



Metamorphic Madness

John Bladek

Inside this issue:



Meet the new Chair



Field Education



Summer of '58

- *Mining Building Renamed*
- *New Scholarships*
- *Who was at Tweed '78?*
- *Adventures in Chile*
- *Erindale Class of 7T6*

Contents

- 2 Chair's Message
You saw it here first!
- 3 Meet the new Chair
- 4 News and Awards
- 6 Oil Sands review
Mining Building
- 7 Exploration Leaders
Some recent books
- 8 A. Gordon Stollery
- 9 Sol Kaiman
Christmas Classic
Cornel de Ronde
Scotiabank Marine Lab
- 10 Memoirs of an Alumus
- 12 Undergraduate Matters
Why Geology?
- 13 Adventures in Chile
- 14 Advancement Activities
- 15 Donors
Field Education photos
- 16 Steve and Joan Scott Honoured
- 17 Tony Naldrett Scholarship
Were you at Tweed in '78?
World Needs Geoscientists
Public Outreach continues
- 18 2011 Grads and Scholarships
- 20 Success in US competition
The Wallbridge Connection
Erindale 7T6 Reunions
- 21 News of former students
and friends

*Front Cover photographs by
John Bladek (B.Sc. 1984)
See page 23*

Message from the Chair of Geology

Welcome to this year's departmental newsletter! It's great to catch up on the whereabouts and doings of our unbeatable group of alumni and we provide a few snapshots of the current events in the department. As you will see in the following pages, the department is thriving right now – as a vibrant, stimulating place for education and research. It was an honour to have been appointed as Chair of Geology for a four-year term following last year's service as Interim Chair, and I'm more than ably assisted in the leadership of the department by Associate Chairs Dr. Charly Bank (Undergraduate) and Professor Ed Spooner (Graduate).

As I mentioned in last year's newsletter, we are in the midst of academic planning exercises that will result in a significant growth of our department. As recommended by the Faculty of Arts and Science, various faculty appointments from other cognate departments will move to our department in order to consolidate and strengthen geoscience education and research activity at U. of T. One of the outcomes of this growth is that we are exploring a name change for the department. This has involved a significant amount of discussion and consultation among students, staff, and faculty and possibilities that have been considered (among many others) include: Geosciences; Earth Sciences; Earth and Planetary Sciences; and Geology, Geophysics, and Geochemistry.

As I remind students there is still an unequivocal commitment to our core Geology specialist program and Geoscience major (as well as our new Geophysics specialist)—indeed a primary goal with the undergraduate program is to strengthen these core geoscience areas. A name change really represents the natural evolution of a department that is fully active and engaged in academic research and education. Through its ~160 year history, the department has evolved through an array of names including: Mineralogy and Geology; Geology and Paleontology; and Geological Sciences. We are now at a time where the department is strong and expanding and the planning matters we're facing signal these very positive developments. I would genuinely like to hear the views of our alumni and friends on the potential name change as we take Geology forward to its next stage of evolution; I strongly encourage you to e-mail me personally at chair@geology.utoronto.ca.

The undergraduate program is very strong with enrolments at numbers not seen since the early 1980's. For example, demand for our GLG206 – Mineralogy class pushed well above the enrolment cap of 60 and extra lab sections were introduced to meet the burgeoning numbers of students. As a bellwether course in geoscience, this demonstrates the current and future strength of geology and mining engineering at U. of T. Beyond the numbers, opportunities afforded through fundraising initiatives and departmental planning priorities have given our students more opportunities for field education throughout our undergraduate program. Among a number of new field study initiatives, a particular highlight was the trip to Chile (see page 13) during the 2011 spring break for our GLG217 class to study the Chilean Cordillera at the active subduction boundary.

Continued on page 3

You saw it here first!

The cover photograph on our 2009 Newsletter by Professor **Uli Wortman** won the GSA 2010 photo competition. The photo was featured in the June 2011 issue of GSA Today (page 15) and is featured on the cover of the 2012 GSA calendar. Well done Uli.



Continued from the Chair

Our graduate program continues to thrive. We attract for graduate research some of the very best domestic and international students available. In coordinating our graduate program, Ed Spooner highlights in particular a significant upswing in recruitment of students from other strong geoscience programs across Canada. Our grad student scholarship rate continues to widely outpace all other academic departments at U. of T. – demonstrating both the high quality of our students as they bring funding from external granting agencies and the generosity of those who have endowed scholarships in support of graduate research in Geology. Our graduate student TA's are a tremendous asset to our undergraduate teaching and are some of the best from across the university. At this past spring's semi-formal Ben Moulton and Chris Charles were given the Laurence Curtis Teaching Assistant Award in recognition of their outstanding work this year.

On behalf of the department, I thank all of our generous alumni and friends for their donations in support of Geology over the past year. This includes a long list of donors who helped establish the Emeritus Professor Steven D. Scott and Joan Scott Graduate Student Scholarship. This will be an excellent enduring tribute to Steve and Joan's many contributions to the department over the years. Fundraising for the Kirwin project culminated in a fantastic "Rock of Ages" gala at the ROM and the acquisition of this tremendous rock and mineral collection will be an important shared resource for education and research in economic geology in Toronto. Finally, a sincere thanks to a number of donors for their support of Field Education through the annual fund. These gifts really have made an immediate and tangible difference in allowing us to enhance the quality of the academic experience for our undergrad and grad students. There has been a steady stream of undergrads/grads/faculty to my office with proposals for all sorts of geology field trips — in-course excursions, new field camps, student-led day trips, etc.—and there is a genuine excitement for the new opportunities in field studies that the financial support of our alumni and friends provides. You can find out more about these initiatives in the insert brochure to this newsletter. I encourage you to please consider supporting Geology and making an investment in the next generation of geoscientists.

Enjoy reading up on some of the news within the department and from our alumni and friends and I hope to see and meet many of you at the annual departmental reception during the PDAC.

Best wishes, Russ

Alumni Reception in Toronto
Tuesday March 6th, 2012
Fairmont Royal York
Library Room
5:00pm to 7:30pm



Meet the new Chair...

Russ Pysklywec was appointed as the Chair of Geology on July 1st, 2011. He received his B.Sc. in Geological Engineering from Queen's University and his M.Sc. and Ph.D. in Physics (Geophysics) from U. of T. An NSERC Postdoctoral Fellowship in Oceanography at Dalhousie University was followed by his hire as a faculty member in Geology in 2000.

Russ's geodynamics research centres on lithospheric tectonics and developing an improved understanding of the mechanisms that drive the tectonic evolution of the Earth's active surface and interior. In particular, he has written articles on how the mantle "thermal engine" drives tectonics at mountain belts and sedimentary basin regions, and how climate-controlled surface processes (erosion, deposition) modulate the tectonics. He is currently working on projects in New Zealand, Anatolia, northern Italy, and the Canadian shield.

He considers himself a quintessential Canadian: Skiing and hockey in winter, including almost 20 years of tenacious, even if not highly skilled, play on the geology/physics pick-up team; and canoe tripping in summer, with past experience as a canoe guide in Algonquin Park put to good use in excursions with his kids. He was raised in Belleville, Ontario and is the product of a Ukrainian gold mining family from Kirkland Lake on his dad's side and Irish/English prairie farming family from Kipling Saskatchewan on his mom's side.

At home, his wife Jenny and he are kept busy with three kids: Nicholas (10), Maia (8), and Tessa (6). Chances are that Chair-duty e-mails are composed during downtime at the kids' figure skating/hockey/dance/gymnastics/cello-violin-guitar/Cubs-Beavers/ski activities.

News and Awards



Emeritus Professor **John Westgate** received the Johnston Medal of the Canadian Quaternary Association.

Extract from the citation:

John Westgate has developed the field of tephra studies into a global research area. Countless applications of tephra to geologic problems owe a debt or reflect applications of the earliest methods that John and his colleagues developed in this field. In 1969, John and Dorian Smith, a mineralogist at the University of Alberta, published the first use of the electron microprobe to characterize volcanic glass, allowing the distinctive geochemical fingerprints to be established which then allowed these tephra beds to be identified and correlated from site to site. Their publication in 1969 marks the beginning of the modern era of tephra studies. His move to the University of Toronto in 1975 cemented his focus on the study of tephra. Most every leading tephrochronologist has come to his lab at the University of Toronto and most stayed in his home during their work at the lab—and were invariably fed by Cora. His continued collaborations with so many researchers, many repeatedly throughout his career are indicative of his considerable humanity and value as a colleague.



Professor **Ken Howard** received the President's Award for 2011 from the International Association of Hydrogeologists.

Extract from the citation:

The Presidents' Award of the Association is given annually to a hydrogeologist who has made outstanding international contributions to the development or application of groundwater science. Ken Howard has authored or co-authored 103 books and refereed journal articles and 44 full conference papers, produced numerous conference abstracts and made many invited presentations at conferences around the world. He is, however, probably best known to IAH members as the Chair from 1997 to 2011 of the Commission on Groundwater in Urban Areas. This has been one of the Association's most consistently active Commissions, due in no small measure to the skill and enthusiasm of his leadership. Professor Howard, you are a worthy recipient of the 2011 President's Award.



Emeritus Professor **Steve Scott** received four honours in 2011. A special 3-day session at the GAC-MAC-SEG-SGA conference in Ottawa with 41 speakers from 8 countries was organized by four of his former graduate students – Andrew Conly (PhD 2003), Mark Hannington (M.Sc. 1986; Ph.D. 1989), Jan Peter (M.Sc. 1986; Ph.D. 1992) and Paul Spry (Ph.D.

1984). The “**Emeritus Professor Steven D. Scott and Joan Scott Graduate Student Scholarship**” was established in the department (see page 16). In addition he received two major awards:

1. The Moore Medal of the International Marine Minerals Society

The citation read, in part:

Steve is the first ore deposits geologist and first Canadian to witness the formation of metal sulfide deposits by hot spring activity on the modern seafloor. Steve has been a highly productive research scientist throughout his entire career, with more than 170 publications to his name; probably more impressive are the students that Steve has supervised, including 26 Bachelors, 21 Masters, and 24 Ph.D. degrees. The training of these exceptional contributors is likely to be his most important and enduring mark in his qualifications for the Moore award.

