THE EPOCH

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College of Arts and Sciences
University at Buffalo *The State University of New York*

Mitchell Says Farewell to Chair Duties

Charles E. Mitchell, SUNY Distinguished Teaching Professor

That's right. I've slipped out the back door of the chair's office and am headed down the hall. On August 15th I completed six and a half years as Department Chair, with a six-month leave in the spring of 2005 made possible by Bob Jacobi's generosity and his ability to serve as acting chair for a semester. Now Professor **Richelle Allen-King** has stepped forward to take up the balancing act that is the chair's job: to be an administrator, a faculty member, and a research scientist. I hope that you will soon discover, as I have, that she is an exceptionally talented person who will take up this opportunity with enthusiasm and dedication. In other words, she will be terrific as department chair!

As many of you are probably aware, the budget of the State of New York has suffered some of the same calamitous decline as our individual stock portfolios and this will affect the SUNY budget in similarly drastic ways. Nevertheless, Richelle and I are confident that with your help, UB Geology will be able to continue the positive development of its programs and the effective nurturing of our students and personnel.

The globally expanding demand for oil and natural gas has hit us all in the wallet of course, but here in New York it has also lead to a phenomenal expansion in gas exploration, especially in non-traditional resources: localized, fracture-controlled reservoirs and shale gas (exactly matching **Bob Jacobi's** interests and experience – naturally. Here is a man ahead of the curve, if ever there was one!).

NY State geology includes several regionally extensive gas-producing shales and the current interest in the early Late Devonian Marcellus Shale is a wonder to behold. UB Geology has begun working with several local energy companies (Nornew, Seneca Resources, National Fuel) to help meet their needs for expertise in the regional geology and employees to join their growing team of geologists. Dr. Jacobi is working part time for Nornew and in the near future, **Paul Basinski** (BA, '76) will lead a visit to UB from the ConocoPhillips Corp. recruiting team as they also seek to hire additional geologists to their exploration and development efforts.

In this ebb and flow we also welcome a new senior faculty hire, **Dr. Greg Valentine**, and bid farewell and best wishes to **Dr. Matt Becker**. Greg comes to us from Los Alamos National Lab where he led a large team of geologists and worked extensively on the evaluation of the volcanological geohazards in the region of the Yucca Mountain Repository for spent nuclear reactor fuel rods. He joins our Geohazards Center as a member of the UB 2020 strategic strength in Extreme Events: Mitigation and Response. As reading the accompanying article about Dr. Valentine I hope you will feel the same excitement that we do about his joining the department.

Among the consequences of hiring outstanding faculty is the fact that they may be lured by the siren call of new opportunities at another university. Matt Becker has taken up an at The California State University of Long Beach, which has received a major alumni gift aimed at developing an outstanding Master of Science hydrogeology program and they selected Matt Becker to lead this effort. Matt has taken up the endowed professorship created by this gift at the rank of full professor. As much as we will miss him here at UB, I do hope that he finds out in California the success and contentment he and his wife, Amy seek. I also hope that next year we will be able to introduce to you yet another new faculty member who will fill Matt's shoes and help us meet our commitment to offer outstanding professional training in environmental geology. The search has begun!

Finally, I am particularly pleased to be able to introduce this edition's alumni feature article. **Dr. Stephen T. Hasiotis**, Associate Professor of Geology at the University of Kansas completed an MS degree here at UB in 1991 and his BS in 1985. He made wonderful work out of what seemed at the time to be a very off-beat idea I suggested to him: that burrows we found in the Chinle Formation near our field camp in Steven's Canyon Utah might have been produced by Triassic crayfish. After all, I knew nothing about the Triassic, trace fossils, or the geological history of crayfish – it's just what they looked like! Steve took up the challenge, discovered that these burrows had already been described as lungfish burrows. Unconvinced, he went on to discover abundant evidence of similarity between the Chinle burrows and those he induced crayfish in our lab to make and substantial differences from the burrows of lungfish. And then, not content with these discoveries, he found actual body fossils of crayfish associated with the burrows. Sigh. Steve is now a world-renown expert in continental trace fossils with a long list of scientific publications, newspaper stories about termite mounds the size of buildings, and many other marvelous discoveries – not the least of which is that trace fossils are of considerable value to oil exploration (they help define the sequence boundary exposure surfaces among other things). Way to go Steve!

Thank you all for your support and your contributions to UB Geology. Thank you most especially for the opportunities you have given me to serve our community. If you visit UB, stop by to say "hi." You will find me in my lab up to my elbows in graptolites. And with that, I am outa here!

Greetings from the New Department Chair

Richelle M. Allen-King, Professor and Chair

It is an outstanding time to be involved in educating the next generation of geoscientists because society has never had a greater need for the knowledge of geoscientists than today. Clean water, global warming, natural hazards and energy are important current issues in which geoscientists in general – and graduates from our department in particular - are positioned to take an increasingly important role. As a consequence, career prospects for recent and upcoming graduates are bright. A geological education is a great asset.

Each autumn brings a new class of students and transitions in our department, a few of which I highlight here. As the incoming Department Chair, I look forward to the new challenges and opportunities that the job will bring. On behalf of the faculty, staff and students, I want to thank Professor Chuck Mitchell for his service as Chair during the past six and a half years of growth in UB Geology. We extend a warm welcome to Professor **Greg Valentine**, an internationally recognized volcanologist, who has joined our faculty roster this past August. Sadly, this August we said farewell to Professor **Matthew Becker** and wish all the best for him in his new position as the Conrey Endowed Chair of Hydrogeology at California State University at Long Beach. We hope to fill this vacancy very soon and are currently searching for an Assistant Professor of Hydrogeology.

Through these transitions, our department remains strong. At the moment, we comprise 14 tenure/tenure-track faculty, 6 professional staff, 1 research associate professor, 3 research assistant professors, 8 adjunct faculty, 3 emeritus professors, 55 graduate students and 76 undergraduate students. Several of our graduate students have recently received prestigious academic awards: **Patrick Whelley** received a NASA graduate fellowship; **Sungwook Choung** and **Nicolas Young** have received Geological Society of America student research grants, and **Dale Hess** is currently on a Fulbright Scholarship. In addition to these accolades, five of our current graduate students are supported through highly competitive admission to the National Science Foundation Interdisciplinary Graduate Education and Research Traineeships. We are privileged to work with top notch research students!

Over the next few years, I look forward to working with the Department's Executive Committee, who will help guide the department. **Dr. Marcus Bursik** has been appointed Associate Chair and will be leading our alumni relation efforts and **Drs. Tracy Gregg** and **Bea Csatho** are our Directors of Graduate and Undergraduate Studies, respectively.

To prove that our Department is not too static, we have begun the process of moving our group to Cooke and Hochstetter Halls (rocks and all!). This will occur over some time as new spaces are renovated for us and we are already enjoying improved teaching facilities.

I am proud to serve as Chair of an outstanding, productive and positive department. Although the financial shortfalls in the NY State budget will certainly translate into budget challenges, I am confident that our department is up to meeting these challenges with the same positive and innovative spirit that we have drawn on in the past. And as we move forward this year, we shouldn't forget about our history. I encourage all of our alumni to keep in touch with our department and let us know what you are doing. We are always eager to learn how we can strengthen our ties to those of you that have gone before and improve the student experience here. I look forward to hearing from you!

From top, left to right, UB Geology Executive Committee: Drs. Marcus Bursik, Beata Csatho, Richelle Allen-King, and Tracy Gregg

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The EPOCH is published for the students, alumni and friends of:

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Special thanks to the College of Arts Sciences and CAS Creative Design Services for the design and layout of The EPOCH

Please visit us online at:
www.geology.buffalo.edu

Update Your Address Books!

UB Geology has moved!

This fall, the Geology office and classrooms have moved to Cooke Hall. Any US mail to staff and faculty should be sent to the following address:

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NOTE: Most faculty offices are still located in Natural Sciences Complex.

For additional information on the move, including more pictures, please see page 5.

New administrative space

Meet the New Faculty!

Dr. Greg Valentine joined the Department of Geology in August, as Professor and Associate Director of the UB Center for GeoHazards Studies. Dr. Valentine's interests cover a broad range of volcanology problems, including the source-to-surface dynamics of volcanic fields, basaltic eruption dynamics, pyroclastic flows and surges, volcaniclastic deposits and geomorphic evolution of volcanic surfaces. In addition, he has a strong interest in applying our fundamental understanding of volcanism to problems of natural hazards risk and mitigation, and in using volcanic hazards as analogs to help us prepare for other types of hazards. Dr. Valentine received his B.S. in Geology and Geological Engineering from New Mexico Institute of Mining and Technology (1984) and his Ph.D. in Geological Sciences from the University of California-Santa Barbara (1988). Part of his Ph.D. research involved numerical modeling of explosive eruptions and an internship at Los Alamos National Laboratory (New Mexico), where he later was a postdoctoral fellow and then a research staff member. Between 1998-2008 he led a group of researchers at Los Alamos who conducted basic and applied research in the areas of subsurface flow and transport, experimental mineralogy and geochemistry, field geology, climate change, and artificial life. He led projects on the coupling of environmental sciences with urban infrastructure engineering, defense-related issues, and in the past four years led studies related to the consequences of potential volcanic activity at a proposed radioactive waste disposal site in Nevada. Much of this latter work was recently published in journals such as Earth and Planetary Science Letters, Journal of Volcanology and Geothermal Research, Bulletin of Volcanology, and Geophysical Research Letters. Dr. Valentine was Editor in Chief of *Journal of Volcanology and Geothermal Research* from 1993-2001. He is looking forward to joining the outstanding volcanology group at UB and to participating in the exciting strategic direction of Extreme Events – Mitigation and Response, part of the UB 2020 plan for major interdisciplinary initiatives.

Dr. Beata Csatho, Promoted to Associate Professor

Dr. Beata Csatho

Dr. Beata Csatho was promoted to Associate Professor effective the fall 2008, semester. Dr. Csatho earned her MS in Geophysics in 1981 from the University of Miskolc, Hungary and another MS in Applied Mathematics from Eötvös Loránd University, Hungary in 1989. She earned her PhD in Geophysics from the University of Miskolc in 1993, while fulfilling a Fulbright Scholarship at the USGS in Arizona. Dr. Csatho was a research scientist at The Ohio State University, Byrd Polar Research Center in Columbus Ohio from 1994 until 2006 when she accepted a position with the UB Geology Department as an Assistant Professor. Dr. Csatho's research focuses on understanding the complex dynamics of the Earth's system and its interaction with the human environment. Pursuing this goal she frequently works in a multi-disciplinary setting to integrate information across all of the geosciences, including the solid earth, atmosphere, cryosphere and oceans. To process, merge and analyze data sets from multiple sources Beata adopts methodologies from geophysics, remote sensing, photogrammetry, geodesy, spatial statistics, GIS, visualization, digital image processing, pattern recognition, and data fusion. Her funded research includes the investigation of glacier and ice sheet mass balance and subglacial geology, application of remote sensing for mapping periglacial and glacial geomorphology, satellite laser altimetry and the development of data fusion approaches. Congratulations Beata!

2008 Field Camp – Oh...That Crazy Weather

Travis A. Nelson, Field Camp Operations Coordinator, Geologist, Geology Support Technician

As you might have already guessed by the title, good ol' Mother Nature pulled out a few tricks for us this time… she's just crazy. I'll get to that soon, but first, let's roll out the camp stats. We had 39 remarkable (go with the flow) students this year. They had to adapt to the ever-changing weather conditions and did so with style and smiles. Hats off to all!! Camp population consisted of 16 gals and 23 guys including 2 graduate students. 16 students from UB, 6 from three different universities in the State of Tennessee, 4 - Binghamton University, 2 - North Carolina State University (Hi **Rebecca** ☺), 2 - University of Maine, 2 - University of New Hampshire, 1 - Slippery Rock University, 1 - Beloit College, 1 - Austin Peay State University, 1 - University of Pittsburgh, 1 - Pacific Lutheran University, 1 - Denison University and 1 student from Rice University. Mother Nature brought her own camp participants – 16 days of wind, 5 days of soaking rain, 3 days of snow, and 20 days of just plain cold.

Group photo from Field Camp 2008.

Cell phone charging station at Field Camp 2008.

