Acadia Geology Alumni/ae Newsletter

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VIEW FROM ACADIA

Our newsletter is a bit late this year, not because we weren't thinking of you, but more because we have been especially busy at Acadia over the course of the past winter. Three circumstances have conspired to keep us especially active.

First, and no doubt of most interest to you as graduates of Geology, was the merger of the Department of Geology and the Environmental Science program into a single department, now called the Department of Earth and Environmental Science. The merger did not result in any changes in the programs of the units, which now include undergraduate degrees (BSc and BSc with honours) in Geology, Environmental Geoscience, and Environmental Science, and the MSc in Geology (and soon, Applied Geomatics). It did double our number of undergraduate majors, increase the teaching staff to nine faculty members, and require a physical merger of offices, equipment, and facilities. You will read more about the effects of this merger in the pages that follow.

Secondly, although the number of students in the new enlarged department has doubled, the number of students in the Geology program is also starting to grow substantially. For several years, we have had third-year classes in petrology, structural geology, tectonics, etc. with a class size of about 10 students. However, somewhat unexpectedly the second year core group has doubled, with 20 students in optics and more than that in field school, and many of us are wondering if that means double labs in all the third year courses next year! Remembering back to the mid-1980s, I tried to cram all the optics students into one lab of 18, but they kept on coming, and I was forced to split the lab again It's always exciting to teach a larger class the mysteries of the microscope, but it does mean yet another afternoon commitment. Also, the general elective courses in Oceanography and Natural Disasters are both gaining in popularity, with over 250 students in each one.

The third complication arose because 2007 was the year for the University and Faculty to renew the collective agreement that governs our workplace. While never an easy process, this year's negotiations dragged on till November, with the result that many of the usual activities (budgeting, promotion deliberations, etc.) were delayed much later in the year, and were all squeezed into a shorter period of time.

It is said that you can assess the character of a man (or I suppose a woman, but when I heard it, it was a man) by his response to a crisis. Does he see it as a survival challenge or as an opportunity? We have all had our range of crises this past year, and I think we have made opportunities out of them all. Our new doubled department puts us in the same league as the traditional "big departments", but we are maintaining our small department feel. The bigger classes are certainly a challenge to manage, but we have adopted new teaching techniques, and are building a collegiality that includes faculty and students. As for the compressed season of budgeting, promotions, and the like, the best that can be said is that it will soon be done!

We now have a whole other side in the department, which often inspires interesting discussions in classroom or clubroom. Through the environmental science students we have developed a much closer working relationship with the faculty in other departments, particularly Biology and Chemistry.

We look forward to you, our alumni continuing to return to visit the department – it may have a different name, but we hope that it still retains much of the spirit you provided to it. The Fletcher Geology student club is active – it is organizing its 57th blood donor clinic this year, and continues to participate in the AUGC and the Atlantic Geoscience Society conferences. We like to think that we have offered the best of both the old Geology department and Environmental Science program to each other and that a new and improved department will grow out of the parent units.

This newsletter is being directed to the alumni of the Geology programs (BSc, MSc), but perhaps in future editions you will be able to read the best of both Geology and Environmental Science as we continue to merge!

Rob Raeside

HAPPENINGS

The department was well represented by a large group of about 15 faculty and students at the AGS annual meeting in Moncton in early February, 2007. Once again, Ian Spooner and his team of Acadia students did an excellent job in managing the data projection equipment during the conference, as well as looking after their various scientific presentations and social activities.

During the February mid-term break, Erin Dodge, a fourth year student in Geology, participated in a field school investigating the geology and petroleum industry of Trinidad organized by Dr. Grant Wach of Dalhousie University. Much appreciated financial support was provided by the Department of Energy to allow students from Nova Scotian universities to participate in energy-related training opportunities outside of the province.

Sandra Barr and graduate student Aaron Satkoski travelled to Durham, New Hampshire, in mid-March to present papers at the annual meeting of the Northeastern Section of the Geological Society of America.

The annual end-of-year Acadia Geology Department banquet was held in the then just-opened Fountain Learning Commons at Acadia University. An excellent turkey dinner was preceded by a “highlights of the year in photos” power point presentation and followed by banquet speaker Dr. Tim Webster (CoGS), who provided a glimpse into the application of GIS techniques in Nova Scotia, past, present, and future. Student award winners received certificates of recognition of their achievements. Professors also received “award” certificates for mainly their less admirable achievements over the year.

A short-course in early May at the Bermuda Institute for Ocean Sciences was led by Peir Pufahl. The course focused on the sedimentology, diagenesis, and sea-level history of Bermuda. Six Acadia students, as well as one petroleum industry professional, participated. Mornings were spent exploring Pleistocene carbonate outcrops and snorkeling in modern reef environments. In the afternoons collected samples were examined, and lectures reinforced concepts developed while in the field.

Acadia’s Spring Convocation was held on May 14th. Eight students received degrees in Geology, including two honours degrees. In addition, two degrees were awarded in our new program in Environmental Geoscience, including one with honours. Given our current combined status, it is interesting to note that twenty students graduated Environmental Geoscience degrees, including seven with honours. We wish all of our graduating students the best of luck and good fortune in their future endeavours, and hope that they will keep in contact with us, as so many of their predecessors have done.

The department was pleased to welcome two new adjunct professors in the spring of 2007, both working in collaboration with Peir Pufahl. Eric Hiatt is no stranger to Acadia, have spent part of his recent sabbatical leave here. Eric is at the University of Wisconsin, Oshkosh, and will be working with Peir on Precambrian ironstone in Labrador this summer. Lee Groat is a professor of mineralogy at UBC, and will be co-supervising new graduate student Dan MacDonald in his investigations of mineralization in Yukon.