2. The Haddon Forrester King Medal of the Australian Academy of Science.

Extract from the citation:

Professor Steve Scott is a distinguished mineral deposits scientist with a life long record of outstanding and internationally awarded scientific research. He has made significant contributions to understanding modern and ancient volcanogenic massive sulphide deposits and to the geological processes of the modern sea floor. He was a pioneer of the use of deep sea diving submersibles to observe sea floor hydrothermal activity. His research, exploration and discovery has formed the cornerstone of sea floor mining. Professor Scott's research, teaching excellence, public lecturing and service to the scientific community has had an enormous impact on the Earth Sciences and will continue to do so.

In addition, Steve continued his Canadian Institute of Mining, Metallurgy and Petroleum distinguished lecture tour that has taken him to 30 venues across Canada, the USA, Greece and Australia giving talks in both English and French on “Sea floor massive sulfide mining: the dawning of a new industry”. Steve visited Portugal three times in 2011 at the invitation of the Azores and federal governments to discuss developments in ocean mining for sea floor massive sulphides and their implication for Portugal.



Emeritus Professor **Tony Naldrett** is continuing research on platinum group elements in the Bushveld complex through his honorary professorship at University of Witwatersrand (WITS). He spent 2 months at the institute of Geochemistry in Guiyang, China and a Special Volume of “Reviews in Economic Geology”, was dedicated to him;

part of the preface read:

“We dedicate this collection of papers to Professor Tony Naldrett, whose pioneering efforts laid the groundwork for so

much of our current understanding regarding the genesis of magmatic Ni-Cu-PGE deposits. Tony's students are involved in virtually every aspect of the Ni and PGE industries. He has served as mentor to many of the authors of the chapters contained in this book, and his willingness and desire to share his vast knowledge of magmatic ore deposits is a mark of the educator and the gentleman that Tony is."

Tony continues to be actively involved in both research and consulting; his enthusiasm and zest for life are inspirational to us all."



Professor **Nick Eyles** will receive the 'Geoscience in the Media Award' for 2012 from the American Association of Petroleum Geologists; the world's largest geoscience society. This award is given to a person in recognition of notable journalistic achievement in any medium which contributes to public understanding of geology, energy resources, or the technology of oil and gas exploration.

He will be presented with the award at the association's convention in Long Beach in May 2012.

Emeritus Professor **Jeff Fawcett** received the University's Arbor Award in September. These awards that recognize those who have made exceptional personal contributions to improving the quality of the University of Toronto experience for students, faculty, staff, and alumni. Jeff has worked tirelessly for the department in very many ways since his retirement—in particular, on departmental advancement efforts and alumni relations and is an eminently deserving recipient of this special recognition.

RNP

Professor **Barbara Sherwood Lollar** has begun a second term as a trustee for the Ontario Science Centre.



Emeritus Professor **Fried Schwerdnter**. Accompanied by his wife Flo, Fried was the principal speaker at his Alma Mater's (Free University of Berlin) Golden Ph.D. Awards (1961-2011) ceremony in November 2011. Reverting to his first language for the first time in 20 years, Fried gave a talk to a general audience on the Geology and Scenery of the Eroded

Grenville Mountains of Eastern Canada. What a delightful way for a university to recognise its senior alumni.

Steve Barnes Ph.D. 1983 (Naldrett group) was awarded the Gibb Maitland Medal by the Western Australia Branch of the Geological Society of Australia (see page 21).



Senior Lecturer Dr. **Charly Bank** received the Dean's Outstanding Teaching Award for 2011.

Charly is a dedicated and enthusiastic teacher who has established himself as a leader in teaching and pedagogy in geosciences within and beyond the University of Toronto.

Students credit him in particular for the deeply positive impact he had on their undergraduate Geology studies as an educator and mentor. His commitment for engaging students in geoscience field research projects—such as geophysical surveys of archeological sites in Turkey and electromagnetic probing of TTC tunnels—have had a profound influence on the quality of education for our students.

RNP



Congratulations to our Engineering Technologist **George Kretschmann** who received the Dean's Outstanding Technical Service Award for 2011. Very many members of the department know of George's skills in keeping a wide variety of instruments in operation and of his patience in keeping users from undoing, in a few minutes, many hours of his labour. He has also designed and programmed

interfaces and become an expert operator of machines such as the SEM and XRD.

Alex Borowik was elected to U. of T.'s Sports Hall of Fame.

Many perceptive readers of the Autumn 2011 issue of U. of T. Magazine would see that in June 2011 geology alumna Alex Borowik (B.Sc. 1993; M.Sc. 1998) was inducted into U. of T.'s Sports Hall of Fame in recognition of her standing, during her student days, as U. of T.'s top female gymnast. Alex won medals for floor routine, vaulting, uneven bars and beam. In 1987 she was a member of the Canadian team at the World Gymnastics Championships. She won the Dr. Clara Benson Honour Award for outstanding ability in Athletics and Scholarship. She was also President of the Undergraduate Geology Association. Congratulations Alex.



The 39th Congress of International Association of Hydrologists will be held in Canada for the first time in 17 years. Professor **Ken Howard** is the Congress Co-Chair and he also co-chairs, with alumnus **Rick Gerber** the Technical Program Committee. For more information see <http://www.iah2012.org>

New Initiatives to Manage the Environment of the Oil Sands in Alberta

There have been repeated environmental protests in the U.S. and Europe about “Canada’s dirty oil.” Recent protests in Washington and elsewhere have been aimed at not only shutting down the oil sands industry, but preventing the building of pipelines to serve Canada’s export market.

Earlier protests, in the summer of 2010, were marked by the release of a disturbing research report by respected environmentalist David Schindler (University of Alberta) demonstrating that water pollution studies being carried out at the behest of the government of Alberta and the oil sands industry were not accurately reporting the presence of pollutants that may be responsible for deformities in the freshwater fish population. There were also continuing fears about unusual cancers in the First Nations population at Fort Chipewyan, which is downstream from the oil sands development area.

Largely because of the protests and because of the cutting-edge science by Schindler, both the Alberta government and the federal government appointed research panels to explore the issues and decide what should be done. I was honoured to be a member of both these panels. The federal panel reported in December 2010 and the Alberta panel in late June 2011, and both recommended the establishment of an independent monitoring body in which the focus would be on the carrying out of high-quality science.

Studies indicate that, contrary to claims by the protesters in Washington and elsewhere, air and water pollution can be

managed effectively as long as the necessary, properly planned field sampling is carried

out first. It is the poor quality of the initial field work, plus the lack of high-quality analytical laboratory standards that has, to this point, inhibited proper environmental management. The massive disruption caused by surface mining can be managed by appropriate restoration work, but up to this time, investment in restoration has been inadequate. Increasing efficiencies in energy and water use are steadily reducing the environmental footprint of oil sands projects, although the total footprint continues to expand with each new project.

Industry spokespersons have made it clear that they want proper direction and leadership. Millions of dollars are already being spent in this area, but it has not been spent well, and it is to be hoped, with the appropriate political response to the two major government panel studies and an independent report by the Royal Society of Canada, that this world-class energy resource can be managed in a way that will place Alberta and Canada in a leadership position with regard to the administration of one of the world’s remaining large fossil-fuel energy resources.

Andrew Miall

Andrew Miall was a member of the federal Oil Sands Advisory Panel and the Alberta Environmental Monitoring Panel. He is a former President of the Academy of Science of the Royal Society of Canada.



Mining Building Renovated and Renamed



All Geology, Geological Engineering and Mining Engineering students from the decades prior to 1990 retain a great affection for the “Old Mining Building” at 170 College Street. It is now the LASSONDE MINING BUILDING. The transformation of the building, which first opened in 1904, converted the previously unused attic into new collaborative student design studios and teaching spaces and added a rooftop meeting room. If you were one of the many students who slept over in the Mining Building attic from time to time – or perhaps even for a term or two, you would be amazed by the new rooms. If you carved your initials into the roof joists you will be happy to know that some have been preserved.

The new 4th and 5th floor space, known as the Goldcorp Mining Innovation Suite, provides 100 workstations for students studying mineral and civil engineering to complete engineering design projects. It will also be home to the Lassonde Institute of Mining, an interdisciplinary research institute focused on a whole spectrum of mining activities, including mineral resource identification, mine planning and excavation, as well as extraction and processing. In addition to classes, the suite will host public events ranging from small meetings to seminars and lectures.

The project was made possible by generous financial support from Dr. Pierre Lassonde, the Chair of Franco-Nevada, Goldcorp Incorporated, as well as Knowledge and Infrastructure Project (KIP) funding from the federal government matched by provincial funds.

Exploration Leaders

Numerous alumni have founded exploration companies or risen to top executive positions in established companies. In this and future issues we intend to highlight some of the people and companies who have made an impact through these activities, beginning in this issue with Asia Now Resources and its CEO Kaihui Yang.



After eight years as a PDF and RA with Steve Scott, in 2003 I formed and am the President and CEO of Asia Now Resources Corp. (Asia Now), a Canadian exploration company with a focus on China. The Company was listed on the Toronto Ventures Stock Exchange in 2006.

Initially, the Company reviewed 11 potential areas in various parts of China. Based on the results of exploration over several years, the Company has concentrated on two high-potential projects in Yunnan Province in the southwest. Changes in China and the global financial crisis of the past years has caused most of the western exploration and mining companies to leave China. Asia Now, however, has continued working on its commitments there. As a result, the Company has made a significant discovery at its Beiya gold project through an aggressive drilling program of over 48,000 meters since 2010. This project has been viewed by the China Geological Survey as one of the most prospective areas in China.

The Company's exploration has been cited by the Chinese Ministry of Land and Resources as a model for successful Sino-foreign joint ventures in exploration and mining in China. In November 2011, Asia Now received the Prospecting and Exploration Outstanding Achievements Award at the China Mining Conference 2011, one of the largest international mining conferences co-organized annually by the Chinese Ministry of Land and Resources and the PDAC.