Our amazing faculty and staff dealt with the challenges we experienced this year with professional enthusiasm. It's a privilege to work with such great people, Thank You! **Dr. Charles Mitchell** and **Dr. Joaquín Cortés** got the students acclimated to mapping in the field at the first map site in Grand Junction, Colorado. **Dr. Greg Valentine** (new faculty member - welcome Greg "The Hammer" Valentine!) and Dr. Charles Mitchell taught the "muddy" second map site in Davis Canyon, Utah. **Dr. Paul Baldauf** and **Dr. Jason Briner** suited up in their rain gear and taught the Rainbow Ranch map site in Dinosaur, Utah. Again, thanks to **Ron & Dixie Ufford** for another barbecue at the Rainbow Valley Ranch.

Dr. Jason Briner felt right at home from his research in the Arctic teaching the final map site at Q Creek Ranch in Wyoming where it snowed for several days. Our fantastic teaching assistants this year were: **Shannon Kobs** (4th yr), **Mike Howley** (3rd yr) and **Sean McGrane** (1st yr) and our superb cooks: **Phil Stokes** (5th yr. franchise player),

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Chuck Mitchell describing the regional geology to students in preparation for their mapping exercises.

Geology 2008 Field Camp students.

Field Camp 2008 snowman, complete with a pretzel bow-tie!

Patrick Whelley (1st yr) and **Heather Stewart** (1st yr). Hope to have everyone back next year, just a great group.

From a most generous alumni donation (recieved from **Ronald & Virginia Herdman**), this year I integrated the first item, in a series of many things to come, to achieve a "GREEN" field camp. An energy efficient solar refrigerator, complete with photovoltaic cells and battery pack was added. Next year I hope to replace the gas generator and halogen lighting by adding more photovoltaic cells and fluorescent lights.

Many trips to the hospital for what was dubbed camp "crud," a 48-hour type flu, that just about everyone got. One student went home after a nasty slip down the Morrison Formation. 5 days in the hospital, 1 surgery, 10 screws and 2 titanium plates in your leg will always get you a ticket home from field camp. Hope all's well Rebecca, and wish you a speedy recovery. See you on the trails!

Right off the bat I knew we were in for a most unusual sequence of weather related experiences when we had to relocate our first camp site by direct order from F.E.M.A. due to the rising Colorado River and a bridge upstream that could collapse at any moment. In Davis Canyon, we were met with a low snow line, wind, mud and chains for the vans. Next, the rains in Dinosaur, days of soaking rain. And to cap it all off, snow, 10 degrees, and extreme wind in Wyoming. Ah yes, that crazy weather. Hey, we wouldn't have it any other way, we're geologists!

There is a lot, and I mean a lot of work and energy that goes into making this the best geology field camp in the country. It is the people, faculty, staff, alumni and our friends at the places we stay, that will continue to make this camp a success and a perfect tool for young geologists to learn, enjoy and remember. Thanks to ALL.

Please visit:
http://www.geology.buffalo.edu/fieldwork/fieldCamp.shtml
for more information, highlights and pictures.

UB Geology Finds New Home in Cooke Hall

According to UB Geology staff member **Peter Avery**, this marks the sixth time the department has moved in its 80+ year history. (See timeline, below.) Most of the moves have taken place within the last few decades and we can tell you – it never gets easier! There is a ton of planning, preparation and hard labor that goes into these moves by countless people. This project, in particular, seemed to be especially arduous and time consuming – given that the department will occupy its new space in phases: First, staff and classrooms in fall 2008 followed by faculty according to their research groups, with the last group to arrive sometime after 2011 - give or take a few years. Most of us have handled the inconvenience of being split across four buildings (Cooke Hall, Hochstetter Hall, Natural Sciences Complex and Fronczak Hall) with good humor and an eye on the final prize – some decent space that will accommodate our needs for research and education.

So, update your records to include our newest address:

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TIMELINE: GEOLOGY ON THE MOVE
(Where will we land next?)

Crosby Hall, South Campus
1927 – 1969

Bell Facility, Race Street
1969 – 1975

Ridge Lea Campus, North Bailey Avenue
1975 – 1990

Fronczak Hall, North Campus
1990 – 1994

Natural Sciences Complex (NSC), North Campus
1994 – 2008

Fall 2008, Staff and Faculty Split
Staff Move to Cooke Hall, North Campus
Faculty remain in NSC

Cooke Hall, built in the 1970s.

New Department Office under construction, late summer.

New classroom, under construction, late summer.

Travis Nelson, excited to move some chairs and tables into our new space.

Professor Emeritus, Paul Reitan, Presented at International Geological Congress

Paul Reitan, Professor Emeritus

Once every four years the Earth sciences community gathers for an International Geological Congress (IGC). The host changes: in 2000 it was China, in 2004 it was Italy, and in 2008 it will be "Norden." "Norden" you say? Yes, meaning the nordic countries: Denmark, Finland, Iceland, Norway, and Sweden. The meetings this year, for the 33rd IGC, will be held in Oslo, Norway, August 6-14, with field trips from Greenland to Svalbard to Russia to Denmark and points in between. The last time the nordic countries hosted an IGC was in 1960.

The organizers are expecting about 4000 oral presentations and about 200 posters, so it's a BIG meeting! I will be representing UB at the congress, having organized a symposium, "Earth Ethics II: The Earth sciences and sustainable world cultures" in which I'll present a talk "Earth systems and humans: Is our future sustainable?" I'll also be presenting papers in two other sessions with tiles "Earth ethics: reaches how far?" and "Earth system geoscience education: How broad?"

Those of you who were associated with the department in 1970-72 may remember **Tom Paces**. He will be there, coming from Prague, Czech Republic, organizing a symposium and presenting papers in two. Those of you who were around the department in the 80's may remember **Janusz Wasowski**. He will be there with one paper, coming from Bari, Italy, where he now lives and works. Tom will be without his family, but Janusz will have his wife, **Miriam**, and daughter, **Chiara**. **Trond Skyseth** (late 80's-early 90's), who lives and works in Stavanger, Norway, may or may not make it.

Mexican Exchange Students Visit UB Geology

Eliza Calder, Assistant Professor

Photo left to right: Gabriel, Erasmo, Anaid and Rafael

During the summer, UB Geology was fortunate enough to host four visiting students from Mexico, funded through the E-Haz consortium program. We asked the students to introduce themselves and say a few works about their involvement with the program.

Erasmo Edgar Barreto Mejía (University of Colima, Mexico): *"Hi, I am Erasmo Barreto from Colima, Mexico. Currently, I am studying Environmental Science and Management of Risks in the Faculty of Sciences, at the University of Colima; I will begin my second year next August. During this summer I had the chance to take part in the E-Haz fieldtrip in Mexico, to study the Mexican volcanic belt, and now I am visiting the University at Buffalo, supported by the consortium. Here, I am learning volcanology with Dr. Eliza Calder and currently I am involved in the study of the activity of Chaitén volcano in Chile and in the analysis of temperatures of active lava lakes using satellite images. This program not only has given me the opportunity of learning volcanology, but also the nice chance of interacting with the North American culture…. thanks E-Haz."*

Rafael Ortiz Nielsen (University of Colima, Mexico): *"Like Erasmo, I'll begin my second year in the Environmental Science Risk Management program at the University of Colima. I also have the opportunity to participate in the E-Haz course and the fieldtrip to study the Mexican Volcanic belt. I particularly loved the fieldtrip! We visited Popocatepetl, Colima, Nevado de Toluca, Jorullo and Paricutin volcanoes. I am currently visiting University at Buffalo also working supervised by Dr. Eliza Calder.*

I am currently compiling information on the activity of Llaima Volcano in Chile and also learning the analysis of remote sensing images to determine lava lake temperatures. I think this visit is a great opportunity to learn new things, to know another culture, and interact with other people dedicated to the same area."

Gabriel Reyes Alfaro (University of Colima, Mexico): *"I recently finished my degree in Physics at the Faculty of Sciences in Colima, Mexico. Thanks to the E-Haz program, I am now enjoying this 2008 summer at the University at Buffalo and gladly working under the supervision of Dr. Eliza Calder and Dr. Joaquín Cortés in Volcanology. Using time series analysis we are studying rockfalls and pyroclastic flow data from Soufrière Hills Volcano, Monserrat. The main idea is to try to find a possible relationships between the major dome collapses and dome growing activity with precursory data. Finding such relationships will improve our ability of predict major disasters and understand better the volcano. I really like Buffalo and I feel really fortunate to be here. I love the University, I think it is really pretty and has a lot of facilities. Is really nice and easy to practice a lot of different activities, sports, etc., and people is usually very kind. I am really having a great summer here in the States."*

Anaid Pérez Pérez (Universidad Nacional Autónoma de Méjico, UNAM): *"I am just beginning the second year of my MS at UNAM in Mexico, focused on natural hazards. This summer I have had the opportunity to visit the University at Buffalo to learn to simulate lahars using the TITAN2D software, supervised by Dr. Michael Sheridan. My research project is the study of the occurrence of lahars in the SW slope of Colima Volcano. Using TITAN2D, I will be able to identify vulnerable areas that will help to produce hazard maps and evaluate the potential effects of lahars in a future eruption scenario of the volcano. This visit has been useful and informative since I have been learning about the projects at the University and being able to interact with American students and researchers."*

Coral Reef Ecology at UB Geology

Mary Alice Coffroth, Professor

Coral Reef Ecology continues to thrive in the Geology Department at UB through activities both on and off campus. Last fall I traveled to Townsville, Australia to take part in a workshop on "Connectivity and population resilience -- sustaining coral reefs during the coming century." Due to natural and anthropogenic perturbations such as fishing, pollution, disease and climate change, reefs world-wide are in a state of decline. To understand the potential resilience of these fragile systems, it is imperative that we understand how larvae of reef organisms disperse. Can larvae from nearby or distant reefs repopulate degraded reefs? At this workshop we examined both empirical and theoretical approaches to determining how far larvae of reef organisms travel before settling onto the reef in order to provide managers and conservationists with the needed data to design effective Marine Protective Areas (MPA). This summer several of my students and I attended the 11th International Coral Reef Symposium, where I was a co-organizer of a mini-symposium on "Ecological and Evolutionary Genomics of Coral Reef Organisms." The meeting, which occurs once every four years and brings together coral reef biologists and geologists from around the world, was full of interesting science.

At the end of the summer I spent two weeks on the island of San Salvador in the Bahamas where I taught a field course in Tropical Marine Ecology with **Dr. Howard Lasker** (also UB Geology). The class consisted of nine UB graduate and undergraduate students and we all had a great time exploring and learning about the various marine and terrestrial habitats on the island of San Salvador, Bahamas. The course included field trips to the reefs, the mangroves, the seagrass beds, intertidal areas, a fossil reef and a partially submerged cave (Fig. 1).

Back in Buffalo, the lab has been working away on several projects. The overall focus of our work is the symbiosis between reef corals and single-celled algae, called zooxanthellae. These algal symbionts provide the coral with nutrition and enhance calcification making the symbiosis the foundation of the coral reef ecosystem. With funding from the National Science Foundation, I am examining the establishment of the symbiosis in newly settled corals and how the symbiosis changes over time and in response to different environments.

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Figure 1

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Over the past year, in conjunction with the Aquarium of Niagara, Niagara Falls, NY, my graduate student, **Daniel Poland** studied the kinetics of uptake of different strains of symbionts by corals. He reared newly settled corals at the Aquarium and exposed them to different strains of symbionts to determine how symbiont type affects coral growth and survivorship (Fig. 2). Other students in the lab are looking at coral bleaching (the loss of the algal symbionts) and recovery in a long term study being conducted at the Smithsonian Tropical Research Institute in Panama (See **D. Hamilton** in the student research section) and characterizing the population structure of these symbionts among the coral hosts in an attempt to determine connectivity among these algal populations (See **J. Mansfield** in the student research section).

Fig. 2 Newly settled polyps from the octocoral, Briareum asbestinum. Brown color in tentacles is due to the algal symbionts

Going Places with UB's Evolution, Ecology and Behavior (EEB) Program

Howard Lasker, Professor

I'm writing this update from the Gerace Research Centre on San Salvador in The Bahamas. **Dr. Coffroth** and I and 9 UB students are here for our field course in Tropical Marine Ecology. The Bahamas is a living carbonate environment, and our students are quite literally immersed in learning how the organisms and the environment interact and have created the islands and the surrounding platform. San Salvador is a special treat for the geologists as it is one of the few places in the world where you see and feel living stromatolites. We have a great mix of Geology, Biological Sciences, and Evolution, Ecology and Behavior students, and it has been fun watching the geologists and biologists learn from each other. It also is a great opportunity for undergrads to learn what field work is all about.

