SMITH COLLEGE

Department of Geosciences

Newsletter

May, 2011

Greetings from the Chair

Welcome to a new issue of the Newsletter. Thanks again to Bob Burger for getting the Newsletter out for the third year in a row. This will be Bob's last time having to do this as he will be retiring at the end of this academic year.

Bob's retirement is a significant event in the history of the department and I think it is worth taking a moment to reflect on his career and his impact on the department. He arrived at Smith in the fall of 1966 at a time when the field of geology was undergoing a revolutionary change with the emergence of the concepts of plate tectonics. Not all faculty were ready to embrace these new ideas, but Bob was quick to adopt them and include them in his teaching. He introduced a number of new courses including a physical geology course that became legendary. He made it a point to take students in the field. He was, in many ways, responsible for creating the great department that we have become. It was fitting that, through the efforts of John Brady, the department organized a symposium in honor of Bob that featured three former students Maria Honeycutt '95, Kori Newman '03, and Christie Rowe '00. The diversity of their presentations reflected on the wide range of Bob's interests and teaching. He will be hard to replace.

However, we enthusiastically welcome our new structural geologist, Jack Loveless. Jack earned his Ph.D. from Cornell University in 2007 and has just completed a three-year post-doctoral fellowship at Harvard University. His research interests lie in understanding the activity and evolution of plate boundaries and mountain belts. He uses geodetic observations of plate motions collected both with satellites and GPS to measure contemporary rates of crustal deformation. Part of his post-doctoral work is particularly timely, as it involves examining the tectonic stresses in the Japan subduction zone with an eye to understanding earthquake hazards in that region. Jack will be teaching GEO 105 Natural Disasters this fall that will directly incorporate some of this work. In the spring, he will teach GEO 241 Structural Geology and GEO 150 Geographic Information Systems . Jack also grew up in Northampton and was, at one time, Bob's paperboy. Talk about living in a small world!

Another new hire is Marc Anderson. Marc is a full time instrument and technology instructor for the Center for Aqueous Biogeochemistry Research (CABR) that is housed within the department. Marc holds a Ph.D. in chemistry from Kansas University and has experience managing their undergraduate research facility. Although he is a chemist by training, we are rapidly indoctrinating him into the geosciences. He will provide much needed assistance for students and faculty learning to use all the analytical equipment that is being assembled in a suite of three labs on the ground floor of Sabin Reed just down the Hall from Bob Burger's office.

The renovations are now underway and we are all suffering a fair amount of disruption but the project should be completed by the end of the year. Major changes to the department include, a new microscope room, the Spatial Analysis Lab next to the new geomorphology lab, a new lab for John Brady to cook rocks and the CABR, all located on the ground floor of Sabin Reed. It should be a great showcase for the geosciences at Smith.

I know I said we were doing our decennial review last year, but it was delayed a year in order for us to do the search for Jack Loveless. Therefore, once again we are interested in receiving input from you on what you thought was good and bad about your Smith geosciences educational experience. You can send your comments directly to me or to other members of the department. If you want to learn more about what is going on in the department, you can check out the web page at www.science.smith.edu/departments/Geology/. Finally, I hope that you will visit us during reunion or any time that you are in the area. It's always good to see you again and catch up on what's new in your life.

Sincerely,
Bob Newton
Professor and Department Chair

The GEO-STARS and Schalk Funds – A Great Way to Support Geosciences at Smith College

GEO-STARS is an endowed Smith College fund that was initiated in 2009. The endowment yield from this fund is used to support a range of geo-activity extras that require funding beyond what our always tight departmental budget will allow.

A primary goal of the fund is to assist our students with travel and other expenses related to research, field courses, and attending professional conferences. This year, GEO-STARS funds are covering the costs for several majors who are presenting papers to attend the GSA joint northeastern and north-central sections meeting in Pittsburgh. The fund also can be used to support the Departmental Luncheon Seminar Series, enabling guest speakers, students, faculty, and alumnae to share their educational, research, and professional experiences, and can provide support for alumnae social gatherings at annual Geological Society of America (GSA) and American Geophysical Union (AGU) meetings.

Our goal for GEO-STARS is to secure sufficient funds for an endowment yield of $20,000 to $25,000 annually. We are not presently close to that goal, but the fund is growing, and that is encouraging! Gifts to GEO-STARS can be made through the Smith Alumnae Office by designating the GEO-STARS Fund (Smith Fund 544399) as the intended recipient of the gift, or by sending gifts directly to the Department of Geosciences designated for the GEO-STARS Fund. As in the past, gifts also can continue to go the Schalk Fund, established in memory of Professor Marshall Schalk – the yield from this fund is used primarily to support majors attending summer geology field camps.

Should you have questions or further ideas for the GEO-STARS and Schalk Funds, please contact Department Chair Robert Newton. To help keep Smith Geosciences strong and moving forward, support GEO-STARS and the Schalk Fund! Thank you!

Faculty Updates

John Brady

2010-11 has been an exciting year filled with great students, interesting geology, good news, and lots of change. During the summer of 2010, I was a faculty participant in a Keck Geology Consortium summer research project in SW Montana. This year, Tekla Harms, Jack Cheney and I shared the thrills of Proterozoic rocks with six students, including one from Smith and one from Amherst. I also traveled to Greece to prepare for a Global Engagement Seminar with Scott Bradbury from Classics, "Labyrinth to Parthenon: Greek Myth and History in their Geological Context," now scheduled to be offered in May 2012.

