

**COLGATE
UNIVERSITY
GEOLOGY DEPARTMENT
ALUMNI NEWSLETTER**

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**Fall Term
2012**



Victor Krivitski '12 6/25/90—8/22/2011 at the rim of the Grand Canyon

A note from the chair,

Department of Geology
12-22-12

Hello from the Ho Science Center! I am writing this during exam week and there is a little snow on the ground; a perfect December day in central New York. There is a great deal to report in this year's newsletter- we do this biennially, so there is a lot of catching up to do. I took over as chair in July from Amy Leventer, who did a great job chairing the department and coordinating our efforts for the past three years. Of course as we all know it is really Jodi McNamara who keeps the department running! They have both made the transition into this job a great deal easier for me. There have been a few changes in the department since the last newsletter. We recently have added a thesis requirement for all Geology concentrators, making required something that many students had been doing already. Currently the way the thesis is structured is that students do summer research, internships, and/or independent research projects during the term which are written-up as a thesis during the spring of their summer year. This is a great experience for the students and has enhanced the feeling of camaraderie of the graduating class, who are all in the senior seminar together. This program has been a lot of work for the faculty to implement and moreover is expensive: more students are doing summer research as a result and going to professional meetings to present their results. This is possible only by our alumni's generous contributions to Geology's discretionary fund and by the endowed funds for summer research. Thank you! I encourage you to look over the amazing list of senior research projects and presentations in the newsletter.

In other news, last year we hosted an external review of the department, which is done by all Colgate departments every ten years or so. The department wrote a massive self-study document and hosted three reviewers: Don Rodbell from Union College, Susan Brantley from Penn State, and Cam Davidson from Carleton College. We had really stimulating conversations with them about undergraduate research and the curriculum, they wrote a glowing report to the administration, and their visit planted the seeds of re-thinking some requirements for the major. Overall the reviewers were pretty amazed by what they saw: the state-of-the-art building, amazing students, and great research being done really impressed them. There are a few other pieces of big news in the department. The first is that Martin Wong was granted tenure and promoted to Associate Professor last year. We also just heard that the Amy Leventer is being recommended for promotion to full Professor. Congratulations go to both! In addition we have had a visiting Assistant Professor in the Department, Jeni McDermott, who just finished her PhD at Arizona State and does tectonic geomorphology work in the Himalaya. With her contribution added to the wide breadth of expertise of the faculty we are able to offer a large and diverse assortment of courses, field trips, and research opportunities for students- in other words we are still providing those experiences that make a Colgate Geology degree so special. Thank you all for your support over the years, and please stay in touch.

With best wishes,



William H Peck
Associate Professor and Chair

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Rich April

Dunham Beldon, Jr. Professor

Things are good with Rich April. Over the past couple of years, since the last newsletter came out, Rich has been working on two National Science Foundation–sponsored research projects, one in the Adirondacks and the other in the central New York area, and he’s finished up a third (with co-PI Michele Hluchy ’81). The two ongoing projects involve mineralogical and geochemical studies of the Critical Zone, defined as the thin “skin” of the earth, from the outer envelope of vegetation (the tree canopy) to the lower limits of groundwater penetration (down to solid bedrock). This zone is important because it supports all terrestrial life on Earth, and the more we know about it, and how it responds to global change and human intervention, the better. Results of

some of this research, which involved several Colgate students, were presented last spring at the meeting of the Geological Society of America (NE), and last summer at the Goldschmidt Conference held in the Czech Republic. Rich continues to work with colleagues at Penn State University on Critical Zone research and recently submitted a co-authored paper on this work to the journal *Geochimica et Cosmochimica Acta*.

Teaching has been fun for Rich - enjoying his students, as always. In addition to teaching mineralogy and geochemistry, over the past two years he has taught courses in x-ray & clay mineralogy, environmental analysis and geochemistry, an acid rain seminar, and a liberal arts core course called Gems. The Gems course examines the origin, history, myths, and lore of diamonds, rubies, sapphires, and emeralds, as well as a score of other precious stones. While teaching the course (mainly to non-science majors), Rich slips in a good dollop of science, as well. Students study the chemical, physical, crystallographic, and optical properties of gems; how they form; and where they are found. They assess the cost — in environmental degradation and human lives — of extracting gems from the Earth’s crust, and read about the brutal history and mysterious ways of the diamond industry. Toward the end of the course students discuss and evaluate New Age claims for crystal healing and crystal power and are given the opportunity to make clear distinctions between science and pseudoscience. Invited speakers, such as the COO of Mikimoto, authors Kevin Krajick (“Barren Lands”) and Tom Zoellner (“The Heartless Stone”), gemologist extraordinaire Wendi Mayerson (’88), and others bring wonderful experiences and stories to the class. As a tangible accessory to this class, Rich designed and now curates a gem display housed in the new Linsley Geology Museum, located in the Robert. H.N. Ho Science Center. Included in the display is a beautiful 20-carat star sapphire, christened the “Colgate Star,” which was donated to the university over 30 years ago. It was locked away in a safe in the bowels of the Administration building until Rich got wind of it and asked if it could be transferred to the Geology Department and displayed in the new museum. It is an old stone - passed down through generations - mined, cut and polished in Sri Lanka, back when the country was still known as Ceylon. Little did anyone know that the son of the donor, who himself was a Colgate grad, would attend Colgate decades later, get to see the stone displayed in the new museum, and graduate as a geology major! We hope you can come visit the museum next time you get back to campus. The Linsley Geology Museum is filled with students, parents and alumni on Homecoming, Family and Graduation Weekends.

With a donation of 75 beautiful fluorescent minerals to the Geology Department from the Schramko Family (Matt ’13 is currently a senior geology major) and a generous monetary donation to the Geology Museum Fund from friends of the department, Rich and Di Keller designed and had built a really cool fluorescent mineral display. The display is located in the exit corridor of the Ho Tung Visualization Lab, which sits atop the Ho Science Center on level 4. Since February 2012, over six thousand people have seen the display. Most are school children who come to campus for a morning or afternoon of science, taking in a show in the Vis Lab, visiting the beautiful new greenhouse

and Geology Museum, and being treated to science demonstrations in physics, astronomy and geology. The fluorescent display is a big hit, and the oooh's and aaaah's that emanate from the Vis Lab corridor are fun to hear when the regular lights are dimmed and the UV light source illuminates the case.

Rich sends his regards to all those who have passed through Lathrop Hall and the Ho Science Center these past years. Lathrop, by the way, is undergoing a complete renovation as this newsletter is being prepared (Fall 2012). The building, when it reopens in December 2012, will be home to Writing and Rhetoric, University Studies and the English Department, as well as the COVE, the Upstate Institute, Off Campus Study, the Fellowships Office and the Dean of the College staff. We all wonder if the Ghosts of Geologists Past will haunt the halls of Lathrop for many years to come. We'll see.

Keep in touch with nature, enjoy life, and have a healthy, happy and sweet New Year! All the very best. Rich.

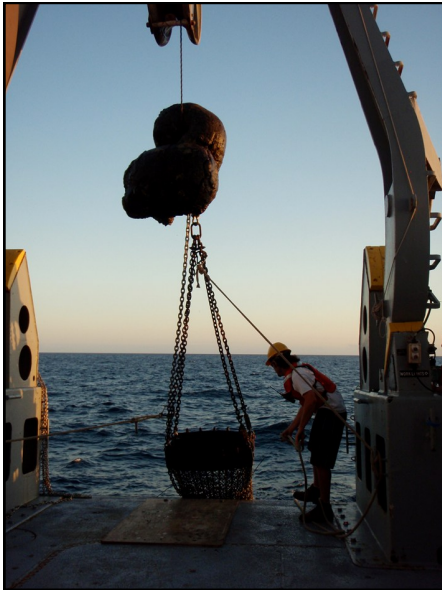


Karen Harpp
Associate Professor

In May, 2010, I was chief scientist on a research cruise that brought 9 undergraduates to the Galapagos Islands for 5 weeks. After a semester of preparing for the trip with a seminar that included marine geologists from across the country, they joined the science crew on the ship dredging samples from the ocean floor and mapping submarine volcanoes, then carried out research on the rocks and data we collected that summer (see the cruise blog that they put together while at sea: <http://galapagos-expedition.blogspot.com/>). All of the students presented their research at the American Geophysical Union conference in San Francisco that fall, and a few students continued their work into the next academic year. This summer, Rita Van Kirk (CU '13) was part of a field team in the Galapagos working on Santa Cruz Island that included grad students from the University of Idaho; she'll be presenting her results at the AGU conference this fall.



The science team on board the Research Vessel Melville at sunset in the northern Galapagos, including Colgate undergraduates Will Cushman, Will Schlitzer, Nick Pollock, Cam McKee, Mike Carbone, Krista Moser, and Caitlin Mello, as well as Colgate geology alumnae Alison Koleszar and Gretchen Swarr, along with scientists from Woods Hole Oceanographic Institution, University of Redlands, University of Idaho, INOCAR (the Ecuadorian ocean research organization), and the Charles Darwin Research Station.



←The very first dredge of the cruise brought in one of the largest pillow basalts collected by dredging, caught on the cable above the actual basket! It weighed over 1700 lbs.



↑Will Schlitzer moves a piece of a pillow basalt from the ocean floor into the lab for processing.



Di Keller
Senior Lecturer

Hello alums. All is well here in Hamilton. I still regularly teach Mineralogy and Environmental Geology labs, and now teach labs for GEOL 190, Evolution of Planet Earth too. On occasion, I also help with other courses that have a significant analytical component such as X-ray and Clay Mineralogy and Environmental Geochemistry.

As always, student researchers continue to keep me very busy throughout the year and even more so now that the department requires all majors to complete a senior thesis. It's great working one-on-one with students on something of mutual interest but senior research is always a

little bittersweet for me because it is followed by a goodbye. But I am left with a sense of pride in what each student was able to accomplish, good memories of the times and laughs we shared, not to mention, a lot of good data. Ah, data. Most recently, Sam Ely '12 studied heavy metal concentrations in fluvial sediments downstream from a chemical plant in Pennsylvania, and Gary Marshall '11, Sarah Lemon '12 and Lauren Frisch '12, completed theses on soil formation in tills overlying Adirondack gneisses and Clinton Group shales. The soil studies were done in association with NSF funding to Rich April, and are part of a large international study being carried out by colleagues at Penn State and the Critical Zone Exploration Network (CZEN). For this research, we were lucky to find a good shale outcrop about 20 miles northeast of Hamilton in a beautiful glen on the property of the Woodhaven Wildlife Sanctuary. Something that has added a special experience to this research has been getting to know Judy and Vinny, who run the sanctuary, and meet a broad assortment of animals that have been rescued and brought there including numerous geese and deer, a few arctic foxes, a baby beaver, and one truly stunning Great Horned Owl. While sampling at the glen, we sometimes look up to find a team of goose 'pit inspectors,' assessing our progress, and Beggar the deer (shown with me above) was a regular field assistant for the first year or so.



In addition to teaching and research, I've enjoyed working on a few new displays for the Robert M. Linsley Museum and a new fluorescent mineral display that is located in the dark exit corridor for the Ho Tung Visualization Lab. It is always so great to see people enjoying and engaged in what they are viewing in the museum and I'm very happy to have had a hand in that.

Outside of Colgate, over the last few years, I have had the amazing experiences of going to Volcanoes National Park in Hawaii and more recently flying over the Aleutians with my good friend, Sally Rothwell '84. Just like when I first saw glaciers on my first trip to Alaska, I was thrilled to set foot in the volcanic landscapes and view active venting. Looking out from the plane while flying back from Dutch Harbor this past summer, it was incredible to think, "Wow, here I am, right above an island arc that I have pointed out so many times on maps!" Of course, I still love the sight of the old neon Syracuse sign at the airport when I return home too.



Amy Leventer
Associate Professor

Colgate's Geology Department continues to provide me with great opportunities to teach interesting courses. Over the past few years, in addition to more traditional courses, such as *Oceanography* and *Marine Geology*, I've been fortunate to teach my favorite first year seminar, *Science and Exploration*, in the Core SP program (*Climate Change and Human History*) and to help introduce a new mid-level course, *Paleoclimatology*.