BSc (honours) student Kara-Lynn Scallion (along with supervisors Peir Pufahl and Sandra Barr) was busy investigating outcrops in Saint John, NB, on 14 May when a CBC television crew stopped and asked for an interview. Kara-Lynn and Sandra described the regional geology and importance of these outcrops, which bridge the Precambrian-Cambrian boundary. Their interview was taped for broadcast on Victoria Day. Kara-Lynn received more "press time" later in the month when she became Princess Port Williams in the Apple Blossom Festival, and was awarded the position of “Second Lady-in-Waiting” in the competition for queen.

For the past 7 years, visiting scientists from Britain and Ireland under the supervision of Brian Williams (University of Aberdeen) have often been based at Acadia while investigating the geology of the Triassic rocks of the Fundy Group. During the 2007 season, the program was spearheaded by post-doctoral fellow Sophie Leleu, who worked primarily in the Wolfville Formation. She subsequently visited the department in September to launch the visiting speaker series for the 2007-2008 academic year with an interesting talk on the provenance of these sedimentary rocks.

July 1, 2007, was the "big day" when the Department of Geology and the Environmental Science program at Acadia University were merged into a single Department of Earth and Environmental Science. The merger did not result in any changes in the programs of the units involved, so the merged unit offers undergraduate degrees (BSc and BSc with honours) in

Geology, Environmental Geoscience, and Environmental Science, and the MSc in Geology (and soon, Applied Geomatics). It did double our number of undergraduate majors, however. Rob Raeside had a brief return to the position of Head in the new department, before being again persuaded to take on the role of Acting Dean of Science. Professor Linda Lusby, who has taught in the Environmental Science program since its inception, took over as acting department head. So far, all is going smoothly, although we have trouble fitting around the table at departmental meetings.

Over the summer, the newly merged department welcomed Dr. Nelson O'Driscoll, a Tier 2 Canada Research Chair in Environmental Biogeochemistry. Nelson is studying the impact of climate change on mercury contamination in freshwater ecosystems by analyzing the effects of temperature, precipitation, and solar radiation on the contaminant. He hopes his research will contribute to the development of effective measures to reduce exposure to this contaminant as climate change occurs.

On August 21-22, the Earth and Environmental Science Department hosted the EdGEO annual workshop for teachers. Sandra Barr and Ian Spooner organized the event, which consisted of a 2-day field trip in the Wolfville area emphasizing the connections between geology and the environment, and an evening lecture and discussion session led by Ian on the topic of "Climate change: what Al Gore didn't tell you". Both Sandra and Ian found it an interesting experience, teaching teachers! To start Day 2 of the workshop, Acadia Geology graduate Tracy Webb, who teaches at Horton High School, contributed a lecture describing a lesson plan for a Horton Bluff field trip, which was also well received by the participants.

Graduate student Doug Stiff presented his MSc research at the Canadian Meteorological and Oceanographic Society, Canadian Geophysical Union and the American Meteorological Society Congress 2007 in St. John's, NL, in October. The title of his presentation was "Flood Risk in Oxford, Nova Scotia: Mapping flood inundation in an ungauged meso-scale watershed", the topic of his MSc thesis project supervised by Ian Spooner.

The department developed a fascination with impact structures that led to the resurrection of George Steven's idea of the presence of an impact structure, which he named ASTRID, in southwestern Nova Scotia. A team including all the Geology faculty in the department as well as others (George Stevens, Ian Spooner, Jared Morrow, Peir Pufahl, Rob Raeside, Richard Grieve, Cliff Stanley, Sandra Barr, and David McMullin) submitted an abstract entitled "Physical evidence of a late-glacial (Younger Dryas?) impact event in southwestern Nova Scotia" to the annual meeting of the American Geophysical Union. Ian and Rob travelled to San Francisco in December to present the poster, which was well received.

FACULTY AND STAFF NEWS

Sandra Barr's research work during 2007 can be best described as "wide-ranging". Geographic areas covered included southern New Brunswick, Nova Scotia, Labrador, and Thailand, and subjects varied literally from A (acritarchs) to Z (zircon). She is involved in writing a chapter on volcanic rocks for a book on the Geology of Thailand, and also contributing to a chapter on the late Precambrian - Paleozoic in a book tentatively named "The Last Four Billion Years", a popular book on the geology of Canada modeled to a large extent on "The Last Billion Years" book on Maritime Canada, to which she was also a contributor. This new book is a contribution to the "International Year of Planet Earth", an UN-declared "special year" for all of us "Earth scientists". Her other activities included conference presentations (in Moncton, Newfoundland, New Hampshire, and Fredericton), and co-leading field trips (southern New Brunswick for an international group of geologists but in honour of Dr. David Stewart of the USGS, and the EDGEO teachers' workshop here in the Wolfville area). In combination with on-going investigations of igneous and tectonic problems, Sandra is increasingly involved in studies of sediment geochemistry, geochronology, and oxygen and Sm-Nd isotopes. In addition to research and of course teaching, volunteer positions with GAC and other organizations fill her days (and too much of most nights). Life is good and busy!

Lynn Graves, previously part-time secretary for the Environmental Science program, replaced Janet Harnum as secretary for the new combined department on a (more than) full-time basis. We tease her that with both her husband and her brother being geologists, ending up working with geologists was a matter of fate. We are grateful to Lynn for taking on the heavy load of being secretary to a newly combined unit, part of which is "up the hill" at the K.C. Irving Centre - obviously her job is demanding both mentally and physically.