Geology in the Field students (Leanna Ross Marans, Naomi Baumann-Carbrey, Caroline von Herrmann, Paula Burgi, and Emma Hall) at Marconi Beach on Cape Cod (October 2010)

At Smith, renovation of Sabin-Reed Hall continues and will soon yield a new Mineralogy, Petrology, Sedimentology classroom complex in SR-101a,b,c,d. We will have an active-learning lecture space with moveable tables in the former Sed lab, and lab space with petrographic microscopes permanently positioned in the former Geomorph lab. The Experimental Petrology lab will move from the basement of Burton to Sabin-Reed first floor just opposite the X-ray lab. Those mixed gases will now have a hood to vent them and there will be other improvements, including more space for safe working.

At GSA in Denver, I delivered the MSA Presidential Address, "Will Mineralogy Save the World?" to an appreciative audience. My MSA duties are much reduced as Past President. No longer on Faculty Council, my administrative duties at Smith still involve planning as a member of the Committee on Mission and Priorities. We have been talking about the financial future of Smith and how to pursue Smith's mission during the next 20 years. My grant proposal to NSF with Dick Briggs in Biology for a new SEM/EDS was approved on the second try, so Dick and I have been shopping much of the year to find the best equipment in our price range. There have been many improvements in the SEM/EDS technology since our last purchase 20 years ago. With the new SEM/EDS, all users will be able to collect great data with little training.

On the home front, Nancy and I have been preparing our house on Henshaw Avenue for sale in anticipation of building a new, smaller, LEED-certified house at the top of Hospital Hill (still within walking distance). This has been a fun, if time consuming, project. The really hard part has been choosing the rocks to use for counter tops!

Mark Brandriss

I've had another very enjoyable year teaching at Smith, where it's always gratifying to see the buzz of activity in the halls and labs of our department. For the last several years I've maintained and updated a large bulletin board in Burton Hall, showing photos of Smith geoscience students engaged in research all over the world. It's an impressive array of projects, taking place everywhere from the labs of the Science Center, to the forests, rivers and marshes of the Northampton area, to the beaches, deserts, and mountains of distant states and other countries. In short: our students are busy, and there's a lot going on.

My own research this year has focused on Scotland, where I'm wrapping up a project on gabbros of the Isle of Skye, and on southeastern Alaska, where I spent a month last summer studying plutons of the Coast Mountain Batholith exposed in the Juneau Icefield. The Alaskan project is part of the Juneau Icefield Research Program, which has been monitoring changes in the region's alpine glacier systems continuously since 1949. Among recent Smithies who've spent field seasons with the program are Marian Kramer ('04) and Marie McLane ('08). They'll be followed by Jenna Zechmann ('12), who'll be taking her turn this summer.

The big news for me this year has been a promotion to Senior Lecturer, after twelve years as (Regular) Lecturer. I deeply appreciate the recognition and am looking forward to many more years of teaching at Smith.

Bob Burger

The 2010-11 academic year is turning out to be one of my busiest ever, but also one of my most enjoyable. Thus, it is just what I hoped my last year before retirement would be like. In the past Fall semester I taught environmental geophysics and natural disasters, both of which had good enrollments with enthusiastic students. This semester I'm teaching structure and GIS and both are going well based on students comments and how much fun I'm having. I couldn't ask for more.

Breccia outcrop at Barton Cove, Turners Falls, MA, which Lily Seidman and Bob Burger believe represents a seismite.

I'm also supervising three Honors students, all of which are engaged in research projects in areas that I've always found fascinating: strain analysis using calcite twins, paleoseismology, and shear sense indicators in ductile shear zones. All three projects are nearing completion, and all three are yielding interesting and useful results. All three Honors students are tired and a bit stressed, but I believe they are feeling good due to the excellent results their work is producing.

All told, this is quite a heavy teaching load, so I've not managed to progress much on my personal professional work, but then there is always next year, which will have no teaching obligations.

As I've been teaching at Smith for 45 years now, I'm actually looking forward to my imminent retirement. It's nice to be leaving with no regrets whatsoever and with an unbelievable number of wonderful memories. I'm not worried about keeping busy however, as I have numerous projects already lined up – more gardening, more traveling, more visits to my sons and their (soon to be) five children, more time to work on my large but substantially incomplete model railroad, upgrading my photography skills, etc., etc., etc.

Ann is fine, is as active as ever (in large part making lists for my attention after retirement) and keeps telling me how wonderful retirement is. Based on what I've seen from observing her and Al Curran, I do believe Ann is right, so can't wait. I'll do my best to stay in touch and not to fade too quickly into the sunset……

Al Curran

I am thoroughly enjoying retirement! Many of my activities this past year were geo-travel related, and I am continuing to purse research and publishing projects on trace fossils, Bahamian geology, sea-level change, and the geology of fossil and modern coral reefs, with emphasis on carbonate areas of the tropics.

There were two big geo-related trips this past year. The first was to France and Spain in late May-early June, with the first stop being Paris. I had always wanted to attend the French Open Tennis event at Stade Roland Garros. When I retired three years ago, the department generously presented me with tickets to a major tennis event of my choice. It took all three years because I was holding out for an opportunity to go to the French Open – 2010 was the year! Jane and I had a great week in Paris, and we then went to Spain where we participated on field trips and I made presentations at the 10th International Ichnofabric Workshop in Lepe, on Spain's spectacular southwestern Atlantic coast.

The second Big Trip was to Brazil and Argentina in late October and November. The primary mission was to attend a South American Ichnological Congress held at Unisinos, a large private university in southern Brazil. I gave an overview talk on carbonates ichnology at the meeting, and we participated on two lengthy field trips. However, it wasn't all geology – we started the trip with our own excursion to spectacular Iguazu Falls, where we explored both the Brazilian and Argentine sides over several days of perfect weather. We interspersed a side trip to Buenos Aires (when there, be sure to go to the Carlos Gardel tango dinner show!) with the meeting and field trips, and ended it all with several great days in Rio on the way home.