I advised several independent projects involving studies of Antarctic paleoclimate based on marine diatom records, including work with Zora McGinnis ('11), Karen Alley, Alex Crawford and Sam Freccia ('12), Maggie McMullen ('13), Kara Vadman and Allegra Bianchini ('14), and Mikhaila Redovian ('15). Zora is currently in graduate school at Hawaii Pacific University, and Karen and Alex are both at University of Colorado Boulder. I've also worked with several other students on self-designed independent studies including Dana Bohan and Gary Marshall ('11) on Gulf Coast Environmental Change, and John Dow and Zora McGinnis ('11) on Silicoflagellate distribution in the Southern Ocean.

My research in Antarctica continues to be a primary focus, with two recent research cruises to the former Larsen Ice Shelf region, in January-March 2010, and March-April 2012. Both field seasons were part of a recently funded NSF project, *Collaborative Research in IPY: Abrupt Environmental Change in the Larsen Ice Shelf System, a Multidisciplinary Approach – Marine and Quaternary Geosciences*. This project includes Geology colleagues Eugene Domack (Hamilton College), Scott Ishman (Southern Illinois University), Stefanie Brachfeld (Montclair State University), Julia Wellner (University of Houston) and Greg Balco, as well as colleagues with expertise in Glaciology, Ice Core Paleoclimate, and Physical and Biological Oceanography. During our most recent cruise, I was fortunate to be accompanied by Kara Vadman ('14) and Ilona Matulaitis ('10) – for Kara, her first trip to Antarctica, and for Ilona, her second research experience in the Antarctic.

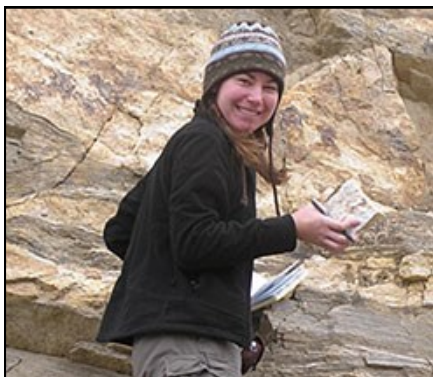


Ilona Matulaitis '10 and Kara Vadman '14 on the RV NB Palmer as part of the Larissa project.

I've just started a new Antarctic project, to study a relatively unexplored and inaccessible region of East Antarctica — the Totten Glacier and Moscow University Ice Shelf — to investigate the reasons for accelerated ice loss there. This project includes Eugene Domack (Hamilton College), Bruce Huber (Lamont-Doherty Earth Observatory), Alex Orsi (Texas A&M University) and Sean Gulick and Don Blankenship (University Texas Austin). We just completed seismic sea trials in Chilean coastal waters, and will have a 46 day cruise in early 2014.

Finally, I continue to enjoy time spent out west teaching the *Geology Off Campus* and *Geology of America's Parks*. I was lucky enough to help (with Dave Linsley) for the final segment of the OC in summer 2012, out in the Seminoes of south central Wyoming and to teach (again with Dave!) Ge-

ology 120 during summer 2011, out in Arizona and Colorado. What better way to spend a week or two, surrounded by beautiful scenery, great rocks (a great day collecting rocks at “BIF Beach” and at the old Bonanza Mine) and wildlife (including horses and a few rattlesnakes!), and great bunch of students? Thanks to all of you for sharing your time with me!



Jeni McDermott

Visiting Assistant Professor

Hi Colgate Alums! In the fall of 2011, I started a two-year visiting position in the Geology Department, moving to central NY from Phoenix, Arizona where recently I finished my PhD (July 2012). My research interests are in understanding how fluvial systems interact with and shape our world, both at the orogen scale through the interplay between surface processes, deformation, and tectonics, as well as at a smaller scale where surface water and groundwater

dynamically interact with our human environment, affecting the quality and availability of water resources while defining the very surface on which we live.

Most recently, my research has focused on understanding the formation and evolution of orogenic systems by exploiting the connection between the form of the surface of the Earth, especially within fluvial systems, and deep Earth processes that drive uplift and deformation. Landforms such as fault systems, river networks, and hill slopes can record evidence of these evolving processes, and the unraveling of an orogen’s history using a combination of thermal, geomorphic, and structural records is an exciting puzzle. While at Colgate, I have had the wonderful opportunity to design courses in the Core curriculum (Earth Resources), introductory courses (Environmental Geology), and now a 200-level course in my favorite topic, Surface Processes and Hydrogeology. Next semester, I am excited about the opportunity to teach a 400-level course in Thermochronology. I feel very lucky to have had the chance to work in such a wonderful environment and have truly enjoyed all my interactions with both the exceptional faculty and the fabulous students!

William Peck

Associate Professor

It has been an exciting two years here since the last newsletter! In addition to just having started as chair of the Geology Department, students and research have kept me pretty busy. This term I am teaching Environmental Economic Geology (Geol 310) and Evolution of the Earth (Geol 190, a new Historical Geology course that we’ve been doing for the last few years). In Geol 310 this year we will be doing class projects on ore suites from the Stillwater deposit, courtesy of Christian Rathkopf (’10) and the Bingham Canyon deposit, courtesy of Kyle Tumpane (’06), in addition to the field trip to the Sterling Hill Zn-Fe-Mn mine in Ogdensburg (NJ).



Research-wise things have been moving along. I recently published a geochronology paper in *American Mineralogist* that deals with zircon growth in the Irving Pond Quartzite in the Adirondacks, with the Chief (Jim McLelland), Ashley Nagle (’05), and Gretchen Swarr (’07). Research in the Adirondacks with Martin Wong and Bruce Selleck has also been very fruitful, resulting in papers in *Geosphere* and *Precambrian Research*.

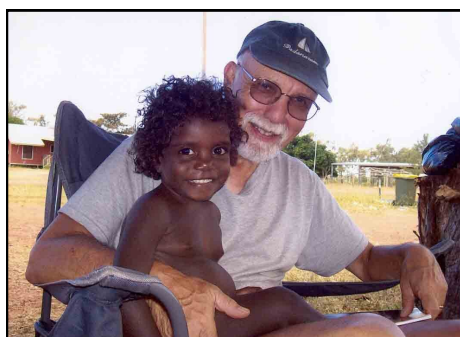
Students working on petrology and isotope geochemistry projects with me have looked at a number of interesting things in the last two years. Julie Wallan (’11) participated in a Keck Geology Consortium research project in the Sierra Nevada Batholith, and worked back at Colgate on deter-

mining the conditions of metamorphism and fluid flow in carbonate roof pendants. Bo Montanye ('12) participated in a Keck project with me in the summer of 2011, and worked on metamorphism in an amphibolite-facies shear zone in the Ontario Grenville Province. Just this summer Max Ephraim ('13) and Caitlin Cunningham ('13) did field work for their theses in Proterozoic rocks of the Colorado Front Range (on days off from the OC), and they are currently working on a zircon vein complex and a metamorphosed regolith, respectively. Matt Shramko ('13) is also working with me this year, on secondary carbonates from the Franklin-Sterling Hill mining district.

Things are going well with the family. Myongsun is still the GIS specialist in the Geography department and is teaching GIS labs fairly regularly now. In the fall Julia just turned three and Henry, who is now in first grade, turned six. We are all gearing up to spend the fall of 2013 in Manchester England, where I will be leading Colgate's study abroad semester.



Julia and Henry Peck examine the Cambro Ordovician Inwood Marble in NYC.



Paul Pinet
Professor

I am currently in Australia with a study group for the fall term. This is quite a privilege for Colgate faculty for a number of reasons. First of all, one is anonymous and so is free to read, think, and write without the sort of day-to-day disruptions that one regularly encounters at their parent university. Also, the newness of one's surroundings allows the mind to think more fluidly and fluently (at least for me). Then, there is the opportunity for travel in a foreign land, in my case within the interior desert landscapes and the lush coastal rainforests of Australia. Finally, the director chooses the Colgate students for the seminar that one will teach at the University of Wollongong. Can there be a better intellectually and emotionally nurturing assignment for faculty than such an opportunity? I think not, given that this study group is my sixth such experience, every one of them important for me in the special ways described above.

Our student trip to the Central Desert during the mid-term break was particularly distinctive. This was my third journey to this remote region of Australia. Over the years, I have written and painted watercolors of Uluru and its surroundings, a region that is singularly sacred to the indigenous people who have lived there for well over 40,000 years. This is where washes of sunshine and moonshine spill onto the barren bedrock and the adjoining vegetated dunes and desert oaks, and by so doing create a singular, glowing landscape that cannot be rendered with mere words and watercolor; they must be seen directly. All of my students agreed that the visitation to the Central Desert was the high point of their many study-group experiences.

During the term, I have focused on reading, thinking, and writing about the accelerated extinction events that are rapidly diminishing the current biodiversity of the Earth. Last spring at a workshop held at Colgate, I met with seven scientists (paleontologists, ecologists) and five philosophers from around the country to try to begin understanding what is actually happening to the biota of ecosystems because of human activity. The workshop was magnificent and intellectually demanding for all participants. Our goal over the next few years is to identify a set of viable strategies that will help mitigate to some significant degree the severity of this ongoing episode of extinction. What are our moral obligations concerning the human-induced ecological cascades that are the result of intentional and unintentional human agency? The crux of the problem, we currently believe, is to

identify the appropriate temporal and spatial scales for the identification and application of both moral tenets (which, I learned, depend on scale!) and preservation/conservation strategies. Rarely do scientists and philosophers engage in this sort of dialogue, and this could only have happened at a liberal art institution like Colgate.

All of these activities have reenergized my teaching and scholarship late in my career as a professor. Soon, I will have finished my book of essays, *Shadowed by Deep Time*. I continue to learn from what I teach, which informs my scholarship; this is an intricate self-organized web of feedback loops that deepen my understanding of the human and natural world, and my place in it.



Bruce Selleck

Harold Orville Whitnall Professor

The saying goes “Once burned, twice a fool” and I guess that sums up last year for me. I spent the 2011-12 academic year as Interim Dean/Provost here at Colgate, something that I did for four years 1990-94. While the job brings certain rewards – getting to know a number of newer faculty outside the sciences – having a hand in major personnel and budget policies – working closely with some wonderful people in the Colgate senior administration

(including Dave Hale, a Colgate Geology Major class of '82), doing it again made me ever more grateful that my regular job is being a geology professor at Colgate. I did manage to teach Geology 302 (Sed/Strat) last fall, and also taught a leg of the OC that included a tourist trip through Yellowstone, and then a week near Flaming Gorge in northern Utah, on the north flank of the Uintas.

Last year I also managed to have two senior research students, Rob Bickhart and Mike Carbone, who worked on the sulfide mineralogy of the Marcellus and Utica Formation shales, respectively. Rob and Mike are currently employed as mudloggers for Selman, Inc., and are working on the Marcellus play in Susquehanna County, PA. I have a couple of continuing research projects in the gas shale area, with seniors Brittany Phillips and Mike Leidl working on the Genesee (upper Devonian) and Marcellus gamma ray logs and outcrop geochemical data. Spencer Staley, also a senior research student, is working on middle Devonian well logs, trying to correlate G.A. Cooper's classic Chenango Valley stratigraphy with the subsurface to the south, into northern PA.

Other stuff going on: Directing Colgate's Upstate Institute for the next three years; Giving lots of local and regional talks about the Marcellus and Utica gas shale developments; Will be heading back to Alaska for field work in summer of 2013; Daughter Caity just got married in late September; Daughter Beth is in St. Louis and just got engaged; Nancy and I are looking forward to leading the Wales study group in spring of 2015. Colgate geo-alums are always welcome to follow my Facebook and Twitter sites.

Constance Soja

Professor

Hello to our alumni in the US and around the globe! I continue to enjoy life at Colgate teaching paleontology and evolution-related courses to geology and non-science students. Thirteen students from my paleontology course last spring took part in a 10-day field course on San Salvador Island, Bahamas. We enjoyed a warm, sunny spring break exploring modern reefs and adjacent ecosystems as well as their fossil (Pleistocene) counterparts. Students returned to campus eager to learn more about the many contributions invertebrate animals have made



to the fossil record and to modern-day ecosystem services. Thanks very much to the Boyce Endowment and the department for support!