Asia Now's accomplishments would not be possible without the strong support of its friends and partners in Canada, especially at the early stage of development of the Company. These include shareholders, investors, local communities and governments. In return, the Company has provided support to local communities, co-sponsored short courses and lectures for Chinese geologists and students (see report of the Scotiabank Marine Geology Research Laboratory), made contributions to local schools, and has funded student research programs and scholarships at universities, including the University of Toronto.

Built upon the multi-cultural environment of Canada, Asia Now has taken up some excellent opportunities in both Canada and Asia. The Company initially raised funds from Canada for its exploration projects in China but, in recent years, it has attracted significant investments from Asian areas including Hong Kong, Singapore, Taipei, Shanghai, Beijing and Yunnan. These investors support Asia Now, not only for its projects in China, but also for the opportunities that the Company is looking into globally. Asia Now is fast becoming a "world" company with people, projects and investments from various parts of the globe!

Kaihui Yang

Some Recent Books

Gems and Minerals

Earth Treasures from the Royal Ontario Museum

by **Kimberly Tait**, Curator of Mineralogy, Royal Ontario Museum, Assistant Professor (status only), Department of Geology. This book is a comprehensive illustrated guide to 260 outstanding examples of gems and minerals from the collection of the Royal Ontario Museum; published by Firefly Books.

Beginner's Guide to Minerals and Rocks

by **Joel Grice**, (B.Sc. 1969; M.Sc. 1970; Ph.D. 1973/U Manitoba), a 300 page Beginner's Guide to Minerals and Rocks (published by Fitzhenry & Whiteside) is loaded with colour photos, information on appearance, physical properties, occurrence (localities), Canada's geological regions and interesting facts.

Nick Eyles's book 'Canadian Shield – The Rocks that Made Canada' was published in January 2011 and Ontario's first road guide to its fascinating geology is to appear in January 2012 (**Road Rocks: Ontario's Geological Heritage**) also produced by Fitzhenry and Whiteside. It includes more than 300 GPS referenced sites from Timmins in the north to Long Point in Lake Erie spanning the last 2.7 billion years of the Province's tectonic and environmental legacy with a dash of human history thrown in for good measure. It has taken more than 3 years to produce and afforded many opportunities to travel the byways, many by motorcycle, and to discover hidden gems of geological stories and landscapes. Several graduate research projects have grown out of this project.

A. Gordon Stollery

M.Sc. 1972 — died on December 11, 2011

After finishing his undergraduate degree at Princeton, Gordon enrolled as an M.Sc. student in our graduate department in 1971. Never one to shirk a challenge, he decided on the all course program which required the completion of five full graduate courses. He achieved the remarkable feat of successfully finishing those courses



within 15 months of first enrolling. This stood as a record in our department for over 25 years. He would have finished even sooner had it not been for field work required for a research project he carried out under the supervision of Fried Schwerdtner! As Associate Chairman at that time, I was the nominal supervisor for each of the all course masters students. We met from time to time during the year to review his progress. It is my recollection that, despite his involvement in several sports, most particularly in ice hockey and probably a few business ventures, he breezed through his courses. He was one of the most efficient students I had ever known – hard working and extremely capable. At the same time he was very friendly and got on well with everyone in the department.

I reconnected with him in the mid 90's as part of a departmental effort to broaden the scope of our alumni relations. He immediately responded from his office in Calgary. We met for lunch during a Calgary meeting of the CSPG and I was able to bring him up to date on departmental changes over a 20 year span and on our aspirations within the University's fund raising campaign. It is typical of the man that he took the time for that meeting even though he was at the peak of critical negotiations for the sale of one of his companies. He immediately expressed interest in hearing more about the campaign and we agreed to keep in close touch. The relationship moved on upstream. John Lynch, Advancement Officer for Arts and Science, Dean of the Faculty, Carl Ahmrein, and Vice President for Advancement Jon Dellandrea followed up by meeting with Gordon and before long he had made a commitment to fund the Gordon Stollery Chair in Basin Analysis and Petroleum Geology with a donation of \$1M (matched by the University).

JJF

Gordon's business career is well documented in the University's official obituary at:
(<http://news.utoronto.ca/remembering-arthur-gordon-stollery>).

Andrew Miall who was appointed to the Chair in 2001 and still holds that position comments:

“The establishment of the Gordon Stollery Chair in Basin Analysis and Petroleum Geology has been of critical importance in ensuring a long-term future for the study of sedimentary processes in our Department, and in supporting the application of such studies to the exploration of earth history, and the search for fossil fuels. While faculty research is typically funded by NSERC Discovery Grants, and other sources, where available, the regular research stipend that is attached to an endowed chair is of immense value in providing flexibility for ideas outside the main focus, for supporting student endeavours, and so on. The funding of a second faculty position in the area has also enabled the department to establish expertise in whole new areas. My primary interest is in clastic sedimentology, principles of stratigraphy, including sequence stratigraphy, and in the geology of nonmarine deposits. The complementary position is occupied by Professor Ulrich Wortmann, whose interests lie in the area of marine geology, paleoceanography, and geomicrobiology. He is interested in the global interplay of biology, chemistry, and physics on various timescales, and has established an important laboratory facility in the area of stable isotope geochemistry.”

Together Andrew Miall and Ulrich Wortmann are carrying out Gordon Stollery's vision for the future of this central field of geology at U. of T.

Laurie Curtis, a contemporary of Gordon Stollery writes:

"What I remember about Gord was that he was on the fast elevator of life, bound to achieve and clearly a multi-tasker. In the early seventies he would breeze into the lab, play around with some garnets, do some quick calculations then be off to the next appointment, which generally meant back to his Dad's office. At that time his vehicle was Morrison Petroleum Ltd. which he was clearly preparing to storm into Alberta, which he did, and made a significant fortune. He was always thinking, and in more recent years asked me to look at the Canada Fluorspar mine which he created again from part of the family portfolio. I always found it interesting that here was a guy who started a research project with garnets, moved to the oil patch and then later in life choose to develop another simple but very valuable industrial mineral-fluorite. Gord had a renaissance talent and was a generous and gregarious human being."

Sol Kaiman

(B.Sc. 1942; M.Sc. 1946)

Sol Kaiman passed away at age 90 on February 11, 2011. He graduated with an Honours Bachelor Degree in Mineralogy and Geology in 1942. After military service in WW II he obtained a Master's degree in Mineralogy, with Professor Martin A. Peacock, receiving his degree in 1946. He spent his entire professional career at the Mines Branch (later CANMET) in Ottawa where he was deeply involved in the characterization of uranium minerals. Sol was one of the few surviving members of a small group that founded the Mineralogical Association of Canada in 1954.

He was a “gentleman” mineralogist, in the true sense of that word, who made a valuable contributions to our knowledge of ore minerals. He is remembered by friends and former colleagues as a very fine person.

From R B Ferguson's obituary in The Canadian Mineralogist Vol. 49, pp. 671-672 (2011), with his permission.

Geology vs ROM Christmas Classic



The Christmas Classic between the ROM (dark jerseys) and Geology (white jerseys) was held at Varsity Arena in December. Thanks to de facto captains George Kretschmann (Geology) and Dr. Kim Tait (Curator of Mineralogy, ROM) for organizing the game. Grad/undergrad students, staff, and faculty from both institutions played; the final score was not recorded but admittedly defence and backchecking took a backseat to offence.

RP

Cornel de Ronde and the Pink Terraces of Lake Rotomahana

Cornel de Ronde's (Ph.D. 1991) research at GNS Science, New Zealand attracted international attention early in 2011. Cornel and colleagues used an underwater vehicle to image the long lost Pink Terraces of Lake Rotomahana. These terraces, once the Eighth Wonder of the World, were submerged by accumulation of water from a blocked stream during the 1886 eruption of nearby Mount Tarawera. News of these results was reported in many countries around the world.

For more information and underwater images see:

<http://www.youtube.com/watch?v=eSEsMRTX3Ys&feature=related> (>15,000 views!)

http://www.youtube.com/watch?v=po53v4TGPbc&feature=youtube_gdata

Scotiabank Marine Geology Research Laboratory

Director Steve Scott's retirement to Emeritus status has not stopped the Scotiabank Lab's global activities. Filipa Marques, a former Postdoctoral Fellow (2006-09) and now a researcher at the University of Lisbon, returns to the lab annually to use our department's analytical facilities. She is leading the Portuguese-funded “TerRiftic” project on the marine geology and volcanology of the Terceira “leaky transform” rift in the Azores in which Steve is involved. Both of them are contributors to a second Portuguese project lead by Jorge Relvas of the University of Lisbon on the zinc ores of the giant Neves Corvo mine.

Doctoral candidate, Dapeng Li of China University of Geosciences in Beijing where Steve is an Honorary Professor, spent 5 weeks in the lab analyzing melt inclusion from the Tongling copper mining area using the Time of Flight – Secondary Ionization Mass Spectroscopy (ToF-SIMS) facility in Chemical Engineering. Steve was one of the applicants for this advanced piece of equipment. The work that Steve and

his colleagues (Kaihui Yang and Filipa Marques) have been doing on melt inclusions, tiny samples of magma encapsulated in crystals in volcanic rocks, is one of the first applications of ToF-SIMS to geological problems and is helping to resolve the source of ore fluids in volcanic-hosted deposits.

For the past 6 years, Steve and his wife, Joan, have been organizing in China a 4 to 6 day workshop on “Ore Deposits Models and Exploration”. Steve invites renowned lecturers from around the world to present workshops that attract 250 to 350 students, young professors and both company and government geologists. Joan's task of setting up daily lab sessions for so many people is a challenge! This year's course received recognition from the chief geologist, Dr. Zhang Hongtao, of the China Geological Survey, Vice Minister Dr. Wang Min of the Chinese Ministry of Land and Resources, both of whom together with the SEG, SGA and Asia Now Resources are sponsors, as well as the Minister of Natural Resources Canada, Joe Oliver.

