Acadia Geology Alumni/ae Newsletter

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VIEW FROM ACADIA

This year, our annual departmental newsletter and holiday greeting is going out a bit later than usual, in part because of the very busy 2004 we have had in the Geology Department, and in part because your correspondent is not quite as punctual as Rob Raeside, our long-standing department head who was on sabbatical this fall. Our year here at Acadia has been very eventful, with many positives (see below) and a few negatives (the faculty strike last spring, which although thankfully only partially disruptive, did have a beneficial impact in that it allowed faculty from different departments to meet and truly get to know each other, something that we seldom have an opportunity to do).

Some of the highlights of our year include the implementation of a new degree program in 'Environmental Geoscience' to complement our traditional degree in 'Geology'. This new program has a curriculum that is in line with the national educational requirements for the Environmental Geoscientist stream of Registered Professional Geoscientists (P.Geo.), and was created by defining a different blend of core and elective requirements, without the need of any additional curriculum. Our two major programs now afford our students more flexibility in the geological orientation that they pursue, and as a result our graduates, after four years of suitable geoscience experience, can qualify as professional geoscientists via two of the three professional streams (Geology and Environmental Geoscience) in any province or territory in Canada.

Another important event is the ongoing search for a replacement professor for Dr. Barry Cameron, who will be retiring in June after 24 years at Acadia. After some significant thought into what type of person we should look for to fill Barry's shoes, we drafted an advertisement for a 'soft-rock' geologist in the early fall. This attracted more than 50 highly qualified candidates for the position and, after poring over the applications and undertaking several meetings to decide on a short list, we are presently in the process of interviewing three of these candidates. Our intent is to have the successful candidate start in July, so s/he will have time to get up to speed when classes start in September.

Lastly, our department hosted a very successful Atlantic Universities Geology Conference (AUGC) in October. This task was undertaken by the Fletcher Geology Club, went off without a hitch, and was superbly organized and run! Other news from the department is covered in other articles in this newsletter.

Probably one of the most important, but least appreciated events that has taken place is the long term planning effort by our department. This was originally motivated by the succession planning exercise necessitated by Barry Cameron's retirement, but is continuing, and has taken on a life of its own with the discovery of some important demographic information regarding geologists in Canada. Many of you may not realize that over the next 10 years, 76% of all Canadian geologists will retire (or at least reach retirement age; Simpson 2004; Foden 2003). This reality is probably not too unexpected by many of you, as a quick count of the numbers of grey hairs on your colleagues down the hall will probably verify this observation. An obvious consequence of this fact, though, is that there will clearly be a dearth of geologists in the near future, and the various geology-related industries will be actively looking for, recruiting, and employing young geology graduates to fill the vacant positions (or at least they should be).

At the same time, some universities in Canada, as well as the United States, Australia and Europe, have, over the past decade or so, dissolved their geology programs, or merged them with other departments (Lubick 2004a, 2004b, 2004c; Foden 2003). This change has been largely due to declining enrolments because of a relative lack of demand for geologists by industry during a period of consistently low commodity prices, and a widespread failure to recognize the importance of

geoscience to society. Furthermore, high schools have excised earth science courses from their curriculum, preventing exposure to geology by students at a fundamental level, and this change has also served to limit geology enrolments in universities (Roy 2002; Ridkey 2002; Pinkster 2002b; Foden 2003), a factor that has motivated some of the department closures. Even federal and provincial/state government funding of geoscience research and geological surveys has been substantially reduced, leading to fewer geoscientists serving the general public, lower demand for geologists (Geotimes 2001; Pinkster 2002b; Sever 2004), and fewer students enrolled in geology programs. As a result, just when a surge in geologist retirements is about to take place, a critically low capacity exists among geology departments in universities to provide new geologists who will take the place of these retirees.

In the Acadia Geology Department, we have been examining what this means in terms of future enrolments, the prospects that our graduates can expect to see, and the role that we can play in educating future geologists for service in our society. Clearly, prospects for our present and future graduates should be rather rosy, and we are already seeing more recruiting and employment opportunities available to our graduating students, probably due to recent increases in petroleum and metals prices. We can expect even higher levels of employment among geologists in the future and, given that demand will likely exceed supply, we should also see significantly higher salaries. When word gets out regarding the high paying jobs in geology, enrolments can be expected to increase significantly (but hopefully not to un-manageable levels). Clearly, both of these consequences can be expected to make for a strong Acadia Geology Department over the next decade, at least.

How successfully the Geology Department responds to these external factors will largely dictate to what extent we thrive over the next 10-20 years. Clearly, prudent and well thought out long-term planning will be essential, and the department is attempting to position itself to take maximum advantage of opportunities that present themselves over the next couple of years. Selecting the appropriate candidate to replace Barry Cameron is obviously foremost on our minds, but if our undergraduate enrolment numbers increase substantially, the Geology Department can be expected to push to add a teaching position.

For future graduate students, we are formulating a new avenue by which students can complete an M.Sc. in geology at Acadia, via a part-time, non-thesis program. If the geology job market is going to be as tight as we project, young geologists can be expected to rise rapidly through the geological ranks of their companies and organizations, and this will reduce their motivation to return to graduate school. As a result, although we expect an increase in undergraduate enrolment, we also foresee a potential reduction in graduate enrolment in the long term. Too small a graduate student population is not viewed by the department as a healthy development, as retention of professors who cannot attract graduate students will be difficult. Additionally, without graduate students, the department will lose an important set of contributors to the geological community on campus, and will lose the mentoring and teaching assistance that the graduate students tangibly and intangibly provide to the undergraduates just by being around the department.