During sabbatical last year, I enjoyed attending the World Marine Biodiversity Conference in Aberdeen, Scotland; visiting with Kim Waldron '81 and Hugh Bradford in Edinburgh (Kim is University Secretary and Head of Student and Academic Services at Edinburgh University!); and exploring national parks in South Africa. What a treat to see in the wild many of the mega-mammals I teach about in my Geology 115 course (Evolution: Dinosaurs to Darwin). Sabbatical also made it possible to co-publish research results about Devonian reef-like deposits in Mongolia based on Adam

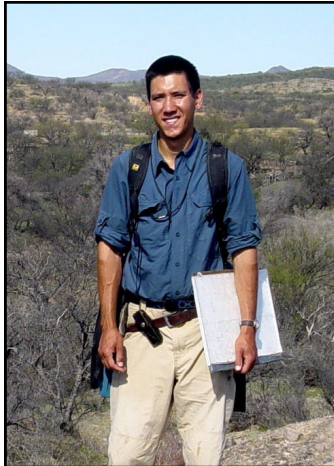


March 2012 field course on San Salvador Island, Bahamas: (A) queen conch on pink sand (*H. rubrum*), (B) first snorkel dive at Dump Reef, (C) studying body and trace fossils at Cockburntown Fossil Reef, (D) boat trip to Gaulin's reef, (E) bonfire after night snorkel, (F) urchins and ophiuroids in Fernandez Bay, (G) last snorkel dive in French Bay, and (H) "pay-it-forward" clean-up exercise that removed > 2000 pieces of plastic, glass, and other junk from East Beach.

Pellegrini's '09 project there. I was also pleased to have a chapter from a book I am writing about the Sixth Extinction published as the cover article in *American Paleontologist*. Alyssa Hausman '08 and Emily Kennedy '11 provided terrific assistance on earlier stages of the book-in-progress. Mike Britton '12 and I co-wrote a new introductory script for the Darwin show in Ho's Visualization Lab and have in process the script for a new 3-D program on dinosaurs to be designed by Joe Eakin, Director of the Viz Lab.

Thanks to Boyce funds, this summer I'll be heading back to southeastern Alaska to evaluate similarities that Devonian redbeds of the Karheen Formation may share with the Old Red Sandstone in the UK. This will be my first chance in many years to examine field sites in Alaska where Colgate students did research in the 1990s–early 2000s. That important work — special thanks to all who were involved! — was a springboard for undertaking research in the Ural Mountains, Siberia, Mongolia, and Australia over the past decade.

Genuine thanks to all who generated interest in — as well as energy and enthusiasm for — the department while at Colgate and in your post-graduate years. Please stop by on your next visit to campus!



Martin Wong
Associate Professor

Hello all and greetings from Colgate! I hope this update finds you all well. Probably the biggest news on my end is that I successfully got through my tenure case this past spring, which was really exciting. What a relief! I'm looking forward to being part of the department and to help to shape its direction for many years to come. Teaching and research are both going well. In addition to teaching structural geology, the tectonics seminar, the OC and a variety of intro courses, I had a chance to teach Geology 120 – Geology of America's Parks this past May. Sixteen students and I had a great time (after our 4–day cross country drive) touring around the west and seeing great geology at classic localities in

Arizona, New Mexico and Colorado.

On the research front, I recently wrapped up and published two research projects in the Adirondacks; one in the Adirondack Lowlands that came out of a Keck project that William, Bruce and I ran a few years ago and the other on a shear zone in the eastern Adirondack Highlands, which is work that I did with the Chief and Justin Kowalkoski ('08). Most of my work continues to be focused out west though. I just submitted the results of an apatite He thermochronology project on the Grayback normal fault block in Arizona, with co-authors Dan Gleason ('11) and Hillary O'Brien ('11). My current research has largely returned to thinking about metamorphic core complexes and I have recently been working in the Harcuvar core complex, AZ, where Sam Jackson ('12) conducted a U-Pb zircon geochronology project, and in the Snake Range, NV, where Casey Portela ('13) along with six other undergraduates and I recently conducted a Keck undergraduate research project. No shortage of fun things to work on! On the personal side, my wife Jen and daughter Olivia are both doing well. Olivia turns six this fall and is starting 1st grade. Time flies! Until the next newsletter update, hope to see you all at Colgate sometime soon!



The Geology Department would like to congratulate Paul Pinet and Karen Harpp for their inclusion in the Princeton Review's "Best 300 Professors", based on surveys & rankings by students. Ten Colgate professors were included in the Best 300 list.

Kevin Williams '11 Memorial Fellowship

Kevin Bradley Williams (July 27, 1988 – October 4, 2010)
Colgate University Geology & Geography concentrations, Class of 2011



The Kevin Williams Memorial Fund has been established to keep Kevin's memory and spirit alive at Colgate. A native of Santa Cruz County, California, Kevin was an upbeat, athletic, curious, friendly, and passionate guy. Kevin loved learning. He loved playing. He loved traveling.

Kevin's love for Colgate and the community was obvious to all who knew him. He raced on the Colgate Alpine club ski team, became captain of the club water polo team, held summer fellowships in Cazenovia with the Upstate Institute, and worked for Campus Safety. Kevin met the love of his life, fellow Colgate student, Kathlin Ramsdell '10, his freshman year. Kevin was on track to graduate with honors in the Class of 2010 with concentrations in Geography and Geology.

Kevin loved to travel. In his junior year, love for earth science and the outdoors led Kevin and Kathlin to spend spring semester studying abroad at the University of Canterbury in Christchurch, New Zealand. Kevin enjoyed his classes there but especially took to exploring New Zealand's geologic and geographic diversity traveling with Kathlin in rental campervans.

Tragically, Kevin was diagnosed with an inoperable brain tumor the fall semester of his senior year at Colgate. He lost his heroic battle with cancer a year later with his family and fiancée, Kathlin, at his side.

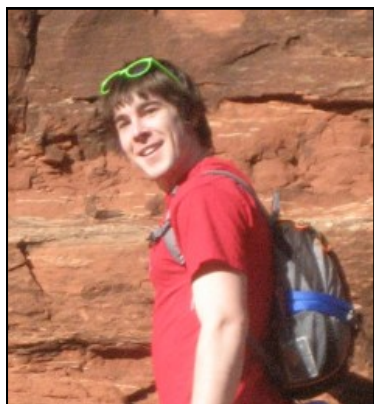
This fellowship has been established to give other students the opportunity to experience what Kevin discovered as one of the greatest joys in life—traveling around another country. To help celebrate Kevin's memory and spirit, we hope the recipient of this fellowship will think of Kevin often and take to heart Kevin's favorite motto: "Live life to the fullest. Don't take anything for granted." The award recipient for 2012 is geology major Joshua Lasker '14 for travel to Jamaica this spring. Thanks to everyone who has contributed to the Fellowship.

In September 2012 a memorial to Kevin Williams was placed outside of the south entrance to the Ho Science Center. The stone selected by Kevin's family is the megacrystic garnet amphibolite quarried from the Barton mine on Gore Mountain in the Adirondacks.



1819 Award presented posthumously to Vic Krivitski '12

By Barbara Brooks (Colgate Communications Department)



It's never easy to identify the one senior "whose character, scholarship, sportsmanship, and service to others best exemplify the spirit that is Colgate," and yet every year there can be only one recipient of the 1819 Award. The 2012 winner was Victor Krivitski '12, who passed away last August after an eight-month fight with cancer. In just five semesters at Colgate, Krivitski left an indelible mark. The 21-year-old was a geology major, rugby player, member of the Colgate Geological Society, a WRCU radio host, and recruitment chair of Phi Delta Theta.

At Saturday's convocation for the Class of 2012, President Jeffrey Herbst quoted a faculty member who knew Krivitski well. "He was exuberant and high-spirited and through his example helped all of us understand how to handle life's most difficult challenge," Herbst said. "He showed us how to face our own destinies with an outstretched hand — inviting us to not be afraid of the inevitable but rather to embrace every moment with a contagious sense of humor and deep gratitude."

Earlier in the program, Krivitski had received a special award from the geology department, so the crowd was all the more surprised and moved when his name was called again, this time for the university's most prestigious and coveted award. His parents, Victor and Roxane, came to the stage on his behalf. "The crowd went nuts," said Scott Brown, interim vice president and dean of the College. "There was very sustained applause and a standing ovation, and many, many people were moved to tears." In addition to his 1819 Award, Krivitski received the Chair's Award from the Geology Department and an honorary, posthumous bachelor of arts degree at Colgate's 191st commencement ceremony.

After Krivitski's diagnosis in December 2010 with a rare mediastinal germ cell tumor, fraternity brothers, teammates, and classmates, all rallied around his valiant fight. On a cold day in February 2011, 40 members of Phi Delta Theta shaved their heads in solidarity.

Last year, the rugby team raised \$1,200 at Victorpalooza, one of several events held in Krivitski's honor, and, after finishing the 2012 season 13-0, the team fought harder than ever to earn the right to a spot in the final round of the USA Rugby National Division II Tournament.

Upon Krivitski's passing, the university community rallied around his memory. Colgate's Class of 2012 dedicated its senior class gift to him, breaking all previous records and raising nearly \$37,000. In all more than 1,200 people have made a gift to support the Victor Krivitski '12 Memorial Scholarship, which now contains more than \$94,000. The first recipient will be awarded for the 2012-13 school year.



Victor and Roxane receive their son's posthumous 1819 award.

Workshops Hosted

William Peck, Martin Wong, Bruce Selleck (October 2011) 2011 Friends of the Grenville Field Conference, Alexandria Bay, NY

In Fall 2011 William Peck, Bruce Selleck, and Martin Wong hosted the Friends of the Grenville Field Conference in Alexandria Bay, NY. The conference focused recent research at Colgate with students and with colleagues from other institutions. Thirty students, faculty, and survey geologists from the US and Canada spent two days examining the geology of the Adirondack Lowlands and the Black Lake Shear Zone, a newly-recognized terrane boundary. This conference was supported by funds from the Malcolm ('54) and Sylvia Boyce endowment.



Martin Wong and Cathy Shrady ('79) examine deformed metapelites (left photo). Jim McLelland (the Chief) holds forth on dynamics of intrusion of the Hyde School Gneiss (right photo).

Paul Pinet (March 2012) A Workshop on Ecosystem Impacts and The Moral Landscape of the Current Sixth Mass Extinction, Hamilton, NY

During a three-day-long workshop generously supported by a grant from the Boyce Funds, seven natural scientists and five philosophers discussed at length how the accelerated extinction that is currently underway would likely unfold as ecosystems systematically lose resiliency and destabilize into degraded social-ecological states. Specifically, we examined the temporal (geology), spatial (ecology), and ethical (philosophy) cross-scale processes that not only are currently eroding ecosystem resiliency at an unprecedented rate, but also will accelerate during the forthcoming centuries. Our intent was to initiate cross-disciplinary discourse among paleontologists, ecologists, and ethicists about the intricacies of mass extinction and plausible mitigation strategies and policy recommendations that will minimize the loss of co-evolutionary potential of the geologic future.

We began by examining the connections between slow and fast biogeochemical processes and their associated nonlinear feedbacks that cause regime shifts, ecological cascades, and abrupt biodiversity loss in both managed and unmanaged ecosystems. We focused explicitly on the temporal record of species decline, because the causes, configurations, and consequences of exten-

sive diversity loss are well documented for the deep geologic past by paleontologists and for the present by ecologists. This background proved crucial for imagining an ethical perspective that would allow development of effective adaptive management initiatives to mitigate biodiversity loss and widespread ecological collapse *over the long term*.

All of us benefitted immensely from the depth and quality of the cross-disciplinary dialogue that transpired during the long-days of the workshop and we have agreed to continue collaboration in the future. Everyone felt that they had participated in a unique intellectual experience that cannot be accessed within the confines of a single discipline. During the workshop, we outlined two papers for publication that will be fleshed out as we continue to do collaborative research. We discovered that what we do about the current accelerated extinction depends on what matters and what matters depends on both values (various values have different logic) and perspective (temporal and spatial scales). At the moment, we are trying to organize for the spring of 2013 a gathering of the workshop participants to continue our discussion on the natural and moral landscape of the current accelerated extinction. Also, being educators, we are particularly concerned at promoting how humans as both an animal species and moral agent can help mitigate the magnitude of the current biodiversity crisis through ecological education and appropriate behavior modifications of the public in general.

Rankin Endowments Support Student Research

In the Summer of 2011, five students received Rankin Fellowships for Geology Research: Samuel Jackson '13 for his research on extensional contacts in Arizona with Martin Wong; Kara Vadman '13 and Karen Alley '12 worked with Amy Leventer on Antarctic paleoclimate; Will Schlitzer '12 did research in the Galapagos with Karen Harpp; and Alison MacNamee '12 for her research with Martin Wong in Wyoming. Bo Montanye '12 and Josh Solomon '14 were awarded the Rankin Fellowship for Appalachian Geology Research. Bo did research in the Bancroft Terrance, Ontario, Canada with William Peck while Josh's research with Martin Wong was related to volcanic rocks in the Harcuvar Range of Arizona.