Steve Scott

Memoirs of Paul Van Loan

*Many alumni have participated in ground-breaking discoveries of both petroleum and hard rock resources. Only a few can compare with the experiences of **Paul Van Loan** (B.A., M.A. U of T, 1957-58; Ph.D. McGill U., 1968) during the early years of uranium exploration in north west Ontario. The following partly edited extracts are taken from his memoirs that were recently published.*



My first introduction to this land, the Canadian North, had of course been Lake Skootamatta and our cottage. But as I boarded the train at Union Station that early June evening in 1953, I had no inkling that I was about to be plunged into the first great adventure of my life, in a raw land of two billion year-old rock that would kindle in me forever the same awe and love that moved Robert Service. As I write these pages exactly fifty years have passed since the events described herein and yet they are as clear to me as if it all happened yesterday. So here I was in Union Station at 10:30 pm, embarking on an overnight slow train journey for the first time in my life. Between discomfort in the upper berth and mixed trepidation and excitement, I scarcely slept a wink.

Gilles explained to me briefly in heavily accented English that I had been put with their team to learn the rudiments of claim staking. There was a lot of work to be done. I nodded. The truck turned up a dirt road and finally, deep in the woods, came to a stop. We climbed out, gathered up our things and lined up behind the team leader at a trailhead marked by blazes at shoulder height on two tall poplars of the type called “trembles” in French. Then, without a word, we began to jog—not walk—at a steady pace until we came to a post of a previously staked claim. Here we would begin tying in the next block of claims. And now my education began.

And so it continued, claim after claim. No time for a break other than cutting posts. Presently, I concluded that I had to start cutting posts too if I were to carry my weight on the team. And so at the next stop I declared it was now my turn. “No, no, that’s OK.” Gilles said in his quiet, deep baritone. I insisted. And so, Gilles stepped back and let me go at it. Coincidentally (or was it?) he and the whole team decided this was a good time to take a break, and they all sat down and leaned back against the trees to watch. I chose a promising birch tree. Thwack! Thwack! Oops! Thwack! Thwack! After a brief struggle my opponent creaked and fell over. A few minutes later I had my

four-foot post. Now all I had to do was fashion those smooth surfaces to write on. I tried; I swear I tried. But I just couldn’t get it. After another five minutes my post looked as though it had been attacked by a demented beaver. No one laughed, though they smiled. At last, Gilles put me out of my misery. He took the post, and zip!-zip!, created four paper-smooth surfaces in a few seconds. On we went, and I restricted my contributions for the rest of that day to blazing the trail and writing down the information for my nine claims.

Franc Joubin had prospected the area north of Georgian Bay the previous summer and fall of 1952. Historically it was known to have some small deposits of ore grade copper minerals, but Joubin, who had worked in South Africa, noticed a resemblance between the quartzite conglomerate sequence of these two billion year-old Huronian rocks, as they were named by geologists, and the gold-bearing formations of Witwatersrand. Like many others, he could find no trace of gold here but, tipped off by a prospector named Karl Gunterman, came across some long-abandoned trenches that were noticeably radioactive to a Geiger counter. Uranium was of course much sought-after in the 1950s, and when some exploratory diamond drilling of the trenches yielded significant assays of the metal, Joubin had little difficulty persuading Joe Hirshorn that further investigation was warranted. It was then that I learned what I will call the First Rule of Field Work: when the weather is good, you work. It was understood that when it rained heavily it was generally so inconvenient to work in the bush that it was useless to try. Depending upon the location and time of year, you might work 20 or 30 days without a break. On the other hand, as I was to learn in a couple of years, you could get stuck in a tent for days on end of pouring rain until you thought you’d go stir-crazy or assault your tent-mates.

Poring over a 1922 map prepared for the Geological Survey of Canada by W.H. Collins, they found to their amazement

that the potentially uranium-bearing rocks extended in an enormous, 90-mile long Z-shaped formation, a nearly continuous outcrop of Huronian-age Precambrian rocks that loop back and forth in white quartzite hills from just north of Georgian Bay to Quirke Lake, nearly 30 miles to the north. Hirshorn and Joubin, working with a number of experienced mining geologists from Hirshorn's Preston East Dome gold mine farther north in Timmins, Ontario, determined upon an ambitious exploration program which began in May 1953 with a top-secret claim staking rush. Most of the stakers were quietly assembled in Timmins, a gold mining town far north of the area, and then flown surreptitiously into remote lakes that lay along the trace of the big "Z" outcrop. The desired surprise was largely achieved, and this coup later became known in mining history as "The Backdoor Staking Bee". I appeared on the scene as the rush was in full swing but, of course, had no idea at the time of the scope or significance of what was going on around me. By the time word got out, Joubin's teams had tied up most of the promising property in an area of several hundred square miles. When Hirshorn's men came out of the woods to the Mining Recorders' offices in Sudbury and Sault Ste. Marie on July 11, 1953, they filed title to more than 1,400 claims covering 56,000 acres.

It must not be thought that the maps based on these grids were super-accurate in dimension and orientation; several factors could militate against that, foremost of which was terrain with a high relief. This made it difficult both to maintain visual alignment of pickets when cutting, and to accurately chain the grid once it had been cut. Climbing up and down hills and cliffs necessitated "breaking chain", as it is called, in order to avoid significant distortion of the dimensions on a grid which is intended to be a plane projection of the surface. Nonetheless, accuracy was sufficient for this stage of assessment work, where only a preliminary knowledge of the geological relationships and positions of ore-bearing rocks was required.

The next morning I met the man with whom I was to spend the next couple of weeks cutting line. He turned out to be one of the most remarkable individuals I have ever worked with, then or since. Joe Niemi was a Finn from the goldmining town of Timmins, Ontario, a stooped hulk of a man in baggy work pants and a heavy blue shirt. His deep-set blue eyes under their bushy brows and shaggy mass of white hair regarded me quizzically as we were introduced and it was explained to us that we were each to cut a mile of line a day in preparation for assessment mapping of the surrounding claims. It was clear that each of us had some doubts about the other's ability to meet this quota. "Old Joe Niemi", as he was universally referred to by everyone in the camp, was indeed old; could he keep up the pace?, I wondered. Joe was looking at this scrawny adolescent (at 5'10"

I still weighed only 140 pounds) who was scarcely beginning to shave, and must have been asking himself the same question. Well, during the next few days we proved to each other that, yes, we could do the job. But there were real differences. Old Joe cut his mile of line methodically, with scarcely a wasted motion, while I thrashed away with the indiscipline and lack of skill of my years. And oh, yes: I was 18, and Joe was 82.

A few evenings before my departure a bunch of us went into Blind River for an evening of fun. Toward the end of our evening a young, rather attractive woman approached our table. She didn't seem to be much older than me, and said she was a University student (which I certainly doubted, though she was well-spoken) trying to make some money, and were we



interested. Well, when all was said and done, no, we weren't. "Well" she said, standing up and turning away, "I guess I'm still a destitute prostitute." Great line. She had probably stolen it somewhere, but unaccustomed as we were to any display of wit in this whistlestop part of the world, we were impressed. A couple of days later I was on the train to Toronto, with another phase of my life about to begin. So far, my 18th and 19th years had been a magic time, filled with events that, joyful and otherwise, I was to remember vividly forever. In retrospect I spent much of my life from that time on imbued with the energy, enthusiasm, naivete and sense of wonder of an 18-year old, and on balance I don't regret that a bit. I only wish I could recapture it.

See also Alumni Newsletter 14, 2005 for some of Paul's recollections of his years in the Department.

Photos:

In July of 1953, at the Pronto Base camp and the field camp on Pecors Lake, about 25 miles north of Georgian Bay, east of Blind River. At 18 years old, just out of high school, Paul was assigned to a lot of tasks, including claim-staking, line-cutting (note the axe top left photo) and portable diamond drilling, prior to assisting a geologist in reconnaissance mapping.

Undergraduate Matters



*Charly (Carl-Georg) Bank, Ph.D.
Senior Lecturer and Associate Chair
(Undergraduate Studies)*

The undergraduate program continues to be exciting. Our student body is dedicated, working hard, and each year grows into a close-knit community. Last spring the department secured one-time funding from FAS (the Internationalised Course Modules) and I took 29 students to Chile, where we met Fernanda Soto (B.Sc. 2010) and now a graduate student at the University in Santiago – who became our fieldtrip guide for the reading week: mesozoic sedimentary rocks and igneous dikes in the Elqui valley, Jurassic fossils and structures in the Maipo canyon (yes, we passed Maipo valley known for its wine, but no, we did not stop and drink), finally greenschist and present-day beach environment in Pichilemu (and a surfer's paradise). It seems

this trip initiated a string of new field-based initiatives (Uli Wortmann will be taking the 3rd-years to the Colorado Plateau over Reading Week, James Brenan will offer a capstone fieldtrip “to the Moho” in Newfoundland in August). Undergrad students are also engaging in research, lab and field based. Faith Meadows, a 3rd-year student is presenting geophysical work at Fall AGU that 8 of our students and 2 high-school students from the Deep River Science Academy did over the summer in NE Ontario. For the first time (at least in the past decade for which I have data) we have more specialist students than majors. Current discussions about a revamped department offer the opportunity to streamline content and skills learned in our courses and rethink our position within environmental science at the university.

Why Geology?

My name is Faith Meadows. I am currently a third year undergraduate in a Geology Specialist Degree at the University of Toronto. I decided to study geosciences for many reasons, the first being my love and respect for water. I admire the strength and persistence with which water shapes the Earth, and how it is the precursor and giver of life. I wanted to understand its connection to the Earth, and society. This desire led me to geology, and a whole new world opened up before me.