The proposed part-time, non-thesis M.Sc. program is designed to allow industry geologists to upgrade their education by attending classes in intense compartmentalized short courses each spring without undertaking long-term absences from their employment. This mechanism will allow them to complete their M.Sc. program in less than two and a half years, and we expect such an option to be attractive to industry geologists in the near future. This program will initially be oriented in the field of Exploration Geochemistry (my specialty), but has the potential to expand into other applied fields of applied geology (petroleum exploration, environmental geology), as appropriate and required. This new M.Sc. program proposal is presently making its way through the approval process via the various academic committees at Acadia, and if implemented, will likely be launched in the spring of 2007, after I have returned from my sabbatical in Perth, Australia with the CSIRO.

Clearly, the Geology Department is making efforts to ensure its vitality and relevance into the foreseeable future. We hope to be able to continue our relationship with you, our alumni, and I would like to take this opportunity to remind you that if you are looking for a new employee for your organization in the future, please remember to look to your alma mater as a potential personnel resource. We believe that our undergraduate and graduate geology programs are among the best, and we are constantly tweaking these programs to improve the educational experience of our students. Please ensure that we have your up-to-date contact information so we can inform you of our news and the new initiatives that the Acadia Geology Department is undertaking to contribute to our university, our discipline, and our society.

Cliff Stanley

HAPPENINGS

Another year has flown past! An impressive group of 10 newly minted geoscientists and 13 environmental scientists received their BSc degrees at Convocation on May 10th. The end of the winter term was welcomed at Acadia even more so than usual because of the faculty strike that made the term rather stressful. Luckily, the strike was resolved after only 10 days of classes had been missed, and hence no changes to the end of term date or the examination schedule were required. However, it was a challenge for both faculty and students to compress the course material into the shortened time-frame, and the whole campus breathed a collective sigh of relief when the term was successfully concluded.

One of the losses during the strike was the visit of the GAC Robinson Lecture Tour speaker, John Thompson of Teck Cominco. However, a keen group of students organized their own transportation and made the trip to Dalhousie University to catch Dr. Thompson's excellent talks.

Acadia was well represented at the AGS conference in Moncton in February, where the graduate students did an able job as projectionists under the direction of Ian Spooner. Acadia faculty and students were authors and co-authors of a total of 9 oral and/or poster presentations at the meeting.

The annual end-of-year Geology Department banquet was held in Wheelock Hall on the Acadia campus. It consisted of a fine meal, the recognition of student award winners, and a "high (or low) lights of the year" power-point presentation compiled by students Jeffrey Bigelow and Nathan Rand. Also presented were the "special awards" to faculty and staff – it is worth a visit to the department to see these documents posted on the winners' office doors. The guest speaker at the banquet was 1971 Acadia geology graduate Jack MacDonald, who gave us an overview of his career that managed to be both hilarious and inspirational.

A hardy group of 10 students (as well as instructors Rob Raeside and Sandra Barr) once again survived senior field school in Cape Breton Island in late August through early September. Working in pairs or groups of three, the students mapped separate areas of about 25 km^2 and then used the field data to produce individual maps and a report interpreting the geology of the map area. The map and report were submitted on the last day of the field school, evaluated, and returned to the students for “improvements”. The final grade was based on the resubmitted map and report. The school is held in the excellent facilities of the Gaelic College at St. Anns. The instructors note that the use of GPS has led to more efficient field work, and the outcrop locations (although not necessarily the outcrop observations!) are now more accurate. Those dreaded traverses across the highlands plateau from one stream head to another always result now in a happy ending!

In Fall 2004, the Geology Department began offering a new program in Environmental Geoscience. This degree program is available at both a BSc and BSc (Honours) level. It has been introduced in response to recently passed provincial legislation identifying the knowledge requirements required for professional registration as an ‘Environmental Geoscientist’ in Nova Scotia (similar co-recognized legislation exists in most other provinces and territories, 39 states within the USA, and in the UK). This legislation identifies three Professional Geologist specialties: ‘Geologist’, ‘Environmental Geoscientist’ and ‘Geophysicist’. The new Environmental Geoscience degree curriculum provides a basis for application to the Professional Environmental Geoscientist category. It includes a core of courses at the first and second year level in common with Geology majors, and diverges at the third year level to incorporate courses in geochemistry, geophysics, and hydrogeology (all of which are electives in the regular geology program). Outside the Geology Department, students will also take Biology, Mathematics, Physics, and Environmental Science courses (Human Activity and the Environment, Environmental Law, and Environmental Impact Assessment).

The Fall term of 2004 was a busy one for visiting speakers. Dr. John Suter, American Association of Petroleum Geologists 2004-2005 Distinguished Lecturer, started out the term with an informative talk in September on “Deltaic Systems: Perspectives on facies models and sequence stratigraphy”. GAC’s 2004-2005 H.S. Robinson Fund distinguished lecture Dr. Herman Zwanzig visited the department in late September to tell us about the evolution of the Paleoproterozoic Trans-Hudson Orogen in western Canada. In early October, Dr. Sonya Dehler gave a presentation on recent advances by her and her colleagues on presenting and interpreting regional geophysical data. Dr. Shoufa Lin, the 2004-2005 GAC Hutchison Medal winner, gave a talk in mid-October on “Structural thinking: a key to mineral deposit studies in deformed terrain”. In early November, Dr. Randall Miller came through as the APICS-AGS speaker and provided an interesting perspective on historical figures who worked on the geology of the Saint John, NB, area. In addition, throughout the term several graduate and undergraduate students presented talks on a variety of course-related, thesis-related, or travel-related

topics. All these presentations are appreciated; some not only educate but also include a free lunch! Anyone interested in attending future events at Acadia should check out the website at: http://ace.acadiau.ca/science/geol/coming.htm.