In summer 2012, Mike Leidl '13 was awarded the Rankin Fellowship for research related to the Marcellus Shale. Mary Spetsieris '13 was granted the Rankin Appalachian Fellowship for her research on Hydraulic Fracturing. Both students were guided in their research by Bruce Selleck.

Norma Vergo Prize in Geology

Thanks to alumni contributors to the Norma Vergo endowment, we continue to offer this prize to geology concentrators who significantly contribute to the spirit of excellence among fellow students in the department. Norma Vergo graduated from Colgate with Honors in Geology in 1981 and then completed her M.S. degree at the University of Illinois. She died in 1989 at the age of 30. The special award was initiated by friends and colleagues in memory of Norma, an alumna the department fondly remembers as a gifted scientist and as someone with a special compassion for others that continues to inspire us today.

2011 Recipient	Kevin Williams
2012 Recipient	Alexander Crawford

In addition, in 2011 this endowment assisted Lauren Frisch '12 with her research on soil formation on Adirondack Till with Rich April. Funds were also used to support seven of our top level students attending a combined Northeastern/Central Geological Society of America meeting to present the results of their research. Five abstracts were accepted with Colgate geology students as first authors. Students who attended the meeting were: Kaitlyn Bunting '11, Dan Gleason '11, Hillary O'Brien '11, Jacqueline Colborne '11, Julian Michaels '11 and Alison MacNamee '12.

Rita Van Kirk '13 was provided funding to assist her with her research in the Galapagos Islands with Karen Harpp in the summer of 2012 and Ross Mower '13 used his Norma Vergo funding to conduct research with Bruce Selleck using ground-penetrating radar at Fiddlers' Green, just north of Hamilton, and other marsh settings.

Robert M. Linsley Prize for Excellence in Geology

The department is able to award this prize, in honor of Bob Linsley, thanks in special part to a donor who wishes to remain anonymous. The prize is to be given mid-way through the junior year to a rising senior who has demonstrated the promise and potential for leadership and excellence in earth science scholarship and research. It is to be used at the awardee's discretion to do field work or other research, or to attend scientific meetings to present research or interview and make contacts for graduate school, or to cover costs of summer field camp or special field trips. It is intended for someone who exhibits a balance of leadership, research, and communication/teaching interests, in Bob's spirit and who plans to pursue earth science as a career.

In 2011, Karen Alley '12, received the prize and used the funding to offset expenses to work on the first evaluation of an ultra-high resolution marine sedimentary sequence from a cross shelf trough on the East Antarctic continental shelf. Similar records have been recovered and analyzed from the Antarctic Peninsula and from the Wilkes Land Coast; both sites have provided ground-breaking insights into Holocene climate change in Antarctica, and both sites were drilled by the International Ocean Drilling Program only after careful work on shorter cores revealed their potential.

In 2012, Susannah Boote '13, received the prize.

Chile Extended Study Course

On December 27 2010, a group of 19 Colgate students set off for a 3-week extended study field trip to study volcanoes in Chile. The expedition was preceded by a semester-long course during which students studied the arc volcanoes of South America, focusing on five specific volcanoes and their eruptive histories. Teams of students were responsible for planning the field activities we would carry out at one of five spectacular volcanoes: Llaima, Lonquimay, Lanin, Villarrica, and Copahue (in Argentina). After battling one of the season's biggest winter storms, everyone managed to arrive safely and begin the adventure. We spent about four days at each volcano, studying the deposits, learning volcanological field methods, assessing volcanic hazards, and resolving scientific questions that students raised during the course. At Llaima, we examined the material



The group at Villarrica volcano

← From left to right back row: Dan Gleason, Sam Freccia, Nick Pollock, Will Schlitzer, Kristen Meisner, Clem Dunne, Cait Mello, Brandon Bray, Zach Shutran, Rita Van Kirk, Lauren Frisch, Alex Crawford, Bo Montanye.

From left to right middle row: Susie Boote, Julie Wallan, Will Cushman, Ali MacNamee, Matt Shramko, Sarah Kunze (ITS).
Bottom group, left to right: Phil Clayton, Victor Vargas, Karen Harpp

produced by its most recent eruptions and investigated the impact of those events, including interviewing local residents affected by the eruptions. At Copahue, we investigated the influence of the volcano on local lakes and rivers, examining the rather extreme chemistry of the water from the base to the summit, where there is a crater lake. Lonquimay volcano was the site of lava flow studies, as well as an epic climb to its summit to map flows from a bird's eye view. We examined tephra deposits from Lanin and Villarrica volcanoes that have blanketed the landscape around Pucon, Chile, explored lava tubes, assessed the emergency procedures in place in case of eruptions, and climbed to Villarrica's spectacular summit. Each group of students designed and led the activities at their volcano, which resulted in exceptional teamwork, cooperation, and a dynamic atmosphere throughout the entire trip. We were fortunate to be accompanied by volcanologists Dennis Geist from the University of Idaho and Victor Vargas Gutierrez, a Latin American scientist who has spent his career studying Colima Volcano in Mexico.

The students produced an online field guide for future groups that might want to visit these volcanoes, available at <http://applemediasv02.colgate.edu/groups/geol420/>. The guide is intended to provide enough information so that any volcanology group can plan a trip comparable to ours and carry out the original activities that the students designed. This resource assures that the impressive student effort put into this trip can have a lasting educational impact. Videos of our adventures are also available at the websites listed below, made by Sarah Kunze, a technology expert from Colgate who (bravely) accompanied us on the trip.

Sadly, Vic Krivitski was unable to accompany us despite being part of the class, but he was with us in spirit the whole time (and via the Internet!). We know how much he would have loved this expedition and dedicate our efforts to his memory.

For more information see:

<http://blogs.colgate.edu/2011/01/extended-study-brings-students.html>

<http://offices.colgate.edu/Video Console/Preview Player.asp?VideoID=830>

<http://offices.colgate.edu/Video Console/Preview Player.asp?VideoID=831>

<http://offices.colgate.edu/Video Console/Preview Player.asp?VideoID=832>



The Chile Group poses majestically in front of Copahue volcano, having spent several days uncovering her scientific secrets.

Geology 120 – Spring 2012

In May 2012, sixteen students, along with Martin Wong, spent 20 days exploring the geology of the western U.S. as part of Geology 120 – Geology of America's Parks. The geological highlights of the trip included Basin and Range geology in Western Arizona along the Colorado River Extensional Corridor, Paleozoic to Mesozoic sedimentary deposits in the Grand Canyon, Antelope Canyon, and Petrified Forest, Quaternary volcanism in Sunset Crater National Monument, AZ and Bandelier National Monument, NM, and modern aeolian deposition at Great Sand Dunes National Park, CO. The trip ended in Denver, CO. During the trip we drove 3,700 miles, visited five state and national parks, saw great geology, and all around had a terrific time.



Part of the group at lower Antelope Canyon, AZ.



Students enjoying the dunes at Great Sand Dunes National Park, CO.

Geology 320 – The OC

Last summer's OC began in Denver in early July after the departure of the Geol 120. The class spent a week and a half working on Dinosaur Ridge and the Proterozoic rocks of Golden Gate Canyon with William Peck. The group then traveled to Craters of the Moon to examine lava flows and cinder cones with Karen Harpp, Yellowstone and the Flaming Gorge area with Bruce Selleck, and finishing with a big mapping project at Seminoe Reservoir with Amy Leventer and Dave Linsley.



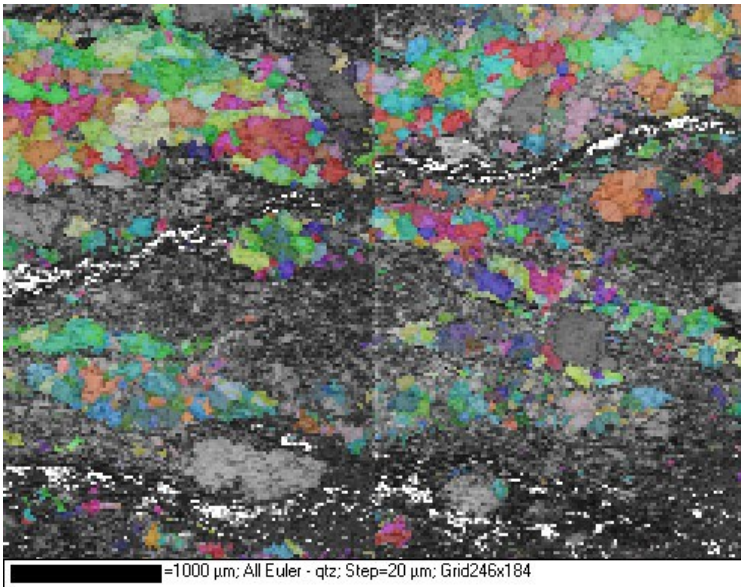
OC students in 2012 at Sheepeater Cliff, Yellowstone National Park



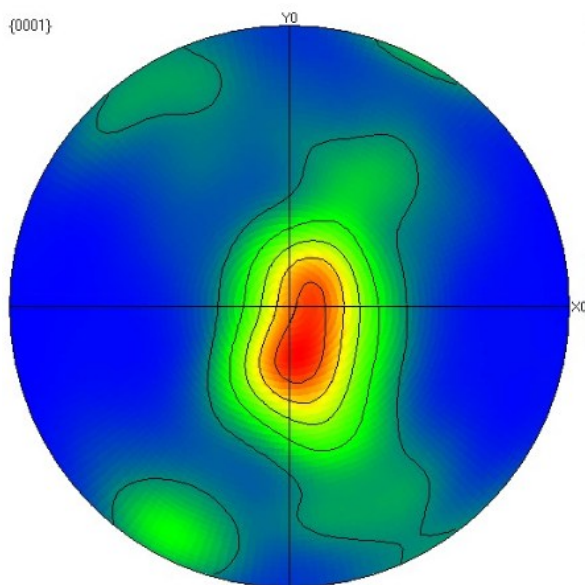
OC students in 2011 near Morrison, CO.

Upgrades to the Scanning Electron Microscope

In the fall of 2010, Bruce Selleck, William Peck, and Martin Wong received funding from the National Science Foundation to upgrade a number of the detectors on the department's scanning electron microscope (SEM). As many of you may remember from first-hand experience, this instrument is a workhorse for both student and faculty research and the new detectors both upgrade and expand our capabilities. The new detectors include an Oxford INCA Synergy 350 Energy Dispersive X-ray (EDX) Microanalysis system for conducting compositional analyses on single points and for mapping regions of a sample. We have also added a new HKL Electron Backscatter Diffraction (EBSD) detector that allows us to do lattice preferred orientation (LPO) studies on deformed samples. Finally, we have added a Gatan ChromaCL cathodoluminescence detector, which allows us to do color CL, which can be used to image zircon grains in preparation for geochronology as well a variety of other applications. The new suite of detectors has been installed for just over a year now and has been used extensively for student and faculty research and has also attracted visitors from the Physics department and a variety of geology departments in the area.



←Map of the lattice orientation of quartz grains in a granite mylonite generated with EBSD data. Colors correspond to different lattice orientations.



←Stereonet plot of quartz c-axes derived by EBSD from a granite mylonite illustrating the development of a strong lattice preferred orientation (LPO) as a result of dynamic recrystallization during deformation. These results can be used to determine both the kinematics (sense of shear) of the sample as well as the temperature conditions during deformation.

A New Fluorescent Mineral Display

The geology department recently added a small but beautiful fluorescent mineral display in the Robert H. N. Ho Science Center. It is located in a darkened exit corridor off of the Ho Tung Visualization Lab, a state-of-the-art domed, digital theater and planetarium that attracts thousands of visitors each year. The display was made possible by two generous gifts to the geology department: a suite of seventy fluorescent minerals donated by Steven and Matthew Shramko '13, and funding for the display's construction provided by Rand and Carol April.

Rich April and Di Keller worked with Jeff Golley and other members of Colgate's Buildings & Grounds staff on the design of the case and sample mounts and then put the display together. Twenty-one samples showing a variety of fluorescent colors and differences in short- versus long-wave and phosphorescent properties were chosen for the display. They show a full range of colors from Peruvian fluorite's deep bluish purple, through the striking contrast between calcite's reddish-orange and willemite's bright green fluorescence in samples from Franklin, New Jersey, to the yellow and white fluorescence of scapolite and selenite respectively. Willemite veins, optic grade calcite, and selenite also continue to phosphoresce when the lights are turned off.