We have just returned (3/14/11) after seven weeks in the Bahamas and Florida. The first five weeks were spent on geo-research on Eleuthera (with Bosiljka

Koji Seike and Al Curran with a giant cast from a ghost crab burrow made on East Beach, San Salvador, Bahamas.

Glumac and others) and on San Sal with colleagues from Singapore and Koji Seike, a young Japanese post-doc fellow from the University of Tokyo (see photo). Koji returned to Japan just 10 days before the earthquake and tragic tsunami event. He was working at a Japanese government research pier when the tsunami came in, but fortunately the pier is located south of Tokyo where the strength of the tsunami was not so great. Koji and his colleagues were safe, but his report to me indicated that even there it was a major event and very scary.

Beyond geology, I continue to be involved with the Coral Reef Ed-Ventures program in Belize, along with Professors Paulette Peckol and Susan Etheredge. I enjoyed working in San Pedro with the Coral Ed 2010 team last June, and we have a great team lined up for this summer, which will mark the 12th year of the program. I continue to enjoy tennis, outdoor activities, and visits to Wellfleet, on Cape Cod. Our two grandkids on the Cape and three on the west coast enjoy beating up on me whenever possible!

To all geo alums, when you make a visit to the Smith campus, please take time to drop by the Geo Department. I'm in Burton B-11, and I will be very glad to see you.

Bosiljka Glumac

In 2010-11 I enjoyed my first yearlong sabbatical leave. I decided not to leave Smith for long, but to instead stay near my lab and work on completing several projects. My leave started with a short trip to Croatia where I worked with colleagues from The University of Zagreb, Croatian Geological Survey, and The Croatian Natural History Museum on completing three manuscripts. In the Fall I worked with Maya Wei-Haas '10 on finalizing a paper stemming from her special studies research. I also completed two articles based on fieldwork on Cat Island, Bahamas with Al Curran, Sara Pruss, Sarah Motti '10 and Madeline Weigner '09. In January I enjoyed one week of fieldwork on Eleuthera, Bahamas with Al Curran and other colleagues. This Spring I worked with a first-year STRIDE student Sarah Brisson '14 who is presenting a poster at the Joint NE/NC GSA Meeting in Pittsburgh in March.

I continue active administrative service for various professional organizations: I am the Secretary/Treasurer of the Eastern Section of the Society for Sedimentary Geology (SEPM), and have been selected to be a Co-Chair for the 16th Symposium on the Geology of the Bahamas and other Carbonate Regions in 2012 on San Salvador, Bahamas, and the SEPM Vice-Chair for the 2013 AAPG ACE (American Association of Petroleum Geologists Annual Convention & Exhibition) in Pittsburgh. My next two years will undoubtedly be busy as I take on these additional duties and return to full time teaching and other department and college service.

Bosiljka Glumac on a Holocene carbonate "piperock" cliff, Eleuthera Island, Bahamas, January 2011. The goal of the Eleuthera expedition was to determine the origin of these unusual structures in this rock. Photo by Al Curran.

In addition, I enjoy spending time with my family: Alex (7+; first grade, Smith College Campus School), Yelena (5+; last year of preschool at Smith College Center for Early Childhood Education, aka Fort Hill), and Tony whom most of you know as our former departmental technical assistant (Tony now does full-time computing support for the sciences but keeps involved in many ways with the Geo department). Alex likes to stage perform, ski, swim and to play the flute, soccer, baseball and, of course – computer games! Yelena loves gymnastics, dance and art. She is so ready for kindergarten! We look forward to our summer trip to Europe and especially attending a real Italian wedding on the picturesque coast of Lake Como. Until next year we all send your way our best wishes!

Bob Newton

It is hard for me to believe how fast time is flying by. My daughter Molly is graduating from Bates College in May with a major in environmental studies and a minor in geology. Much to my

surprise, she did her honors thesis in geology on the erosion of Popham Beach in Phippsburg, Maine. Both Jill and I "volunteered" as field assistants and helped collect monthly beach profile data with a total station. Now that was really fun last summer but the beach in winter is another matter. I did find out that

Molly Newton (Mike Retelle in back) explaining how sand circulates at Seawall Beach

you can still get poison ivy even when there is a 2 foot snow pack. Molly, in her infinite wisdom, located one of the benchmarks for the total station in a poison ivy patch and I had to dig it out from under the snow one cold January day and somehow came down with poison ivy a couple of days later. Anyway Molly's project turned out to be very interesting as Popham Beach went through a large erosion cycle beginning a couple of years ago when the tidal Morse River was deflected by a growing spit into Popham Beach. Over a two-year period the beach eroded back about 200 meters, threatening a newly constructed million-dollar bathhouse facility at the State Park. In February 2010 a storm caused a breach in the spit that the river now flows through. With the change in the position of the tidal river, Popham Beach is now accreting the sand from the cutoff spit.

This semester I took the geomorphology course to Popham Beach on our weekend field trip. We stayed at the Shortridge Coastal Research Center – a house owned by Bates College and Mike Retelle, a professor at Bates and Molly came down from Lewiston on Saturday to help lead the trip. The weather was great and everyone had a great time.