The department was well represented at the Nova Scotia Department of Natural Resources "Mining Matters" conference in early November with posters by students Jeffrey Bigelow, Patrick Moran, and Lori Cook, and a departmental poster. The next week Russel Hiebert gave a talk and Sandra Barr and Cameron Bartsch presented posters at the New Brunswick Department of Natural Resources "Exploration and Mining New Brunswick 2004" conference in Fredericton.

The Christmas party and pot-luck supper was held at Rob and Wendy Raeside's house on the evening of November 28th. This venue has become somewhat of a tradition, and we once again thank them for their exceptional hospitality. As always, the food was great (we have a department full of creative and excellent cooks!!) and the "ungiving gift exchange" was as entertaining and frustrating as always.

FACULTY AND STAFF NEWS

Sandra Barr became president of the Geological Association of Canada in May during the annual meeting of GAC and MAC in St. Catharines, Ontario. This role has proven interesting but also both challenging and time-consuming. Producing those "presidential preamble" articles for *Geolog* is not as easy as one might think! Summer included some (but not enough!) interesting field work, mainly with graduate students Cameron Bartsch, Robin Black, and Russel Hiebert in southern New Brunswick and Lori Cook in western Cape Breton Island, and with honours student Patrick Moran on Seal Island off southwestern Nova Scotia. As usual, the busy Fall term began with senior field school at the Gaelic College in St. Ann's (a place with fond memories for many of you!). Those waterfalls get higher ever year!! Four courses in the Fall term kept her busy, as did working with the AUGC organizing committee, participating in the Lithoprobe celebratory conference in Toronto, the "geoscience summit" in Ottawa, and the NS and NB Department of Natural Resources reviews of activities, organizing and chairing a GAC Fall council meeting, and trying to supervise honours and MSc students. However, the "light at the end of the tunnel" was her approaching 6-month sabbatical leave beginning in January 2005. Life is good!

Barry Cameron teaches paleontology, oceanography and petroleum geology courses this year, officially for the last time, but after his retirement in June he will likely be called upon to offer some of these on a part-time basis. Much will depend on who replaces him, but as we write, Barry is hopeful at least one of the basement lab courses will still be his, as he has a few acres of amphibian footprints that will need moved otherwise! He hopes to use extra time gained finally to write up the story of these tracks.

Alan Macdonald once again taught Structural Geology in the fall term and Metamorphic Geology in the winter term. He is also kept busy at home with his gardens, orchards and on-going house and barn renovations.

David McMullin continues to teach the first year labs and again taught Sedimentation and Stratigraphy (GEOL 2303) in the Winter as well as Rob's portion of GEOL 1023 while he was Head of both Chemistry and Geology. In the fall, David taught Rob's Cordillera portion of GEOL 4003 (Geology of North America) while the latter was on sabbatical. Most interestingly David co-taught a redesigned GEOL 1043 (Environmental Geology) with Ian. The course has informally been renamed Earth Science and Society and introduces non-science majors to Earth Science using pop culture (mostly recent mainstream movies). The course will be offered as a completely new course (GEOL 1073) in the fall of 2005 and beyond. In April, David attended a conference on "Pedagogies of Engagement" in Chicago with 7 other Acadia faculty and staff (including Ian). This was a fascinating look at how teaching is taking place at university level and how it is changing. Our attendance (particularly in such large numbers) is the result of a significant shift in support for teaching at Acadia and something that is probably here to stay. On other fronts David continues to be the Production Manager for ***Atlantic Geology*** which is now being printed by a new (and young) local company, Gaspereau Press. We've had our usual share of hassles but things are looking good for the coming year.

Rob Raeside finished his term as head of both Geology and Chemistry, spending mornings in one department and afternoons in the other. He found the experience "interesting", picking up a few Chemistry ways to introduce to Geology, and hopefully passing on a few new traditions to Chemistry. From July to December he took sabbatical leave, to work on several projects - revamping the Atmosphere, Weather and Climate correspondence course (the previous textbook went out of print), participating in the whole of senior field school (without the need to rush back to Acadia for all the start-

of-the-term issues), and writing up recent student theses and projects for publication. He is now back in the head's office, starting a fourth term there.

Ian Spooner continues to conduct research on lakes in northern British Columbia, Nova Scotia, and Newfoundland trying to solve the mysteries of past climate change and catch a few trout. He has also been actively working on groundwater distribution in the Annapolis-Cornwallis Valley with graduate student Amanda Blackmore and has partnered with CoGS (Tim Webster), the GSC, and DOE in a large project aimed at aquifer characterization in the valley.

Over the summer he spent considerable time in northern British Columbia working on the Bear Glacier neoglacial moraines with Jerry Osborn (University of Calgary) but managed also to attend a rodeo, get chased by a bear, and fit in some fly fishing. In the coming year he will be coring lakes in the Tablelands in Gros Morne National Park (western Newfoundland) and bogs near Kejimkujak National Park, N.S. Students still comment on his excessive use of the word ephemeral!

Jason (U of C), Jerry Osborn (U of C), Ian, and Rebecca Haspel (U of C) at Bear Glacier, B.C. June 2004

Cliff Stanley was promoted to Associate Professor this year, and was 'rewarded' by holding the departmental headship during Dr. Raeside's 6 month sabbatical. He has been otherwise keeping busy with ongoing research in and visits to Australia. One project sponsored by Kalgoorlie Consolidated Gold Mines involves supervision of graduate student Tansy O'Connor-Parsons in her study of the lithogeochemistry and alteration of the Golden Mile gold deposit. He is also working down under with Ph.D. student David Murphy (Univ. of Western Australia) in a study of regolith development of mesothermal vein deposit alteration zones at the Groundrush and Pajingo Gold Mines, and with honours student Jeff Bigelow on gold precipitation mechanisms at the Callie Gold Mine, Northern Territory. Closer to home, he is participating with several biology professors on an Irving Oil Company-sponsored project investigating the bioremediation potential of native Maritime plants for cleaning up gasoline and diesel oil fuel spills, and is supervising Environmental Science honours student Rebecca Schaefer in her study of the Au and As uptake potential of *Eucalyptus salmonophloia*, a common Australian gum tree. Lastly, Dr. Stanley is collaborating with post-doctoral fellow Dr. Michael Whitbread (Univ. of Canberra) on a study of fractionation and contamination of the South Mountain Batholith using the large lithogeochemical database created by the NS Ministry of Natural Resources in the late 1980's.