Since its installation in February, the display has been enjoyed by several thousand people, many of them, schoolchildren. Everyone seems to love it!



Photo by A. Daddio



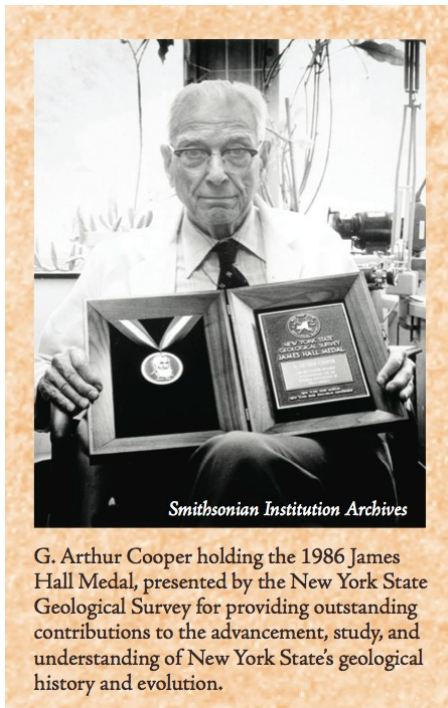
Robert M. Linsley Geology Museum News

Since its opening in October 2009, the new Robert M. Linsley Museum continues to attract many Colgate students, parents and alumni, and other campus visitors from far and near. The museum, along with the Ho Tung Visualization Lab two floors above, has also become a very popular resource for local school, scout, church and adult education groups. Being scientists, we were curious to know just how many people were visiting the museum, so in mid-January (2012) we installed a people counter on the entry door to gather some data. What we found was close to 5000 people

had visited the museum over the 10-month period from January to November, with big spikes in attendance over special weekends, like the 450 visitors we had during the recent Family Weekend alone.

Although the museum is largely finished, we continue to add new samples and recently installed two new display panels. The first of these panels greets people at the entry to the fossil area by describing the paleogeography and tectonics of New York State during the Devonian, and explaining how this is reflected in the fossil-rich rocks that compose our local bedrock. The second new exhibit focuses on one of our illustrious alums, G. Arthur Cooper, whose love for fossils was born in the Colgate quarry and led him to a Master's degree in geology from Colgate University (one of only two ever awarded) and then onto a celebrated career in paleontology. The display outlines some of the highlights of his career and showcases several of the most highly prized medals in the sciences that were awarded to Cooper in recognition of his achievements. These medals, along with publications and other items from his personal collections, were generously donated to the geology department by Cooper's family after his death.

We hope that on your next visit to campus, you will stop by the Linsley Museum, which is located just off the atrium in the Ho Science Center, refresh your geo-memory and enthusiasm, and read more about "Coop."



G. Arthur Cooper '24 Lecture Series

*We continue to host invited speakers—
including our alumni---in a weekly seminar series.*

FALL 2011

Ho Summer Student Research Symposium A Select Group of Students Presented a Short Talk on Their Summer Research Experience from the Areas of Environmental Studies, Physics/Astronomy, Geology, Biology, Geography and the Visualization Lab

Extending the Mapping of Clay Minerals in the Ancient Martian Crust Using Thermal Infrared Spectroscopy Christina Viviano '06

Terrestrial Ages of Meteorites Jonathan Levine, Physics & Astronomy, Colgate University

Aminosiloxane Solvents for CO₂ Capture Michael O'Brien, GE Global Research

Tectonics, Climate, and Topographic Evolution of the Andes Greg Hoke, Syracuse University

Lower Tertiary Trend in the Deepwater Gulf of Mexico: Exploration History and Future Potential Kerry Inman, Inman Gallery, TX

SPRING 2012

Jarosite Chronometry on Earth; and How About Mars? Joseph Kula, Syracuse University

Noble Gas Cosmogenic Dating: Promises and Pitfalls Will Amidon, Middlebury College

Granites and Migmatites as Windows Into Crustal Evolution in Southern Maine, Paul Tomascak, SUNY Oswego

Experimental Deformation of Dehydrating Antigorite: Challenging Models of Dehydration Embrittlement, Linda Meyers '05, Rochester Institute of Technology

The "Anthropocene" Mass Extinction: It's Scientific and Moral Implications, Paul Pinet, Colgate University, Geology Department

What Role Does Thermal Weakening Play in Driving Continental Extension? Martin Wong, Colgate University, Geology Department

Keck Geology Consortium

For the last six years Colgate has participated in the Keck Geology Consortium, a group of 18 of the top undergraduate geology departments in the country. The consortium is funded by the National Science Foundation and the member schools, and runs month-long research experiences for students at member schools. Colgate has been very active in the consortium: in 2008, Colgate faculty William Peck, Bruce Selleck, and Martin Wong directed a project in the northwestern Adirondacks, in 2009, Connie Soja directed a project in Mongolia, in 2011 William Peck directed a project in the Grenville Province of Ontario, and in 2012 Martin Wong directed a project in the Snake Range (Nevada). After completing these projects back at their home institutions, students attend the Keck Research Symposium in the spring.

Colgate Student Research on Keck Consortium Projects

2011

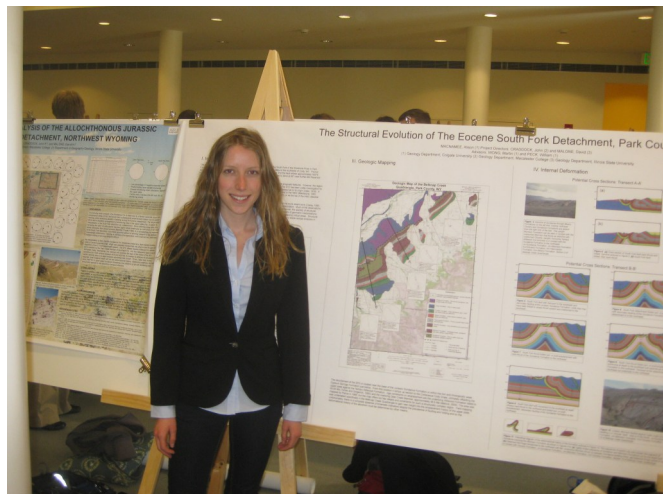
Melissa Cross: A Multi-Proxy Study of Holocene Paleoclimate and Depositional Environment, Hövsgöl, Mongolia

Julianne M. Wallan: Stable Isotope Geochemistry of Marbles in The Kings Sequence, Sierra Nevada, CA

2012

Alison MacNamee: Structural Evolution of the Eocene South Fork Detachment, Park County, Wyoming

Bo Montanye: Carbon Isotope Thermometry in the Central Metasedimentary Belt Boundary Thrust Zone Grenville Province, Ontario



Ali MacNamee '12—Keck meeting presentation at Amherst College



Bo Montanye '12—Examining marble outcrops during his Keck project in Ontario.

Contributions to Geology

We want to thank those who have donated to the geology department over the last three years. If you are planning to give money to Colgate, you can specify that your contribution go directly to the Geology Department. The department's discretionary fund pays for the publication and distribution of this newsletter and other departmental projects, including support of student research. If you wish, you can specify for your gift to go into one of our endowed funds for students: The Norma Vergo Fund or the Bob Linsley/James McLelland Fund. Since the last newsletter the following have contributed to the department (July 1, 2011—December 31, 2012). Thank you! Our apologies if we missed anyone (please let us know so we can acknowledge you the next time.)

Jay A. Ach '77	Darren A. Karn '05	Douglas W. Rankin '53
Linda Besse '81	Dianne M. Keller '81	Leslie A. Reed '03
Malcolm and Sylvia Boyce	Kevin F. Kelly '04	Allison H. Ridder '99
Gary J. Braham '02	Ms Toni M. Kerns '97	Daniel E. Riker '91
Sarah C. Buxton '96	William M. Kier '78	Shannon Jones Ritter '75
Michael P. Carrington '06	Kristie A. Kilgore '84	Emily E. Rodgers '02
Lisha K. Chase '96	Jonathan J. Kim '81	Elizabeth A. Roller '01
Jon F. Cobb	Nicole E. M. Kinsman '06	David A. Roth '62
Alexis L. Coplin '07	Karen L. Kleinspehn '76	S. Andrew Sandberg '81
Janet A. Cushing '91	Alison M. Koleszar '04	Erik E. Scherer '91
Pamela T. Darwin '81	Maria T. Kopicki '86	Michael S. Scherr '04
Alexandra Dattelbaum '04	Andrea G. Kretchmer '84	Ronald C. Schott '91
Allen J. Dennis '82	Elizabeth R. Krol '92	James H. Sears '03
Theresa Dennis '84	Robert S. Kuhlman, Jr. '73	Julia K. Shackford '03
Barry L. Doolan '66	Lawrence H. Lessard '85	Justin M. Shaw '04
Emily W. Doren '04	Deborah A. Levine '77	Michael R. Snyder '80
Bret A. Doverspike '03	Tim K. Lowenstein '78	Walter S. Steinmann, Jr. '79
Dr. & Mrs. Newton O. Duncan, III P'02'09	Sarah W. Lowenstein '79	Jason B. Stewart '00
Neal D. Durant '87	Bryan K. Luftglass '77	Emily T. Stewart '02
F. Donald Eckelmann, Jr. '79	Anna M. Martini '86	Paul M. Stout '77
Gary R. Eppich '06	Mr. John A. Matulaitis & Dr. Siga M. Lenkauskas P'10	Julie L. Sweeney '01
Douglas H. Erwin '80	Sharon D. McLelland '85	William J. Sweeney, III '01
Mr. & Mrs. Richard J. Fahey '74 P'07	Ellen L. Mecray '90	Colleen Brogenski Tautfest '97
Gavin P. Fisco '06	Fred C. Meendsen, Jr. '82	Jill Thompson '03
Mr. & Mrs. Charles S. Fish	Linda J. Meyers '05	Kimberly A. Threlfall '01
Daniel J. Gaudiano '96	Dr. & Mrs. Dennis J. Minchella P'08	Michael J. Tone, Jr. '07
Donald C. Gifford	Peter A. Minchella '08	Rebecca D. Tortorello '10
Timothy D. Glotch '99	Bo Ryan Montanye '12	Jeffrey A. Trembly '78
Evan B. Goldstein '04	Mr. & Mrs. Keith A. Montanye P'12	Robert Y. Urquhart '60
Adam J. Greenhut '01	Harlan F. Moonen '62	Christy C. Visaggi '02
Matthew H. Grossman '95	Laura J. Moore '93	Christina E. Viviano '06
Richard M. Hall '77	John B. Morey	Andrea C. Walker
Douglas P. Harmon '85	Rebecca C. Newhall '99	Mitchell Warren
John W. Hoffman '68	Kevin J. Padian '72	Starr W. Waymack '06
Lorren D. Hotaling '92	Nancy S. Padian '74	Charles A. Weiss, Jr. '83
James T. Hutton '84	Jeffrey J. Palmer '80	Kenneth P. Wenz, Jr. '83
Susan Hutton '83	Michael J. Paolini '81	Richard W. Wiener '73
Emily M. Janke '01	Ronald L. Parker '82	Bruce Wilkinson
Gerald J. Jasko '73	Patrick C. Ramsey '90	Jason M. Williams '03
Jason L. Kaplan '06	Kristen J. Ramsey '90	Robert F. Ylagan '90
		Paul J. Zangrilli '98

We also thank the donors to the Kevin Williams Memorial Fellowship

Senior Honors Projects—Spring 2010

Melissa Cross (Advisor: Bruce Selleck) A Multi-proxy Study of Holocene Paleoclimate and Depositional Environment in the Hövsgöl Region of Mongolia

Hillary O'Brien (Advisor: Martin Wong) Petrographic and Thermochronologic Investigations of Normal Faults in the Basin and Range, Arizona

Senior Honors Projects-Spring 2011

Karen Alley (Advisor: Amy Leventer) Iceberg Alley, East Antarctic Margin: A Site of Unusually High Primary Productivity

Douglas Schaub (Advisor: William Peck) Experimental Investigation of CO₂ Solubility in Primitive Martian Basalts and Implications for the Martian Atmosphere

Alison MacNamee (Advisor: Martin Wong) Structural Evolution of the Eocene South Fork Detachment, Park County, Wyoming

Geology 441 (Senior Research Seminar) Presentations—Spring 2011

Nicholas Pollock (Advisor: Karen Harpp) Vegetation Damage as a Proxy for Emplacement Characteristics of Pyroclastic Density Currents