The Avery Brook project has moved forward with four students working on a variety of projects. Geoscience majors, Gretchen Ravenhurst and Jennifer McNicholas worked on the chemistry of beaver ponds in the upper part of Avery Brook while two biology majors, Sara Sirois and Yisi Lu examined the genetic fingerprints of bacteria inhabiting the ponds and their sediments. Last summer was fairly dry and the beaver ponds became active biochemical reactors, reducing sulfate and mobilizing manganese. We used the Piccaro isotope analyzer in engineering to determine the stable oxygen and hydrogen isotope composition of the ponds and were able to document how the ponds became isolated from the inlet streams and groundwater. We plan to expand this work this summer with at least four more students doing summer research projects in the watershed.

In the last newsletter I noted how Jill and I had replaced the college bound kids with a second golden retriever (Lilly) who proved to be a bit of a handful. You will be glad to know that Lilly has not changed and has continued to live up to her nickname "Spawn of the Devil". She still eats shoes, remote controls, and anything else she can get hold of. Hopefully by the next newsletter she will have learned to be a nice well-mannered dog but, alas, I think this is unlikely.

The geomorphology class (minus Rebecca who was jogging the 2 miles to the beach) at the entrance to the Shortridge Coastal Research Center where we spent two nights on our weekend field trip.

Sara Pruss

I am now in my fourth year in the Department of Geosciences. This last year has been an exciting one for me, both professionally and personally. My NSF-funded project with Tanja Bosak at MIT and Francis Macdonald at Harvard has been hugely productive, as we discovered the first unambiguous evidence for

microfossil life in Sturtian (~720 million year old) cap carbonates. I returned to work part time last summer after celebrating the birth of our son Ethan in March, and my student Lilly Dalton '12 worked diligently on extracting and characterizing these microfossils. She presented her exciting work at the GSA Annual Meeting in Denver last Fall and is a co-author on our forthcoming publication. In other news, Katie Castagno '12 has progressed on her long-term research project on the Cambro-Ordovician Cow Head Group in collaboration with Matt Hurtgen at Northwestern University, and both she and Lilly will be presenting their results next week at the NE GSA in Pittsburgh.

In other news, I recently appeared in a National Geographic documentary called "Clash of the Continents" which aired during the summer of 2010 on the Nat Geo channel. I filmed this spot amidst Shark Bay stromatolites in western Australia when I was 27 weeks pregnant in December 2009! It was fun to see the program all come together, and we watched it as a department last Fall with a viewing during our Lunchtime talk series.

This Spring, I am enjoying my first sabbatical since arriving at Smith College where I have been spending time writing papers, giving talks, and visiting colleagues in Cambridge and California. I am also very much looking forward to heading out to western Newfoundland in June with two Smith College students, Katie and Monica Rolls '12. In other news, I continue to be involved in the Science Center Committee on Diversity, Five College Marine Sciences steering committee, and Committee for Educational Technology, where I am excited to contribute to Smith College and the Five College community in broader ways.

Amy Larson Rhodes

Hello everyone. Highlights from Amy Rhodes' corner from the 2010-2011 academic year include seeing former geology classmates from the classes of 1990 (their 20th year reunion!) and 1991 during the 2010 Commencment Weekend: Bronwyn Wallace, Sisley Tiernan, Pat Smith, Karen Mullaney Bridges, Rebecca Haney, Lisa Oxboel, and Ann Farrell Han, in addition to other geology alumnae! I hope to see 20th reunion friends soon at the upcoming alumnae reunion!

Past readers of the Geosciences newsletter may remember news of the dedication of Smith's Ada and Archibald MacLeish Field Station, located in the rural area of Whately, Massachusetts, just a short drive from campus. The field station was dedicated in 2008 in honor of former Smith President Jill Ker Conway, who named it after her longtime friends. Archibald MacLeish was a Pultzer prize-winning poet, and both Ada and Archibald were former residents of nearby Conway, MA, both having close connections to the land.

The field station is located on approximately 240 acres of forest and fields, and it connects an important biological corridor within other protected forested municipal and state-owned properties. Geoscience majors have been exploring the property these past few years, and several research projects are related to assessing the potential impact of the Hemlock Woolly Adelgid, an invasive insect that has infested Eastern Hemlock trees in the eastern U.S. Specifically, summer projects have looked at effects of potential forest succession of hemlock trees on nutrient cycling in soils (Stacie Mansen 'AC, Jennifer Ludden '13, Ellen Maley '11, with math major Julie Warren '11) and on forest throughfall geochemistry and quantity (Jennifer McNicholas '10J and JakePecht '12, with engineering majors Salma Mehter '11, and Caitlin Spence '11). These summer science interns, funded by Smith's Summer Undergraduate Research Fellowship (SURF) program, were also part of an effort to construct educational hiking trails on the property. Geoscience major Mary Gowins ('11) authored a geologic interpretation of features on the "Porcupine Trail" for her special studies project this past fall.

Thanks to a generous grant from the Bechtel Foundation, the Ada and Archibald MacLeish Field Station will soon be home to an environmental classroom, where course, student, and alumnae groups can gather and follow up on field expeditions that take place on the property. The architectural plans are almost complete, and the design prioritizes an innovative, sustainable building that is "net-zero" with regard to energy and water consumption, in addition to it being well situated to blend into the surrounding landscape.

This May, I will be teaching one of Smith's new Global Engagement Seminars titled, "Costa Rica at a Cross Roads: Examination of Globalization and Sustainability." Co-taught with Prof. Gary Lehring of the Government Department, this seminar of 14 students will leave for Costa Rica on May

16, 2011, spending time in San Jose, Monteverde, Guanacaste, and rain and mangrove forests on the Pacific coast. The course will examine how Costa Rica's biodiversity, climate, history and politics relate to its changing economies, resource use, conservation practices, and environmental protection. We will be sure to visit Volcan Poàs, and we will be conducting a water quality study within various watersheds. The participating students come from a variety of departments across campus, and they include two geosciences majors (Stacie Mansen 'AC and Lauren Magliozzi '13) and one Environmental Science and Policy Major (Beth Gillespie 'AC) who also happens to take lots of geology classes. Following the 4-week seminar, the students will remain in Costa Rica through August working as interns for a variety of organizations related to the countries' sustainability initiatives. This program is completely funded by Smith College, and we are looking forward to an exciting and fun learning experience!