As the Association of Applied Geochemists distinguished lecturer, Dr. Stanley traveled to Beijing, China in mid-October, at the invitation of the Ministry of Commerce and the Ministry of Land and Resources, People's Republic of China, to give a series of lectures at the Chinese Academy of Geological Sciences. These lectures were presented to the Institute of Geophysical and Geochemical Exploration, Applied Geochemistry Research Center and part of the 2004 Technical Training Course on Exploration Geochemistry, a Chinese government foreign aid and development initiative to educate African geologists in the methods suitable to conduct regional geochemical surveys to assess their country's mineral resource potential and identify environmental and public health hazards associated with anomalous element concentrations. Dr. Stanley presented three half day lectures, toured the Institute's laboratory facilities, and initiated a research collaboration with Dr. Wang Xuequi, Chief Geochemist and Director of the Applied Geochemistry Research Centre, and Dr. Xie Xuejing, Honorary Director of the Institute of Geophysical and Geochemical Exploration.

Nancy Van Wagoner spent part of the summer mapping with her honours student, Robert Lodge, in the Eastport Formation, Maine. This is a fantastic area for understanding more about hydrovolcanic processes, and also unraveling the never-ending story of the evolution of the northern Appalachians.

In September Nancy, Robert, and Kelsie Dadd, at Macquarie University in Sydney, Australia, presented the results of their work at the Second International Maar Conference in Hungary. Robert went on field trips to maar fields in Hungary and Slovakia. Nancy was only able to attend the field trip to Hungary, but was amazed by incredible exposures of all parts of the maar volcano, facilitated by quarrying for basalt aggregate.

Robert gave a talk on his honour's thesis work at the Atlantic Universities Geological Conference and won the APICS-NSERC Award for the best paper presented at the conference. After spending the month of October at Acadia, Nancy was off to southern Chile, where she and Kelsie presented a paper on volcanism in tidal flat environments at the International Association of Volcanology and Chemistry of the Earth's Interior, General Assembly, November 13-20, 2004, Puncon, Chile. Nancy also participated in workshops on developing international guidelines for the preparation of volcanic hazard maps, and subduction zone volcanism in developing countries.

Villarrica volcano, Pucon, Chile. Photo by Nancy Van Wagoner.

Don Osburn continues to turn out the finest thin sections in the east, and keeps all the increasingly temperamental machines coaxed or goaded into running. As a half-time person at Acadia, he uses his other half-life to pursue music interests – he was instrumental in organizing the hugely successful Deep Roots Music Festival in Wolfville in September – and drops in to play or peruse at the Union Café in Berwick, owned and operated by his wife and daughter.

Janet Harnum left in December on maternity leave. She is now the happy mum of Mackenzie, born on December 28th 2004, and 3½ year old Sullivan.

Helen Texidor-Carlsson joins us as secretary whilst Janet is on maternity leave. She moved here in August from the UK with her husband, who is an MSc Geology student here at Acadia. After working for the BBC for six years she decided to completely change career and is happy working in the department, close to her new home. It sure beats the 45 minute commute on the underground everyday!

GRADUATE STUDENTS

Graduate students are always a valued aspect of the department. They bring experience from other universities, a level of understanding a notch or two up from the undergraduate program, and often act as mentors or info-resources to the undergraduates.

We welcomed two new graduate students to the department in January. **Tansy O'Connor-Parsons**, a graduate of the University of Alberta, joined us from Vancouver where she was working with Anglo American Exploration. Her thesis project with Cliff Stanley is on the lithogeochemistry of the Golden Mile gold mine, Kalgoorlie, Western Australia. **Lori Cook**, a Dalhousie graduate, arrived to begin her project on the cause of a large magnetic anomaly in the offshore area between Cape Breton Island and Prince Edward Island. She will be jointly supervised by Sandra Barr and research associate Sonya Dehler of GSC Atlantic.

We welcomed three new graduate students to the department in September, bringing the total to 10, a record number. **Amanda Blackmore,** from the University of Guelph**,** is doing a joint Acadia-CoGS MSc program. She has completed her year at CoGS and will be based at Acadia in the coming months to do a thesis with Ian Spooner on the hydrogeology of the Annapolis Valley, focusing on aquifer vulnerability. **Brent Lennox** from the University of Toronto also will be working with Ian Spooner on Late Holocene climate change in the Maritimes. **José Texidor-Carlsson** arrived from London, England, with his wife Helen (and cat Shadow!) in late August. He is in the process of turning his engineering background into a geological career, and will be working with Sandra Barr and Cliff Stanley on a metallogenic appraisal of the Caledonia Highlands, southern New Brunswick.