Discovering the universe from one single element to colliding galaxies expanded my horizons, and led me to the concept of time; I've been hooked ever since. Climbing this mountain of such an unfathomable concept has allowed me to see the true beauty of a beryl gem stone, or a soapstone carving. Working this past summer in Deep River, I watched mica grains drift through water as the rest of the quartz and feldspar sub-rounded sand particles sank to the lake bottom, envisioning the awesome journey they endured before becoming the object of my admiration. Fractionally melting, forming continental crust, only to be thrust into to the roots of a mountain by the immense pressures and stresses of a convergent margin. Spending millennia, millennia!, under unimaginable pressure; recrystallizing, deforming, bound by the laws of thermodynamics. Uplifted, then crushed and ground by the immense mass of ice that cyclically advances and retreats over the land. The outwash, the water – carving its way through the remnants of what were once mighty mountains; dragging,

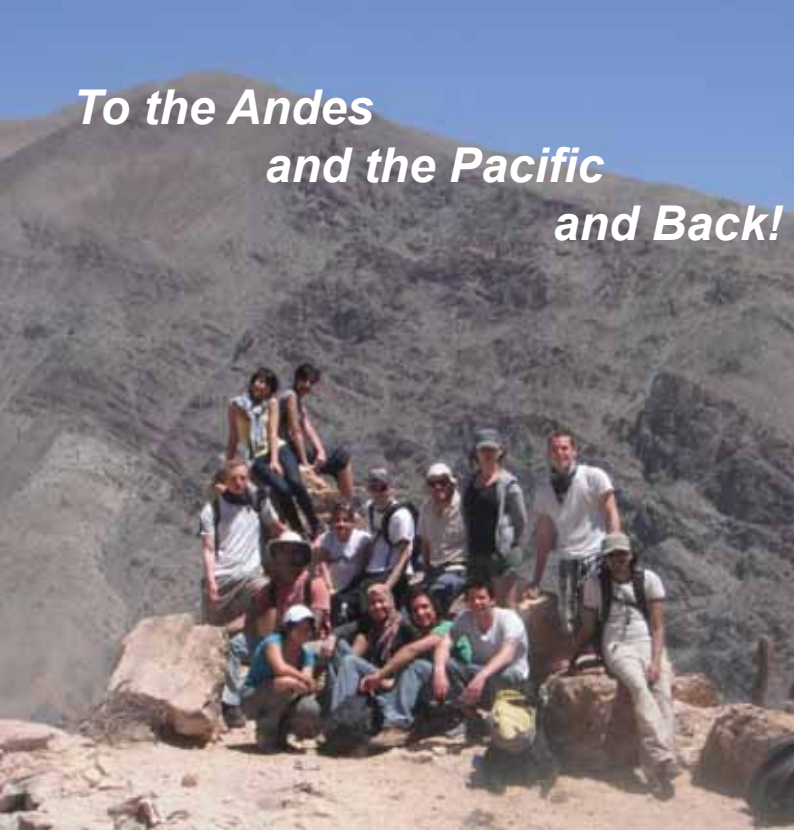
shaping monzonite and gneissic rock into sand particles, depositing them in a temporary hold, where I am lucky to find myself, watching sunlight reflect off of floating mica grains in a spring fed lake.

You ask why I study geosciences, and I have to answer: for the love of the story.



Undergraduate Faith Meadows supervising high-school students Akhil Garg and Kaylyn Stark at the Deep River Science Academy in summer 2011. The team conducted GPR, resistivity, and seismic surveys to image a pristine shallow sand aquifer.

To the Andes and the Pacific and Back!



by Danica Pascua
*2nd years go on a field trip to
Central Chile, February 19-26, 2011*



Department lecturer Charly Bank is fond of the saying, "the best geologist is the one who has seen the most rocks." During Reading Week 2011, Dr. Bank took myself and 28 other young geologists south for the winter to Chile to see our "first rocks". The 7-day field trip was part of our 2nd year Earth Evolution class (GLG217) and gave us a unique out-of-classroom experience in one of the world's most active geological environments. The trip was led by U. of T. alumna Fernanda Soto (B.Sc. '09), now an M.Sc. student at the University of Chile, and her colleague Hernan Bobadilla.

We started off with a long day travelling from Toronto to Santiago, then 600 km north to the Elqui Valley. Day 2 was spent viewing the rocks of the Elqui-Limari Superunit in Paihuano. We examined Triassic gabbroic to dioritic dikes intruding a hill of sedimentary rocks, with some cross-cutting relationships in the dikes themselves. Later, we investigated the formation of alluvial fan deposits, with a sedimentary succession of an ancient alluvial fan on one side of the road, and a modern alluvial fan just on the other side.

We got some serious action the next day when we went to Tres Cruces in a part of the Andes Mountain Range to construct a stratigraphic column of the area. Some students took the safe route and walked along the roadcuts, but the

braver ones hiked up the mountain in the scorching heat. We found a variety of rock types on our exciting climb, including a granodiorite, porphyritic andesites, mafic lava flows, sandstones and conglomerates. We found some fossils (ammonites, brachiopods, bivalves) in the sedimentary layers approaching the summit. Those who opted to traverse the sequence along the road also visited an abandoned skarn mine nearby. Minerals such as calcite, malachite and chalcopyrite were still well-exposed.

We then left the picturesque Elqui Valley and drove back to Santiago. Still in the Andes and just southeast of Santiago is the Maipo Canyon. We drove up to an elevation of 1800 m above sea level where we had a beautiful view of a valley once carved by glaciers and an extinct volcano still covered by one. We climbed up the talus of the steeply dipping beds of slate and shale flanking the sides of the canyon, uncovering many fossil ammonites and bivalves of the Upper Jurassic Lo Valdes Fossils along the way. Strike-and-dip measurements were also taken at certain areas. After lunch, we discussed the regional folding in the area. We soon took off to hike up a path leading to Tertiary lava beds that formed a refreshing waterfall.

We drove 200 km south of Santiago, came out of the Andes and spent our last 2 days near the Pacific Ocean where we examined sedimentary structures and metamorphism of rocks on the coast. Near the towns of Navidad and Matanzas, we observed modern beach sands and an uplifted section of lithified sand with hummocky cross-bedding, graded bedding and faulting possibly due to earthquakes. In Pichilemu, we studied the metamorphism resulting from the Andean subduction zone. We walked along the coastline to view the exposed greenschists and blueschists of the Western Metamorphic Belt. Here we noted various rock fabrics (foliations, crenulations) and structures (folds and evidence for deformation).



Alumna Fernanda Soto leads the field trip in Chile.

Advancement Activities and Donors

The Department–Industry Steering committee’s work of the last few years received added impetus with announcement on November 20, 2011 of the University’s major fund raising campaign - BOUNDLESS. As most readers will probably already know, the \$2B target for the campaign has been designed with a goal “of building U. of T.’s international reach and global leadership capacity: the Campaign has a vision for the future of our University built on two central pillars: preparing global citizens and meeting global challenges.”* The Department of Geology’s \$34M fund raising target, announced two years ago is a component of the University wide campaign.

During the year a total of \$314,811 was received from all sources between October 2010 and December 3, 2011. Of immediate impact were the many donations directed to the **Explorers Annual Fund for Field Education**. The funds have been allocated to support both undergraduate and graduate student education in the field, enabling a number of new in-course and extracurricular field activities. This includes (among numerous): the GLG217 field trip to Chile, a GLG360–Sedimentary Geology trip to the southwest U.S., a GLG465–Geodynamics excursion through the Grenville Province, the departmental grad student trip to Bancroft, an undergrad outing to the Niagara Gorge, and undergraduate geophysics research in Northern Ontario. Unquestionably, this generous support really has tangibly enhanced the quality of our undergraduate program. The full amount of these donations goes directly and immediately to Geology students and elevates the university experience of the entire cohort of our students—from first year to doctoral level. There is a remarkable fresh enthusiasm among the students and faculty for these new opportunities and they gratefully acknowledge the donor support—specifically the accelerated pledges over the past year—for making it possible. We look forward to building on this success and encourage you to consider the options for supporting field education described in the insert document.

A major success and joy of the past year was the creation of an endowment, now totaling about \$138K to establish the **Professor Steven D. Scott and Joan Scott Graduate Scholarship**. The award recognizes Steve’s enormous contributions to the Department and to the former Division of Geological Engineering in both academic and extra-curricular activities throughout his 37 year career and Joan’s continuous support, most particularly during the time of Steve’s chairmanship (2000-2005). Largely due to the efforts of Ed Spooner, more than \$69K was donated by about 75 individuals and four professional organisations. A matching amount came from a Faculty administered fund derived from special funding from the Province of Ontario (See page 16).

In June of this year, the Steering Committee organized a fund raising event "Rock of Ages" at the Royal Ontario Museum in conjunction with Dr. Kim Tait and ROM Vice President Scott Forfar. Over 350 people from all facets of the mining, exploration and resource industry attended and a total of \$365,000 was raised as a result of this function. The purpose of the fund raising was to underpin efforts to bring the **Kirwin Collection** of minerals and ores to the ROM as a tactile and digital learning resource. Future geology students and teachers at U. of T. will benefit from this legacy collection through access and usage. In addition, the acquisition of the collections is seen as an important step in the Committee's continuing efforts to create a Chair related to mineral resources.

It was a particular pleasure to see the call for applications for the inaugural **Roger E. Deane Postdoctoral Fellowship** made possible by a major bequest, announced in 2010, from the estate of **Mrs. Dorothy Deane**.

We want to bring to the attention of all reader and potential donors a limited term program of matching funds for graduate scholarships. A new matching fund, announced in November 2011 by the Provost, will provide critical financial support and expand our ability to enrol the best and brightest graduate students from around the globe. This matching program provides a remarkable opportunity to leverage your gifts by effectively doubling the impact of your donation. This program will match (on a 1:1 basis) new, eligible gifts to create an endowed graduate award in support of international students. Pledges may be made until December 31, 2012, to be paid in full by December 31, 2013.

Similar to other graduate scholarship matching programs, the donation of \$50,000 will be matched through the **Provost’s Ph.D. Enhancement Fund (PPEF)** to create a \$100,000 named endowment in the Department of Geology. The annual payout (approximately \$4,000 depending on market conditions) will then annually support graduate students in the department in perpetuity.

*from the University Brochure The Campaign for The University of Toronto, November 2011.

Laurie Curtis, Chair, on behalf of the Geology-Industry Steering Committee (Nick Tintor, Catherine Beckett, Patrick Anderson, David Brace, Russ Pysklywec, Ed Spooner, Dan Schulze, Colin Bray, Monica Hahm and Jeff Fawcett).

We again acknowledge with thanks donations made to the Department between October 2010 and December 3 2011 by the following individuals and organisations. This list names donors who made contribution to funds other than the Scott Scholarship; see separate list on page 16.