Once every four years the world's coral reef scientists meet, and earlier this July, I along with over 2000 other scientists attended the 11th International Coral Reef Symposium. The science was exciting and it was great seeing old friends, but updates on the state of the worlds' reefs and the need to act now to save them were sobering messages.

The Bahamas is also the site of my primary research project, a National Science Foundation funded study of the connectivity of octocoral species. Most of the bottom dwelling marine invertebrates produce larvae which float in the water column before settling to the bottom and developing into adults. This is true for both diminutive species that may live for only a year or two and for massive coral colonies, which can grow and survive for centuries. For decades the dogma was that the larvae were widely distributed and that the supply of larvae never affected populations. We now realize that is not the case and that the larvae do not necessarily travel large distances before settling to the sea floor. My project is looking at the rates of larval settlement, the genetic relatedness of populations and combining those data with a high resolution model of oceanic circulation that is being developed by collaborators at the University of Miami. Understanding dispersal is crucial to our ability to predict the resilience of coral reef communities, which are increasingly threatened by climate change and other anthropogenic effects.

Back in Buffalo, in addition to my graduate and undergraduate teaching, I direct the Graduate Program in Evolution, Ecology and Behavior (EEB). The program, now going into its third year, has graduated its first M.S. student and has 16 students enrolled in its M.S. and Ph.D. degree programs. Six of those students are working in Geology faculty labs. I am also one of the Co-Principal Investigators on UB's new NSF funded graduate training program in ecosystem restoration, Ecosystem Restoration through Interdisciplinary Exchange (ERIE). The program which is a truly interdisciplinary effort incorporates faculty from both Engineering and Arts and Sciences departments and has at its focus stream restoration. We have accepted our first group of students including two geologists. The students will be taking courses ranging from the nitty gritty of stream hydrology through to the policy and ethical considerations involved in restoration efforts.

As is the case for everyone in the department it all adds up to a very busy but exciting array of activities.

Bored of Graptolites?

Jörg Maletz, Visiting Assistant Professor

After the frantic days of last summer with a conference on the Ordovician and Silurian Systems in Nanjing (China), at which I presented a number of talks on biostratigraphy, biogeography and evolution of Ordovician graptolites and radiolarians with colleagues from the USA, Argentina and Germany, things got a little quieter and I was able to concentrate on teaching and research. The GSA Meeting in Denver was the next challenge with a presentation by **Jesse Carlucci** on a cladistic analysis of Lower to Middle Ordovician graptolite faunas, and others on biostratigraphy and paleogeography in Scandinavia and on Ordovician ostracod faunas from Québec (Canada).

Jesse Carlucci also presented his research on graptolite evolution and taxonomy at the NEGSA in Buffalo this spring and graduated in May. His work will be featured prominently in the project for a new edition of the Treatise Graptolithina (edited by **Chuck Mitchell**, Buffalo and **Mike Melchin**, Antigonish, Nova Scotia, Canada). The preparations for this project included a ten-day workshop in the Prague Region of the Czech Republic for me, perfectly scheduled for summer 2008. Luckily, Prague is just a few hours by train from Berlin, where I am living when I am not teaching in Buffalo. The NEGSA in Buffalo this spring also led to new territory for me: I led a fieldtrip on Middle and Upper Devonian strata in western New York (thanks to **Bettina Martínez-Hackert** at Buffalo State College, who asked me to organize this trip) - not that I worked that much in the Devonian so far, but I had done fieldtrips for my classes before and I am interested in Devonian microfossils, especially radiolarians. My research is going on in various directions, including taxonomy of Tremadocian graptolites from Korea with post-doc **Hyun Su Cho**, Middle Ordovician graptolites from Argentina (with **Blanca Toro**, Mendoza, Argentina) and Peru (with **Heinrich Bahlburg**, **Cornelia Reimann** and **Michaela Spiske**, Münster, Germany and **Edsel Brussa**, Cordoba, Argentina) and paleogeography and sequence stratigraphy in Scandinavia (with **Sven Egenhoff**, Fort Collins, Colorado).

An exciting project is the recently re-submitted NSF proposal on "Direct Re-Os dating of Ordovician graptolite biozones in Newfoundland" with **Judy Hannah**, **Holly Stein** and **Sven Egenhoff** (CSU Fort Collins, Colorado), for which we had a meeting discussing details in Berlin.

As the geologic time scale relies on correlation of absolute ages with biostratigraphy, it is exciting to be able to directly date fossil material and improve the accuracy and resolution of the time scale with this new method. It is very unusual to be able to directly date fossil materials and to provide fossil age data not only via relative dating and biostratigraphy. Therefore, we have high hopes for this project.

So I am not bored of graptolites yet - but there is so much more in the world to do and so little time …Last semester should have been the last semester for me in Buffalo. Thus, I thought of giving a farewell talk in the Pegrum Lecture Series – great idea – but what to present?

Talking about graptolites or radiolarians, about my interest in biostratigraphy and paleogeography … who wants to know? Thus, I choose a different topic, my favorite fossil group: The Rhinogradentia or Snouters.

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Figure 1: An impression of Prague in July 2008, a very touristy and crowded city.

Figure 2: Judy Hannah (l) and Holly Stein (r) at the Neptun Fountain on Alexanderplatz, Berlin (June 2008).

Figure 3: Judy Hannah (r) and Holly Stein (l) crossing the former border between Berlin (east) and Berlin (west) behind the Reichstag. This is where the Berlin wall was between 1961 and 1989.

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Figure 4: Nasobema lyricum, the Morgenstern Nasobema (based on an original illustration from the book).

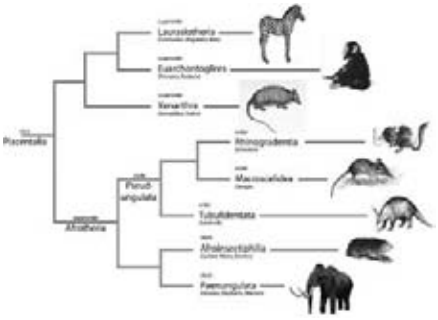

Figure 5: New cladistic diagram of the relationships of the Rhinogradentia (Maletz, unpubl.).

Many of you attended the talk and apparently enjoyed it - For the rest a few notes here:

The Snouters are a fictive group of mammals, created by the German professor Gerolf Steiner to educate his students about evolution. He developed the idea around the scientist Harald Stümpke and his monograph on the Rhinogradentia. The idea was to show how evolution might have acted on a group of rodents(?) in isolation on a distant archipelago. A comparable - but real - example of island evolution would be the Galapagos Islands west of the coast of South America, providing prime examples of allopatric speciation with the Darwin finches, the giant tortoises and others. On the Hi-lay Islands, somewhere in the Pacific Ocean, a strange fauna with primitive mammals developing their noses in various ways for walking and even flying, was found. Unfortunately the islands were destroyed in 1956 by a nuclear explosion and all traces of the faunas were lost. Steiner described and illustrated more than 100 species that evolved on these islands. The Rhinogradentia recently gained more attention and wider distribution through the internet, where hundreds of websites can now be found and even life-like reconstructions of the peculiar animals are provided. The Rhinogradentia even found their way into scientific journals (e.g. Kashkina 2004).

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Stümpke, Harald, Bau und Leben der Rhinogradentia. Mit Vorwort und Abbildungen von Gerolf Steiner. Gustav-Fischer-Verlag, Stuttgart, (1981). ISBN 3-437-30083-0.

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Monitoring Climate Change from Space: Updates from the Remote Sensing Lab

Beata Csatho, Associate Professor

The polar regions have been undergoing dramatic changes during the past few decades. Glaciers in Greenland and Antarctica are accelerating and surface melt increases in the coastal regions. In addition, iceberg calving in Antarctica has increased in frequency, millennia-old floating ice shelves are disintegrating and the sea ice cover of the Arctic Ocean is rapidly decreasing. High latitude terrestrial ecosystems have also experienced dramatic environmental changes, including higher mean annual air temperatures, increasing precipitation, and thawing of permafrost. Our research demonstrate how remote sensing and digital imaging techniques can produce rich datasets needed to investigate these rapid changes in order to understand how the polar regions may respond to future climate changes.

To measure ongoing changes of Greenland and Antarctic glaciers **Drs. Bea Csatho** and **Toni Schenk** continued their research for combining multisensor data from remote sensing, photogrammetry, geodesy and in situ measurements. **Drs. Briner** and Csatho have received a new grant from NSF to link recent changes from historical data with the paleo-record on the behavior of the Greenland Ice Sheet's fastest and most dynamic outlet glacier, Jakobshavn Isbræ, to quantify its sensitivity to temperature change.

Drs. Csatho and Schenk have also received support from NASA to participate in the work of the ad-hoc science team definition team of the ICESat-II satellite. ICESat-II, planned to be launched in 2015, will monitor cryospheric and vegetation changes of the Earth.

Justin Rich (MS student) is examining the current surface conditions of a study area near the Arctic Long Term Ecological Research site at Toolik Lake, Alaska. He seeks to differentiate the surficial geology and geomorphology, largely influenced by glacial activity, as well as ecology of the region. Using an object oriented multi-scale segmentation approach, his study is utilizing Definiens Professional, a remote sensing application which, among other things, allows for fuzzy analysis of data and integration of multiple data types within the same project.

About to start her second year as a MS student, **Heather Stewart** has been staying busy this past summer as a Provant Logger for the UB Field Camp and in Alaska attending Dr. Briner's Advanced Field Methods course. Heather's focus at the moment has been preparing for field work near Ilulissat, Greenland at the Jakobshavn Glacier. She, along with Dr. Briner, Dr. Schenk, and PhD student **Nicolas Young**, are spending more than a month in 2008 summer near the Jakobshavn Glacier, Greenland to core pro-glacial lakes and obtain high resolution GPS data. Being co-advised by Dr. Bea Csatho and Dr. Jason Briner, Heather is privileged to integrate current and recent glacial changes seen in aerial photos and satellite images with glacial changes seen in the lake sediment record. This past year she has successfully presented preliminary results of ice flux changes in the past 20 years at the International Arctic Workshop in Boulder, CO, and at the UB Sigma Xi Research Day; winning first place in the Sigma Xi poster contest.

The Remote Sensing Lab also participated at the IEEE Geoscience and Remote Sensing Symposium, held in July 2008 in Boston. As part of the outreach program **Dr. Taehun Yoon**, a research scientist of the lab, demonstrated ongoing research on 3D visualization. The 3D images and animations presented at the meeting included remote sensing data of the Jakobshavn Glacier, Greenland from NASA and from the Center for Remote Sensing of Ice Sheets, U. of Kansas; a simulation of the Frank landslide, Turtle Mountain, Alberta, Canada modeled by the TITAN software and provided by **Dr. Michael Sheridan**; and remote sensing data of Mono Lake, CA from **Dr. Marcus Bursik**. Viewers were wearing special polarizing glasses, similar to those worn at 3D movie theaters, which allowed them to perceive depth in the images projected on the screen. Future young researchers were dazzled to see evidences of glacier's thinning in 3-D! People from Chester F. Carlson Center for Imaging Science in Rochester Institute of Technology also joined with the Remote Sensing Lab to demonstrate a 3D visualization software of urban sites.
The group has also been active in collecting and sharing remote sensing data of the polar regions. MS student **Justin Rich** with **Jennifer Dexheimer (nee Farino)** and **Melissa Zelazny** (UB geology undergraduate students) was collecting and organizing digital maps, satellite imagery and aerial photographs for a new GIS database of Greenland, which will be used for identifying areas undergoing significant changes during the past few decades. Melissa has also developed a new interactive website featuring Greenland mass balance data, collected by NASA's PARCA project in the 1990s. She will continue her research in remote sensing at UB as a graduate student studying lineaments in central New York State as part of the CO2 sequestration project of **Dr. Bob Jacobi** and Bea Csatho, funded by the NYS Energy Research and Development Authority.

Justin Rich measures the spectra of tundra vegetation by using a field spectrometer, North Slope of Alaska in 2007 – Field course on Soils affected by permafrost, led by Chien-Lu Ping (UAF).

Heather Stewart in Alaska with Mt. McKinley in background, glaciology field trip in 2008 with Dr. Jason Briner.

Melissa Zelazny in Mexico, volcanology field trip in 2008 with Dr. Eliza Calder.