Brandon Bray (Advisor: Karen Harpp) Origin of the Vanda Dike Swarm, Dry Valleys, Antarctica

William Cushman (Advisor: Karen Harpp) Seamount Lineaments of the Northern Galapagos and Plume-ridge Interactions

Caitlin Mello (Advisor: Karen Harpp) Fossil Ridges in the Northern Galápagos Province

Jacqueline Colborne (Advisor: Bruce Selleck) Fractures, Veins, Fluid Migration and Hydrocarbon Generation in the Utica Shale, Northern Appalachian Basin, New York, Part I

Julian Michaels (Advisor: Bruce Selleck) Fractures, Veins, Fluid Migration and Hydrocarbon Generation in the Utica Shale, Northern Appalachian Basin, New York, Part II

Phillip Clayton (Advisor: Bruce Selleck) On Fracture Sidewall Cementation and Oxidation of Natural Gas in Vein Carbonates of the Marcellus Formation

Dana Bohan (Advisor: Bruce Selleck) Well Logs as a Potential Indicator of Structural Deformation in the Marcellus Onondaga Interval in New York State

Kristen Meisner (Advisor: Bruce Selleck) Carbon Sequestration Potential of Altered Basement Rocks in New York State

Gary Marshall (Advisor: Rich April) Acid Rain and its Effects on Soil Chemistry in the Adirondacks

Dan Gleason (Advisor: Martin Wong) Using U-Th thermochronology to Assess Tilting in the Grayback Fault Block, Arizona

Kaitlyn Bunting (Advisor: Martin Wong) An Investigation of Footwall Mylonites in the Harcuvar Metamorphic Core Complex

Hillary O'Brien (Advisor: Martin Wong) Petrographic and Thermochronologic Investigations of Normal Faults in the Basin and Range, Arizona

Melissa Cross (Advisor: Bruce Selleck) A Multi-proxy Study of Holocene Paleoclimate and Depositional Environment in the Hövsgöl Region of Mongolia

Julianne Wallan (Advisor: William Peck) Stable Isotope Geochemistry of Marbles in the Kings Sequence, Sierra Nevada, CA

Geology 441 (Senior Research Seminar) Presentations—Spring 2012

Douglas Schaub (Advisor: William Peck) Experimental Investigation of CO₂ Solubility in Primitive Martian Basalts and Implications for the Martian Atmosphere

Bo Montanye (Advisor: William Peck) Carbon Isotope Thermometry in the Central Metasedimentary Belt Boundary Thrust Zone, Grenville Province, Ontario

Samuel Freccia (Advisor: Amy Leventer) Holocene Changes in the Antarctic Circumpolar Current and Sea Ice Extent in the Antarctic Peninsula

Alexander Crawford (Advisor: Amy Leventer) Marine Sedimentary Record of the Greenpeace Trough, Larsen A Embayment, Antarctic Peninsula

Karen Alley (Advisor: Amy Leventer) Iceberg Alley, East Antarctic Margin: A site of Unusually High Primary Productivity

Robert Bickhart (Advisor: Bruce Selleck) Geochemistry, Mineralogy and Leachate Chemistry of Basal Marcellus Formation Well Cuttings

Michael Carbone (Advisor: Bruce Selleck) Implications of Major and Trace Element Geochemistry for High-Volume Natural Gas Development on the Utica Shale of the Mohawk Valley, New York

Samuel Ely (Advisor: Rich April) Potentially Polluted Floodplain Soils: A Study of Trace Metal Contaminations Related to Drake Chemical Manufacturing Along the West Branch Susquehanna River

Lauren Frisch (Advisor: Rich April) Adirondack Till to Soil: Geochemistry and Mineral Transformations

Sarah Lemon (Advisor: Rich April) Shale to Soil: Geochemistry and Clay Mineral Weathering in the Critical Zone

Cameron McKee (Advisor: Karen Harpp) Morphology and Distribution of Seamounts in the Northern Galapagos Volcanic Province

William Schlitzer (Advisor: Karen Harpp) The Effect of Lithospheric Discontinuities on the Composition of Lavas from the Northern Galápagos Platform Extension

Samuel Jackson (Advisor: Martin Wong) Multi-stage development of the Harcuvar Metamorphic Core Complex: Evidence From Structural Studies and Zircon Geochronology

Andrew Kavanagh (Advisor: Martin Wong) An Electron Backscatter Diffraction (EBSD) Study of Mylonites in the Sierra Mazatan Metamorphic Core Complex, Mexico

Alison MacNamee (Advisor: Martin Wong) Structural Evolution of The Eocene South Fork Detachment, Park County, Wyoming

Geology Students Present Research at Conferences

An important part of student research is presentation of scientific findings. In the Geology Department, we hold a symposium at the end of the year where seniors can present their completed research projects. Students also often present talks or posters at local, national, and international meetings. These trips to meetings are funded by department funds, faculty grants, and some support from the university. At these meetings, students get a chance to interact with geology majors from other colleges and to talk to geosciences professionals about their work. Several seniors have met their future graduate school advisors at these meetings or have been inspired to pursue a particular subfield by talks they've heard. In recent years, students have presented work at the Northeastern Geological Society of America meeting in American Geophysical Union meetings in San Francisco, and the Goldschmidt Geochemistry Conference in Knoxville. Abstracts of conference presentations are listed below;

Abstracts (*denotes the Colgate student presenter.)

*Alley, K., Leventer, A., and Dunbar, R., 2012, Laminated sediments from Iceberg Alley, East Antarctic Margin, *SCAR Open Science Conference*, XXXII, Portland, Oregon.

*Bray, B., Harpp, K.S., Geist, D., Garcia, M.O., Swarr, G.J., 2010, Origin of the Vanda Dike Swarm, Dry Valleys, Antarctica, *Eos Trans. AGU*, Fall Meet. Suppl., San Francisco, CA.

*Bunting, K.C., and Wong, M., 2011, An investigation of footwall mylonites in the Harcuvar metamorphic core complex, *Geol. Soc. Amer. Abs. with Prog.*, v. 43, no. 1, p. 148.

*Crawford, A., Domack, E.W., and Leventer, A., 2012, Evidence for deposition within a pre-Holocene subglacial aquatic environment in the Greenpeace Trough, Antarctic Peninsula, *SCAR Open Science Conference*, XXXII, Portland, Oregon.

*Crawford, A., Leventer, A., Domack, E.W. and Brachfeld, S., 2010, Marine sedimentary record of the Greenpeace Trough, Larsen A embayment, Antarctic Peninsula, *EOS, Transactions of the American Geophysical Union*, Fall 2010 AGU Meeting, San Francisco, CA.

*Cushman, W., Harpp, K.S., Kurz, M.D., Geist, D., Mittelstaed, E.L., Fornari, D.J., Soule, S.A., 2010, Seamount lineaments of the Northern Galapagos and plume-ridge interaction, *Eos Trans. AGU*, Fall Meet. Suppl., San Francisco, CA.

*Frish, Lauren, April, Richard H., and Keller, Dianne M., 2012, Adirondack Till to Soil: Geochemistry and Mineral Transformations, Northeastern Section of the Geological Society of America - 47th Annual Meeting, 18–20 March 2012.

*Gleason, D.M.B., and Wong, M., 2011, Evaluating tilt at the Grayback fault block, AZ, using grain size and geochemical analyses of the Tea Cup pluton, *Geol. Soc. Amer. Abs. with Prog.*, v. 43, no. 1, p. 149.

*Lemon, Sarah, April, Richard H., and Keller, Dianne M., 2012, Chemical Weathering and Mineral Transformations in a Small Watershed in Central New York, Northeastern Section of the Geological Society of America - 47th Annual Meeting, 18–20 March 2012.

*Macnamee, A., *Baughman, J. and Selleck, B., 2011, Geochemistry and Mineralogy of Devonian Strata: A Preliminary Study to Determine Possible Beneficial Use of Well Cuttings; Geological Society of America Abstracts with Programs, Vol. 43, No. 1, p. 71.

*McKee, C.T., Harpp, K.S., Geist, D., Mittelstaedt, E.L., Fornari, D.J., Soule, S.A., 2010, Morphology, size, and spatial distribution of seamounts in the Northern Galapagos, *Eos Trans. AGU*, Fall Meet. Suppl., San Francisco, CA.

*Mello, C., Harpp, K.S., Mittelstaedt, E.L., Geist, D., Fornari, D.J., Soule, S.A., 2010, Investigation of E-W trending parallel ridges north of the Galapagos Archipelago, *Eos Trans. AGU*, Fall Meet. Suppl., San Francisco, CA.

*Montanye, BR and Peck, WH, 2012, Carbon isotope thermometry in the Central Metasedimentary Belt Boundary Thrust Zone, Grenville Province, Ontario, Geological Society of America Abstracts with Programs v. 44(2), p. 115.

*Moser, K., Harpp, K.S., Ketchum, J.T., Espinoza, E., Penaherrera, C., Banks, S., Fornari, D.J., Geist, D., Mittelstaedt, E.L., 2010, A shark's eye view of the ocean floor: Integration of oceanographic research with educational outreach, *Eos Trans. AGU*, Fall Meet. Suppl., San Francisco, CA.

*O'Brien, H.P., and Wong, M., 2011, Geologic constraints on tilting of the Grayback normal fault block, Tortilla Mountains, Arizona, *Geol. Soc. Amer. Abs. with Prog.*, v. 43, no. 1, p. 148.

*Pellegrini, A.F.A., * Soja, C.M., and Minjin, C. 2012. Post-tectonic limitations on Early Devonian (Emsian) reef development in the Gobi-Altai region, Mongolia. *Lethaia*, v. 45:46-61.

*Pollock, N., Harpp, K.S., Geist, D., Dufek, J., 2010, Vegetation damage as a proxy for physical characteristics of PDCs, *Eos Trans. AGU*, Fall Meet. Suppl., San Francisco, CA.

*Schlitzer, W., Harpp, K.S., Kurz, M.D., Geist, D., Mittelstaedt, E.L., Fornari, D.J., 2010, The geochemistry of Pinta, Marchena, and Genovesa Islands and the surrounding seafloor in the Galapagos Archipelago, *Eos Trans. AGU*, Fall Meet. Suppl., San Francisco, CA.

*Schlitzer, W., Harpp, K.S., Mittelstaedt, E.L., Kurz, M.D., Geist, D., 2011, The effect of lithospheric discontinuities on the composition of lavas from the Northern Galapagos Platform Extension, *Eos Trans. AGU*, Fall Meet. Suppl., San Francisco, CA.

Papers Published with Colgate Students

Mittelstaedt, E., Soule, S., Harpp, K., Fornari, D., McKee, C., Tivey, M., Geist, D., Kurz, M.D., Sinton, C., *Mello, C., 2012, Multiple expressions of plume-ridge interaction in the Galapagos: Volcanic lineaments and ridge jumps, *Geochemistry Geophysics Geosystems*, v. 13, Q05018, 31 pp.

Wong, M.S., Williams, M.L., McLelland, J.M., Jercinovic, M.J., and *Kowalkoski, J., 2012, Late Ottawan extension in the eastern Adirondack Highlands: Evidence from structural studies and zircon and monazite geochronology, *Geological Society of America Bulletin*, v. 124, p. 857-869.

Student Summer Research—Summer 2011

Karen Alley '12 (Amy Leventer) Analysis of an Ultra-high-resolution Ocean Sediment Core from Iceberg Alley, East Antarctica

Jaclyn Baughman '13 (Bruce Selleck) Illite and Graphite Crystallinity, Utica Formation

Robert Bickhart '12 (Bruce Selleck) Sulfide Mineralogy of the Marcellus Formation

Susannah Boote '13 (Bruce Selleck) Metals Leachate Analysis: Marcellus Formation

Michael Britton '12 (Connie Soja) Dinosaurs and Darwin in the Viz Lab

Michael Carbone '12 (Bruce Selleck) Sulfide Mineralogy, Utica Formation

Jacqueline Colborne '11 (Bruce Selleck) Gamma Ray Analysis, Marcellus Formation

Alexander Crawford '12 (Amy Leventer) Marine Sedimentary Record of the Greenpeace Trough, Larsen A Embayment, Antarctic Peninsula

Caitlin Cunningham '13 (Amy Leventer) Paleoclimate Record from Lallemand Fjord, Antarctic Peninsula

Samuel Freccia '12 (Amy Leventer) Kayack Bay, Antarctica: Holocene Oceanographic Record

Lauren Frish '12 (Rich April) Soils on Adirondack Till

Halley Goldman '13 (Rich April) SEM/EDS Study of the Root-soil Interface of the Wood Fern.