Andrew Bau
 Martyn Beckett
 Richard Bedell
 Susan Belo
 Jeffrey Blackmer
 David Burga
 Giacomo Capobianco
 Priyanka Chanda
 Jennifer Clark
 Omar Colmenares
 Cynthia Coron
 Laurie Curtis
 Dorothy Deane (estate)

Kathryn David
 Iain Downie
 Robert Falls
 Arpad Farkas
 Jeff and Sylvia Fawcett
 John Gittins
 Jack Hill
 Robin Hill
 Sarah Hirschorn
 Emily Fairs Hobson
 Ann Hubbs
 Graeme Jannaway

Aisha Jean-Baptiste
 Richard Jensen
 Olga Johnson
 Brenda Kinnear
 Derek Lee
 Andrea Lowenfeld
 Donald Macdougall
 Doug Macdougall
 Brian Mottershead
 David Pautz
 Walter Peredery
 Alan Rachlin

Patrick Ramsay
 Alastair Rucklidge
 John Rucklidge
 Miles Rucklidge
 Leslie Ruo
 Steve Scott
 Kevin Shaw
 Jean Stockford
 Greg Stott
 Edward Tompson
 Ian Thompson
 David Unger
 Dennis Waddington

Canadian Institute of Mining & Metallurgy-Toronto Branch
 Geological Association of Canada
 Quadra FNX Mining Ltd
 View It Inc.
 Waisberg/Bellwood Charitable fund

Selected Field Education Experiences



SCI199Y at the Niagara Gorge; GLG465 visits the Grenville Province; GLG field trip to Bancroft; ERS319 at Acton dolostone quarry; GLG217 in Chile

Over \$138,000 Raised to Honour the Exceptional Contributions of Steve and Joan Scott



Thanks to the contributions of 75 individuals and 4 organisations, funds donated to establish the “Emeritus Professor Steven D. Scott and Joan Scott Graduate Student Scholarship Fund” total over \$69,000 at the time of writing (January 18th., 2012). And thanks to a Province of Ontario 1:1 matching program, funds donated before October 1st., 2011 have been doubled in value. It has given us great pleasure to see so many of Steve’s former students, as well as his friends and colleagues, participate in this worthwhile tribute and seeing these names brings back very good memories. The award is in honour of Steve’s and Joan’s exceptional contributions to the Department of Geology and the former Division of Geological Engineering (Lassonde Program). It has been a particular pleasure to receive donations from David Strangway, former Chair of the Department and former President of both the University of Toronto and of British Columbia, and also from Hu Barnes, Steve’s supervisor at Penn. State. It has been an exceptional pleasure to have The Prospectors and Developers Association of Canada contribute, facilitated by former Executive Director Tony Andrews, as well as The Scotiabank Group, supporter of Steve’s research for ten years, courtesy of Ms. Patricia M. Mohr, Vice-President, Economics & Commodity Market Specialist and Ms. J. Slasor, and the Canadian Scientific Submersible Facility, courtesy of Dave Gawley.



Photos (by F. Barriga):
 Top: Some of Steve’s former graduate students left to right: Taras Bryndzia; Arpad Farkas; Paul Spry; Beth Clemson; Stavros Kalogeropoulos; Mark Hannington (in front); Jan Peter (behind); Steve; Joan.

Bottom, left to right: Yannick Beaudoin; Elitsa Hrischeva; Steve; Filipa Marques; Hu Barnes and Hiroshi Ohmoto from Penn. State.

On behalf of the Department of Geology we wish to express our deepest gratitude to each donor, and to honour each one of your contributions with the following recognition:

\$5,000 - \$10,000

Laurie Curtis
 David Harquail
 Peter Herzig for IFM-GEOMAR
 Anne and John Thompson

The Prospectors and Developers Association of Canada

\$50 - \$4,999

Gilles and Bernadette Allard	Steve and Judy Kesler
Joe Arengi	Steve Kissin
Charly Bank and	Helen Lasthiotakis
Katharina Heinz	Norm Lavery
Chris Barnes	Dan Layton-Matthews
Hu and Mary Barnes	Mike Lesher
Tucker Barrie	James Macdonald
Yannick Beaudoin	Tim and Di McConachy
Mirek Benes	Toshio Mizuta
Chris Bishop	Dave Moore
Trevor Boyd	Roger Moss
Colin Bray	Hamid Mumin
Alex Brown	Tony Naldrett
Taras Bryndzia	Jan Peter
Larry and Mary Helen Cathles	Bill Roscoe
Dick and Mackie Chase	Eva Schandl
Beth Clemson (formerly Farr)	Norm Sleep
Andrew Conly	Ed and Jane Spooner
Arpad Farkas	Paul Spry
Jeff and Sylvia Fawcett	David and Alice Strangway
Jim Franklin	Verena Tunnicliffe
Harold Gibson	Tetsuro Urabe
Mike and Pamela Gorton	Dave Vanko
George Gorzynski	Dennis and Janet Waddington
Mark Hannington	Ryan and Lesley Weston
Murray Hutchison	Noel White
Stefan Ioannou	Jim Whyte
Sandra Kamo	Jim and Marnie Workman
	Kaihui Yang

The Scotiabank Group

The Canadian Scientific Submersible Facility

The Mineral Deposits Division, Geological Association of Canada
 (Kirsten Rasmussen, Chairperson)

Sincerest thanks to the Mineral Deposits Division of the Geological Association of Canada (Luke Ootes, Chair of the Executive Council) and the Prospectors and Developers Association of Canada (Tony Andrews, Executive Director) for sending out fundraising notices to their memberships.

The fund will remain open for future contributions.

Ed Spooner

Note: donations received up to January 18, 2012

Scholarship to Honour Emeritus University Professor A. J. (Tony) Naldrett

The Department of Geology is seeking donations to create a graduate scholarship to honour Tony Naldrett. We propose to raise at least \$50K that will attract matching funds (in \$50K increments) from the Provost's Ph.D. Enhancement Fund. The endowment of at least \$100K will create a permanent Graduate Scholarship for an international graduate student in the Department of Geology. In his 31 year career at the U. of T., Tony was instrumental in bringing the Department of Geology to a pre-eminent international position in teaching and research in mineral deposits geology. All undergraduates will remember his fourth year mineral deposits course - a "must take" for almost all students not just those specialising in that field. It was consistently ranked as a top course for both content and delivery and the mandatory field trip, frequently to the Sudbury area, was an unforgettable experience.

At the graduate level Tony attracted the very best students from around the world and many now hold senior academic and company positions, worldwide. He is recognised as the leading expert in the field of magmatic ore deposits, particularly related to nickel and platinum group elements. He also played a leading role in developing the Department's exceptional facilities for geochemical analysis, a strength that continues today.

In addition to his high level teaching and research Tony served as President of several prestigious national and international professional societies, including the Mineralogical Association of Canada, the Society of Economic Geologists, The Geological Society of America and the International Mineralogical Association. Please note – there is a limited time window in

which we can take advantage of the Provost's matching fund program. All pledges must be made by December 31 2012 and fulfilled before the end of 2013. Cheques should be made out to the University of Toronto-Naldrett Scholarship and mailed to the Department (address on back page).

Ed Spooner, Jeff Fawcett

Tweed 1978

Our best guesses at the names in this photo.



L-R: John Siriunas?; ??; Dave Unger; Maureen Jensen; ?? (in back with hat); Nushy Reid/Stephanian; Ellen Biasucci; ??(behind Ellen); Oleh Wowkadow?; ?? (behind); ??; John Thompson (at back); Ann Erlich (partly hidden); Ken Kryklwv; Mara Matison/Strazdins; ??(with glasses); Diana Wiese/Bubulis; Tony Naldrett. Photo taken and provided by David Harquail.

*Please contact Jeff Fawcett if you can fill in the missing names!
fawcett@geology.utoronto.ca*

Our World Desperately Needs More Geoscientists



2010 UTSC grads Angie Falcon (at left) and Louise Daurio

The latest audience numbers for the five-part Gemini-nominated Geologic Journey II–World which aired last fall are 7 million; CBC's most watched documentary series. A Teacher's Guide is now available for high schools; that for the first series Geologic Journey–Canada is in use in almost 70% of the nation's schools.

The Department of Geology Continues to Work at Public Outreach

Many will remember the trials and tribulations of saving the world famous Don Valley Brickyard from destruction in the mid-80s which involved John Westgate, Nick Eyles and many from the local community. Finally, the geological interpretation centre at the revitalized Brickyard is on track under the leadership of the Evergreen Foundation. It features the story of interglacial and glacial paleoclimates recorded in the famous North Wall of the quarry, and of A.P. Coleman, Professor of Geology here at U. of T. until 1939 who realized the significance of the site. A resin peel was collected from new exposures of the famous Don Beds this past summer and will be the focus of the new exhibit being put together by Ferruccio Sardella the well-known illustrator and artist who has designed new murals outlining the geologic history of the Toronto area. The brickyard will be an excellent resource for visiting students as the new Environmental Community Centre houses a large lecture room and work labs.

Nick Eyles

2011 Graduates & Award Winners

Graduating Undergraduates

Jessica Chu	Kristy Long
Veronica Di Cecco	Mubeen Muhtar
Pallavi Hariharan	Jared Shilson
Brian Hua	Oliver Spicer
Katherine Elaine Kelly	William Edward Sweet

UNDERGRADUATE AWARD WINNERS

Natural Science and Engineering Research Council of Canada Undergraduate Student Research Awards

Veronica Di Cecco
Faith Meadows
Yakun Liu

The Coleman Gold Medal in Geology

Pamela Patraskovic

The Edward Blake Scholarship in Earth Sciences

Pierre Grondin-Leblanc

The Roger E. Deane Memorial Scholarship in Geology

Felicia Da Silva

The H.V. Ellsworth Undergraduate Award in Mineralogy

Danica Pascua

The Joubin James Scholarship and Prize

Faith Meadows

The Alexander MacLean Scholarship in Geology

Danica Pascua

The Garnet W. McKee-Lachlan Gilchrist Scholarship

Mubeen Muhtar

The James P. Nowlan Explorers Fund Undergraduate Scholarship

Pamela Patraskovic

The Wesley Tate Scholarship in Geology

Pamela Patraskovic

The Daniela and Alexander Tintor Undergraduate Scholarship

Alexander Pernin

The Nicholas Wemyss Undergraduate Explorers Fund Award

Zachary Rawluk

KEGS Foundation Scholarship

Pamela Patraskovic

KEGS Foundation Book Award

Kanita Khaled

The Don Salt Scholarship

Pamela Patraskovic

University of Toronto, Department of Geology
Annual Alumni Reception in Toronto during the PDAC

Tuesday, March 6, 2012

at the Fairmont Royal York, Library Room

5:00pm to 7:30pm

Graduating Graduate Students

M.Sc.