Big Findings in Little Science

Tracy L. Bank, Assistant Professor

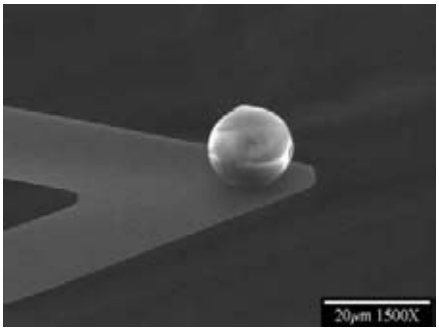

Figure 1: SEM image of silica colloid attached to AFM cantilever.

Several research projects investigating nanoscale forces in geologic and related systems are underway in the new nano(bio)geochemistry lab. **Michael Bower** joined the group in fall '07 and has been studying the forces that stabilize silica and iron oxide colloids in aqueous and non-aqueous systems. These forces are extremely important in understanding the fate and transport of pollutants in the subsurface, as well as in maximizing efficient removal of hydrocarbons from sedimentary systems. Michael is focusing on geologically relevant colloidal systems and he has made the first measurements of colloidal forces in non-aqueous solutions using atomic force microscopy (AFM). He is now working to identify how slight changes in aqueous and non-aqueous geochemistry, such as pH and ionic strength, influences these forces. Michael presented his preliminary results at the Northeastern GSA meeting and will present an update of his results at the regional AAPG meeting in Pittsburgh this fall.

We are also continuing our collaboration with the Department of Oral Biology and **Dr. Giese** in the Geology Department. PhD student **Anja Dosen** is working to determine the nature of adhesion between Aggregatibacter actinomycetemcomitans and tooth and mineral surfaces. The bacterium, affectionately called Aa, is an indigenous oral pathogen that readily forms biofilm on dental surfaces. The biofilm contributes to the formation of plaque and causes localized aggressive gum disease. Using AFM, our collaborative research will determine the mechanism of adhesion of the cell and tooth surface and how that mechanism is possibly changed due to salivary chemistry (yup- spit chemistry!). Data from this study may suggest ways to prevent biofilm formation and, hence, reduce periodontal disease and tooth decay. Anja presented her preliminary results at the Northeastern GSA and will present final results of her study at the upcoming AFM workshop in California.

In addition to AFM, we are currently investigating how the fate and transport of toxic metals are influenced by aqueous chemistry and redox conditions. **Kylah Wyatt** joined the research group in January '08 and has developed a new method of measuring arsenic transport through sedimentary columns. Her research will help us understand the significance of redox conditions and temperature on arsenic transport through porous sediments. We also continue to collaborate with Oak Ridge National Lab and Montana State University in our quest to better understand the relationship between biofilm growth, aqueous chemistry, and bioremediation of uranium. We are excited to welcome two new graduate students to the group in fall '08. Their interests are both in bioremediation of inorganic contaminants and will focus on uranium and arsenic remediation.

Lava Lab Exploding With Students

Tracy Gregg, Associate Professor

The Lava Lab was an exiting place this last year! **Mr. Joel Allen** successfully defended his M.S. thesis in the fall, describing and interpreting the distribution of pedestal craters on and around the Medusae Fosse Formation, Mars. He's spent this summer working for the National Park Service in Bryce Canyon as an interpreter. **Mr. Brett Burkett** also successfully defended his M.S. thesis in the fall. His work concentrated on the strange Hualca Hualca volcano in Peru. Mr. Burkett has accepted a position at Colin Community College in Plano, TX, and began teaching there this fall.

Ph.D. candidate **Ms. Abigail Semple** is now **Ms. Abigail Domagall**, and she successfully completed the oral defense of her Ph.D. dissertation in the spring of 2008. She's currently working on finishing up the written portion of her dissertation requirements, and plans to have that completed before she starts teaching another year at Black Hills State University in Spearfish, SD. Her research on large-volume rhyolite lava flows in Idaho will continue, as she guides her own students to do fieldwork there.

Ms. Emily Laity is balancing a full-time job at a local environmental consulting firm with finishing the writing of her M.S. thesis. She's completed the planned data collection and analyses of the distribution of submarine lava pillars at the Juan de Fuca Ridge and the East Pacific Rise, and now just needs to finish writing the thesis and plans to defend this fall.

M.S. candidate **Ms. Kelly Shockey** joined the lab this year, and is supported through NASA grants to investigate the spatial distribution of basaltic shield volcanoes on Earth, Mars, and the Moon. She'll be joined this fall by M.S. candidate **Ms. Trevelyn Lough**, who will be working on a NASA-funded project to generate the one of the first new geologic map of the lunar surface in over 30 years!

I'm continuing my collaborations with **Dr. Sarah Fagents** (U. of Hawaii) and **Dr. Rosaly Lopes** (Jet Propulsion Laboratory) as we try to put together a text book for advanced volcanology students. Dr. Lopes, **Dr. David Rothery** (The Open University) and I are co-chairing a session on Planetary Volcanism at the upcoming International Association of Volcanology and Chemistry of Earth's Interior (IAVCEI) conference in Iceland.

A great deal of my time over the past year was spent on establishing a new undergraduate research program at UB, called the "Research Exploration Academy." The goal is to provide a living and learning community for undergraduates who are particularly interested in the research opportunities offered at UB. See http://academy.buffalo.edu/ for more information about this effort.

I'm looking forward to a new year, sure to be filled with enthusiastic students and grand adventures!

Rocks, Ridges and Glaciers: The Alaska Field Methods Adventure

Greg Babonis, UB Geology Ph.D. Student

The poet Robert Service claimed "there are strange things done 'neath the midnight sun." I'd say there's nothing strange at all about filling your days with moraine mapping, learning about the past advances of glaciers, bushwhacking miles of alder trees, and hiking hummocky terrain in search of the elusive Rhizocarpon Geographicum; and all of this while keeping roaming bears at bay. This was the daily routine of the Alaska Field Methods course.

On July 3, 2008, 17 students, TA **Nicolas Young**, and **Dr. Jason Briner** trekked 176 miles north from Anchorage, Alaska, to Denali National Park. A 6-hour, 85-mile bus ride later through majestic untamed wilderness teeming with caribou and bears, we stood on miles of dead ice at the foot of the Muldrow Glacier that winds its way down the flanks of Mt. McKinley. From Denali we headed east, across the Alaskan oil pipeline, to the Castner and Worthington glaciers where we learned about tree coring and moraine mapping. All of the field techniques we employed during the trip were put to the test when we visited 27-Mile Creek Glacier. There, we were split into two groups to explore and map the extent of the Little Ice Age advances of the 27-Mile Creek Glacier, which have never been mapped before. On the last day of the journey we drove back to Anchorage, stopping at the Matanuska Glacier and Wrangell-St. Elias National Park (home to a glacier larger than the state of Rhode Island). That evening, we toasted a successful journey, and went our separate ways back to Buffalo.

Student involvement was an extremely important part of the Alaska Field Methods course, not only in the classroom but also in the field. Graduate and undergraduate students, alike, prepared for the field portion of the course by researching and giving presentations on topics of Alaskan geology and glacial geology. In the field, students led demonstrations and discussions on techniques useful to understanding glacial geology such as lichenometry, dendrochronology, proglacial geochemistry, and subglacial hydrology. The whole trip was equally an opportunity to learn from the glacial geology expertise of Dr. Jason Briner and to learn from each other as we explored, mapped, and studied glacial environments in Alaska.

Mt. McKinley, Alaska.

Group photo at Denali National Park.

Eruption Forecasting for the Masses

Sara Hanson-Hedgecock, UB Geology MS Student

Understanding the eruption history of a volcano is important in forecasting future eruptive behavior and hazards. At Pinatubo, the record of ignimbrite deposits from repeated, large explosive eruptions indicated that the repose time between eruptions decreased through time and that the volcano was due for another ash-flow event from the central vent. In volcanic chains and fields, with a more complex eruptive history and no central vent, determination of eruption patterns becomes more difficult. Although eruption patterns can most easily be determined from correlation of tephra beds by their lithologic, mineralogic, and geochemical properties, the collection of enough data for analysis is costly and time consuming.

Dr. Marcus Bursik and **Dr. Galya Rogova** have developed an intelligent computer system to correlate tephra layers by using the lithologic and geochemical characteristics of field samples, to aid geologists in interpreting eruption patterns in volcanic chains and fields. The intelligent system is used to define groups of tephra source vents and to correlate tephra layers based on combination of geochemical data and lithostratigraphic characteristics. The data is processed by the intelligent system by a suite of both unsupervised and supervised classifiers, built and combined within the framework of the evidence theory.

The tephra beds of the Mono-Inyo Craters, California, are used to test the ability of the intelligent system for tephra layer correlation. These data were collected by Dr. Bursik and students; **Shannon Kobs, Shannon Burkett, Justin Deming, Stephanie Piil** and **Charles Meyn**. The Mono-Inyo Craters are comprised of craters, domes and flows that extend 40 km northward from the Long Valley caldera to Mono Lake. The volcanic chain is characterized by a variety of magma and eruption types and by migration of the volcanic activity in space and time. The most recent eruption of the Mono Craters occurred between A.D. 1325 and 1365, and is referred to as the North Mono eruption.

Sara Hanson-Hedgecock has been working to develop methods to automatically calculate maps of thickness, lithic and pumice size for each volcanic tephra layer. This spatial information is important in the determination of eruption patterns and is used by the intelligent system classifier to correlate of tephra layers. Integrating the maps and expert knowledge about stratigraphic order of the tephra layers into the classifier improves the lithostratigraphic correlation from 56% to 87% of layers correctly identified. Geochemical data for defining groups of tephra sources are processed by a suit of fuzzy k-means classifiers. Improved clustering results of geochemical data are achieved by the fusion of individual clustering results with an evidential combination method. The intelligent system aids correlation by showing matches and disparities between data patterns from different outcrops that may have been overlooked. The intelligent system produces a useful recognition result, while dealing with the uncertainty from sparse data and the imprecise description of layer characteristics. The intelligent system has proved to be a good tool for pattern classification and matching since it can extract complex patterns and detect trends better than many other pattern recognition methods.

Paleontology—So Much More Than Just Fossils!

An Alumni Profile: Dr. Stephen Hasiotis, MS ’91, BA ‘85

Heather Kornacki, Project Staff Assistant

Science and the study of science, evolves. Particularly over the last decade or so, Science has become increasingly multi-disciplined. Many science programs offer interdisciplinary tracks to broaden a students' knowledge of the subject matter. Take for instance, paleontology – which is thought by non-geologists to be simply the study of fossils. However, those who know better, understand that paleontology is so much more. It's the study of what fossils tell us about the ecologies of our past, about evolution and our place as humans in the world. As such, paleontology draws from and adds to knowledge from many disciplines like anthropology, geology, biology, botany, zoology, ecology, and even computer science. This has lead to the growth of subdisciplines like invertebrate paleontology, vertebrate paleontology, paleoecology, geomicrobiology, paleobiogeography, and on and on. This fall, we sat down with alumnus **Dr. Stephen T. Hasiotis** (known to former classmates as **Zorba**!), Associate Professor of Geology at the University of Kansas, to talk about his perspective of this changing science. Steve focuses on ichnology, the study of trace fossils and trackways, and he uses these in combination with detailed fieldwork, to study key evolutionary events in the history of arthropods and vertebrates. He uses fossil trackways not only to identify trace makers but also to study the ecology and evolution of behavior. Steve received his Bachelor's of Arts and his Master's of Arts degrees from UB Geology in 1985 and 1991, respectively and his PhD from the University of Colorado, Boulder in 1997. Explaining his career choices, Stephen said, *“UB Geology really prepared me well for a future in which I had no idea what I wanted to do. I remember coming to the University at Buffalo as a senior or junior in high school to see what the department was all about and thought this is gonna be a great place! I thought I wanted to be a petroleum geologist; I wanted to work on an oil rig – I never thought I'd become a professor.”* But, in 2001, Hasiotis took an assistant professor position in the Department of Geology at the University of Kansas and has since moved up the ranks to associate professor.

In 2003, U. S. News and World Report ranked KU's program in paleontology fifth in the nation. We asked Steve what it was like to be part of such a successful program and what he attributes to the program's success. *“Our success is building upon strengths but also maintaining balance and being active. It's not so much the pedigree but the productivity and our interactions with our colleagues across the country and internationally. I think that is why we are such an effective program. We are standing on the shoulders of giants – in particular those giants being **R.C. Moore** [Raymond C. Moore] and his contemporaries.”* KU's Paleontology Program is studied through multiple departments, including the Geology Department and Ecology and Evolutionary Biology Department, with research also conducted in other disciplines, such as Anthropology. We asked Hasiotis what his thoughts were regarding on such a multi-disciplinary program *“This creates students who are going to be well trained or better trained to deal with future issues in paleontology and understanding new frontiers like the deep oceans, deep earth, or potential life on extraterrestrial bodies – Mars and the moons of Jupiter. I think this strengthens our programs because of the selection of courses under the guise of other departments yet with a focus in particular strengths. The down side is the students are split up in so many departments our program can be underestimated.”*

Picture 1: Dr. Stephen Hasiotis, MS ’91, BA ‘85.