Janet Harnum, our former secretary-technician, left the department in July to take a new career path. She opened the "Vegetarian Lunchbox" in Wolfville, which appears to be doing very well indeed, and serves great food. We recommend it if you are back in Wolfville for any reason.

Elisabeth Kosters again taught the second year course on Stratigraphy, ensuring all future Acadia grads are thoroughly knowledgeable about deltaic (and other) sedimentary rock types. After a fall term teaching at Dalhousie, she is back at Acadia again this term, teaching Stratigraphy, and once again Global Tectonics. In 2007 Liz was appointed business manager of the Canadian Federation of Earth Sciences, a role that could probably be a fulltime job in itself, and which gives us an interesting perspective through her into the machinations of associations, organizations, government, and industry.

Linda Lusby stepped in to take on the challenging role of acting head for the new Department of Earth and Environmental Science. Professor Lusby is active in the LEAD (Leadership for Environment and Development) program. In July 2007, she travelled to Malawi where she met with the Farmer's Union of Malawi, Catholic Development Commission of Malawi, and representatives of the University of Malawi and LEAD Southern and Eastern Africa. Her goal was to strengthen ties between Acadia University and Uniterra's agriculture and rural development sectors. She also bolstered the knowledge of Uniterra partner organizations in sustainable community planning, organic farming and genetically modified crops.

David McMullin continues to teach several courses (or parts thereof). In the winter he taught Metamorphic Geology (3503) for the first time. This had been taught by Dr. Macdonald for many years. He found it interesting finally to be teaching in his area of specialization. The spring saw his usual involvement with Field Methods and in the late summer he was also involved in the ENVS field school. Now that we are an amalgamated department we will be investigating a more amalgamated field methods course as well. We have one of our largest 2nd year classes in 20+ years, which means that field school in 2008 will be a very busy time for David. David once again co-taught Natural Disasters with Ian Spooner. This year there were over 260 students enrolled by the start of term – a record for the Department, which will likely be beaten by Dr. Pufahl's Oceanography course in the winter term. Teaching these very large enrolment classes comes with its own challenges – most of them associated with managing the course and dealing with large numbers of emails a day. The Faculty strike in the fall was a difficult time, but one of the positive outcomes from David's perspective is that he is now eligible for sabbaticals. He is planning to spend his first (January – June 2009) aboard one of the vessels associated with Class Afloat. This program, based in Lunenburg, became affiliated with Acadia a few years back and recently Acadia faculty have been spending time aboard ship teaching classes. David hopes to spend 5 months sailing through the South Atlantic and Caribbean Sea teaching various first year courses with time ashore to see some spectacular (he hopes) localities that help illustrate geological concepts/ideas from those courses. In January of 2007, David resigned from his post of Production Manager for *Atlantic Geology*, which he had held for 8 years. The journal has moved to online-only status and David felt it was a good time to change.

New to the department in 2007 was **Nelson O'Driscoll**, who moved with his family from Ottawa in the summer after enjoying a summer exploring the area, especially Kejimkujik National Park, with his family. His area of expertise is the biogeochemistry of toxic substances in ecosystems, with research focusing on the effects of solar radiation quality, organic matter structure, and geochemistry on mercury fate in ecosystems.

Don Osburn has remained busy this year as our faithful thin section preparer and geological technician. Don is mostly busy making thin and polished sections for teaching and research purposes, and organizes our hand sample rock and thin section collections. Substantial improvements in his rock sawing equipment have improved his productivity, and with renovations to the room across the hall, all the crushing and pulverizing equipment are now within earshot of Don's office.

Peir Pufahl had a productive and exciting year. After a leading a great field course in Bermuda, he headed up to northern Labrador where his field camp was subsequently destroyed by a bear. In September, Peir, Cliff Stanley, and MSc student Gabe Nelson received a lot of publicity when their paper on the Sudbury ejecta was published in the September issue of the GSA journal "Geology". Together with co-authors Eric Hiatt and Cole Edwards (University of Wisconsin – Oshkosh) and Jared Morrow (San Diego State University), they reported on their discovery and investigation of a two-to-four-metre-thick layer of "ejecta," south of Lake Superior, in which they found high levels of iridium, "melt drops", and "shocked" quartz crystals, as well as evidence of reworking by a

tsunami. In the late fall, Peir took delivery of a new cathodoluminescence (CL) system (~$50,000). CL is the phenomenon whereby light is emitted by a material when it is impacted by an electron beam and is used to study the structure within materials. When combined with a petrographic microscope, the texture of a rock can be viewed simultaneously with CL and light. This instrument will play an important role in research by Peir and his students, and potentially others in the department.

Rob Raeside had a 10-month term as Dean of Science, filling in for Dr. George Iwama, who was seconded to the vice-president's position. These days, the dean of science's office is on Huggins third floor, so he was just around the corner from the Geology department. In late June he completed the term, and moved his materials into a vacant office as he headed over to the UK to visit family and attend a joint meeting of the Mineralogical Association of Canada, the Mineralogical Society of America and the Mineralogical Society (of UK - but not so stated). Upon his return he took over as department head in the new Earth and Environmental Science department, moving his materials back into his office, only to discover a few hours later that the incoming Dean of Science didn't come in! So it was back to the south side of the building for another year as Dean of Science, during which he discovered that that would be followed by a third year. He is beginning to feel as if this might be his future. To keep in touch with Geology, he continues to teach Optics, Atmosphere Weather and Climate, and parts of the Geology of North America, first year Historical Geology and Field School courses. He attended the GAC-MAC meeting, in Yellowknife, where he spent most of his time in the Laurentian and Greenland sessions, catching up on the recent developments in Shield geology and fretting about the number of lectures he needs to update. At the Yellowknife meeting, his latest editing project, a short course text on the "Geology of Gem Deposits" was released (lots of colour photos of Canadian gems – available from the MAC website!) He also attended the AGU meeting in San Francisco, as well as heading across the Atlantic to Cambridge for the joint mineralogical societies meeting and to Berlin to participate in the International Congress of Vexillology, where he was inducted as a Fellow of the Federation.