Bronwyn Azar
Andisheh Beiki
Emily Boucher
Enkelejda Brati
Allison Enright
Heidi Tomes
Renjie Zhou

M.A.Sc.

Priyanka Chandan
Levke Koeoep
Taronish Pithawala

Ph.D.

Gerald Bryant
Shannon Carto
Remo Cossu
Kerry Evans-Tokaryk

GRADUATE AWARD WINNERS

Natural Science and Engineering Research Council of Canada Alexander Graham Bell Canada Graduate Scholarship

Robert Gray

Natural Science and Engineering Research Council of Canada Postgraduate Scholarship

Phoebe Chan
Herb Maier
Ben Moulton

Ontario Graduate Scholarship

Calvin Chan
Ida-Maria Jansson

The Queen Elizabeth II Graduate Scholarships in Science and Technology/Canadians Resident Abroad Foundation Graduate Scholarship

Laura Quigley
Veronika Shirokova

The Queen Elizabeth II Graduate Scholarships in Science and Technology/J.J. Fawcett Graduate Scholarship

Adrienne Campbell	Mathieu Morin
Wing Karen Chiu	Stephanie Mabee
Lisa Douglas	

Connaught Fellowship

Neil Bennett

The H. V. Ellsworth Graduate Award in Mineralogy

Guillaume Barlet	Duane Smythe
Benjamin Hook	Kartina Van Drongelen
Levke Koeoep	

Graduate Explorer's Fund Award

Veronica Di Cecco
Benjamin Hook
Katrina van Drongelen

The Jeff Fawcett and John Gittins Graduate Explorers Fund

Calvin Chan
Therese Garcia
Damoun Pourbazargan

Dr. P.C. Finlay, Q.C President's Fellowship

Abin Das (one term)
Daulet Mukanov
Renjie Zhou

D.H. Gorman Explorers Fund Graduate Scholarship

Heidi Tomes

Margaret Amelia Miller Scholarship

Benjamin Hook

W.W. Moorhouse Fellowship

Benjamin Hook

James P. Nowlan Explorers Fund Graduate Scholarship

Jan Hennissen
Ida-Maria Jansson
Rosemary Oakes

Nick and Marilyn Tintor Explorers Fund Graduate Scholarship

Allison Enright

National Association of Geoscience Teachers Outstanding TA Award

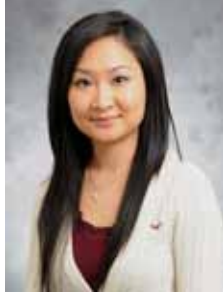
Jan Hennissen

Laurie Curtis Teaching Assistant Award

Chris Charles
Ben Moulton

Success in U.S. Award Competition

Ph.D. Candidate and NSERC recipient **Phoebe Chan** was awarded the Charles A. Ross and June R. P. Ross Research Fund by the Geological Society of America Foundation. The award supports research in the broad field of biostratigraphy and paleobiogeography.



Phoebe's research, supervised by Professor Jochen Halfar at UTM, is focused on the geochemistry of coralline algae used to determine past climatic and environmental changes in mid-to-high latitudes. Her current research involves determining how large-scale climate oscillations in the North Pacific can modulate the impacts of ocean acidification on coralline algal calcification rates.

Erindale 7T6 Geology Class Reunions

The Erindale (now UTM) geology class of 1976 has met every year for about 15 years now. Alumnus Joe Spiteri takes the lead to gather the group every March around the PDAC; their former teachers, Henry Halls and Pierre Robin are invited as well. Typically, we meet for dinner following the Departmental reception at the Royal York. This last March, however, the reunion started at UTM, in Mississauga. In 1971 or 1972, when the members started their student lives, Erindale College had about 2000 students. Now that UTM serves over 12,000 undergraduates with an array of new academic, recreational and residential buildings, it is almost unrecognizable to them. The usual enjoyable dinner followed, this time in Streetsville. In March 2012, we plan to visit the new (!) Geology building, unknown to some still because their 'finishing year' then was in the Mining Building.

The mailing list definitely suggests solid and respectable citizens. John Brookes is a retired investment broker; Bob Ferguson: Retired Inspector, Mississauga Fire Fighters; Jim Henderson (actually a 7T5 grad): Vice-President, Geophysical Services, Associated Geosciences; Wayne Holmstead: Vice President Exploration, Western Troy Capital Resources; Andreas Lichtblau: Regional Resident Geologist, Kenora-Red Lake, Ontario Ministry of Northern Development and Mines; John Sansom: retired Senior Reliability Engineer with Lyton Industries; Paul Sorbara: President, Golden Goliath Resources Ltd.; Joe Spiteri: mining consultant, corporate director and part-time farmer; Rod Tanaka: Family Physician in Aurora and ER MD at Southlake Regional Health Centre in Newmarket. Later Erindale graduates such as Gary Baschuk, Mining Research Analyst with Loewen, Ondaatje, McCutcheon, and Don Poirier, Analyst, Emerging Companies, Blackmont Capital, have also come along. Even an engineering graduate, John Siriunas, President and director of Cuervo Resources,

The Wallbridge Connection

It is not unusual to see our alumni and faculty taking part in media interviews but it is most unusual to see three alumni involved in a single BNN company feature. In 2010 Alars Soever (B.Sc. 1978), Mara Strazdins (B.Sc. 1977) and Bruce Jago (Ph.D.1991) were all involved in a program focused on WALLBRIDGE MINING Co. and it's two spin-off companies Duluth Metals and Miocene Metals. Alars has been President/CEO of Wallbridge for over ten years where, in addition to guiding its exploration work in the Sudbury Basin, he has also been instrumental in creating the two spin-offs. Mara Strazdins, formerly with Placer Dome and Cominco, is now vice president, investor relations for Wallbridge and Duluth Metals and Bruce, formerly VP Exploration for Wallbridge is now President and CEO of Miocene Metals.

Director of Goldtrain Resources, and Chairman of the Board of Shield Gold Inc, has now also attended often enough to be considered an honorary Erindalian.

Yes, it seems to be a very august group! However, you would not guess it from reading some of the (less-than-publishable) e-mail exchanges leading to each reunion, or from listening to some of the banter during dinner. These guys must be reliving their youths! And they keep coming back every year!

From conversations with friends and colleagues, these yearly reunions appear to be a unique phenomenon, one which the Class of 7T6 and their two professors greatly enjoy and wish will continue for a long time. To quote Joe Spiteri, the chief organiser, "We were a very small student group, with a low student-to-professor ratio. The Erindale Professors were young and very informal (from day one they were Henry and Pierre, not Dr. Halls and Dr. Robin). All this led to a closeness that may have been more family-like than institutional." Actually, the main author of this article thinks that Joe should get the credit.

Pierre Robin, Henry Halls and Joe Spiteri



March 2007 – From left to right: Wayne Holmstead, Pierre Robin, Henry Halls, Bob Ferguson, Paul Sorbara, Jim Henderson, Rod Tanaka, Joe Spiteri.

News of Former Students and Friends

'70's

Bob Kuehnbaum (B.Sc. 1971; M.Sc. 1973; Gittins)

After leaving U. of T. I went to Carleton University to study the Coldwell alkaline complex in the Marathon area in northern Ontario. At the end of a year, however, a needed break from studies and infusion of cash into the treasury made me take (what I thought would be) a temporary position in early 1974 with Union Carbide Exploration Corporation. And so began my career in the mining business and the consumption of vast quantities of Graval on the rollercoaster ride of mineral exploration.

Although nominally based in Vancouver, I was off to the Yukon in the summers and Brazil in winters in for the next 2½ years. It was on a bus in Rio Grande do Norte that I met Ann, a young Peace Corps worker from California; our marriage in late 1976 curtailed the itinerant life – but certainly did not put an end to my time away from home. A two-year term in Toronto, including field work across Canada, was followed by a year in Portugal on the delineation of a tungsten deposit.

When that project sadly ended in 1980, I left Carbide and joined Canadian Occidental Petroleum's minerals division in Toronto. For the next four years, I managed CanOxy's numerous greenfields properties and projects in the Cordillera, under the tutelage of Dr. Joe Brummer, one Canada's most successful explorationists. After CanOxy joined the oil industry's mass exodus from mining in the early '80s, I spent a couple of years with Kennco Explorations working on gold in Ontario.

In early 1986, I decided to go it on my own as a consultant, and have been doing so, often as an associate with established consulting firms, ever since. The tracks of the rollercoaster – along with the learning curve – steepened dramatically! The freedom and flexibility of self-employment have been tempered by frequent uncertainties and the maxim that the consultant is the first to suffer in economic downturns. Nevertheless, the journey has been interesting and highly varied: everything from diamonds to precious and base metals, and anywhere from Canada to Asia, Europe and Africa.

Following our return from Portugal in 1980, Ann and I quickly established roots and sprouted a family in Mississauga where we remain to this day. We have two daughters who have completed university – one a nurse, the other a banker – but neither, sadly, elected to attend U. of T.; hope rests in our grandson.

Ann is nearing the end of a teaching career, but I beat her to the draw. About a year ago, I felt it was time to semi-retire, but a lot closer to “retire” than to “semi”. In the spring and summer months, I intend to spend as much time as possible flyfishing for trout, a twenty-year-long passion of mine, before my river legs give out!

Patricia Dillon (B.Sc. 1974; B.Ed. 1976)

Ted Dillon (B.A.Sc. 1974; M.Sc. 1976; MBA 1989)

Pat retired from Teck Resources Limited in 2011 after 32 years with the company. Her latest assignment was Director of Employee Communications and Engagement, following a series of positions of increasing responsibility. She is renowned in the mineral industry for her work with PDAC (President 2006-2008), as a founder of the hugely successful educational and outreach organisation Mining Matters and as an active and knowledgeable member of many national and international mineral industry associations. She is not resting on her laurels, however; in October 2011 she took over as Chair of the Board of the Mining Industry Human Resources Council. Ted also retired in 2011 after 12 years at RoyNat and they have moved back to Ontario after four years in Vancouver.

