, for a number of reasons, but my favorite memory still is being in a little diner one morning, doubtless blurry from the seemingly endless affection the students had for Olympia beer, and the waitress was eyeballing you, and asking what you did for a living. When you said professor of geology, she said, "Huh. You sure look like a dynamite man to me." And we probably all would agree that you are a dynamite man, for sure...

Barry, I will not forget the two summers I spent living at the Schneehut, the first as field assistant to Rob Hoar, the second on an URP grant, chasing you and Rolfe around the woods fielding pop-ups as you hammered off samples with that ungodly big hammer you schlepped around. And then there was Trousers Lake (Lac du Trouseres) and the excursions across the border in the little jeep we called "Max" (due to the stencil on the dash that said, max speed 35). The one time when we were stopped and interrogated by Canadian customs, who couldn't quite grasp the concept that indeed the rocks don't stop at the border, and no, there isn't any oil, gas or gold in commercial quantities that the US government is attempting to extract from the unwitting Canadians anywhere in the area...But they never caught on to the massive quantities of Molson we had under the tarps in the back, covered with rocks...

So I hooked up with an ill-fated outfit in the Alaskan bush early summer of 1980, in search of placer gold on a creek about 100 miles northeast of Fairbanks, with some undesirable consequences (went with Marco VanGemmeren and Peter Hoar, Rob's brother, and some others), and didn't find much gold, but Denali was pretty amazing, and flying into Juneau definitely an experience, never mind landing in a Super Cub on a gravel streambed crammed into the back of the plane with the pilot's 45 in a shoulder holster aimed at the family jewels. Then, hooked up with Anaconda through Chase Curtis, who was my field partner on the URP, from Bates, and that was a great experience, until the \$ ran out, and since I didn't have a Masters (yes, you told me so) I couldn't get on permanently, although did get an interview at the Carr Fork mine in Tooele, UT, but without any immediate underground mapping experience (is that course offered yet?) didn't make the cut.

Thus ended my formal endeavours as a field geologist. Since then I have pursued this greatest of sciences as an avocation, from the Wind Rivers to Canyonlands, and for the last 20+ years here in northern Cal, patiently observing the struggle between the Sierra uplift and the inexorable forces of erosion, not sure which side is winning, but the granodiorite is sure amazing...

Guess I have bent your ears quite enough, but I do wish to send you all my heartfelt best wishes, and very grateful thanks for turning me on to a program of study that has led me to a fantastic appreciation of the physical world around me. And yes, there is a big difference coming from the Land of No Outcrops to the Land of No Overburden!

Regards,

Peter Perkins '80
12640 Greenfields Way
Grass Valley, CA 95945

"Just 5 miles from the Empire Mine"

PS have decided that Lassen Park is my favorite place to go, in fact, my family is instructed (in writing) to toss my ashes into the Lassen crater when the time comes...

Annie Pyke Peel (M.A. 1985) is doing her residency in medicine. Both docs (**Annie and Dave Peel** B.S.1984, M.D. 1991) and their three children live in Portland. Prepare for an invasion of geologists when next year's GSA meeting comes to town!

Brad Rosenheim (B.S. Env Sci, Geol, 1999) finished his post-doc at Woods Hole for a teaching position in Oceanography at Tulane. Brad came back to UVM in 2007 for our distinguished alumni talk. "Hi Char! Things are going very well down here in Nawlins. I'm enjoying the city, the university and the department. I've got a working mass spectrometer, two eager graduate students, and a lab with a lot of potential. How are things in VT? It is already a little over a year since I visited and it was very exciting to see the new building and all of the energy that was coming along with it." Brad's email is: brosenhe@tulane.edu

Chuck Rubins (B.A. 1966) Thanks for "The Champlain Thrust" which arrived via a long series of forwards. Previous address has changed to that at the bottom of this email, and I request that you please change your contact list.

I'm in my 38th year with Chevron. After leaving the overseas lifestyle of Nigeria, Kazakhstan and Venezuela and moving to Midland, Texas in mid-2006 I have become deeply immersed in the petroleum geology of the prolific Permian Basin of West Texas. Oil in tight rocks, now benefiting from the convergence of high oil prices and technologies for fracturing wells, has made this area a boom town once again.

Regards to all and especially to Dr. Hunt by copy of this email! Fond memories of a much smaller but lively Department in 1961 - 6.

Chuck Rubins
Asset Development Manager - Permian

Chevron North America Exploration & Production
Mid-Continent / Alaska
15 Smith Road, Room 5212, Midland, TX 79705
Tel (432) 687-7239; Fax (432) 687-7998; email to: crubins@chevron.com

Chris Sharpe (B.S.1997) is still working at Arcadis US environmental consulting company and he is great about keeping UVM in mind when it comes to recruiting. If you are interested, contact Chris at Christopher.Sharpe@arcadis-us.com

Deb Shulman (B.A. 2004) left her consulting job in the San Francisco area to go back to school. Deb entered the grad program at San Francisco State, doing petrology/tectonics. Deb stopped in at the Department on a swing through Vermont. She can be contacted at deborahshulman@hotmail.com

Alyssa Snyder (B.S.2003) is, according to Nathan Toke (B.S. ?) attending St. Michaels College to get a degree in teaching. Last year Nathan came by to visit the Department in Delehanty from his grad program at Arizona State.

Bethany Zinni (M.S. 2006) recently bought a house in the Rochester area and is still enjoying her job at Haley and Aldrich consulting. Her email address is bjzinni@yahoo.com

**Thank you for keeping in touch.
We'd like to hear from the rest of you.
Send us your news to geology@uvm.edu, and
PLEASE include in the subject line "newsletter 09"!**

Continue scrolling to see photos below

**Some photos of our “digs” at Delehanty
For those of you who knew only Perkins we think you’ll see a difference!!**



Petrology Lab (Keith Klepeis presiding)



Computer Lab (Keith Klepeis presiding)



Old Cosmogenic Laboratory (Jen Larsen at work)



Delehanty Lobby with dinosaur footprints (Rob Zimmermann presiding)



Earth History Lab (Char Mehrtens (presiding))



Environmental Geology Lab (Stephen Wright presiding)



Geomicrobiology Laboratory



ICP Laboratory (Adam Hunt presiding)



Introductory Geology Lab



Structural Laboratory



Perkins Museum in Delehanty Hall



Perkins Museum in Delehanty Hall