John Roff may not be known to many of you. John has been a Tier 1 Canada Research Chair in Environmental Science since about 2004, with particular interest in coastal fisheries, and joined the Earth and Environmental Science department with the merge of units. He will be retiring in June of this year, and looks forward to spending more time sailing the Atlantic.

Ian Spooner spent the last year roaming the woods of Nova Scotia and northern B.C. trying to shed more light on Quaternary processes in both locales. In northern B.C., Ian has been looking at a fossil glacier on Mt. Edziza. Gasses trapped in bubbles in the ice should help us understand what the composition of the atmosphere was 10,000 years ago. In Nova Scotia Ian continues to delve into the mysteries of organic lakes and how they (and the species they contain) have evolved since deglaciation. Graduate student Doug Stiff (M.Sc. Dec. 2007) completed his thesis on Flood Risk Assessment in the Oxford, NS region and Chris Bates is undertaking a study of relative effects of isostatic and eustatic controls on sea level changes in the Bay of Fundy. Ian also achieved promotion to full professor this year.

Cliff Stanley attended the GAC-MAC meeting in Yellowknife in late May. His poster, co-authored with his PhD student David Murphy (U. Western Australia), and entitled "Documenting geochemical, physical, and thermodynamic changes associated with all possible geochemical reactions in rocks using Gale vector space: Metasomatic examples from diamond-iferous kimberlites and Ni laterite deposits" was conveniently placed next to the kimberlite core shack displays, and was constantly busy. It was his first trip north, and into the boom-town environment of diamond mining, and he was fortunate to be able to participate in the field trip to both the Diavik and Ekati mines. In June, Cliff was off to Spain for the International Applied Geochemistry conference, another field trip, short course presentation, and reunion with a number of former students. During the remainder of the summer he was also mainly travelling, including New Zealand (to visit honours student Tim Cross in his field area), and Australia, as well as various locales in the USA and Canada.

GRADUATE STUDENTS

Students who finished their graduate studies in 2007 included: **José Texidor-Carlsson**, who successfully defended his thesis on "Metallogeny of the Eastern Caledonian Highlands, southern New Brunswick: a pilot study". Sandra Barr and Cliff Stanley jointly supervised his thesis. José is currently working in mineral exploration in eastern Canada. Two other students defended their theses in December. **Doug Stiff**, supervised by Ian Spooner and Chris Hopkinson (Centre of Geographic Sciences), defended his thesis on "Investigation of flood risk in an ungauged

watershed in a coastal environment using LiDAR and GIS Tools". Doug is now working for the Nova Scotia Department of Environment. **Aaron Satkoski** defended a few days later; his thesis is entitled "Sm-Nd isotopic and whole-rock chemical compositions of late Neoproterozoic and Cambrian sedimentary and metasedimentary rocks of the Caledonian Highlands, southern New Brunswick". His thesis was supervised by Sandra Barr. Aaron began a PhD programme at Syracuse University in January 2008.

Continuing graduate students and their projects are:

Stephanie Anderson: Chemical sedimentology of Paleoproterozoic phosphatic iron formation in the Labrador Trough and the evolution of the early ocean; *supervisor: P. Pufahl*

Chris Bates: Sea-level changes in the Bay of Fundy region: isostatic and eustatic controls; *supervisors: I. Spooner, T. Webster (CoGS*

Andrea Lundrigan: Glacial stratigraphy and till geochemical dispersion controls associated with the Brazil Lake Pegmatite, Yarmouth County, Nova Scotia; *supervisors: C. Stanley, I. Spooner*.

Sheri Lyon: Sources of magnetic and gravity anomalies on the Scotian shelf southeast of Cape Breton Island and onshore-offshore geological correlations using geophysical modeling; *supervisors: S. Barr, S. Dehler* (Sheri defended successfully in January, 2008).

Dan MacDonald: The mineralogy and paragenesis of the Ni-Mo layered sulfide horizon: A potentially new type of stratiform SEDEX deposit, Yukon Territory, Canada; *supervisors: P.Pufahl, L. Groat (UBC)*

Tamara Moss: Lithogeochemistry of hydrothermal alteration at the Pampalina porphyry Cu deposit, Region 2, Chile; *supervisor: C. Stanley*

Pizye Nankamba: Geology, geochemistry, and mineralogy of the Three Mile Plains U deposit, Nova Scotia; *supervisor: C. Stanley*

Gabriel Nelson: Chemical and physical paleoceanographic constraints on Paleoproterozoic phosphorite and iron formation accumulation, Baraga Group, Michigan, USA; s*upervisor: P. Pufahl*. Gabe was awarded the best student poster in sedimentary geology at the Geological Society of America annual meeting in Denver, Colorado. The GSA's annual convention is the largest congregation of Earth scientists in the world. The poster is based on his M.Sc. thesis and is entitled "Shallow-water Phosphorite Accumulation in the Paleoproterozoic (1.85 billion year old) Baraga Group, Michigan, USA". His thesis research has made a significant contribution to understanding how phosphorus, a bioessential element, was cycled in the very ancient oceans.