Samuel Jackson '13 (Martin Wong) U-Pb Geochronology of Deformed and Cross Cutting Granites in the Footwall of the Harcuvar Metamorphic Core Complex

Sarah Lemon '12 (Rich April) Shale to Soil: Geochemistry and Clay Mineralogy Transformations

Julian Michaels '11 (Bruce Selleck) Gamma Ray Loggings Marcellus Formation

Bo Montanye '12 (William Peck) Calcite-Graphite Carbon Isotope Thermometry of Grenville Marbles in the Bancroft Terrane, Ontario, Canada

Casey Portela '13 (Bruce Selleck) Illite and Graphite Crystallinity, Utica Formation

William Schlitzer '12 (Karen Harpp) The Effect of Lithospheric Discontinuities on the Composition of Lavas from the Northern Galápagos Platform Extension

Joshua Solomon '14 (Martin Wong) Geochemistry of Volcanic Rocks in the Harcuvar Range

Kara Vadman '13 (Amy Leventer) Diatom-based Paleoclimate Record from the Hugo Island Trough, Western Antarctic Peninsula

Student Summer Research—Summer 2012

Allegra Bianchiani '14 (Amy Leventer) Late Holocene Diatom Record of Ice Advance and Retreat In West Antarctic Peninsula, Antarctica

Caitlin Cunningham '13 (William Peck) Paleoproterozoic Erosion in Colorado Front Range

Max Ephraim '13 (William Peck) Geochemistry and Growth of Hydrothermal Zircon in the St. Peters Dome District, El Paso County, Colorado

Halley Goldman '13 (Rich April) Plant Induced Chemical Weathering in Central New York Soils

Michael Leidl '13 (Bruce Selleck) Regional variations in Trace Element Chemistry, Marcellus Formation, New York

Margaret McMullen '13 (Amy Leventer) Holocene History of glacial and Sea Ice in the Larsen A embayment, Northeastern Antarctic Peninsula

Ross Mower '13 (Bruce Selleck) Ground-penetrating Radar Investigations of the Lake Moraine “Delta”

Tyler Peters '14 (Rich April) : Mineral Collection Curation

Mikhaila Redovian '15 (Amy Leventer) Diatoms: Studying a Proxy Record of Antarctic Glacial and Sea Ice

Damian Roesler '13 (Martin Wong) Thermochronology of Potassium Feldspar in Greyback Fault Block, Arizona

Joshua Solomon '14 (Martin Wong) Extension in the Eastern Adirondacks: Electron Backscatter Diffraction Analysis

Mary Spetsieris '13 (Bruce Selleck) Analyzing the Perceptions of Local Residents on the Use of High-Volume Hydraulic Fracturing in Natural Gas Development & Background Research for the Development of an Adirondack Water Budget

Spencer Staley '13 (Bruce Selleck) Geospatial Correlation of Sandstone Marker Beds Across New York State for the Exploitation of the Marcellus Shale

Kara Vadman '12 (Amy Leventer) Diatom-based Paleoclimate Record from the Hugo Island Trough, Western Antarctic Peninsula

Rita Van Kirk '12 (Karen Harpp) Geochemical Evolution of Santa Cruz Island, Galapagos

Wrobel, Alexander '15 (Martin Wong/Jeni McDermott) (U-Th)/He Zircon Thermochronological Dating

Alumni News

Bason, Roger **1972** Natural Currents (NC) is a renewable energy company with a focus on the development of technology and sites that produce electricity from the lateral movement of the tides. With over 10 years of development, Natural Currents is preparing commercial ready technology with a final series of testing in the US and Europe.

Present projects include a US DOE funded renewable energy park project in cooperation with the NYC Dept of Parks and Recreation on Randall's Island at Hell Gate in the East River to include combined power from wind, solar and tidal technologies.

During the summer of 2012, NC is completing work in the UK for the Duchy of Cornwall to evaluate tidal power potential on the River Tamar.

As president of Natural Currents, Roger Bason has worked with Interns from 18 Colleges and Universities to introduce students to the emerging field of tidal energy site evaluation and technology development.

Battles, Denise **1985** After seven years in Colorado, my husband Michael Mills and I recently accepted positions at the University of North Carolina Wilmington, where I will serve as Provost and Vice Chancellor for Academic Affairs and he will have a faculty appointment. Along with my administrative role, I will also hold the rank of Professor in the Department of Geography and Geology. We look forward to our new positions and encourage visitors to the Wilmington area to drop us a line.

Beardslee, Paul **1959** I have a "peculiar" connection with a current headliner, namely the Marcellus shale/gas operations. Back in the early 60's, following 2 years as an earth science teacher, I took a position with a small Texas based Oil Co. My job - leasing land in upstate NY in preparation for expanding old gas fields, via "fracturing", I averaged 4000 acres per month for 2 years. I left before anything happened to enter the college admissions world (spent 28 years at several colleges, ending as Dean of Admissions at Shippensburg). I worked with Monmouth Coll (Ill); Muskingum (OH); Franklin and Marshall (PA) Susquehanna U (PA); Georgetown U (DC) and Shippensburg.

Bernstein, Michael **2007** Received his M.S. in Environmental Policy from Bard College in May 2012.

Bishop, John **1980** Joined Ironman Capital Management in Houston. Ironman was founded by fellow Colgate alum Bryan Dutt. We run several energy investment funds including a public company long/short fund and two private and thinly traded company private equity style funds.

Bozek, Cathy **1999** After seven years of working at NOAA near Washington DC and in Gloucester, MA, I just accepted a position as an Aquatic Ecologist with The Nature Conservancy in Boston. I'll be working on river restoration and conservation, low impact development projects, and aquatic policy issues.

Brackett, Chapin **1998** The Kimberly-Clark pulp and paper mill where I was employed closed in late 2011. I left a few months before the official close and took a job with Boeing. I am working in the Everett manufacturing facility where the 747, 767, 777, and 787 models are assembled. My work is focused on environmental compliance with regards to hazardous waste and hazardous materials management.

In January we welcomed Henry into the world. Mom, dad, and baby are doing well!

Conklin, George **1963** Although I did not pursue geology as a profession, I am still interested in keeping up with current developments, since I graduated "BCD," or Before Continental Drift!!

This past year I attended the Carolina Geological Society's annual field trip. Given the boom in shale gas and its development, the emphasis was on North Carolina's Cumnock formation, which is known to produce natural gas. Due to an accidental legal situation which insisted that wells drilled in the state must be with five degrees of vertical, fracking was forbidden. Further, the Cumnock formation has only enough projected yield for five years, making it economically marginal. However, the state legislature has just now legalized fracking, probably as much for ideological reasons as economic ones. So, politics and geology continue on.

Butterworth, Craig **1991** Wife Hina Kato and I married six years ago. Our first - son Liam - was born June 30, 2011.

Still collecting sand samples from worldwide beach, river (and some constructions sites) I've visited. Latest one is river sediment from Taman Negara Rainforest, Malaysia.

Doren, Emily Constantine **2004** I have been working for Ecology and Environment for the past four and a half years (two years in DC and now back home in the Buffalo area). Much of my work is permitting and writing environmental reports for large, interstate natural gas pipelines. Recently I have been working on a regional sustainability plan in Western New York.

I met my husband Jesse while working in the US Antarctic Program, after a trip to Antarctica with Amy Leventer during my junior year led to an internship and then a job after graduating from Colgate. A couple of years after my graduation, I was able to work with Amy and a group of Colgate students as a marine technician on one of Amy's research cruises. Our lives recently got exponentially better when we welcomed our son Elliott in September of 2011. He is awesome.

Dutt, G. Bryan **1981** Launching another private equity fund, Ironman PI II to take advantage of opportunities in North American natural gas.

Dwyer, Luke **2002** Greetings from Boston! In September I accepted a position with the Boston University Athletic Department as an assistant business manager. It has been a very exciting time to be a terrier! The university recently accepted an offer to join the Patriot League and will be competing against Colgate in all sports but men's and women's ice hockey. We recently broke ground on a new turf field which will bring our field hockey team back on campus after an 11 year hiatus. Additionally BU recently announced the addition of a men's lacrosse team and a women's light weight rowing team starting in 2014 and 2013, respectively. A lot happening on Commonwealth Ave!

Jane Murray ('02) and I are enjoying our small apartment in South Boston. She also started a new job recently, accepting a position with Massachusetts General Hospital last July. Finally we were excited to see Juli Jansing ('02) in Boston last month on what is becoming an annual visit to Boston. Hope all is well!

Frisch, Lauren **2012** Was accepted to the Bard College Center for Environmental Policy Master's degree program, with a scholarship.

Glotch, Timothy **1999** I've been keeping very busy, both personally and professionally. I have two wonderful kids--Charlotte, who turns 4 in August, and Cameron, who is 1 and a half. I've been a faculty member at Stony Brook University since 2007. My research focuses on using infrared and Raman spectroscopy to study samples of Mars and Moon and their terrestrial analogs. All the data we generate in the lab are used to help interpret remote sensing data from spacecraft that are in orbit around those bodies. I'm a Co-Investigator on the Diviner Lunar Radiometer Experiment, which is currently in orbit around the Moon. A couple of years ago, we used this instrument to discover rhyolitic volcanoes on the Moon, which nobody knew existed! This year I received a 5-year NSF CAREER award related to my mineral spectroscopy research. My students and I are also using NASA supercomputers to study the effects of light scattering on the spectroscopy of planetary regoliths. I got tenure in January, and my wife started a tenure-track job in my department, so

we've effectively solved the "two body problem," which is a big relief. I often see fellow Colgate geology alums Liz Rampe and Christina Viviano at national meetings, where we'll often reminisce about the good old days at Colgate. Hope everyone is doing well. I'd love to hear from you!

Gonzales, Amy Baldwin **1981** My company, AK Environmental, LLC, just celebrated 10 years! We have been on the Women President Organization's 50 Fastest Growing companies for the past three years....should be another stellar year this year! Who would have thought that when Bruce Selleck was talking about that wedge of Marcellus Shale, it would be a big part of where my business would take me? No space for pro vs anti fracking discussions here - maybe at the next reunion? I am now a Certified Professional in Erosion and Sediment Control, so I know how dirt moves. My husband and I are building a house in Taos, New Mexico and looking forward to hiking and skiing in the mountains.

Hayes, Mark **1998** The big news since the last newsletter is the arrival of two daughters. I'm sure I was delinquent in writing in about Zoe, who's now 2.5 years. Our second daughter Anna was born last September. I also recently transitioned to manage portfolio strategy at the Stanford University endowment, where I had previously been responsible for the energy and resources portfolio. I now have to get my energy fix from dinner conversations with my wife, who recently started working at a research center at Stanford focused on renewable energy policy. I look forward to seeing old friends and lots of great changes on campus next year at Reunion!

Hibbard, Jim **1973** Ran into Rich Wiener at SE GSA meeting; he has retired from Exxon and is now living in his hot tub in Asheville, NC.

Hoffman, John **1968** Enjoying retirement in NW Connecticut. Gardening, golf & reading occupy much of my time, but the arrival of the first grandchild in April will probably upend those priorities.

Hudson, Shelby **2002** Less than a year ago, I took a job at a Mitigation Planner/GIS Specialist at FEMA Region VIII. Most recently, I worked in response to Colorado wildfires assessing damages for grant funding allocation. Please get in touch if you are in the area!

Hutton, Susan Corkran **1983** Greetings Geoheads young and old.

Jim Hutton '84 and Susan Corkran Hutton '83 celebrated our 25th wedding anniversary by touring Iceland. We achieved a long term goal of standing on the Mid Atlantic Ridge. That dream had developed in the halls of Lathrop way back in the early 80's. We saw incredible geology including columnar-jointing in basalts on a black sand beach. We climbed to the top of Eyjafjallajokull Glacier and peered down into the steaming volcanic vent. (The same vent that sent up the enormous volcanic ash cloud that shut down air traffic over Europe in 2010)

Jackson, Bill **1984** Last February I was a chaperone on a photography trip with students from Valor Christian H.S. in Zion National Park, Utah. During breakfast at the hotel, who did I see? Bruce Selleck sporting his Colgate gear. Imagine my shock to find a geologist in a place with big and beautiful rocks! Bruce looked great, so did Zion.

Karmosky, Chris **2004** I have accepted a tenure-track position at the University of Tennessee at Martin effective Fall 2012 as an Assistant professor of Meteorology. It's a small but growing program and is the only meteorology degree offered within the state of Tennessee.