Geology in the Field students on outcrops of the Portland Fm. along the Connecticut River near the Dinosaur Footprints Reservation (September, 2010).

Student/Faculty Publications

(* denotes Smith student)

*Brisson, S., and Glumac, B., 2011, Sandcracks and sandchips: Experimentally produced sedimentary features in ooid sand and glass beads: Northeastern and North-Central Sections, Geological Society of America Meeting Abstracts with Programs, v. 43(1), p. 134.

*Castagno, K. A., Pruss, S. B., and Hurtgen, M. T., Geochemical analysis of the Cambro-Ordovician Cow Head Group, western Newfoundland, Geological Society of America Northeast Meeting, v. 43, n. 1, p. 90.

Cvetko Tešović, B., Glumac, B., and Bucković, D., 2011, Integrated biostratigraphy and carbon isotope stratigraphy of the Lower Cretaceous (Barremian to Albian) Adriatic-Dinaridic carbonate platform deposits in Istria, Croatia: Journal of Cretaceous Research, v. 32, no. 3, p. 301-324.

*Dalton, L., Pruss, S. B., Bosak, T., Lahr, D. J. G., and Macdonald, F. A., 2010, Microfossils in the post-Sturtian cap carbonates of the Rasthof Formation, northern Namibia, Geological Society of America Abstracts with Programs, v. 42, n. 5, p. 259.

*Dalton, L., Pruss, S. B., Bosak, T., Lahr, D. J. G., and Macdonald, F. A., 2011, A microfossil assemblage from post-Sturtian cap carbonates of the Rasthof Formation, northern Namibia, Geological Society of America Northeast Meeting, v. 43, n. 1, p. 68.

*Durkin, K., *Schultz-Baer, M., Curran, H.A., and Glumac, B., 2010, Recovery of East Beach and Hanna Bay Beach from hurricane Frances (2004-2010), San Salvador Island, Bahamas: The 15th Symposium on the Geology of the Bahamas and other Carbonate Regions, Abstracts and Program, p. 12-13.

Glumac, B., Curran, H.A., *Motti, S.A., *Weigner, M.M., and Pruss, S.B., in press, Polygonal sandcracks: Unique sedimentary desiccation structures in Bahamian ooid grainstone: Geology.

Glumac, B., and *Froneberger, M., 2010, Marble as a potential local source for Yapese Stone Money: Geological Society of America Abstracts with Programs, Annual Meeting, v. 42(5), p. 577.

Glumac, B., and *Betances, C., 2010, Portable handheld X-ray fluorescence (XRF) in provenance studies of Yapese Stone Money: Geological Society of America Abstracts with Programs, Annual Meeting, v. 42(5), p. 577.

Glumac, B., Curran, H.A., *Motti, S.A., *Weigner, M.M., and Pruss, S.B., 2010, Polygonal fractures or sandcracks in ooid grainstones of Cat Island, Bahamas: A unique sedimentary structure formed by desiccation of carbonate sand: The 15th Symposium on the Geology of the Bahamas and other Carbonate

Regions, Abstracts and Program, p. 18-19.

Glumac, B., Curran, H.A., *Weigner, M.M., *Motti, S.A., and Pruss, S.B., 2010, Composition and distribution of sediment along a beach-to-offshore transect at Pigeon Cay, Cat Island, Bahamas: New insights into the formation and deposition of ooids in modern carbonate sedimentary environments: The 15th Symposium on the Geology of the Bahamas and other Carbonate Regions, Abstracts and Program, p. 19.

Glumac, B., Curran, H.A., *Motti, S.A., *Weigner, M.M., and Pruss, S.B., 2010, Polygonal fractures in ooid grainstones of Cat Island, Bahamas: A unique sedimentary structure in carbonate deposits: Joint Northeastern and Southeast Sections, Geological Society of America Meeting, Abstracts with Programs, v. 42(1), p. 168.

Matys, E. D., Pruss, S. B., Lahr, D. J. G., Pruss, S. B., *Dalton, L., Macdonald, F. A., and Bosak, T., 2010, Tubular microfossils from the Sturtian cap carbonates of the Rasthof Formation, American Geophysical Union Fall Meeting Abstracts with Programs.
Lužar-Oberiter, B., Hochuli, P.A., Babić Lj., Glumac, B., and Tibljaš, D., 2010, Climatic cycles recorded in the Middle Eocene hemipelagites from a Dinaric foreland Basin of Istria (Croatia): Geologica Carpathica, v. 61, no. 3, p. 193-200.

Pruss, S. B., and *Clemente, H., in press, Assessing the role of skeletons in Early Paleozoic carbonate production: Insights from Cambro-Ordovician strata, western Newfoundland, in: Laflamme, M., Schiffbauer, J. D., and Dornbos, S. Q. (eds.), Quantifying the evolution of early life: Numerical and technological approaches to the study of fossils and ancient ecosystems, Topics in Geobiology, Springer.

Pruss, S. B., Bosak, T., Macdonald, F. A., *McLane, M., Hoffman, P. F., 2010, Microbial facies in a Sturtian cap carbonate, the Rasthof Formation, Otavi Group, northern Namibia, Precambrian Research, v. 181, p. 187-198.