Picture 2: Hasiotis at Cabin Peak Mountain.

Picture 3: Hasiotis and his colleague in Alaska.

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Picture 4: Hasiotis and his "famous" crayfish tank when he was studying at UB Geology.

Joe Maxwell MA '87, BA '84 and Steve Hasiotis in 1986.

An important component to the Paleontology Program at KU is the Paleontological Institute. The Institute is home to the *Treatise on Invertebrate Paleontology* and serves as a clearinghouse for the world's taxonomy of invertebrate paleontology as well as ichnology and some of the micropaleontology. R.C. Moore, the project's founder, imagined the *Treatise* as ultimately comprising three hefty volumes with a total of some 3,000 pages. The *Treatise*, expanding fifty years beyond Moore's vision, now comprises 49 volumes and involves the work of more than 300 authors worldwide with another dozen or so volumes in various stages of preparation. *"Along with the Paleo Institute and the Treatise…..the KU Paleontological Contributions were created for fast turnaround of papers on invertebrate paleo taxonomy. The Treatise was a place where they didn't put new information but was a summary of taxonomy to date. One of the interesting things about it is people thought that once we had this all together and….. publish what we know about taxonomy, we would have basically taken care of everything and its usefulness would come to an end because we've figured everything out. But here we are in 2008-2009 and we are still putting out new volumes, we are re-doing and updating the taxonomy and we are publishing what we know about the world's taxonomy of invertebrate paleo and micro paleo and we are doing the same thing with trace fossils. So it is a really important part of the department."*

In addition to his teaching duties, Dr. Hasiotis has been serving as co-editor of *PALAIOS*, an international peer-reviewed journal published by the Society of Sedimentary Geologists (SEPM) since 2006. We talked to Steve about his experience as co-editor and asked him how he prepared for such an appointment. Hastiotis explained that as a student, he'd give his advisor, **Dr. Charles Mitchell**, chapters to his thesis work and get them back with pencil marks everywhere and things crossed out. Steve said this was a tremendous learning experience for him, teaching him how to incorporate these changes into his thinking. "*These life experiences from my time at Buffalo to my time at Colorado and then here at KU, really helped prepare me for being the co-editor of PALIOS." He continued, "Our purpose is to make people's research better and present it in a fashion that gives it the highest profile possible."*

Steve's active research projects include using trace fossils to understand the Cambrian radiation, studying the formation of soils, and evaluating the origins and evolution of crayfish and other groups of continental invertebrates. When Steve was a master's student, he used to study active burrows and had a tank of crayfish in his office. Hasiotis recalled, *"I remember coming in the next day and **Bob Jacobi** or **John King** would have corralled my crayfish which had escaped from the tanks overnight and were walking down the hallway."*

We asked Steve how he felt about those times and his studies as UB Geology, and he replied *"I loved my time at UB Geology. It was the program, it was the learning, it was the field trips – I just loved my time there, it was all just so much fun. I love the department and the thing I remember the most was being at the Ridge Lea Campus. We had our own campus, our own building. We had barbeques and picnics there in the parking lot. It was great camaraderie and excellent professors. We had a very balanced, classical education in geology, which really prepared me well for a future."*

We could not agree more about the value of a integrated approach to learning. For instance, our Ecology and Evolution research area ranges from the paleobiology of graptolites to the population genetics of modern coral reef invertebrates. The research foci of our faculty are on studies of marine and aquatic invertebrates and the ecological and evolutionary scale interactions between the environment and morphological, physiological and genetic traits. Most recently we have added an explicitly interdisciplinary graduate program in Evolution, Ecology and Behavior, where students can actually earn a Master's or PhD while working with a consortium of faculty from a broad spectrum of the disciplinary departments at UB, including Anatomy, Anthropology, Biological Sciences, Geology, Psychology, and Geography. The program's goal is to promote interdisciplinary research and education in the study of evolution, ecology and behavior. For more information on this or our other programs, please visit us online at www.geology.buffalo.edu.

UB Geology Alumni Events

OCTOBER, 2007: ***UB Geology Hosted Private Alumni Reception at GSA National.***

On Monday, October 29, 2007 UB Geology hosted a private alumni event in which nearly 30 alumni and friends caught up each other and department faculty over good food and wine. The event was held at the Hyatt Regency Denver, at the Colorado Convention Center.

NOVEMBER, 2007: ***Dr. Mitchell Goes to Houston, Texas***

In early November, 2007, ***Dr. Charles E. Mitchell*** traveled to Houston, TX to visit with alumni and friends from that area. Alumni board members, ***Dr. Gary P. Citron*** and ***Dr. James Douglas Murphy*** graciously agreed to host the event.

MARCH, 2008: ***Conference, Natural Disasters in Small Communities: How Can We Help?***

This past March 29th and 30th the *Center for GeoHazards Studies* hosted its first conference entitled "Natural Disasters in Small Communities: How can we help?"

This meeting provided a forum for experts in science, mathematics, engineering, social sciences, communication and management to share viewpoints on disaster research with their colleagues, students and members of the public. There were 90 participants who came from as far away as Colombia, United Kingdom and Canada and represented 34 institutions, universities, colleges, and businesses.

Participants included many geology faculty, including Dr. Michael Sheridan (Director of the *Center for GeoHazards Studies*), Dr. Marcus Bursik, Dr. Beata Csatho, and Dr. Eliza Calder and Dr. Tracy Gregg. Additionally, many alumni participated in the conference, including Dr. Bernard Hubbard (USGS), as well as many current students. Some of whom can be seen in the picture to the right.

The conference consisted of four sessions with a total of 27 talks, four of which were invited keynote presentations. There were 20 posters by students about their research and projects.

The session's topics were: ***Modeling and Uncertainty in Geohazards, Geohazard Analysis and Management with Remote Sensing and GIS, Case Studies of Hazards, and Health, Communication, and Management***. The conference was videotaped and it will be posted on our website http://www.geohazards.buffalo.edu for everyone to see. A CD with all the conference abstracts was created and it can be obtained by sending an email to geohaz@buffalo.edu. The journal NATURAL HAZARDS has expressed an interest in publishing a special volume devoted to the theme of the conference featuring papers by conference authors. Go to our website for updates on that and many other things happening.

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Figure 1: Poster of the First conference hosted by the Center for GeoHazards Studies.

Figure 2: From left to right: Melissa Zelazny, Leila Marzeki, Gregory Babonis, Sarah Ogburn all Geology students enjoying and talking during one of the breaks.

Figure 3: In for front and from left to right Dr. Renschler from UB, Dr. Kremmens from RIT, and a third man talk during the student poster presentation. In the background you have several students and professors talking in front of the students posters.

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APRIL 2008: ***Alumnus Paul Mayewski Returns to UB to Give Climate Talk and Receive Award***

Dr. Paul M. Mayewski, Director and Professor, Climate Change Institute, University of Maine gave a lecture, "The The Ice Chronicles, Rapid Climate Change, the Importance of Polar Regions, and Implications for the Future" to students, alumni, faculty and friends on April 4, 2008. Mayewski's lecture defined climate and detailed how climate changes, why climate changes an how humans are impacting climate. Mayewski explored whether recent climate change is part of a natural process or in a "new state." Mayewski is a 1964 graduate of UB Geology and has led several major scientific projects including Greenland Ice Sheet Project 2, International Transantarctic Scientific Expedition and the Central Asian Deep Ice Coring, authored more than 300 publications and has been a keynote speaker at as many events. He was this year's recipient of the University at Buffalo Alumni Achievement Award in recognition of his work in polar glacier research. In attendance were Professor's Emeriti: ***Dr. Parker Calkin*** and ***Dr. Dennis Hodge***. Congratulations Paul!

APRIL 2008: ***UB Geology Hosted Private Alumni Reception at AAPG***

On Monday, April 21, 2008, UB Geology hosted a private alumni event in which many alumni and friends caught up with each other and department faculty. The event was held at the Grand Hyatt, San Antonio.

OCTOBER, 2008: ***UB Geology Hosted Private Alumni Reception at GSA National in October 2008!***

On Monday, October 6th from 7:00 PM until 9:30 PM, UB Geology hosted a private alumni event in which alumni and friends were able to catch up with each other and department faculty. The event was held at the Hilton Americas-Houston.

OCTOBER 2008: ***Alumni Advisory Board Member, David Muscalo, Gave Pegrum Lecture on Thursday, October 16, 2008.***

David Muscalo, MA '69, BA '66

David Muscalo, MA '69, BA '66, gave a Pegrum Lecture on why and how he chose to be a geologist, sharing highlights of his career and giving a description of some of the geology found in New Jersey. The Pegrum Lecture Series was established to honor Reginald H. Pegrum, founder of UB's Geology Department. This series is funded in part by the Maurice Crook and Orin Foster Lecture funds. Lectures are free and open to the public. For information on this lecture and others, please visit us online at www.geology.buffalo.edu.

FALL 2008: ***ConocoPhillips To Visit UB Geology to Recruit Students for Summer Internships***

Alumni Advisory Board Member, Paul Basinksi, BA '75, plans to visit UB Geology with colleague Jacek Lupa to give a Pegrum Lecture and interview students for summer 2009 internship positions with ConocoPhillips. Paul will give a lecture "Unconventional Shale Gas Exploration: Paradigms, Paradoxes & Prospectivity," to students, faculty and alumni.

Watch for more upcoming alumni events on www.geology.buffalo.edu and/or through your e-mail!

Geology Alumni Advisory Board Completes Successful First Year

James Douglas Murphy, MA, '72, GAAB Chair

The UB Geology Alumni Advisory Board (GAAB) has had a successful first year of operation. The brainchild of former Department Chair, **Chuck Mitchell**, the concept was further nurtured on the back of a boat in Long Beach Harbor at the 2007 AAPG convention. With encouragement and assistance from **Deb McKinzie**, UB Vice President of Development and **Melanie Buhrmaster-Bunch**, Director of Corporate and Foundation Relations, Chuck enlisted a core of volunteers for the first GAAB meeting which was held on October 1, 2007, at the University. You can see the make-up of the initial Board on the department web site: http://www.geology.buffalo.edu/alumnirelations/advisoryboard.shtml.

The meeting was opened by **Dr. Bruce McCombe**, Dean of the College of Arts and Sciences, who provided the Board with an endorsement from the University and an insight into expected outcomes from the University's perspective. A field trip and lively discussion throughout the afternoon and evening resulted in a grouping of five overall objectives and the formation of committees to manage those objectives. In the interest of brevity, the objectives are only summarized here:

- Program Enhancement
- Development
- Outreach Activities
- Communication
- "Big Stuff"

There was an overarching theme to all of our discussion. As an Alumni Board, the foundation of our efforts and activities is reaching out to Alumni and bringing you back into the UB Geoscience community. UB, and the department specifically, were instrumental in our success and in making us what we are today. There is an extensive network out there just waiting to be reconnected and it is the intention of this Board to be the enabler in that process. You can expect an expanding effort to make contact with you. Don't hit the DELETE button, this is not a fundraising effort, it truly is an effort to rewire the global UB Geoscience network.

Two specific results of the first GAAB meeting involved the Outreach and Development objectives. Chuck Mitchell committed that the department will continue its outreach to alumni by sponsoring receptions at national conventions, such as the AAPG and GSA. Additionally, **Gary Citron** and **Jim Murphy** volunteered to sponsor a Houston, Texas alumni reception/dinner in November, 2007.

As you read this, we will have had a UB reception at the AAPG in San Antonio in April, 2008 and at the GSA in Houston on October 6, 2008. Citron and Murphy pulled off the Houston reception with the able assistance of Chuck Mitchell, **Heather Kornacki** of the Department and Deb McKinzie and Melanie Burmaster-Bunch. All three events were a great success with alums from around the country reconnecting with one another and with the department.