Matthew Tucker: Geology and mineralization in the Faribault Brook area, western Cape Breton Island, Nova Scotia; *supervisor S. Barr*

HONOURS STUDENTS

Three graduating students submitted their honours theses in geology in the spring of 2007. **Geoff Baldwin**, working with Peir Pufahl, completed his thesis entitled "*The sedimentology and diagenesis of a Mississippian brachiopod biostrome in the vicinity of Newport Landing, Hants Country, Nova Scotia*". **Rafael Cavalcanti de Albuquerque,** working with Ian Spooner and Cliff Stanley, finished his thesis on *"The southern Nova Scotia Wine Terroir: A geological and pedological approach including the cation exchange capacity* of soils from vineyards". **Crystal Laflamme**, working with Cliff Stanley, completed her thesis on "*Gold and sulphide minerals in the Triple Seven VHMS deposit, Flin Flon, Manitoba*".

In addition, Ian supervised Environmental Science honours student **Ty Smith** in his project on *"A Baseline Assessment of Surface Water Quality in the Kesagami River Wilderness Area, Ontario"*, and Ian and Cliff co-supervised Environmental Science student **Mary Samolczyk** in her thesis entitled *"Arsenic, uranium and other key constituents in water from drilled wells: a study of local geochemistry and its effects.* Mary's presentation of her thesis results won the best paper award from NSERC at the annual APICS Environmental Studies Conference held in Corner Brook, Newfoundland, in March. Mary also won the CSPG award for best paper at the AUGC conference in October, 2006. Clearly her work is an outstanding example of synergy between geology and environmental science.

B.Sc. Honours theses this year are listed below in alphabetical order by student name:

Tim Cross Lithogeochemical vectors toward gold mineralization in the Amaranth Vein, Union Hill Deposit, Waihi, New Zealand; *supervisor: Cliff Stanley*

Kieran McDonald (Environmental Science thesis) Sedimentological records of the Holocene history of the Labrador Current; *supervisors: David Piper (AGC-Atlantic) and Ian Spooner*

Kara-Lynn Scallion Phosphate deposits in Cambrian rocks of Avalonia in Saint John, New Brunswick, area; *supervisors: Sandra Barr and Peir Pufahl.*

WHERE ARE THEY NOW?

Alison Steele

Each year we ask a graduate to write an article on his/her past and current activities since leaving Acadia. This year we invited Alison Steele, who studied at Acadia from 1983-1987 as a BSc (Honours) student.

I'm a fringe geologist. I'm not talking capillary fringe – I'm talking periphery of the discipline.

I never intended to be this way – in fact, my decision to become a geologist was based on a traditional field experience. I remember the day of that decision well, because it was my birthday. I awoke in a mood most foul: it was cold, raining, and Nancy VanWagoner had scheduled her Intro class for a trip to the Fundy coast to look at Triassic rift basalts. Well, I had two major problems with that. First, I already knew about Triassic rift basalts; I'd been collecting zeolites since I was eight years old. More importantly, it was my NINETEENTH birthday! I wasn't supposed to be freezing my butt off listening to some newly minted Associate Prof prattle on about old-news lava. I was supposed to enjoy a leisurely afternoon that would include a sashay down to the NSLC for my liquor ID, and a minor walk-of-fame back to the dorm with a mighty case of Keith's under my arm, in full view of the world for the first time ever. Of course, my cohorts and I already had a beer cache that would have made William S. McCoy proud, but that wasn't the point. The point was that this field trip fiasco was interfering with my crowning moment of legal-age glory. I thought long and hard about skipping out but in the end, I decided to live up to the goody-two-shoes persona for which I was already legendary. I didn't cut the class, although I did reserve the right to resent that decision for the rest of my life.

What happened next became one of those moments that truly define the transition from childhood to adulthood for those of us lucky enough to experience it. Teeth chattering, glasses foggy, wet hair matted to my head, I listened dumbfounded, as Nancy brought the geology to life in a way that no self-taught experience ever could have. "My God," I thought to myself. "I've been crawling around these beaches since I was a kid, but it took this woman from Los Angeles to make me SEE them for the very first time." I understood everything then. I understood my own mistakes. I understood that I wanted to be a geologist, to do THIS kind of work. I think I came of age on that day, but not in the way that I had originally anticipated.

I worked hard after that. I worked for Nancy that first summer, on a research grant she shared with the Biology Department for the purposes of studying Minas Basin sedimentary processes. I spent my second summer at the University of Ottawa doing stable isotope work. My third summer job produced fifteen minutes of national fame – an internship at Johnson Space Center. After ten transformative weeks in Houston, Texas, I returned to Acadia for my senior year, took a bronze medal at graduation, and headed for the Ph.D. program in the Department of Earth & Planetary Sciences at Washington University in St. Louis, Missouri.