On-going students are **Cameron Bartsch** (Geology of the Blacks Harbour - Beaver Harbour area in southern New Brunswick), **Robin Black (**pre-Mesozoic rocks on Grand Manan Island, New Brunswick), **Russel Hiebert** (geochemistry of the Mechanic Settlement Gabbro and its relationship to PGE mineralization, southern New Brunswick), and **Cheryl Reid** (contact and regional metamorphism around the Barrington Passage Pluton in southwestern Nova Scotia). **Andrea Locke**, who returned to Newfoundland to take advantage of an employment opportunity, continues to write her thesis on glacial stratigraphy and till geochemical dispersion controls associated with the Brazil Lake Pegmatite, Yarmouth County, Nova Scotia.

HONOURS STUDENTS

BSc Honours theses this year are listed below in alphabetical order by student name:

Jeffrey Bigelow - Gold Precipitation Mechanisms in Sheeted Quartz Veins, Callie Gold Mine, Northern Territory, Australia (Supervisor: Cliff Stanley)

Christina Caldwell - Physical Properties of soils on Heckmans Island: evolution and diversity (ENVS thesis) (Supervisors: Soren Bondrup-Nielsen, Ian Spooner)

Robert Lodge - Styles of explosive mafic volcanism: examples from the Silurian Eastport Formation, Maine, USA (Supervisor: Nancy Van Wagoner)

Charles Madden - Thermal Sensitivity of Small Boreal Lakes, Experimental Lakes Area, Northwestern Ontario (ENVS thesis) (Supervisor: Ian Spooner)

Brian Martin - Landscape Evolution in the Pleasant River Area, Southwestern Nova Scotia (ENVS thesis) (Supervisor: Ian Spooner)

Patrick Moran - Petrology of the Seal Island Granite, offshore southwestern Nova Scotia (Supervisor: Sandra Barr)

Rebecca Shaeffer - Gold Uptake in *Eucalyptus salmonophoia*: A Possible Explanation for Gold Anomalies above Barren Overburden (ENVS thesis) (Supervisor: Cliff Stanley)

FLETCHER GEOLOGY CLUB

It has been another busy fall semester for the Fletcher-club. During October the bi-annual blood drive was held at Wheelock Hall and again was a resounding success with enough blood collected to help 492 people! Many students from the Geology and Environmental Science departments volunteered their time to help out and, on behalf of the club, thank you all very much.

With the club and the university playing host to the 54th Atlantic Universities Geology Conference it was a hectic semester for many of us. The busiest people had to have been the AUGC planning committee. A special thanks goes out to Dave Hapgood (chair), Heather Wolczanski (secretary), Matthew Phinney (events planner), Jeffrey Bigelow (technical planner), and Sandra Barr (faculty advisor). Roughly 130 delegates attended AUGC this year. Congratulations go out to Robert for winning the APICS-NSERC award and Jeffrey who won the Imperial Oil Poster Award. A good time was had by all and we are all looking forward to the AUGC next year at MUN.

Acadia University vice-president academic Ralph Nilson with AUGC student winners from Acadia, Robert Lodge (centre) and Jeffrey Bigelow (left).

Rob and Wendy Raeside hosted students and faculty again this Christmas season at their freshly renovated home. The party was a truly enjoyable event, with the gift exchange being the evening's highlight, every present must have passed through the hands of Sandra or Nancy at least once!

CLASS OF 2004

Front row: Sarah Fisher, Lincoln Weller, Matthew Phinney, David Hapgood.
Back row: Jeffrey Bigelow, Josh Goss, Jamielee Chambers, Jill Payton, Robert Lodge, Nadine Wood, Patrick Moran, Nathan Rand

Photo courtesy of Jeff Bigelow

WHERE ARE THEY NOW?

Anastassios (Tassos) Grammatikopoulos

Each year we ask a graduate to write an article on his/her past and current activities since leaving Acadia. This year we invited Anastassios (Tassos) Grammatikopoulos, who studied at Acadia from 1990-92.

I arrived at Acadia University to do my M.Sc. degree under the supervision of Dr. Barr in early June of 1990. My English was not so good and I was skeptical about this whole thing as I had been in Canada for only for a year or so. However, I stayed to taste what proved to be some wonderful experiences for the next two years that followed. A few days after I arrived I went to Cape Breton Island with another student, Brent Miller, but to my surprise (!) it was nothing like the Greek islands that I was used to! It took me some time to get accustomed to the new environment and people who later became very good friends. I started doing my thesis on gabbroic plutons in the Avalon terrane in New Brunswick and Nova Scotia. The thesis yielded a couple of papers in Canadian journals and few abstracts dealing with the age, mineralogy, petrology, and economic potential of the plutonic rocks. Two years later I was leaving Wolfville with wonderful memories and full of hope and pride in my accomplishments at the University.

I arrived at Queen's University in mid-August in 1992, where I started my Ph.D. thesis on wollastonite ($CaSiO_3$) skarns. I had to face new challenges, both cultural and scientific. Initially, I did not know much about this topic and for the first couple of years it was a struggle to define the boundaries of the research project. I did a lot of mapping, sampling, petrography, geochemistry, and dating of three different skarn bodies related to Grenvillian plutonic rocks older than 1 Ga. The main topic was to distinguish between metamorphism and metasomatism in the three areas where regional metamorphism varied from greenschist to granulite facies. It was difficult to understand the genesis of the wollastonite skarns and the lack of metallic minerals, and explain the formation of million tonne, essentially monomineralic wollastonite occurrences and deposits in the Grenvillian calcitic marbles. I tried to connect the field and laboratory research between the skarns and the plutonic rocks. A few new terms were raised such as "fluid exsolution" and "fluid flow" which I had to work through in my mind and incorporate in my thesis. Writing a Ph.D. thesis proved a difficult process. I wanted to provide some data to the mining industry with regards to the wollastonite characteristics, chemical purity, and industrial applications, and I slowly developed a group of properties that were essential in determining the quality of the mineral. I published a paper with my supervisor in the CIM Bulletin illustrating how to deal with such issues on industrial minerals. Ultimately I concluded that the skarns are metasomatic, and had formed from fluids that infiltrated the calcitic marbles under H_2O-rich conditions that carried a large number of elements, including Mg, Fe, Si, Zr, P, and Ti.