Karn, Darren **2005** It's been a few years! After working as an environmental geologist in Syracuse for three years, I moved back to Toronto in 2008 to take on an MBA. Despite my intentions to continue working in environmental consulting, I shifted gears and now research and teach management theory to high school students, undergrads, MBA students and executives in Toronto. The Colgate geology spirit, however, lives on - I keep my rock collection from the OC on display in my office!

King, Marylynn **2006** This is my second year working for Backroads, an adventure travel company, and I've had the opportunity to be a part of cycling trips in the Netherlands, Belgium, and France in

addition to hiking trips in Iceland. I am in the process of applying to graduate school in Physical Therapy to start in the fall of 2013. I continue to travel with an appreciation for the geologic processes that have helped shape our dynamic earth and lovesharing what I can with our eager guests.

Kinsman, Nicole **2006** Still working as a coastal geologist for the state of Alaska - mapping some fantastically remote beaches. I recently became a storm chaser when we dashed out to measure storm surge heights during the Bering Sea Storm last November (2011) and I am also getting my very first taste of advising graduate students at UAF. Learning more all the time and looking forward to a visit back to Colgate soon!

Laemmel, Bill **1956** Tours offered: The magmatic segregation of the granite/pyroxenite of the Cortland Mafic complex the stratigraphy of the Fordham, Lowerre, Inwood, Manhattan formations in the Teatown Anticline (Ossing Quadrangle).

Lewis, Reed **1996** Still running my stores in Snowmass Village, CO (Daly Bottle Shop, Grain Gift Baskets & 81615 T.Shirts). Lucky to have had a chance to see first-hand the excavation and discovery of what has now been dubbed the Snowmastadon Project. Seeing a recently unearthed mother Columbian Mammoth still in situ was probably the highlight of my experiences here. At one point, they were finding a few bones every minute, as well as grasses and insects we well preserved they had maintained their original colors!

Liebman, David **1976** After 12 years with Colliers International & 11 years before that at CB Richard Ellis, in March 2012 I joined Op2mize, LLC, a boutique commercial real estate brokerage and consulting firm in Des Plaines, IL. Built on a strong service platform of industrial & office brokerage fundamentals, we also assist property owners, occupiers and investors with energy conservation, cost-cutting methodologies and sustainability initiatives, all based on ROI-driven principles. It's the intersection of commercial real estate, "green" buildings & smart building technologies. Would love to reconnect with my former geology student classmates!

McCardell, Laurie **1979** I've been in Wyoming for over 20 years now, which feels like just an instant.....or forever, depending on the day. My husband Allan and I have 3 kids: 10, 12, and 16, and my life revolves around them. Summers are full of 4-H showing at fairs, camping trips with the horses, days at the lake/reservoirs, boating, and endless chores. Around here the Fall means hunting season, and the kids don't like store-bought meat any longer.

We've tried to make our patch of desert along the North Platte River "pay" for itself with a few rental houses and a dog boarding kennel. Allan is away for months at a time working in North Dakota as a directional driller. I fill available time slots with gold prospecting, gold panning, and short stints working for gold exploration companies. I'm trying not to forget everything I ever learned at Colgate!

McLenaghan, Natalie **2002** I just finished my first year of a PhD program in marine sciences at UGA, after spending some time in Montana doing stream ecology. If you're traveling through the balmy southeastern states anytime soon, let me know! I would love to reconnect with some old pals from the geology days.

McKnight, Marshall **1983** My daughter, Sarah McKnight (Mt. Holyoke, 2011) continues her Fulbright research scholarship at the university of Jordan. She has finished six months of Arabic language study and now focuses on the Dead Sea Seismology's quantitative analysis.

Mecray, Ellen **1990** It's been ages, let's see: we do things in threes (3) - in 2008 I was married to Stephen Remsen, moved home to Falmouth from DC and changed jobs within NOAA. In 2010, we moved to Long Island with another new job in NOAA and had our daughter Lydia. In 2012, we are happily ensconced in my job as Regional Climate Sciences Director for NOAA's Eastern Re-

gion (SC-ME), living in Falmouth, MA and enjoying life with Lydia and our 2 golden retrievers. Hello to all in 'Gate Geology!

Meyers, Linda Chernak **2005** Hello Everyone! A lot has happened in two years but to sum it up, I finished my PhD in geology in December 2010 after spending 5 1/2 years doing rock deformation experiments on quartzite and serpentinite in a Griggs apparatus. I moved to Rochester and got married last June to my husband, who is finishing the 2nd year of his neurology residency at the U of R (halfway there!) and we honeymooned in Costa Rica. Since then I have been busy working as an admissions counselor at the Rochester Institute of Technology where I get to travel like crazy and was even able to visit my brother Brian, Colgate '14, on the way back from one of my trips. On a related note, I was thrilled to be invited by William and Martin to give a brown bag lunch talk on my dissertation research this past March. It was great to see everyone and be back in the department although I do miss 4th floor Lathrop! Hope everyone is doing well!

Padian, Kevin **1972** We have started a prize in memory of Bob Linsley. It is an award given to a rising senior (i.e., about to enter senior year) who, in the view of the faculty, shows promise for a career in research and teaching, and intends to go to graduate school. The funds may be used to go to GSA or other meetings, to do field or lab work, to purchase supplies and equipment for research, to attend field camp, to visit museum collections, or any other related purpose. The subject area is not restricted to Bob's interests! Anyone in the department can qualify. So far a couple of very deserving students have made good use of the funds. But we would like to increase the fund so that more than one student can benefit, and perhaps to move into cross-disciplinary awards.

If you would like to learn more about this prize that honors the memory of an inspiring professor, wonderful human being, and -- shall we say -- a unique personality, please let me or Jodi know. Thanks!

Palmer, Jeffrey **1980** I'm still living in Houston and will reach my 30-year anniversary with ExxonMobil in November 2012.

Powell, Jon Powell **1974** I'm still working mergers and acquisitions of high risk industries - energy, chemicals, and refining. Also, I'm the Mayor of Taylor Lake Village, TX. And in my spare time, just enjoying life. Come visit.

Proctor, Chris **1984** Happy to be living in a place with rocks after years in the Mississippi Delta and low country South Carolina.

Rampe, Elizabeth **2005** I received my Ph.D. at Arizona State last year, studying chemical weathering of basalts on Earth and Mars. I am currently at NASA - Johnson Space Center as a NASA Postdoctoral Program fellow. I'm continuing to study chemical weathering and soil formation processes on Mars and am involved in the Mars Science Laboratory rover mission.

Rankin, Douglas **1953** Although I retired in 1995, I remain active professionally. I maintain an office at the USGS in Reston, VA to which I go every day barring travel or other engagements. I have an ongoing research project of mapping in the Upper Connecticut Valley, New Hampshire-Vermont as well as spending time writing reports on past research projects. I am currently a member of the Board of Trustees of the Geological Society of America Foundation.

Schulenberg, John (Ted) **1952** My wife, Janet, died in December 2010 following 57 years of marriage. I teach a 12 hour course in geology at our Adult Education Center twice a year. The goal is to help our many retired, widely traveled folks better understand what they are looking at and how it got that way. I'm still waiting for an oft suggested, oft agreed that itw as a good idea and never realized all-years geology graduate reunion.

Smith, Dale W. **1970** Astrogeophysics from Physics & Astronomy Dept. (not Geology), but studied with Chief as well as with Tony Aveni.

Was on first Mexico trip (1970) led by Bob Linsley & Tony Aveni.

Now, 100 countries & 7 continents later, am Professor of Physics & Astronomy and Planetarium Director at Bowling Green State University.

Served as President of International Planetarium Society 1999-2000 and continue as Editor of the IPS Directory of the World's Planetariums.

Snyder, Michael **1980** Still residing in Dallas, my daughter Grace begins high school in the Fall...won't be long til we're trekking north to visit Colgate.

I'm a Trustee for St Alcuin Montessori, a toddler thru 8th grade program that is the largest Montessori in the country. The school has an active outdoor education program with geology as one of the topics! If anyone has some spare cash and would like make a donation toward the purchase of 80 acres of escarpment so we can expand the geo/outdoor education, I will forever be your friend :-)

Taylor, Russell **1948** You have various groups of people that are way off base. I'm really amazed at their efforts (research-research) to stop gas well frac jobs lots of jobs and money lost.

Trembly, Jeff **1978** Running a one-person environmental consulting firm for 11 years. Mostly groundwater quality work. Older daughter (26) getting married July 2012. Younger daughter (8) going to third grade. No retirement plans.

Tubman, Stephanie **2008** In March I returned from my two-year Peace Corps service in Guatemala as part of the Peace Corps Master's International program. In April I married my grad school sweetheart Rudiger Escobar-Wolf. We're currently living on Michigan's beautiful Upper Peninsula and working to finish our degrees in Geology here at Michigan Tech.

Tumpane, Kyle **2006** I successfully defended and completed my M.S. in Geology in spring 2010 at Boise State University. Since then I have moved to Utah and was working at the Kennecott Bingham Canyon Copper Mine outside of Salt Lake City. This spring I joined the petrology group at TerraTek, part of the oilfield services company Schlumberger. I'm working on thin section and SEM analyses for oil and gas companies.

I try to get out skiing, mountain biking and looking at interesting geology as much as I can while I'm here in Utah. I will also be getting married in early August, to my wonderful fiancée Katie who I met in grad school.

Visaggi, Christy **2002** It's been an exciting year in geology-related news for me. I received the Winifred Goldring Award from the Association for Women Geoscientists, which goes to an outstanding female pursuing a career in paleontology. Following that, I landed a job as a faculty member in geosciences at Georgia State University; I start in August 2012. Most recently, I defended my PhD, which utilized modern marine organisms to help investigate evolutionary patterns of predation in the fossil record. I'm now looking forward to exploring Atlanta this fall and creating "opportunities" for my own students to showcase their knowledge in the classroom. Thanks to Dr. Soja and the rest of the geology faculty for a great start to my career at Colgate! My husband, also a geologist (Arizona '99, Syracuse '04), is doing well and works at CH2M Hill. Hope to catch up with a few of you at GSA in Charlotte, and if any of you stop by the ATL, please drop me a line! Finally, congratulations to fellow 'Gate geology alum, Dr. Jann Vendetti on the new arrival to her family. :-)

Wehler, Bryan **1998** Thank goodness for organic shale deposits! During a very weak economy, our business has continued to prosper thanks in large part to the Marcellus + Utica shale formations. ARM Group, Inc. provides engineering and environmental consulting services in support of the safe and environmentally sustainable extraction of natural gas from shale formations in the Appalachian Basin.

White, Philip **1970** Lucky to have a lovely wife of 29 years, 3 sons, young men of 20, 22 and 24. Love living in Honolulu, life is good. To old friends, let me now if you are visiting Hawaii.

Williams, Jason **2003** Can't believe it's been 10 years since OC '02 – what an experience! I find myself with a firmly established sense of place in my hometown of Syracuse, NY with Laura and our sons (Evan and Martin). I just began my 5th year teaching earth science at Corcoran HS. The school's campus has access to a trail system, which provides frequent field experiences for my students. I look forward to reading about you all in this newsletter and I hope to catch up with my friends soon.

Winger, David **2012** My daughter Morgan is six and a half and entering first grade next year. Whenever we are outside, she selects a piece of nature to bring in and it is almost always a rock.

I'm in my fifth year of teaching at Lexington High School, but will be teaching physics for the first time next year. Nicholas Gould '98 is a physics teacher there as well.

I also recently got engaged to Amanda Hope Smith '05 and will be completing my master's degree in Curriculum and Instruction at the end of July.

Comments & other important information!

- A copy of this newsletter is also available in color at our geology website at <http://departments.colgate.edu/geology/alumni/alum.htm>
- Many of us are trying to “go green.” If you would like to join the cause, please contact us at **geology@colgate.edu** and we will be happy to remove you from our hard copy newsletter distribution list. You will be able to view future newsletters at the site mentioned above in the coming years. The newsletter is published biennially.
- Jodi McNamara, Administrative Assistant to the Geology Department, prepared the geology newsletter for publication. Please send all comments/suggestions to her at **geology@colgate.edu**.

If you have a change of address, including an e-mail address change or other correction and/or update (marriage, name change etc.), and would like to keep getting your newsletter, please contact the Alumni Office (at 315-228-7453 or alumnirecords@colgate.edu) as we receive **all** of our addresses from the alumni records folks.