Grad school disagreed with me for two reasons. First, although the members of my research group were extraordinary on both personal and professional levels, I suffered from an acute case of "undergrad withdrawal". One day, I expect to see a Slate article (probably to be authored by a similarly suffering psychology grad student) describing this phenomenon, which is every bit as common and powerful as post-traumatic stress disorder (PTSD). Sometimes, the undergraduate experience is just SO GOOD that EVERYTHING following it is a severe anticlimax, to the point where the student has a hard time maintaining perspective. Such was my post-Acadia reality. To make matters worse, my interests shifted in a way that was not compatible with my school: I became interested in environmental affairs. "I see what's happening," I would tell members of my new Department. "This environmental stuff is going to be big, and I want to get in on the ground floor." But I was discouraged from saying "environmental" in any context of study or career because, in those years (late 1980's), it was a dirty word associated with "soft science", "social activism", or "Rocks for Jocks". "Environmental is not an option befitting someone of your academic calibre," I was told. Unsupported and disenchanted, I left with a Masters degree, headed back to Texas, and spent three unemployed months sneaking into the University of Houston library to study everything "environmental" that I could get my hands on.

The public part of the rest is history, to the point where I now teach a continuing education module on how and why it happened: environmental career

opportunities exploded and, for a while, just about every non-faculty, non-post-doc'ing geologist seemed to be accepting employment in the field. That it's mainstreaming and legitimization coincided with an early-1990's oil industry downturn seemed to make the trend even more vivid.

Privately, the environmental boom sealed my fringe fate. As much as I love fieldwork, I tend to be "book smart" – I can recall and manipulate large volumes of information (much of which is of questionable value). Well, that skill translates wonderfully into regulatory analysis. The Peter Principle cannot be opposed – like it or not, we get promoted to our level of incompetence. Many people want to become environmental geologists, but not many people want to digest and apply the principles that underlie the regulatory frameworks that stimulate the need for environmental geologists in the first place.
The niche was too open and too lucrative to pass up. After working for "The Man" in conventional employment settings for more than a few years, I formed my own company about 18 months ago (see www.EnviroSteele.com). I now have 33 industrial, commercial, and local government clients, and more success than I predicted.

Houston itself is partly to blame for me doing less "real" geology than I would like. Basically, this town sits atop 50,000 feet of muck. I don't even feel like invoking correct terminology (e.g., sedimentary basin, coastal plain, fluvial depositional regime) – "muck" seems like a better fit. Occasionally, I will tear myself away from regulatory compliance long enough to accept a monitor well installation contract. I usually start those jobs in mild euphoria, because I'm finally getting to go outside and behave like the real geologist I wanted to be in the first place. But glee often turns to despair, because muck has a nasty habit of being unpredictable. Subtle variations in porosity and permeability can produce significant shallow groundwater behavioral differences. On a bad day, I base my productivity prediction less on my well log, and more on the number of teeth remaining in my driller's head (drillers are a tough, well-worn bunch). If he has an even number of teeth, then let's predict that the hole will make water. Odd number of teeth, and it's probably going to be dry for at least 10 feet below where I expect to find that all-important cap fringe. ☺

I may have found a way to make some peace with my fringe status, however. I like to develop specialty educational materials to complement both conventional academic instruction and on-the-job training. I've delivered some courses on a contract basis, and I've reserved a few lectures for nonprofit settings. I was the speaker for the November 2007 meeting of the Houston Geological Society's Environmental and Engineering group. As I began my talk, I couldn't help but think, "A lot of these guys in the audience get to work with ACTUAL ROCKS." As the evening drew to a close, the committee chair mentioned that my talk had drawn the largest crowd in four years. Maybe I'm a fringe geologist so that I can be of some use to those who are not.

Every year, this Alumni column showcases a geologist who graduated from Acadia and went on to do even bigger and better geology. This is not exactly one of those columns. I'm not sure what the moral of my story is... work hard, try to be perceptive about trends, and you can craft yourself a darned good living, even on the periphery of a discipline?? But with market demand for geologists at an all-time high, I'm not sure that any of you NEED a moral to this story! I do recommend that every geologist should experience a period of self-employment, for the unprecedented perspective that it provides. But maybe not right now - maybe you should think about that farther down the road, once you have harvested the low-hanging fruit of our current economic situation. Best of luck in the process. And feel free to call me if you ever want to go see some muck.

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FLETCHER GEOLOGY CLUB

The Fletcher Geology club had a rocking 2007! The 2007-2008 executive began their prestigious reign at the year-end banquet in March. The executive includes Tim Cross (President), Jeremy Kozlowski (Vice-President), Kate Albright (Secretary), Alex Kaul (Treasurer), Amanda Marshall (Social Events), and Kara-Lynn Scallion (Student Rep).

To welcome back students and celebrate the merger of the Geology and Environmental Science departments, the club helped with the welcome BBQ in September. It was great to see so many students and faculty from both disciplines mingling and becoming friends.

The fall provided a great opportunity for club members to travel. Over Thanksgiving, a group of students ventured to Joggins to search for fossils. In late October, students traveled to St. Francis Xavier University in Antigonish to participate in AUGC 2007. The department was well represented with an oral presentation by **Tim Cross** titled *"Lithogeochemical vectors toward gold mineralization in the Amaranth Vein, Union Hill Deposit, Waihi, New Zealand,"* and a poster presentation by **Kara-Lynn Scallion** titled *"Phosphate deposits in Cambrian rocks of Avalonia in the Saint John area, New Brunswick"*. Both students did an excellent job and Kara-Lynn tied for the Imperial Oil Best Poster Award.

December brought the annual Christmas party, this year at Dr. Pufahl's house. The yankee swap took place, alcoholic beverages were popular gifts to give and steal, although many participants tried to steal and keep a live fish that was given as a gift.

With a successful 2007 behind us, the club is looking forward to a prosperous and fun 2008!

A proud group of students modeling their safety gear at a tour of the Scotian Mine during AUGC 2007. From left to right are Kara-Lynn Scallion, Leah Christie, Alex Kaul, Kate Albright, and Amanda Marshall.