Having completed a first draft of the thesis, I left for a few months to work in Guyana in South America as a mineralogist looking for diamonds. I did a lot of microscopy, mineral chemistry, and geochemistry, and looked for diamond indicator minerals (Cr-diopside, G-10 garnet, and chromite). After completing the thesis a couple of years later, I took a job at SGS Lakefield Research Limited in Peterborough, Ontario, a service company for the mining industry, where I worked as mineralogist and senior mineralogist. The work included initiation, co-ordination, and design of project work in process and exploration mineralogy, environmental mineralogy, and industrial mineral exploration. I had to examine a lot of different rock types and metallurgical samples, complete technical reports, and participate in pilot plants. I learned how to deal with the QEM-Scan (Quantitative Scanning Electron Microscope) and Image Analysis. I also completed some accreditation on point/grain counting and liberation techniques to prepare Mineralogical Services for ISO Guide 25. I was part of the Mineralogical Services, a group of scientists that carry out work for exploration companies but also for the metallurgists, in house, that compose the core of the company. Thus, the

role of our group was to solve mineralogical and metallurgical problems. I dealt with various deposits, Zn, Cu, Au, Pb, PGE, REE, Nb-Ta, diamonds, etc. This new aspect of mineralogy was not at all boring! I had to be alert and up-to-date on current research, and also had to educate geologists and metallurgists on mineralogical issues. Mineralogy appeared to be a whole new field and I came across a lot of scientific issues that we typically do not deal with in everyday classes in the universities. For example, in several gold projects I had to deal with the distribution of gold in deposits with both visible (> 1 μm) and invisible (<1 μm) gold. Invisible gold was analyzed in many sulfides, mainly pyrite and arsenopyrite, by Secondary Ion Mass Spectrometry, which mainly constitutes refractory (not easily recovered or non-recoverable) and has tremendous implications for any project and mining company. The grade of Au was generally low and I had to apply several techniques to separate gold and gold-bearing minerals to define the size and form of gold (gold minerals such as native gold, electrum etc.) and carry out mass balance calculations to define recoverable and non-recoverable proportions. Many times I also had to deal with liberation of Cu-bearing minerals, or Zn or Pb, etc. Thus, I learned to use terms such as middling particles and liberated particles, which were in many cases quantified by the QEM-Scan and tried to give information directly applicable to metallurgical processes.

This "process or applied" mineralogy experience was tremendous and I obtained knowledge in many technical issues. I like very much this approach because it gives a new status to geologists that specialize in mineralogy. I completed a large number of projects in SGS Lakefield Research and I had the opportunity to write a few scientific papers that were published in conference proceedings and various journals. While at the company, I got heavily involved with the Canadian Institute of Mining, Metallurgy, and Petroleum, and served as Chair (2001-2002) and as a Vice Chair (2002-2003) for the Industrial Minerals Division.

However, after five years with SGS, I took a position to teach at the University of Patras in Greece, where I had completed my B.Sc. degree 15 years earlier. Thus, for the last couple of years I have been teaching economic geology and introducing process mineralogy to fourth year students at the university. I also started research on PGM in chromite deposits in ophiolite complexes in Greece and I am trying to develop techniques to concentrate PGM minerals and define their distribution in such rocks. I am also involved with research projects involving gold occurrences in Greece and wollastonite deposits in China. In Canada, I am again working with Dr. Barr, her students, and colleagues, using my new skills to look closer at the PGE mineralization in the Mechanic Settlement pluton, one of the plutons from my M.Sc. thesis. We have discovered a number of platinum-group minerals, including sophcheite ($Pd_3Ag_4Te_4$), only the fourth occurrence of that mineral to be found in Canada.

I seem to live between the two countries and I keep coming back to Canada as it is hard to forget good friends and colleagues that I met for the last 15 years. Perhaps I will be back permanently in the next few years. Canada appears to be the centre of geology with great people and I am always going to be thankful and grateful that I choose to study here. As I have said many times to friends and colleagues, I would never have imagined the course of my scientific life when I arrived in Canada. Acadia was one of my greatest experiences, and I take this opportunity now to thank the university, and all of my teachers there who helped me tremendously. I may not have been back for a few years, but my degree from the university will always remind me of the great people that I met there.

Note from editor: During 2004, Tassos and his wife Betty became the proud parents of Steven-Adrian, who was born on September 7th in Montreal.

GROWIN' UP – ACADIA GEOLOGY GRADS ESTABLISH THEMSELVES IN CALGARY

How does that Bruce Springsteen song go? "Well my feet they finally took root in the earth but I got me a nice place in the stars…ohhh…ohh Growin' Up."

I think the theme of this years update is just that – Growin' up! It's been a great year out here and the Acadia geology grads are benefiting from solid commodity prices and, of course, our great education. There have been lots of changes and it sure seems like we're all going to call this place home for a long time coming. So, what's new you ask?

On the parental front! James and Monika Newsome are the proud parents of Olivia Marie. She was born on January 7th, 2005. James and Monika will be parading her around Canada this summer, as James will be taking a 2-month parental leave of absence from EnCana Energy where he continues to work as a professional geologist. Their 4 year old Golden Retriever, Mabel, loves the baby too and seems to like licking the back of her head, which drives the mother-in-law batty (It's win-win!). Blair Sangster and his wife, Cleide, welcomed their first son, Collin, into the world on October 3rd, 2004. They continue to live up in Whitecourt and Blair has been promoted to District Engineer with Schlumberger Wireline Services. Finally, Jamie and Meghan Babineau are expecting their first child in May 2005. Jamie continues to work with Talisman Energy as an Exploration Technologist.