The 2008 AAPG reception was particularly exciting because of the number of attendees and the diversity of their geography and employment choices. There were alums from NY, TX, CA, IL, CT, WV, CO, OK and The Netherlands. Long-lost faces like **John Karlo** and **Sam Koster** materialized and people were reluctant to let the bartender shut down the room. In true UB Geoscience style, we partied on long after the bar closed. We got contact info for everyone and added to our growing network database.

While these outreach events will be an ongoing effort and will continue to be both fun and valuable to the participants, the Board has a larger vision for our contribution to the Department, including:

- Adding to the educational experience of the students, thereby improving and expanding their employment opportunities.
- Enhancing the image of the department with government and industry, focusing on creating greater employment and research funding opportunities.
- On into the future, the "Big Stuff" could include an Endowed Chair, a Study Center and a Speakers Fund.

Most of you know that there have been changes in the department's organization. Chuck Mitchell has survived his sentence as Department Chair (he will need extensive rehabilitation). He is succeeded by **Richelle Allen-King** as Department Chair and **Marcus Bursik** as Associate Chair. Marcus will have primary responsibility for GAAB, although Chuck will continue to buy drinks and provide valuable pontification.

As a final note, none of this will be possible without the active participation and input of all alums. Take a minute and contact other UB grads that you know and encourage them to check in and share their contact information with the department so that we can make them aware of upcoming events. Get active yourself and plan, with the department's help, a local event. In short, help us rewire the network to the mutual benefit of the department, the students and the alumni.

Oh, by the way, there's a pretty good football team playing in Buffalo this season, and they're not just in the NFL.

A Word about Alumni Giving

It's been a year of changes at UB Geology, there is no doubt about that. Our staff offices and classrooms are moving (or by the time you read this, will have moved) from Natural Sciences to Cooke Hall. We've had a change in department leadership, with our first-ever woman chair at the helm! We've added even more new faculty to the department, expanding our programs – and even have said goodbye to some faculty we'll miss. One thing that hasn't changed is our dedication to our students and their success. We're working harder than ever to provide students with a solid academic foundation, offering our top students scholarships and placing more and more into good paying internships so they can gain work experience prior to graduation. This assistance is so important, especially in such tough economic times – and it wouldn't be possible without the support of our dedicated alumni.

This year the department awarded 31 scholarships, totaling more than $19,000. Without your support we would not be able to provide our students with this level of support. In addition to scholarships, gifts from alumni and friends helps us support student field trips - including our outstanding summer field camp program.

Donations to UB Geology

Thank you to the following alumni and friends who have donated to UB Geology since July 1, 2007:
(Reporting on donations received July 1, 2007 – June 30, 2008).

David L. Aloysius
American Association of Petroleum Geologists Foundation
Anadarko Petroleum Corporation
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Harold O. Wolf
Lori A. Zimmerman
Glenn G. Zinter

How I Caught a Break

Sarah Gay, UB Geology Undergraduate Student

It was a particularly bad mid-April day. The pressures of final exams, labs, and projects, finding an apartment, preparing for a month out west, and trying to maintain my schedule at work were mounting, as I am sure any college student can relate to. Then I realized that on top of the cost of field camp itself and the necessary equipment for it, the University wanted its piece as well, and a large one at that, being that field camp is a summer course. I had taken a loan out to cover everything, including a trip to Alaska in July for another class, but overlooked the tuition for Field Camp. Whoops. Looking forward to the next couple months and how much I was not going to be working, I figured my situation was going to get interesting and stressful after I was done with my adventures and was back in Buffalo for the summer.

I then received an ambiguous email, directing me to meet with UB Geology professor, **Dr. Marcus Bursik**. I was informed then that I would receive the Duttweiler Field Camp Award. Along with being relieved at the timing of it, I was, and still am, honored and thankful to receive it. It went right towards paying the tuition for field camp, and it has served as encouragement to keep working hard in my classes. I was also able to enjoy Field Camp more because I wasn't so worried about the financial end of it.

I had a blast at field camp. The people I met were awesome, the geology was fantastic, and I'll never forget the scenery-the west is beautiful beyond words-and so BIG too. I loved every second of it, even the cold and snow in Wyoming (although my spirit was significantly tried). Receiving the Duttweiler Scholarship helped make it more enjoyable, and I'm very glad to have received it!

Sarah Gay, dusted with snow at the Q-Creek Ranch Campsite, 2008.

My Scholarship Stress Reliever

Emily Harper, UB Geology Undergraduate Student

After having the opportunity to attend this year's field camp with help from the Dorothea Duttweiler scholarship, my craving to travel had become a realistic endeavor this summer. While finishing up the spring semester was enough of a challenge itself, the added pressure of figuring out how to pay for field camp, a trip to Alaska, and equipment for all of this, was quite overwhelming. It was a wonderful day when I found out I had received the scholarship; I was honored and grateful. The timing couldn't have been better.

Arriving at field camp I had no idea what to expect. What I found was a rewarding way to put everything I had learned in the past year to practical use. Of course the mapping workload had its stresses and strains, but the whole experience was worth every minute. Making friends with new people, better friends with acquaintances, and learning loads about geology and myself, all while tuning in to the nature of the Wild West was one experience I'm not likely to forget anytime soon. I'm tremendously thankful for having the scholarship make this a reality for me, and thanks to the students, TA's, staff, professors, etc. who made this trip unforgettable and helped me to be a better geologist!

Emily Harper, Field Camp 2008, holds up an arch in Arches National Park.

Alumni Notes
Got Pictures?

UB Geology alumni and friends, we need your help! We're running out of pictures for the "Remember When" section of The EPOCH. If you have pictures from your time at UB Geology, send them to us and we may use them in a future edition of our publication. You may submit them electronically to geology@buffalo.edu, or in hard-copy to: UB Geology, 411 Cooke Hall, Buffalo, NY 14260. Be sure to include a self-addressed, stamped envelope so we can return them to you!!!

We'd like to thank everyone for their information and encourage you to visit the department's Web site at: www.geology.buffalo.edu, where an on-line Alumni Notes section can be found. We encourage you to visit often and communicate with your classmates, friends and professors.

If you have any pictures you would like to include in your alumni update or in the "Remember When" section, please e-mail them to us at geology@buffalo.edu along with an appropriate caption.

Alumni are listed in alphabetical order, by the date of their highest UB Geology degree.

2000s:

Abdi, Laura (BA '08): I finished my course work last spring semester and ascertained a position in my field. It was a long haul for me to graduate, and I'm excited that I did. I would love to give back to the Geology Department if I can, as I tried to make the most of my time participating in research and the geology club. I graduated from UB with a Bachelors in Geological Sciences last May, and ascertained a position in a local environmental, health and safety consulting firm with an office here in Buffalo, NY (we have several satellite offices). Not only am I the staff geologist, but an Environmental and Safety Specialist that also does safety training. This is an interesting facet of my job, because I am flown to various locations in the United States to teach wind power technicians about climbing safety including using the particular equipment (shipped from Europe), the risks of suspension trauma, and working at heights. As geologist I participate in environmental site assessments, geoprobe investigations and classifying soils, and well water investigations. I am actually in the process of developing this aspect of our office – geological investigations. Eventually (hopefully next year), according to NYSCPG (New York State Council of Professional Geologists), geologists will be licensed professionals as engineers already are. I'm putting myself in the position to take this professional exam in a few years (there is an experience requirement of 5 years). I'm proud to be a UB graduate who has a job related to my degree, and who is working locally and nationally to help Buffalo become a better, environmentally friendlier place – and as a woman who is striving to succeed in a male-dominated field.

Bapst, David (BS '07): I hiked the Grand Canyon for a second time!

Bufano, Elizabeth (BS '05): Relocated back to WNY in summer 2007 after 2 years in Syracuse for grad school & employment.

Cary, Adam (BS '03): As of June 2008 I have been employed with Minerals Management Service for 14 months. We are the regulatory agency within the federal government that oversees oil and gas operations in the Gulf of Mexico. We employ geologists that serve in the typical capacities of any private oil company, such as exploration geologists and development geologists. My job is to do a geologic evaluation of lease tracts to determine the value, with a focus on hydrocarbon traps and the resources that could be contained within them. My personal life consists of doing anything and everything to meet new people and establish friendships.

De, Narendra (Baba) (MS '04): Married Korrena McNalley (BA Geology 2000, MA Secondary Education 2002) on 7/06/07 in the Adirondack Mountains. Korrena has just completed her 6th year of teaching high school Earth Science and Historical Geology. Moved to Colorado (near Denver) approximately two years ago. Have two dogs – Tungsten (5 years old) and Mica (2 years old). July 2008 was our first year wedding anniversary – we took a trip to Iceland!

Deming, (Nee: Lugert), Courtney (BA '00): I love working all day to convince kids that being a Geologist is really the coolest career choice ever! While working hard to finally finishing my thesis, I worked at the New York State Museum in the office of the State Oil and Gas Geologist. A very exciting place to be when our state's natural gas exploration was hot. While there, I went back to school to get my certification to teach Earth Science. I'm in my second year at Schalmont Middle School where I teach Earth Science to a group of accelerated 8th graders. Yet another very exciting place to be!! In October 2005 I married Justin Deming another UB Geology Alumni. Our wedding info told of our beginnings as lab partners in Geology 104. I wonder how many marriages start out this way? Like me, Justin has made a slight transition from geology. He now works for the NY State Health Department in their Bureau of Environmental Exposure. We still are in contact with several Alumni, but I look forward to the Epoch each time to hear how everyone is doing!

Domagall, (nee: Semple), Abigail (PhD '08, MS '03): I recently found out I had the tenure-track position here at Black Hills State (BHSU) (in fact on May 9th!) after having taught here twice for a year as a stand-in instructor. I also very recently got married (May 24th) to William Domagall, who is from Rapid City, SD. My family all came to SD from England for the wedding, which was fantastic. Hope all is wonderful at UB!

Ferris, Jeffrey (BA '07): I have recently completed my first year of graduate school at UB's Department of Learning and Instruction. I have recently accepted a position as a Missionary in Japan, teaching English as a Second Language. I will be working through a church teaching English while sharing Jesus Christ's love with them. The commitment is for two years and at the end of those two years I plan to return to Buffalo to seek employment as an Earth Science teacher while finishing my master's degree in education at UB.

Fredrick, Kyle (PhD '08): After recently completing my first academic year of teaching at California University of PA, I look forward to continuing my career here and growing the program from its humble roots. I am leading the first of hopefully many summer field trips this June, where along with 15 students we'll traverse the Colorado Plateau. Personally, my wife and I have enjoyed our move to Pittsburgh, PA and continue to be amazed as we watch our daughter Paige, now a year and half, grow ever more cute and curious.

Kowalski, Paul (BA '03): I completed my Ed.M. through UB's GSE in 2007 and continue to teach Science at Clarence Middle School in my hometown of Clarence, NY. Since 2004, I have taught each science course in grades 6, 7, 8 including Earth Science. In the fall I will be teaching both 6th grade general science as well as a new advanced 7th grade Life/Physical Science course which will better prepare students to take and excel in Regents Earth Science as 8th graders.

Pardy, (nee: Talley) Jennifer (MS '05, BS '03): After graduating in May 2005, my husband and I relocated to the Atlanta area. Since then, I have been employed as a hydrogeologist at Golder Associates, a geotechnical engineering and environmental consulting firm, working primarily on site characterization and groundwater remediation projects. We currently live in Stone Mountain, GA with our 2-year old labrador, Luke.

Pietraszek-Polovich, Jane (MA '02, BA '99): My husband Eric and I will be celebrating our 6-year anniversary in September. Our daughter Evelyn will be three years old in July. We're still in WNY, with no plans to leave. I've been at CRA now for almost seven years, and have worked my way up to project coordinator on several local WNY environmental sites. All is well with the Polovich family and I hope all is well for my classmates, too!

Scarpinato, Frank (BA '07): I work for Erie County Department of Environment and Planning doing indoor air quality. Presently this includes Radon, CO, mold and household hazardous waste. I also handle the CESQG program helping detoxify our school systems and handle small amounts of hazardous waste produced by local small businesses.

Spitzer-List, Tara (MS '04): I have a son who is 20 months old, and am happily employed as an Earth Science Teacher in the Rochester City School District.

1990s:

Adams, Douglas (BA '97): Well, just pluggin' along here on Long Island (somewhat predictable geology-wise) and very busy. Working on my CPESC certification right now and trying to find my way through this fabulous economy. Two boys, 6 and 3 years old, make it all worthwhile. I truly miss my UB days and wouldn't mind hearing from any of you. Hope everyone finds happiness and pauses to smell the flowers and see the boudinage.