Pruss, S. B., Bosak, T., *Dalton, L., Lahr, D. J. G., and Macdonald, F. A., 2010, Fossil evidence for life in post-Sturtian cap carbonates of the Rasthof Formation, northern Namibia, American Geophysical Union Fall Meeting Abstracts with Programs.

*Schultz-Baer, M., *Durkin, K., Curran, H.A., and Glumac, B., 2010, Recovery of carbonate sand beaches on San Salvador Island, Bahamas, from damage by hurricane Frances (2004): Geological Society of America Abstracts with Programs, Annual Meeting v. 42(5), p. 109.

*Wei-Haas, M.L., Glumac, B., and Curran, H.A., 2011, Sphenothallus-like fossils from the Martinsburg Formation (Upper Ordovician), Tennessee, USA: Journal of Paleontology, v. 85, no. 2, p. 353-359.

Student/Faculty Research

Axler, Jennifer A. (John Brady) The Formation of Large Garnets in Barton Mine of Gore Mountain, New York (Honors Thesis)

Blonshine, Raquel (Rocky) (Sara Pruss): Comparison of predation rates of two beaches on the Long Island Sound, southern Connecticut (Special Studies Fall 2010)

Brisson, Sarah (Bosiljka Glumac): Sandcracks and sandchips: Experimentally produced sedimentary features in ooid sand and glass beads (STRIDE Research Project and NE/NC GSA, STRIDE and Celebrating Collaborations Posters)

Castagno, Katie (Sara Pruss): Field and geochemical analysis of the Cambro-Ordovician Cow Head Group, western Newfoundland (Special Studies Fall 2010)

Dalton, Lilly (Sara Pruss): Petrographic and laboratory analysis of the Neoproterozoic Rasthof Formation, Okaaru locality (Special Studies Fall 2010)

Durkin, Kate and Schultz-Baer, Mia (Allen Curran): Recovery of East Beach and Hanna Bay Beach from Hurricane Frances (2004), San Salvador Island, Bahamas (Special Studies)

Kennedy, Caitlin and Oates, Kaylyn (Allen Curran): Coral Reef Ed-Ventures 2010, San Pedro, Belize (SURF Project)

Kravitz, Katherine A. (Robert Burger)
Insights Into the Origin of the South Fork

Fault, Wyoming, Using Calcite Strain Analysis (Honors Thesis)

Schultz-Baer, Mia (Allen Curran): Beach Morphodynamics and Post-Hurricane Recovery, San Salvador Island, Bahamas (Special Studies)

Seidman, Lily E. (Robert Burger) Origin of Breccia and Folds in the Turners Falls Formation, Deerfield Basin, Massachusetts (Honors Thesis)

Interstratal breccia in the Turners Falls Formation that constitutes part of the evidence for an origin due to earthquake shaking.

Walker, Alianora (Robert Burger) Exploration of Precambrian Mylonite Zones, Henry's Lake Mountains, Southwest Montana and Idaho (Honors Thesis)

Weigand, Jessica (Sara Pruss): Analysis of Lower Triassic ichnofabrics (AEMES Fall 2010)

Technically Speaking

Mike Vollinger (Technical Services Specialist)
I have survived my first year on the job! I would like to thank all of the people who helped me transition into the position, especially Tony Caldanaro who answered any and all questions for me quickly and most helpfully. I would also like to thank faculty members for their patience and generosity of spirit. Additionally, I had a wonderful group of work-study students who were an invaluable asset. I look forward to working with faculty and the next group of students in the upcoming year.

Ngozi Onuzo beach profiling the "old fashioned way" at Popham Beach.

Geology Club

The Geology Club enjoyed another year together in movie nights, outings, and study breaks and has dedicated some time to administrative aspects of Department life. Highlights included a field trip to Mike's Corn Maze (in the constant view of Mount Sugarloaf, with its striking arkose outcrops) and entertaining encounters for professors (more commonly called "pranks"). In an effort to encourage regularity within the Club, we now meet Wednesdays and Fridays for lunch in Cutter-Ziskind to chat and discuss Club agendas. In a more serious vein, the Club surveyed student experience of the Department and prepared a report for the internal review aspect of the upcoming Decennial Review. Many club members also actively participated in hiring a new Structural Geology professor. During the rest of this semester, we intend to renew the department hat, watch more Magic School Bus and other simultaneously fun and educational productions, and explore local geology.

Geology Graduates

Class of 2011

Jennifer A. Axler
Raquel A. Blonshine
MacKenzie A. Clark
Mary E. Gowins
Caitlin A. Kennedy
Katherine A. Kravitz
Ellen M. Maley
Jennifer L. McNicholas '11J
Kassia M. Rudd
Lily E. Seidman
Kelsea M. Thornton
Alianora Walker

Mineralogy students (Sophie Westacott, Renee Ricci, and Jake Pecht) examining minerals in a Grenville Marble along the Hudson River near Warrensburg, NY.

Alumnae News

Judy Hamilton ('61)
I'm looking forward to my 50th reunion in May. The year I graduated some of the 50-year attendees stayed in Dewey House, and I remember thinking how amazing it was that women THAT OLD could still climb stairs. Well, I'm still climbing stairs and doing many other things besides. Consulting in groundwater geology has been rather slow recently, so I've been substitute-teaching in the Denver Public Schools - anything from ECE to high school, and a number of special ed classes. The very nice thing about being a substitute teacher is that it's one of the few jobs where one can say she won't be workiing for a week, or a month or more, and still have a job to go back to. I'm also on-call for FEMA in hazard mitigation, but fortunately or unfortunately (depending on one's point of view) I haven't had any calls so far except for training.