We wish them well in their retirement.

Steve Barnes (M.Sc. 1979; Ph.D. 1983)

Following his doctoral work Steve spent two years as a National Science Foundation (NSF) Postdoctoral Fellow at NASA's Johnson Space Centre before joining CIRO Western Australia. He was part of the team led by Dr. Robin Hill which won the CSIRO Chairman's Medal in 1989. The Medal was awarded for pioneering research on applying principals of volcanology to the quest for nickel ores hosted by komatiites. He has published numerous papers on komatiite hosted nickel deposits and more recently has collaborated on volcanology research in Hawaii (See page 5).



Murray Nunns (B.Sc. 1979?)

From 1993 to 2002, Murray held management positions at Rio Alto Exploration Ltd. including Senior Vice President of Exploration and Development and Chief Operating Officer. Since 2003, he has been involved in the formation and direction of several successful public and private oil and gas companies. Murray was a member of the Board of Directors of Penn West from 2005 until January 2008 when he joined Penn West as President and Chief Operating Officer and he was named President and Chief Executive Officer in August of 2011.

Continued on page 22

Murray writes: Thanks for your note Jeff. Seem to recall taking metamorphic with you at St. George although memory is starting to get a little fuzzy. I'm not half as sharp as I was then, or at least I thought I was then, but I am about 20% heavier. There's been a bit of a geologic evolution for myself over the last 30 years from semi-competent hard rock student to running a major oil company which has been reborn with changes in drilling and completion technology. Along the way I have constantly had the opportunity to deploy the geologic first principles that were drilled into my brain at U. of T. or at least the portion of my brain that survived the usual behavior of undergrad students in which I enthusiastically partook.

My geological career has afforded me the opportunity to look at basins across the globe and has given the exposure to business practices and cultures that life in a more mundane field would never have allowed. I occasionally run across others of the era, Ellen Biasucci and Brad Hayes.

Would be delighted if you could forward me the alumni newsletter. I am sure there would be some interesting nuggets, apologize for the pun. Have attached the standard corporate bio, which is relatively dry and boring. Feel free to use the material above which runs closer to my true character

Brad Hayes (B.Sc. 1978; Erindale)

I was lured westward to the oilpatch in the summer of 1977 by Shell Canada. My interest in petroleum geology led me to attend University of Alberta after graduation (a move not favored by Pierre Robin or Mike Kimberley), where I obtained my Ph.D. in 1982, studying Jurassic-Cretaceous stratigraphy across the Alberta/Montana border.

Joining Shell Canada full-time in late 1981, I gained experience in the Canadian petroleum industry for the next 15 years, with stops at Canadian Hunter, Dorset Exploration and Chauvco. In 1996, I joined Petrel Robertson Consulting Ltd., where I am now President. We are a petroleum geology consultancy with our roots in Western Canada, but activities worldwide. PRCL has afforded me the opportunity to travel around the world, working some very interesting geological and business-related problems. In fact, as I write this review, I am in Aktau, Kazakhstan (on the shores of the Caspian Sea), taking a break from mapping, assessing, and recommending development plans for Cretaceous heavy oil pools that look remarkably like those in Western Canada. Along the way I have spent a good deal of volunteer time with the Canadian Society of Petroleum Geologists, where I served as President in 2000. The CSPG has afforded me opportunities to stay technically current and involved in stratigraphy, sedimentology, and petroleum geology. I will be undertaking a visiting speaker tour to Eastern Canada schools this fall, although unfortunately Toronto is not one of my stops this time around.

Canada is a world leader in petroleum geology, as it is in mining geology, and I urge students to consider the oil and gas industry as a place for a dynamic and technically-challenging career. Join me and many other U. of T. alumni in Calgary, and who knows where you will end up?

'80's

Grant Troop (B.Sc. 1980; M.Sc. 1984; Scott group; MBA, Rotman 1994)

Grant has left his position as Chief Operating Officer at the Ontario Science Centre to become Co-Chief Executive Officer of the National Ballet of Canada.



Moonsup Cho (M.Sc. 1982; Fawcett)

I arrived at U. of T. in the fall of 1980 to start an M.Sc. thesis work with Jeff Fawcett. It was my first time ever to fly outside Korea at that time, and surely my English was poor. Fortunately, I received a teaching assistantship working at

Department Library as a lunch-time substitute – this means a lot because I was exempt from teaching in English. In retrospect, I guess Jeff has arranged this job for me considering my poor English and cultural shock. With a successful completion of the first semester I was allowed to start my research on synthesizing Mg-chlorite or clinochlore, which is the single most important mineral to Jeff's research career. Again Jeff kindly supported my trip for attending both the Spring AGU Meeting and Short Course on "Kinetics of Geochemical Processes", although I had nothing to present. I learned a lot via this eye-opening meeting, which motivated me to work on the kinetics of nucleation and growth of clinochlore. With the help of Jeff and two other superb committee members, Greg Anderson and John Allen, I could finish my thesis in 1982 and publish two American Mineralogist papers. Greg was one of my heroes during my Toronto days. He was very kind to me, and available at the high-P lab to answer my queries. Even when I failed to answer final exam questions of his Thermodynamics course, Greg came to my office himself assuring that I did well for the problem sets and should be O.K. – What a relief! I was so thankful to Greg for his thoughtful consideration, but never had a chance to say my thanks to him personally. Here I would like to give my heartfelt thanks to Greg for all the encouragement and inspiration. Another professor whom I cannot forget is John Gittins who taught me "Igneous Petrogenesis" in 1980. It was really tough for me to digest all the reading materials and to follow his "speedy" English. Well, one day I told John that my English is too poor to catch up with his lecture. He suggested me to submit a few-page summary every week, i.e., extra home

work. My summaries continued several weeks, and John read and returned each summary with many English corrections. Now as a teacher myself, I recognize it was a lot of extra work for him, too. Again my belated thanks to John.

My officemates at Rm. 64, Mining Building, were terrific and each of them was a continuous source of help and support. They include three Japanese students, Koji Yagishita, Mac Okazaki and Eizo Nakamura, as well as others from the U.S. (Terry Twyman and Barbara Murck) and U.K. (Ed Sawyer). All of them helped me to survive at Toronto, and I still have communications with a few of them. In particular, Ed has visited my university at Seoul last year to give us an excellent short course on migmatites. Today I had a dinner together with Eizo at S.F. AGU, who is currently a big boss for national institute of analytical research facilities at Misasa, Japan. Both of us were very proud of and toasted for Rm. 64 members!

After completing my thesis at Toronto, I went to Stanford University and UCLA for Ph.D. and postdoctoral work, respectively. I returned to Korea in 1991, assuming an Assistant Professorship at Seoul National University. At SNU I have been working primarily on metamorphic rocks and tectonics of the Korean Peninsula. Three decades have passed since I first commenced my research career as an experimental petrologist at Toronto. My education at U. of T. has been a great asset for me to adapt with new things later on even working for a field-related project. Now I am serving as Subject Editor for the Journal of Geological Society, London, and Associate Editor for the Geological Society of America Bulletin and Lithos. What a progress after all! Indeed my deepest thanks go to my "old" professors, Jeff, Greg, and John, and also to my former friends at Rm. 64.

John Bladek (B.Sc. 1984)

I am finally winding down my career in the oil industry and my time in Calgary. I have been a consultant for over 20 years, currently working with the Alberta Geological Survey on a province-wide shale gas study - how the industry has changed!

The plan is to move to my house in Southern Nova Scotia, enjoy the slower pace there, and spend more time on my photography, of rocks of course. After marvelling at them for over 40 years I have finally undertaken the task of trying to capture the beauty of the metamorphic boulders that cover the shoreline of Georgian Bay around my parents' cottage near Midland, Ont. I have already created one calendar and hope to publish a coffee table book and produce a show of framed images. If you want to see some interesting rocks go to www.flickr.com/photos/bladekphotographic (see front cover of this newsletter).

'90's

Brenda MacMurray (M.Sc. 1998)

I have been working at NSERC for over a year now and am really enjoying it. I facilitate the peer review process for Discovery Grants and, currently, for the Canadian Space Agency competitions, and manage the Northern Research Chairs Program. On the personal side, I've been living in Ottawa for 6 years now and have a little boy at home, Kieran.

David Burga (B.Sc. 1997)

After working for a few years in the environmental field, I spent a year in Chile working as the exploration manager for Red Metal Resources. Since 2009 I have worked with a mining consulting firm in the Toronto area focused mainly on NI 43-101 reports. Over the past few years I have worked on a novel loosely based on my travels and experiences in Latin America, set in a fictional town in Zacatecas, Mexico. I signed a publishing deal with a small press in Toronto and it is scheduled for release in the spring of 2012. The working title of the novel is *The Devil's Gold*.



Casey Hetman (B.Sc. 1993; M.Sc. 1996; Schulze)

Since graduation, I have enjoyed travelling and working in 18 different countries. I joined De Beers Canada immediately following my graduation where I worked as an exploration geologist on programs throughout Canada and Greenland. Building on the exploration experience I had gained as a summer student, as well as my earlier years with De Beers I then became involved in evaluation and resource development projects throughout Canada. After approximately 10 years with De Beers, I joined Mineral Services Canada as the Director of Consulting services where I managed a technical team of geologists involved in geological support for advanced evaluation and mine planning activities throughout Canada and Africa. Although focused on kimberlite exploration and evaluation for much of my professional career, I am now focused on gold deposits in Precambrian shields and am presently employed as the Vice President of Exploration for Northern Superior Resources. I presently reside in North Vancouver with my wife Lisa and sons Benjamin and Noah.



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UNIVERSITY OF TORONTO

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Alumni News

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Thanks to the alumni who sent letters, photos and biographical notes.

Comments and contributions are most welcome – especially news of former students. Send your contribution by regular mail or e-mail: fawcett@geology.utoronto.ca

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