Bates, Jeff (BA '91): I was promoted to Professor at Columbus State Community College in June 2007, and graduated with a PhD in Geological Sciences from Ohio State University in December 2007. I reside in Johnstown, Ohio with my wife Suzie and our three children.

Frederick, William (MA '91): I recently passed the AS BOG exams for a professional geologist license in Pennsylvania. It was an interesting experience and made me study all those geologic topics long forgotten. If anyone intends to take the tests, I recommend the "Reg Review" study manuals available online. Have a safe summer field season.

Kim, Jonathan (PhD '96): I'm still working at the Vermont Geological Survey. I've been in Vermont since I left UB in 1996. I'm currently working on projects involving bedrock geologic mapping, naturally-occurring radioactivity in ground water, nitrate contamination of bedrock aquifers, and rock slide mitigation. I still ride my bike, hike, and ski a lot.

Mendes, Michael (BA '97): Got married September 8, 2007 and then traveled to a couple of Hawaiian Islands. We're planning to travel to Portugal and France this summer and will be having our first child New Year's Day 2009.

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Mickler, Patrick (BA '92) and **Staci (nee: Loewy)** (BA '92): We live in southern California where we teach geology at California State University, Bakersfield. Patrick studies the geochemistry of cave deposits for use as proxies for climate change and Staci studies continental tectonic history using radiogenic isotopes and geochronology. We completed our PhD's at The University of Texas at Austin and then spent two years at the University of North Carolina at Chapel Hill as postdocs before moving to California. Along the way we were married, dragging all our friends and family out into the mountains near Lake Placid, NY for a week long celebration. Our latest and most exciting news is the March 2008 birth of our daughter, Sierra Jade Mickler. We very fondly remember our days in Buffalo at the Ridge Lea Campus and would love to hear from any of our classmates.

Waldron, Keith (BA '98): I graduated from the University of Buffalo with a Bachelors Degree in Geology and a Master of Science Degree in Social Sciences (Archaeology). I worked for the US Forest Service in McCloud, California, as an archeological technician (seasonal worker), then got a full-time position with the US Forest Service in Challis, Idaho. I spent six months there then got an opportunity to work with the Bureau of Land Management as the Fire Program Archaeologist, doing archaeology for the Bureaus' Fire and Oil and Gas Program. This is my third year with the BLM and I am enjoying the work. Keeps me out of the office. During the past few months I have been focused on creating a statistical program that hopefully will allow for more accurate archaeological surveys at the landscape level.

Yager, Elowyn (BA '98): After graduating from UB, I moved to California, finished my Ph.D. (on sediment transport in mountain streams), moved to Arizona for a postdoc and am now an assistant professor at the University of Idaho in Boise. Life is good and I am keeping busy hiking, biking, running, gardening, camping and learning about the geology and geomorphology of Idaho. I miss my fellow UB grads so please send me an email (emyager@gmail.com) and say hello!

1980s:

Anzalone, (nee: Kaczanowski), Sandra (BA '84): My degree in Geology from UB and my love for the sciences has sparked the unexpected in my life and career. For 16 years I worked with students in high school as a teacher of sciences. Many of these students had difficulty in school and with learning – but all of them became enthusiastic about science. In my family the same enthusiasm has occurred – one nephew with a degree in Marine Biology and the other with a GeoEngineering degree from CSM. He now works for Ivanhoe as an exploration geologist in Johannesburg.

Bijak, Martin (BA '80): I have been working at Washington Mills for twelve years doing x-ray diffraction.

Economou, Harris (MA '83, BA '81): After graduating from UB I moved to Colorado where I worked as a processing geophysicist. When the price of oil dropped (hard to believe now) I lost my job and made a career change into insurance. I work in State Farm's Fire Claims Department as a company consultant. I have been with State Farm for 21 years. I look forward to hearing about my fellow geology graduates!

Flick, Greg (BA '80): After working nearly twenty years in the consulting business as a geologist and health and safety consultant, I made my last career switch 4 years ago. I now teach 9th graders at a local junior high and I love it. I write and sing songs for class (Continental Drift- "Breaking Up is Hard to Do", Wind erosion - "Dust in the Wind"), and am having the best time of my life. With my wife Susan and daughter Sarah (sophomore in college), we live in Syracuse.

Frank, Bob (BA '89): I was recently in Buffalo (Xmas 2007) and got to drive by the campus/department. All I can say is WOW! Quite a change from the old days at the Ridge Lea Campus, waiting on those cold nights for the single bus to come by...that was never fun. Great to see and hear from (or at least read about) Dr. Mitchell after all these years. A discussion we had over lunch on a field trip in our Geology 101 class (circa 1986) is what got me hooked on Geology, so he'll always be remembered by me for that. It was really nice to hear how the department has grown in the past 15 years or so. As for updates, I just finished my 11th year at CH2M HILL in Tempe, Arizona as a senior hydrogeologist. In addition to my crazy work load, I was recently appointed to the Arizona Department of Environmental Quality's Underground Storage Tank Technical Appeals Panel by Arizona Governor Janet Napolitano. This panel helps resolve technical appeals related to releases and remediation of regulated substances from underground storage tanks. The appointment is for a minimum of 2 years.

Herrenkohl, Mark (BA '85): Since receiving my MS in Oceanography at Old Dominion University in 1988, I have been working in the environmental consulting field specializing in aquatic geochemistry and engineering geology. Earlier this year, I formed my own company (again) working on a variety of environmental cleanup projects for municipal and industrial clients. I have been married for nearly 21 years with 2 children, the youngest is completing her senior year of high school. I enjoy boating, hiking, and horseback riding; all available near my home in beautiful Bellingham, Washington. It would be great to hear from some of my old classmates at UB Geology.

Schmidt, Michael (BA '88): After almost 15 years in environmental consulting, having worked on job sites located throughout the United States and the Caribbean, I joined AIG Consultants as part of the growing field of environmental consulting for insurance companies. In the six years since joining AIG Consultants, the number of consultants working in our program has tripled. I currently manage a group of consultants providing technical guidance and claim oversight on environmental clams ranging in size from small gasoline station releases to some of the largest Superfund sites. I live about an hour north of New York City with my wife, Barbara (a fellow UB grad) and our two girls.

Smith, Stuart (BA '81): MS in Entrepreneurship in May 2008, current member of the Florida Board of Professional Geologists since 2003 where he served as Vice-Chair in 2006, and Chair in 2007.

Stewart, Scott (MA '88): My son, Tristan just turned 18, graduated from high school and started his summer job in a state park. He'll start college in the fall. I've been with the state permitting public water systems since 1988. I've kept up with my martial arts since UB – karate, Aikido and Jujitsu. I have a part time practice as a massage therapist and had a chance to train in Thailand. Vermont is beautiful but lacks fossils!

Talkiewicz, Joe (MA '86): Married with 2 boys, Kieran and Daniel. Traveled internationally to Hong Kong, China, Europe, England and Ireland. 13+ years at the Port Authority Environmental Engineering Design 13+ Division performing asbestos and lead abatement design, soil and groundwater investigations/remediation design, soil disposal, underground storage tank removal, obtain various types of permits including landfill disruption, wetlands, Army Corp., water front development, water quality and soil erosion control and sediment control. Prepare contract documents and design drawings for various Port Authority facilities in New York & New Jersey.

1970s:

Barnes, John (MA '72): was recently appointed Chief of the Pennsylvania Geological Survey's Resource Analysis Section. John has had a lengthy career at the Pennsylvania Survey, having fun working in the laboratory using X-ray techniques and a recently acquired SEM on a wide variety of samples from all across Pennsylvania and sometimes from far beyond. He also helps keep track of the state's industrial minerals industry and enjoys writing both technical and educational publications. He has fond memories of his years at UB as providing excellent training for this career.

Bunting, Jr., Norman (MA '76): Have not kept up with field of geology much in past 30 years; however I hope to do so more in the future.

Hadley, (Nee: Coniglio), Susan (BA '75): Provide prior-art research and library support services to patent attorneys in the Silicon Valley area.

Reade, Larry (BA '76): In addition to 30 years in tool & die work at Ford, raising 4 children, and helping guide the Buffalo Bicycling Club, I've been bicycle racing for 40 years and have won 10 national masters' titles. (Commuted to work on the bike, too.) Geology at UB has made all our travels much more interesting.

Rettke, (Nee Kaplowitz), Phillis (MA '70): I have a new job managing environmental projects for the City of Phoenix (COP).

Spero, Howard (BA '75, BA '75 Biological Sciences): After completing my B.A. at SUNY Buffalo in 1975, I shifted into Oceanography and completed degrees in Biological Oceanography (TAMU) and Biology (UCSB) before deciding to move back into Geology full time. In the late 1980's I spent 3 years as a post-doc in the stable isotope geochemistry lab of Doug Williams at the University of South Carolina, which rounded out my training and gave me the credentials I needed to pursue academic positions in the Geosciences. Given my schizophrenic scientific path through academia, I wasn't surprised when in 1990, I was hired by the Dept. of Geology, UC Davis, as a paleobiologist-paleoceanographer-stable isotope geochemist. The primary focus of my research over the past two decades included experimental research on living and fossil planktonic foraminifera, the development and calibration of geochemical proxies and tracers for paleoceanographic and paleoenvironmental applications and paleoceanographic reconstructions of Quaternary changes in ocean hydrography and air: sea hydrological linkages. In 2006, I accepted a temporary assignment as a Program Officer rotator in the Ocean Sciences Division/ Marine Geology & Geophysics Program at the National Science Foundation. In this capacity, I have been in charge of funding decisions on paleoceanographic and paleoclimatic proposals that are submitted to OCE. I look forward to returning to UC Davis this fall to get back into full time teaching and research.

Tucci, Patrick (BA '74): After 31 years with the USGS, I retired from the federal government in October 2007. Since then I've been busy travelling, getting things done around the house and working with our mineral, fossil, and jewelry business (GEOdyssey). Retirement is highly recommended, although I do miss some of the social interaction with work. I do some work as a volunteer with USGS. We took 2 major trips since retiring: to Ethiopia where I led a small tour group for 2 weeks, and to Ireland where our daughter was spending her junior year at the Univ. Limerick. Also enjoyed spending 2 weeks at the Tucson Gem and Mineral show in February.

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1960s:

Chalcraft, Richard (BA '65): Retired after 23 years with Chevron and 11 years as a college professor. Currently, I'm a Visiting Professor of Geoscience at Colorado State University.

Davidson, John (BA '65): The class of "1964" was one of the best!

Fulton, William (BA '62): I was a varsity boys and girls basketball coach for over 24 years until I retired in 1997. I coached both in Pennsylvania and New York and spent 33.5 years in Public education as a teacher, guidance counselor and coach. A few years ago I was inducted into the Pennsylvania coaches hall of fame in Harrisburg, PA for outstanding coaching achievements. I coached six different high schools in NY and PA. Completing my 24 year coaching career with a 495-210 coaching record and winning 73%. During my years in education from 1964-1997 most of this time I was somehow connected with basketball. After retirement in 1997 I stayed involved in coaching junior high girls and elementary boys for six years. Today I'm still involved in basketball as I do a lot of broadcasting of local teams. After some research I have discovered that from the time I started my involvement in basketball in high school, my 3 years at UB playing baseball/basketball, my 24 years of varsity coaching and several years a junior high and elementary coach and now broadcasting I have spent approximately 48 of my 68 years involved in basketball in some capacity. I received my degree from UB in 1962 in geography/geology. I then achieved my master's degree at St. Bonaventure University in guidance, at the same time I received a certificate in the fields of elementary and secondary administration directing curriculum also from St. Bonaventure. I truly loved my four years at UB and am very glad I chose geography/geology as my career choice. I still have many great memories of these years spent a the old university on Main Street.

Kaldor, Michael (MA '69): Less than two years to retirement!! After 33 years at Miami Dade College I am more than ready to retire, especially since the entire K-University system in FL is about ready to collapse due to lack of funding. But enough of that. For those of you who might remember me but haven't been in touch for the past few decades a little bit of history is needed. I have been in Miami for the past 36 years, 33 at MDC. Of those I spent 20 years as the Dept Chair of Natural Sciences and Mathematics. When the faculty voted in a Union and the administration made the chair position an entirely administrative one, I stepped down and returned to full-time faculty status and became active in the Union. I am now serving as executive vice president of United Faculty and am having a blast "dealing" with the administration. We are presently in negotiations for a new contract so things might get interesting in the next few months. I have been married for 37 years to Kay and have 2 children (Jonathan is in a PhD program in Computer Graphics at Cornell and Lindsay is a first year medical student at Temple). Kay, who will retire the same time I do, works as a program specialist at a middle/senior high school for emotionally disturbed children. Yes her stories are a lot better than mine. Both of us are looking forward to being able to sleep in every day. I would love to hear from anyone who remembers me and wants to contact me. Feel free to contact me at my college E mail address: mkaldor@mdc.edu

Kollatz, Charles (EDM '74, BA '64): Retired form NYSDEC as a Citizen Participation Specialist where he set up public events, appearances and meetings. Currently volunteering at Beechwood Residence.