In my free time I work on my rental houses and occasionally on my own house, garden, and travel as much as I can - a spring trip to England and France with my companion Bill Collins (also a geologist, curently working on some gold prospects) - mainly to see old tin mines in Cornwall and D-Day landing sites in Mormandy. Also with Bill a week in Guanacaste, Costa Rica in Oct, and then in late Oct. a week with my sisters in Sedona,AZ - also several trips to my summer cottages on Lake Michigan. Next Month (March) Bill, my older sister and her husband and I are going on a 14-day cruise from Singapore up the east coast of the Malay penninsula to Bangkok, back to Singapore, and up the west coast of penninsula to Phuket and back to Singapore.

Other activities include a weekly Japanese conversation group and playing the viola in a small folk orchestra.

Sally Stanton Hasted ('67)
I'm still teaching, this time in an inner city school for troubled children. The commute is a killer, but the kids are responding to a "geological approach". Fossils, mineral specimens, early man, continental drift... all hugely exciting. Crystals, they adore. It's the way to get them interested, though sadly it doesn't lead them into a willingness to learn the periodic table in any structured way. Still, "C; that's carbon, isn't it?" is a start.

I am still working, because I must support my husband of 40 years (now 72, and clear of cancer for 5 years), my 103 year old mother, and the family home on the Massachusetts shore which, hopefully, I will inherit someday. I used to want to retire there, and walk the beaches and marshes I've always loved. Now, I fear my support of the place may be no more than a holding pattern, so I can rent or sell when I finally hold the deed, to lay by security for our own golden years. Many women I've spoken with find

themselves in similar circumstances: breadwinner in the "sandwich generation", and saving for their future, too. In our case, we have no children. But my brother is trying to protect his own children's future; and to do so, he is putting a real pinch on us (aka: snatch the valuable house, but pay nothing in). That's more than you probably want to print. But it's the reality of this strange new world, where "survival" means that siblings are pitted against each other, and only the most determined will live to inherit the territory they have both loved in youth. In our financially challenged habitat, where a need for money is the controlling resource, there is room for just one set of sibling-offspring; the rest must slink off and find new places to live, ceding the home range to the winner. Truly, I'm watching natural selection take over from the niceties of when "being a (Smith) lady" meant lunching with one's book club in a tweed suit. Thank God I studied Geology, and not English or Theatre, as my family expected.

I keep looking back to the beginnings of my working life, when the questions were so simple, and always a delight. "Where shall I work?" "In what field: Geology, Environmental, or teach science to eager, interested little people?" When every vacation was a field trip in some way, and there were lovely wild places to explore. Now, towards the end, the rewards are different, but still very real. Last week, one child said "I've just realized: old people know a lot, don't they? You really can teach us about ourselves, can't you?" Well, yes. This time, I was hired because I am old, and have that very experience.

So the needs around us- environment, public education, neglected children- are just the same. And we geological women are here, as we always have been, quietly filling those needs for everyone around us. I'd love to do it all again, beginning with those exciting field trips. But for now, I enjoy browsing the earth science books with (and for) my students (who hate reading), and running my hands and mind over the rocks and minerals I show them. The tales are different, but the technique's ages old: "Once upon a time, in a land now called Africa, in a place called the Olduvai Gorge, there was a race of teeny little beings; and one, we know as Lucy...."

Beth Zigmont Lincoln ('73)
It's my 30th year teaching structural geology (thanks for the inspiration, Bob!) in the geology department at Albion College in Michigan, where I share the job with my husband Tim. He also directs the College's Center for Sustainability and the Environment, and I'm looking forward to my 4th stint as Associate Provost in 2011-12. Our son Sam, who works in IT for a bank, lives about 15 miles away and son Michael, who is an administrator for a commercial real estate company, lives in Virginia. Tim and I are on sabbatical now, so life is good!

Jeannine Perrot ('81)
Not too much has changed career-wise since last year. I'm thankfully still working as a Senior Geoscience Applications Analyst for Paradigm Geophysical. I spent the last year onsite at a major oil and gas client assisting them in their transition from the Landmark suite of geoscience software to Paradigm's. These are always big efforts but in this case very beneficial to exploration and production geoscientists. I enjoy training and mentoring and facilitating other people with their search for oil and gas resources. In this role I don't do any interpretation, but I get to see a lot of seismic data which is fun. Paradigm will release a new version of its software later this year which will be a game changer in this industry, and I just recently moved into a new role where I'll be helping to develop and upgrade some of our training materials. So I'll be doing a lot of technical writing and software testing in the near future. It should be fun as well as challenging. In addition this work, I continue to grow my home-based wellness business (jeannineperrot.com). I appreciate the additional income and the personal health and wellness focus it inspires.

On the home front, my 20-year old son is attending our local Houston community college. I hope he finds a subject and professor who will spark his interest the way you did for me all those years ago.

I was hoping to make it to my 30th reunion this May but the planets didn't align right. I wish everyone well and a splendid reunion celebration.

Donna Whitney ('85)
I'm still having fun as a geo professor at the University of Minnesota, but am looking forward to a sabbatical in Australia (at ANU, Canberra) starting in the fall. Fortunately, my husband has a sabbatical at the same time and in the same place, and our daughter,

Naomi (14), thinks it will be interesting to start high school on another continent. I have a new NSF grant for fieldwork in southern France, and continue to work on projects in Turkey, Norway, and the western US and Canada. I am co-organizing a summer workshop on "Teaching Mineralogy, Petrology, and Geochemistry in the 21st Century", and am happy to see that John Brady has applied to attend!