HOW WE USED TO LOOK …….

This photograph, taken in the Fall of 1991, may bring back some memories (especially for those of you who can recognize yourselves in the photograph!). Where have the years gone?

KEEPING IN TOUCH

If you have an item of interest, or any news of your activities (or those of your classmates), please let us know. We will try to incorporate as much as possible into future newsletters. Did you write an annual newsletter at Christmas? Send a copy to Dr. Barr or Dr. Raeside at the Department of Earth and Environmental Science (sandra.barr@acadiau.ca, rob.raeside@acadiau.ca)

Jillian Bambrick (BSc '04) is studying toward a MA in Archaeology at Memorial University. **Dave Lowe (BScH '05)** is studying toward an MSc in Geology also at Memorial. They were home at Thanksgiving, and reported that **Corey Curl (BSc '04)** moved to Grande Prairie, Alberta, where he is working in a soil analysis lab.

Julia Beresford (BSc ENVS '08) is working as an environmental scientist with A.D. Williams Engineering in Yellowknife.

Jeff Bigelow (BScH '05) and his wife Jane welcomed a new addition to their family in September. Jonathon Scott Bigelow arrived early in the morning (1am-ish) and came in weighing 3.5kg. Jeff and Jane live in Australia, where Jeff works for Newmont Mining Corporation. They were back in Nova Scotia in early December to show of their son.

Jeffrey Calder (BSc '01) recently received a job offer from Kodiak Exploration Ltd. to work on the Golden Mile, which is between Beardmore and Geraldton, Ontario. His position is as an entry-level geologist and has been busy learning the ropes: core logging, spotting drill holes, among other takes.

Life has been pretty exciting for **Kris Carruthers (BSc '99)**. He left his well site geology job after doing a lot of international work, which gave him the necessary skills for his new job. Kris is now a senior geologist with Verenex Energy and he will be working out of their Tripoli office. Kris and his wife, Sheryl, will be living in nearby Malta with Kris commuting to Tripoli. Kris and Sheryl are saving their biggest adventure for this February, as Sheryl is due with their first baby.

Rafael Cavalcanti de Albuquerque (BScH ENGO '07) dropped by in October. He now works as a computer guru for Mercator Geological Services in Dartmouth.

Frank Dennis (MSc '88) has now moved to Keyworth, just outside Nottingham, UK, where he works for Golder Associates as part of the management team that runs the Nuclear Services Team. He has also been appointed as a Technical Advisor to IAEA on the management of contaminated land at nuclear sites. As a result he has made a number of trips to Vienna, including a week spent writing a technical guidance document by committee (a very strange event).

Gerard Eddy (BSc '93) has started as a GIS Analyst with the Environmental Assessment Team in a one-year term with the Nova Scotia Department of Environment and Labour.

Matt Jodrey (BScH '02) started a MSc in hydrogeology at Simon Fraser University in January 2008. The project is a regional scale modeling initiative for the Okanagan Valley, to be carried out in conjunction with the GSC. During the fall, he took a 3-month contract position with Selwyn Resources in the Yukon, logging core.

Rebecca Jones (BSc '07) is working for Apollo Gold at the Black Fox Mine, which is located in Matheson, Ontario (just east of Timmins). Her job is to supervise the two surface drills and the one underground drill, as well as doing core logging.

Crystal LaFlamme (BScH '07) dropped by in October, after spending an extended summer in Scotland, working in Edinburgh, but enjoying the geology of the Highland glens. She is planning to start an MSc thesis in Memorial University, studying the geochemistry and geochronology of rocks of the Makkovik Province in Labrador.

Stephen MacConnell (BSc '92) has been recently appointed as Vice-President, Exploration for Hale Resources Ltd., a company currently working in Manitoba and Ontario.

Ian MacDonald (BScH '01) is applying for a candidature for the Erasmus Mundus scholarship for the International Humanitarian Assistance programme from the NOHA Secretariat. His application has passed the scrutiny of the European Commission and is waiting on 'rubber' stamp' approval from the European Parliament.

Natalie MacLean (BScH '04) is still working in the Sudbury area, and has accepted another year-long contract, which means that she will be in Sudbury for another stint. She had been kept busy looking at core and other geological activities, but was looking forward to the Christmas break back home in Cape Breton Island.

Bryan Martin (BScH '05) is currently pursuing a MSc at Memorial University, working on a project trying to determine the rate of sea level rise on a submergent coastline using the inundated basin approach.

Frances Mitchell (BScH '04) dropped by with her fiancé, John Rivers, on a flying visit to Nova Scotia. Having defended her thesis at Queen's University on brittle deformation and associated recent movement on the Central Metasedimentary Belt Boundary Thrust Zone in the Grenville Province, she took a contract position in Lytton, BC for the summer. John is carbonate petrologist, finishing his PhD at Queen's. They were married in October.

Bob Nickel (BSc '02) is currently doing a long-term contract for Occidental Oil & Gas in the San Joaquim Basin. He's located in Elk Hills Range, which is about an hour east of Santa Barbara, California. The timing of the contract is great, as his wife is enrolled at school in Hollywood, so they are able to live together during this time, which is great, especially as they were just married on September 1st! Congratulations!

Jillian Payton (BSc '06) completed a diploma as horticultural technician at Medicine Hat, Alberta.

After a fantastic summer working in Banff National Park, **Mary Samolczyk (BSc ENVS '07)** has started work as a Junior Hydrogeologist at Rescan Environmental Services Inc. in downtown Vancouver.