Donald Wood is working for Acclaim Energy as a geologist and he continues to act on the side. He can be seen in Shaw Cable commercials right now and has done WestJet commercials in the past. Myke Mitchell is working for Polaris Explorer as Operations Mapping Coordinator and Web Developer. He has finally paid off his student loans and, in his words, "I'm free!". Kris Carruthers spent part of this year working for Apache, but decided that the freedom of being a wellsite geologist fit his travel first agenda much better and he has returned to doing wellsite with ECL. As of last contact, Ian DeWolfe is working for Apache Energy.

On the real estate front, we have several new homeowners! Brian Campbell bought a condo-apartment on the west side of downtown. He says that his 5 minute walk to work is sometimes a little much, but luckily the train is there if need be. He continues to work for Penn West Petroleum as a professional geologist. Jason James has bought a house in the south end of Calgary. He has already begun putting his personal touch on the place, as he has painted most of the house and recently replaced the upstairs carpeting. He continues to work at Allstream as a GIS/CAD Specialist. Alena Wilson has also bought a condo in the Calgary area and she works at GeoMac as a wellsite geologist.

As for me, only little changes. I was married on December 22nd, 2004 to my lovely wife, Elizabeth, on the beach in Playa del Carmen, Mexico. We bought a house together on the east side of Calgary that we are forever renovating and I recently changed jobs. I am now working for Enermarket Solutions Ltd., where I continue to work as a professional geologist.

It's been a great year here in Alberta. New homes, new jobs, new babies and much more to come! I think it's safe to say that we'll all be here for a while. We certainly hope that you can come and visit us soon, as we'd love to have you. All the best!

Stu Venables, P.Geol.
Vice-President, Evaluations, Enermarket Solutions Ltd.

AND MORE GRADS GET THEIR FEET WET IN NORTHERN ONTARIO

This summer saw **Carole Anne MacDonald (BSc '96), Mariska terMeer (BSc '98), Francis Mitchell (BSc '04)** and **Peter Dalton (BSc '04)** come together to work for the Ontario Geological Survey. They wrote in to say that they managed a whole summer of living together in a bush camp, and did a little bit of mapping for the Precambrian division of the OGS at the same time. The geology was very consistent . . . diabase, diabase, and a little bit more diabase!!! But they did get to see some interesting sights at times such as Carole Anne in the morning before her coffee and Fran's attempt to make her ATV an amphibious vehicle. Peter had some fun photographing a pike modeling a hat and cigar, and Mariska spent a lot of time getting unstuck – her truck in the mud, ATV in the mud, herself in the mud. The Thunder Bay area is beautiful and they all enjoyed their encounters with the local wildlife. On their first day pitching camp they introduced themselves to Sandy and the kids (a.k.a., momma bear and her 3 cubs) and throughout the summer met up with lots of her relatives (plus deer, moose, wolves, a lynx, and possibly even a bobcat!). Of course it goes without saying, lots of black flies and mosquitoes! They had great fun reminiscing about their time at Acadia and to hear about how things haven't changed that much. The wet feet during field camp prepared them for the wet feet of today!!

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. Raeside at the Department of Geology (e-mail rob.raeside@acadiau.ca.)

Tony Beardow (BSc '73) and wife Pamela have semi-retired to Vancouver Island in the Comox Valley. Tony is doing some consulting work under his own company Vectis Minerals. beardow@shaw.ca

Michael Black (BSc '84) dropped by to discuss phyto-remediation of oil spills. He is now a partner and practice leader in site contaminant management with Dillon Consulting in Halifax. E-mail: mblack@dillon.ca

Andrew Bourque (BSc '85) and his wife Debbie and children Ainslie, Chelsea and Graham dropped in during the events of the Congres Mondial Acadien in August. Andrew works as an IS specialist for a poplar growing operation in Kennewick, Washington.

Peter Budgell (BSc '03) is working as a Geological Analyst with Infomine.com, the same web company that maintains Careermine.com. He had been working for a landscaping company in Vancouver since he moved there in January 2004. As a side note Peter married Melissa in Boston on October 12th 2003, a good time was had by all. Aside from the new job he was planning to go back to school in the fall part time and through correspondence to do some GIS/Geomatics related courses and work towards a degree in some aspect of either GIS or Geomatics. Email: budgellp@hotmail.com

Jennie Byron (BSc '02) wrote to say that she is working as Earth Sciences Computer Technologist and is also teaching a course on computer applications in geology at Laurentian University. As web manager she also keeps their website up to date. Email: jbyron@laurentian.ca

Jeffrey Calder (BSc '01) has journeyed from Nova Scotia to Toronto to Louisiana/Texas. Due to events of 9/11 he returned to Toronto but a call from a Schlumberger co-worker steered him back to the oil patch. In late August he embarked on a slow drive across Canada to Edmonton where he commenced working for Computalog Canada (Precision Drilling), but in the fall he made the decision to transfer over to Baker Hughes Inteq, where he has been ever since. He is again working as an MWD (measurements while drilling) technician and says it is the best decision he has ever made. Since he is living out west he says it would be nice to contact the fellow Calgarians. Email: j.calder@shaw.ca

Gordon Clarke (BSc '89) wrote to tell us he has changed jobs since anyone last heard from him. He worked for Covello, Bryan and Associates who became Aurora Geosciences. In the fall of 2002 he was consulting for Diavik when they posted a position for the work he was doing. He applied, was hired and has been there ever since. He also got married two years ago to Laurie and has a stepdaughter named Fallon. He also says he has slowed down a bit since a back operation four years ago.