Elizabeth Moreland ('01)
I am an assistant principal at George Washington Middle School in Ridgewood, NJ. In addition to her administrative responsibilities, she teaches sixth-grade Technology Literacy and eighth-grade Science Literacy & the Web. Most recently, she visited Southeast Asian schools in Cambodia and Vietnam with a group of Ridgewood students, teachers, and parents. Elizabeth is also enrolled in a doctoral program at Teachers College, Columbia University and is waiting to obtain approval for her dissertation
proposal to begin research this spring. Her parents are retired and downsizing, and they refuse to move stored boxes labeled ROCKS to Florida.

Rebecca-Ellen Farrell ('04)
I completed my M.Sc. in Volcanology last May from Univ. of British Columbia and 10 days later moved to Fairbanks, Alaska! My thesis work focused on the Neogene Chilcotin basalts. Using physical volcanology, I reconstructed the emplacement history by defining the volcanic facies architecture in Chasm Provincial Park. In June 2010, I started working as a geologist with the State of Alaska Division of Geological and Geophysical Surveys up in Fairbanks. I am working on the Alaska Quaternary Fault and Fold Database, which will be incorporated into the U.S. Geological Survey's national database of active faults and folds. Soon, I will be switching sections within DGGS, to work with the geophysical surveys of the state. More on that next year! I am enjoying cross-country skiing during the winter and in the summer when I am not in the field; I am either cycling or hiking about in Interior Alaska. I'll be at GSA in Utah this May, and would love to meet up with Smithies. Contact me if you are ever in the area!

Merilie Reynolds ('08)
Not much has changed for me in the last year. I'm still working as an exploration geologist for Barrick Gold in northern Nevada. For six months last year I was on secondment at Goldstrike mine where my chief duty was mapping the open pit walls. The job was a blast and I got to play Ultimate Frisbee regularly in Elko, NV. Other geology-related highlights from 2010 include visiting Danielle Schmandt 09' at Colorado School of Mines, meeting up with Larry Meinert (Smith Economic Geology Professor) at the Geological Society of Nevada Symposium, and a trip to Death Valley. I am currently involved in a prefeasibility project to create a new open pit gold mine and I am hoping I'll get to work on a generative or grass roots project for at least part of this summer.

Please contact me if you're on the market for a job or are thinking about an internship in 2012. I want more Smithies out here!

Jane Didaleusky ('09)
I miss Smith and all the professors. I am currently in my 2nd semester of grad school at the University of Nevada, Las Vegas. My thesis research is interesting, and I want to do so much more than my advisors think is appropriate for a Master's degree. I did conform to their expert and more experienced opinion, and I did trim and revise my research plan and goals.

In the summer of 2009, I did an internship with the USGS in Reston, VA. I wrote a paper (with help) about the ferroalloy industry in north America over the last 120 years.

Sarah Jones ('09)
I was the lone English major in Geo/Arch 112 (Archaeological Geology or Rock Art and Stone Artifacts) class in Spring of 2009. This class really stuck with me and gave me the geology bug. I've been living in New Mexico (my home state) since graduation and have found myself collecting rock samples, taking pictures, and often doing double takes to stare at a particularly fascinating piece of obsidian lying around on a trail. And, after nearly two years of career hopping, ranging from renting cars to financial advising, I have come to realize that I might have chosen the wrong major my first time around. I am now considering enrolling at Colorado State University as a Second Bachelor's candidate and am strongly considering pursuing Geology as my major.

Danielle Schmandt (‘09)
I am in my 4th semester at Colorado School Mines studying under Dr. Murray Hitzman with a thesis project in the Democratic Republic of Congo on the Kamoa Cu deposit. Should be finishing up sometime! I am the Society of Economic Geology student chapter president this year (elected when I was in Africa, so sneaky) and kept busy organizing our SEG team. On a personal note, I ran the Austin Marathon with a good friend this February! It was so hard! We finished top 20% of the whole race and top 10% of all women! I think that is pretty good (maybe not as good as Dr. Meinert but I am happy about it anyway!).

Kristen Rahilly (‘10)
I’ve been thinking about Smith and the geology department there a lot and missing it very much, although it seems like there are so many Smith connections here as it is! Last week I met for coffee with Mary Keskinen, Cheryl Cameron, and Rebecca-Ellen Farrell...all Smith Geo Alums here in Fairbanks! My first year of grad school has been awesome and busy, especially as a TA! My focus at UAF is volcanic hazards and I’ve spent a lot of time looking at satellite images of volcanoes in Alaska and Kamchatka, Russia in order to monitor them for activity with the Alaska Volcano Observatory. So far I can say that Alaska is a very interesting place to live!

Jenny McNicholas filtering a water sample at Avery Brook.

Geology in the Field students surrounding a pegmatite dike at Turkey Hill in Northampton (October 2010).

Late Breaking News

Fulbright Awards

The Department has just learned that two of our graduating geoscience majors have received Fulbright Awards for next year.They are:

Lily Seidman who will be located at the University of Chile in Santiago. Her project title is “Mitigating the Effects of Future Chilean Earthquakes Through a GIS Database”. Lily will work with the Chilean Seismological Service in order to develop a database of past earthquakes that will help highlight areas in Chile that are most prone to future earthquakes. The results of this effort will be given directly to Chilean communities so that they can be as prepared as possible.

Kassia Rudd who will be located at Christian-Albrechts-Universität zu Kiel. Her project title is “Maintaining the Delicate Balance of Tourism and Conservation on a Protected Landscape”. Kassia will use aerial photographs and ArcGIS to delve into the role tourism plays on conservation and coastal protection on Sylt, a German island in the North Sea. Her project will be supplemented by participation in a sand-renourishment study at the Alfred-Wegener Institute for Marine and Polar Research and by volunteer work at a local environmental education center.