The Calgary Section

Lately, geologists have been in great demand in Calgary. Other the past years, a number of Acadia grads have made their way west. The next section focuses on some of the grads that live there.

Jamie Babineau (BSc '98) has been working at Talisman for over 4 years now. Jamie and his wife, Meghan, welcomed their second son, Cohen, this June. Their first son, Aiden, is now 2½ years old. They managed to retreat back to Ontario and Nova Scotia to visit (aka pawn off the kids) with family. Jamie also managed to go salmon fishing out of Campbell River this year and he hauled in a 20 lb Chinook!

Peter Budgell (BSc '03) took a job with the National Energy Board as a geologist monitoring the natural gas supply in Canada. The job also includes some work with the Alberta Energy and Utilities Board as a geological technician doing some well logging. He and his family moved to Calgary in February, which was quite a shock to the system coming to -30 from +5 in Vancouver! He can be reached at PBudgell@neb-one.gc.ca

Brian Campbell (BScH '99) has had a few stops on his resume with the latest landing him at Vaquero Resources. He continues to work as a senior geologist and very much enjoys working for a small company.

Ian Dewolfe (BScH '00) is working at a small private company, Vital Energy Ltd. This summer he was married on campus at Acadia, and reported it was nice to be in the valley during the summer and see the campus again.

Diane Emond (BSc '84) has been appointed as Senior Geologist for Winstar Resources Ltd, where she will be responsible for various geological functions in Canada and Eastern Europe.

Joe Guerin (BSc '04) works at Talisman Energy in Calgary. Exploring and drilling for natural gas wells in NE Alberta, and NW BC, enjoying some of the training opportunities, building 3D reservoir models and taking courses at U of A in Geostatistics (which he reports is surprisingly interesting)!

Jason James (BScH '98) continues his work as a geologist with Canaccord Enermarket, the A&D (Acquisitions and Divestitures) Arm of Canaccord Adams' Oil and Gas Division. He writes that it is a challenging role and he only expects to get busier with the Alberta Government announcing changes to the Province's Oil and Gas royalty structure.

Greg Jessome (BSc '05) was working as a well site geologist, but is now working for North American Oil Sands Corporation.

Chad MacDonald (BSc '98) is working in Calgary as a well site geologist for about two years now.

Rob MacLean (BSc '06) is still in Calgary, where he endures 45-minute line-ups at Tim's in the morning. He has taken on a business partner (a fellow Maritimer, Dal grad) for his consulting company, Ceilidh Environmental Ltd., and things have really picked up in the last year as far as new clients and workload. The company now has offices in Calgary, Red Deer, and Edmonton, focusing on soil and groundwater assessments and remediation, risk assessment, and management and have recently expanded into managing environmental programs for several oil and gas clients in western Canada.

Myke Mitchell (BSc '97) works with Polaris Explorer (www.polarisexplorer.com) in Calgary, just bought a house, and has more grey hair than ever before.

James Newsome (BScH '98) is still in Calgary, where he to work at EnCana (he's been there for nearly 10 years). He and his wife, Monika, have two girls Olivia

(3) and Abigail who was born on St. Paddy's Day, 2007.

John O'Loughlin (MSc '81) is now working as a consultant in Calgary, visiting well sites doing horizontal drilling in the foothills. He writes that he sees some incredibly beautiful wilderness in the foothills, and he likes the fact that his time is his own when he is in town, so he can indulge his passion for skiing in the winter, and kayaking back in Ontario in the summer, where he also does a bit of prospecting for kimberlites and diamonds. We always figured that John had not really abandoned hard-rock geology when he went to Calgary!

Sheldon Thistle (BSc '99) has been working for about 6 years, as an engineer for Baker Hughes, first out of their Grande Prairie office, but is now at the Calgary office.

Stu Venables (BScH '99) writes the following from Calgary: Howdy from the Wild West! It's been a crazy couple of years out here in Calgary with strong commodity prices and people arriving at Alberta's doorstep by the thousands… daily! It's been an eye-opener watching our city (literally) start to burst at the seams, but the province seems to be catching up to demand and the influx of people is more manageable these days. In the end, the oil industry has been cruising along very well and so have the myriad of Acadia Geology grads that continue to call Calgary home… or at least home base.

Stu is currently working for an outfit that consists of 5 people (including himself) called Avondale Energy Inc. He enjoys working for a small company, but gets the biggest thrill out of coming home to his wife, Elizabeth, and their 1½-year-old daughter, Sophia, every day!

If you have an item of interest, or any news of your activities (or those of your classmates), please let us know. We will try to incorporate as much as possible into future newsletters. Feel free to send any information or updates to….

ACADIA GEOLOGY FACEBOOK

Interested in connecting with your peers in the 21st Century fashion? Some of our more recent grads have set up an Acadia Geology facebook page, and have been posting their highlights. You can sign up to join at http://www.facebook.com/n/?group.php&gid=2230922055 (that's all one URL, no spaces or other characters, for those who wonder) to see over 100 photos of your activities (including a surprising number of graduation photos – obviously a highlight in many people's lives!)

WE STILL NEED YOUR HELP!

We recognize the need for our students to have a strong grounding (pun intended) in field methods and as much field experience as possible when they graduate. Increasing costs and other financial pressures on our budget make it increasingly difficult to keep our field schools affordable for students. Hence we are grateful for any donations to help us to subsidize the cost of field school for our students. Any amount is a help. Please send donations clearly marked for "Geology Field School" (but cheque made out to Acadia University) to Prof. Linda Lusby, Earth and Environmental Sciences, Acadia University.