Muscalo, David (MA '69, BA '66): Currently editing my first novel to be self-published through Lulu®. The novel entitled "Superfund Odyssey: A Soulful Scientific Saga," should be available for purchase online by the end of August 2008. The protagonist is a hydrogeologist who directs and participates in an investigation of an abandoned recycling and land fill facility in New York State. The facility is fictitious but the geology and scientific exploratory methods used as well as the investigatory rationale are authentic. The author has a Homptod to presout scientists as complete human beings in contrast to the stereotyped nerds we are often misrepresented as.

Pawlowski, Walter (BA '68): After teaching for 30 years at North Tonawanda High School – Earth Science, which I hated, chemistry, which I enjoyed, then for may last 14 years, Regents Physics and AP Physics (calculus based mechanics), which I truly loved – I retired in July, 1998. My wife of 40 years, Mary Jane, and I have traveled extensively since our retirement (she also taught for 30 years), visiting more than 30 countries. Each summer I teach a graduate course at Buffalo State College, Physics 510, with the noble goal of helping the many physics teachers in New York State to become better teachers of physics.

1950s:

Gore, John (EDM '64, BA '55): I fondly recalled comradeship between the faculty and students. It was a one to one basis. We had great rapport with Dr. Pegrum and staff. I will never forget the fun we had on outings and field trips and picnics.

Tyburski, Dennis (formerly Tyler) (BA '50): Name changed from "Tyler" back to "Tyburski" family name.

1940s:

Tesmer, Irving (MA '48, BA '46): In 2007, celebrated 50th anniversary of formation of earth science department at Buffalo State College. It began with me as the sole faculty member. Most of the Earth Science teachers in Western New York have been graduates of this department.

2008 Student Honors:

Duttweiler Field Camp Awards:

Alumna **Dorothea Duttweiler** contributed funds to our department to support women studying in the field of geology; specifically to help women attend summer field camp. The 2008 recipients of the $774 awards are **Sarah Gay** and **Emily Harper**.

Pegrum Field Camp Award:

Due to increased donations to our department from alumni and a generous endowment account return, the department felt it was important to expand our support of students attending field camp to include men. This year's recipient of this $774 award is **James Noble**.

Gilbert Jaffe Memorial Award:

This award is intended for a student that excels in the study of marine or environmental sciences. **Sarajane Gomlak-Green** is the recipient of the $750 award for 2008. Buffalo Geosciences Program Coordinator, **Philip Stokes** had this to say about Sarajane, *"A Dean's List student, Sarajane graduates this spring with degrees in Geological Sciences and Japanese. While tackling courses from two challenging majors (and even some from biology), Sarajane served as Outreach Coordinator for the Buffalo Geosciences Program at UB. Helping to run a multi-component National Science Foundation diversity project requires many leadership traits, and Sarajane's professional attitude helped to carry her (and the program) through many unexpected challenges. Always positive, Sarajane was instrumental in helping to motivate and guide her peers in our seemingly endless outreach to the Buffalo Public Schools. Based on her research (and teaching) interests in all things marine, this award is an excellent fit for Sarajane. I foresee only the best in her future endeavors."* Sarajane is pursuing her MA in Geography at the University at Buffalo.

Figure 1: Sarajane Gomlak-Green, 2008 recipient of the Jaffe Award with Dr. Charles Mitchell

Figure 2: Jessica Sperling, 2008 recipient of the Undergraduate Pegrum Award with Dr. Charles Mitchell

Undergraduate Pegrum Award:

The Pegrum Award has been given annually since 1970 to an outstanding graduating senior in the Department of Geology. The 2008 recipient of the $750 award is **Jessica Sperling**.

In addition to outstanding scholarship, the Pegrum award is established to recognize students who exhibit characteristics such as integrity, enthusiasm and willingness to help others and Jessica Sperling exemplifies these characteristics. This past year she was the president of the Undergraduate Geology Club and a member of the Tau Sigma Honor Society. She has worked in **Dr. Richelle Allen-King's** hydrogeochemistry research lab over the last two years and has been an integral part of the project team on a National Science Foundation project. She presented the results of her independent research project that examined the attributes of sediments which control organic contaminant mobility in groundwater at the Northeastern Geological Society of America meeting in Buffalo this past March. She also is a past recipient of the Dorothea Duttweiler Field camp award (2007). Jessica has been accepted with funding into the University of Vermont Master's of Science program where she intends to pursue further study in Geochemistry.

Graduate Pegrum Award:

Thanks to a large donation of close to $140,000 from alumnus **James W. Cadwell**, the Pegrum Fund is now also able to give additional awards to students. The graduate Pegrum Award is given to a graduate student that excels in teaching, research or both. The department was pleased to recognize **Elizabeth Thomas** with a 2008 graduate Pegrum award for outstanding graduate student. In the words of **Jason Briner** *"Simply put, Elizabeth has excelled since she started as a student less than two years ago, both in the classroom and with her thesis research. She has maintained a 4.0 GPA while accomplishing a significant amount of research. Elizabeth has been involved in two field seasons in the Canadian Arctic as part of her research (not easy field work), and one* year stayed after I returned from the field to lead several days of outreach activities in a remote Inuit village. She also took a leadership role in advising two undergraduate students (Noble and Ridgeway) in the field, in the lab, and at a conference in Colorado, where both she and the two undergraduates presented their research. Her MS thesis consists of two manuscripts, one of which is already published and the second of which has just been submitted for publication. Both papers are

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big advances in the field. They utilize climate proxies from lake sediments to reconstruct climate change in the past one to two thousand years. She has also presented this research at a number of conferences locally, nationally and internationally. Elizabeth was granted an NSF graduate student fellowship (of which very few are granted nationally to geoscience students) and also received a grant from the Geological Society of America that was ranked with an outstanding mention (top 20 of 474 proposals submitted that year)."

Figure 3: Elizabeth Thomas, 2008 Recipient of the Graduate Pegrum Award

Pegrum Professional Development Awards:

Since 2001 the department has offered the Reginald H. Pegrum Professional Development Award. This award provides financial support to undergraduate and graduate students for the purposes of attending professional meetings, workshops and other programs that would aid in their professional development. For the 07-08 academic year, this fund supported 19 students totaling over $8,000.

TA top-off scholarships:

In order to attract the best students to our geology graduate program we offer incentives to the top graduate applicants to our program. These scholarships are offered out of the Reginald H. Pegrum fund. For this coming 2008-2009 academic year 5 Pegrum scholarships of $1,200 were awarded to **Deanna Hamilton, Trevelyn Lough, Jessica Ball, Shannon George** and **Melissa Zelazny**.

James P. Owens Award:

This award is given to an outstanding undergraduate or incoming graduate student who has an interest in the fields related to surface and near-surface geology. The 08-09 recipient of this $1,000 award is **Karen Daigler**. Karen is an incoming graduate student for the fall 2008 studying geochemistry under **Dr. Tracy Bank**.

Degrees Conferred
September 2007 - June 2008

Geological Sciences

Bachelor of Arts

Mary Rumpf	Sept-07
Laura A. Abdi	Jun-08
Kimberly A. Garlock	Jun-08
Sarajane B.I. Gomlak-Green	Jun-08
Gerard P. McGroarty	Jun-08
Monica L. Ridgeway	Jun-08
Timothy J. Stringham	Jun-08

Bachelor of Science

Brandon P. Chiasera	Sept-07
Howard H. Melcher	Sept-07
Jason P. Reynolds	Sept-07
Sean T. McGrane	Feb-08
John R. Stadler	Feb-08
Jacqueline M. Bellnier	Jun-08
Ryan B. Morley	Jun-08
Bryan P. Pula	Jun-08
Jessica F. Sperling	Jun-08
Justin C. Starr	Jun-08
Neil C. Terry	Jun-08
Melissa M. Zelazny	Jun-08

Master of Arts

Karen J. Makey	Sept-07
Stephanie R. Piil	Sept-07
Jennifer R. Somerville	Sept-07
Todd M. Joki	Feb-08
Andrew G. Smith	Jun-08

Master of Science

David R. Blood	Sept-07
Shannon M. Burkett	Sept-07
Melissa A. Farley	Sept-07
Tessa L. Krueger	Sept-07
Charles R. Meyn	Sept-07
Joel G. Allen	Feb-08
Kristi L. Belscher	Feb-08
Brett Burkett	Feb-08
Tammy L. Dunlavey	Feb-08
Craig M. McClarren	Feb-08
William J. Stelmack	Feb-08
Jesse R. Carlucci	Jun-08
Jason Szymanski	Jun-08

Doctorate

Adam J. Stinton	Feb-08
Raymond C. Vaughan	Feb-08
Kyle C. Fredrick	Jun-08

Evolution, Ecology & Behavior

Master of Science

Katherine R. Bala	Feb-08

Congratulations to all our new Alumni!

Researching the Dynamics of Coral Algal-Symbioses

Deanna Hamilton, EEB MS Student

My thesis research is on the dynamics of coral algal-symbioses during and following a large scale bleaching event. Corals form a symbiosis with single-celled dinoflagellates which contribute to the coral's nutrition and calcification. Coral bleaching occurs when the symbiotic algae are lost due to stress. The most common stressors that cause bleaching are increased temperature and UV irradiation related to global warming. The project I am working on follows colonies of seven coral species in Bocas del Toro, Panama, directly after the summer 2005 mass bleaching event. Thus far the same colonies have been sampled five times. I will be adding a new data point to the set with a sampling trip to Panama in early September. I will use these samples to analyze a series of questions that together will hopefully provide insight to how the coral-algal symbiosis changes through the stages of thermal stress. To answer these questions I am analyzing algal DNA from the coral samples using a series of molecular techniques.

Using these techniques we are able to track the specific types of symbiotic algae that reside within the corals. Because it has been suggested some types of algae are more resistant to thermal stress than others, these types of studies are important. If some types of algae within any of the coral species followed in this study are more frequent during thermal stress, this might mean that there is adaptive potential of the symbiotic system. Later on in my research we aim to follow the specific abundances of these types of algae too, which will give great new insight into these ecologically important associations.

Connectivity of Coral Hosts and their Algal Endosymbionts among Reefs in the Caribbean

Jillian Mansfield, EEB Ph.D. Student

My graduate thesis work focuses on coral reefs and the unicellular dinoflagellate algae (zooxanthellae) in the genus Symbiodinium that form an endosymbiosis with reef corals and other invertebrates. Corals depend on their photosynthetic zooxanthellae inhabitants for most of their nutrients, and so these zooxanthellae are key to the coral's survival. Today's coral reefs are in danger due to ever increasing sea surface temperatures (SST) caused by global warming, and other anthropogenic affects. If global warming continues, mass coral bleaching events, which is when the zooxanthellae are expelled from their coral host, will continue to happen, and these vital ecosystems may be lost. This is why it's important to study the connectivity between corals and their endosymbiont populations to answer the question will corals and their endosymbionts be able to repopulate areas devastated by coral bleaching events to ensure the survival of these populations? To answer this question, I'm using highly variable (on an individual level) DNA markers (microsatellites) to investigate population

Collecting coral samples in the Florida Keys in the Summer of 2007.

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Pseudopterogorgia bipinnata, the soft coral species I study.

genetics and to study the connectivity or gene flow between populations over small (meters) and large (thousands of kilometers) spatial scales. Specifically, I am studying the endosymbiont populations in the bipinnate sea plume, a soft coral species (Pseudopterogorgia bipinnata) common in the Caribbean, I'm studying the connectivity of symbiont populations along large spatial scales (kilometers) from the Florida Keys and the Bahamas, to Panama, and also over small spatial scales (meters) and different depths within one site (the Florida Keys). I'm interested in the spatial scales at which these zooxanthellae populations become differentiated from one another and the implications this has for the survival of this coral species as global warming and, therefore, coral bleaching threaten these reef ecosystems.

Remember When