Clair Cormier (MSc '94) checks in periodically from Fort McMurray where she works for Terracon McKay Ltd. She is always on the look out for employees in the oil sands business, so if anyone is interested, contact her at clair.cormier@terracon.ca.

Kevin Deveau (BSc '89) writes that he has two children, Julianna and Alex. Together with his wife, Mary, he is working for the College of the North Atlantic in Clarenville, Newfoundland, seconded to work at the college's newest campus in Qatar. They have been living in the Middle East for nearly two years but will be returning to Clarenville at the end of 2005. Kevin tells us that he is teaching in the engineering technology department which, when the petroleum engineering program kicks off, will involve some geology and geophysics courses (fingers crossed). Living in the Middle East has provided his family with some great opportunities for travel. He has finally managed to see the Semail Ophiolite in person! He has also been to Ghana and saw some fantastic garnet gneiss…the garnets were as large as apples! Email: Kevin.Deveau @cna-qatar.edu.qa

Jodi Eye (BSc '04) now works for Gammon Lake Resources in Halifax, in their corporate relations department. Every now and then she gets to go out on field trips and ensure her geological skills are kept up!

John Greenough (BSc '77) and his wife Leanne Mallory-Greenough were pleased to report the arrival of their daughter Catherine Elizabeth on December 7th in Kelowna, BC. John informed us that they anticipate that she will be attending sessions at the GAC-MAC-CSPG-CSSS meeting in Halifax in May!

Marc Hodder (BSc '99) was encountered at the NBDNR conference in November, where he was looking after the booth for his employer, TerrAtlantic Engineering Limited. He completed his engineering degree at the University of New Brunswick, and enjoys his work as an environmental engineer. He expressed the opinion that his geology degree provided an exceptional background for his present career.

Qusaie Karam (BSc '99) is currently working with the Environmental Sciences Department at Kuwait Institute for Scientific Research. He is responsible for conducting research into marine geology, such as determining levels of carbon, nitrogen and phosphorus in the marine sediment of the northern Kuwaiti waters close to Iraq. In addition, he is examining the effects of oil dispersants on marine organisms such as amphipods, fish larvae and sea urchins (bioassays).

John King (BSc '03) started working for Enermarket Solutions, who market/broker oil and gas properties. He then was offered a six month contract with Talisman Energy as a junior geologist, working in a group focusing on new plays in northern Alberta and the Yukon. He has not forgotten his "hard rock" background, as he initiated thin section study of core samples in addition to the traditional geophysical logging. Email: jking_geo@hotmail.com

CaroleAnne MacDonald (BSc '96) will be in charge of interpreting field observations over the winter for the Ontario Geological Survey, preparing the reports and maps back in the Sudbury office. Email: caroleanne. macdonald@ndm.gov.on.ca

Frances Mitchell (BSc '04) has been traveling Europe over the fall and is starting her Masters at Queens in January. She can be reached at mitchfm@sympatico.ca

Jeff Parks (BSc '87) has opened a geomatics consulting business, Birch Hill Geosolutions, in Lewis Lake, Nova Scotia. Contact: bhgeo@accesswave.ca.

Heather Paul (BSc '02) wrote to say that she has completed her masters thesis and defended it in October 2004. She investigated constraints on the extent and duration of low temperature alteration in the Pacific Ocean Basin. She was planning to move to Portugal in January, but in between she was on another cruise with the IODP (Integrated Ocean Drilling Program), in the Atlantic Ocean.

Paul Ténière (MSc '02) writes that after leaving Acadia he worked on Leg 210 of ODP and then for a small geophysics company called Excel Geophysics in High River, AB. For a time he worked with **Matt Stokes (BSc '03)** in Fort Liard and in Montana doing land gravity survey work and helicopter long-line. Paul had a great time doing that, but wanted to settle down in Calgary. His job kept him out in the field a lot and it was getting to be around -40ºC, which he wasn't enjoying. At the beginning of 2004 he started with a new company called Rakhit Petroleum Consulting working as a Project Geologist on various topics related to coalbed methane and determining permeabilities of gas plays across Alberta using *in situ* stress measurements. He says it was a very interesting and challenging job and required him to visit the U of C occasionally to do some background research (structural geology background is definitely helping there)! However, Paul could not resist the opportunity to return to Texas A&M with IODP as a Marine Lab Specialist in July. Email: pteniere@ yahoo.ca

Mariska terMeer (BSc '98) has just finished her B. Ed and will be dodging spitballs as a supply teacher on PEI. Email: m_termeer@canada.com

Amy Tizzard (BSc '03) sent in an update on her University of Victoria status and some other interesting tidbits. She won an NSERC Northern Research Internship for the summer, and did fieldwork near Whitehorse, with an undergraduate student assisting her. She has finished all her course work, and is able to move semi-permanently to Whitehorse (until the end of her degree) and likes it there. Several Acadia students are at UVic in the School of Earth Ocean Sciences and she discovered that she is related to **Jason Mackenzie (BSc '96)** – his grandmother is her great-grandfather's sister. Someone at the field school said, "It just goes to show that everyone in Nova Scotia is related."

Darin Wasylik (BScH '04) has accepted a position as a "database" geologist with Nevsun Resources in Vancouver, after a several month stint in Mongolia with Erdene Gold (and also with **Steve King, MSc '03**). The new job will keep him mainly in Vancouver, with 3-8 weeks in Africa, involving keeping an organized database and liaison between the field (Africa) and the Vancouver office and maintaining quality control on samples, and doing some computer modelling. You can reach Darin at dwasylik@hotmail.com

Colin Zwicker (BScH '03) finished his diploma at COGS and joined ESRI in Redlands, California, in September.