



*ATLANTIC GEOSCIENCE SOCIETY*  
**NEWSLETTER**

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*Outcrop of columnar basalt on the shoreline at Dartmouth Point on the southeast end of Long Island (44° 15.28N; 66° 19.63W), approximately two kilometres from Freeport, Digby County, Nova Scotia. The columnar basalt is part of the North Mountain Basalt (Early Jurassic). Photograph provided by Bill MacMillan, Geological Survey of Canada (Atlantic).*

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The deadline for submissions to the next issue is 10 October 2008. Please send articles or feedback to:

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Production of this newsletter is by Nelly Koziel.

## **PRESIDENT'S FORUM**

I am not experienced at this – writing a President’s Forum. Since I’ve assumed the presidency from Michael it has been a whirlwind, trying to balance work, family and extra-curricular activities – particularly when involved with an organization as active as the AGS. First of all, although covered in the last newsletter, allow me to personally congratulate Michael Parsons, Jennifer Bates and all the contributors to a hugely successful AGS Colloquium. It is a challenge laid down for the event next year which will be in Moncton. While on the subject of the colloquium, I’d like to express my personal congratulations to Graham Williams for his well-deserved Lifetime Achievement Award. Also, news may not have been leaked yet that the formerly unnamed “Best Graduate Student Oral Presentation” award, given at the colloquium, is now named after Dr. Sandra Barr and will be called the “Sandra Barr Award” for best graduate student oral presentation. A sub-committee of the AGS council voted unanimously to this effect and Sandra graciously accepted and allowed us to use her name. Sandra, as most know only too well, has worked tirelessly on behalf of the AGS and the journal “Atlantic Geology” for many years, in addition to her regular job of mentoring students and professionals, and conducting research.

I also thank Michael Parsons for his contributions last year as President. Michael worked tirelessly on behalf of the society, making it all the more difficult for future presidents to fulfill members’ expectations. Michael ended his year with an APICS speaker tour, visiting Acadia, Dalhousie, St. Francis Xavier, Saint Mary’s and Memorial universities. Since joining the AGS executive as Vice-President and now as President, I am struck by the commitment of its members. Their dedication and involvement runs very deep. I want to express my thanks to the executive for providing guidance thus far through my tenure as President.

The new Joggin’s Fossil Centre had its official opening in April and, on behalf of the AGS, a formal letter of congratulations was sent. I have yet to visit the Centre, but it looks absolutely fabulous and I certainly intend to visit it soon. The building mimics the nearby cliffs, with sandstone cladding quarried from nearby Wallace. The overall form of the building and the use of wooden siding are also reminiscent of the area’s coal mines.

The Canadian Federation of Earth Sciences (CFES) meeting was held at Dalhousie University June 14<sup>th</sup> and 15<sup>th</sup>. CFES represents itself as the unified voice for earth sciences in Canada, raising awareness of the every day importance of earth science to Canadian lives. It helps Canadian earth scientists and earth science organizations to share data, knowledge and evolving ideas, and to influence policy and public opinion, which is not unlike the AGS mandate for the Atlantic region. Hence there is discussion amongst AGS members as to whether we should become a supporting member organization of the federation.

The Conjugate Margins conference will be held in Halifax, August 13-15. The conference will focus on 1) margin evolution and development, and 2) petroleum systems and productive fields and analogues. AGS members Dave Brown and Grant Wach are the conference chairs. Some fantastic field trips, short courses and workshops are planned and I encourage all of our members to consider attending.

As a final word, I’d like to mention the International Year of the Planet Earth. Godfrey Nowlan summarized IYPE activities in his talk at the colloquium banquet, “Earth to Canadians: Communicating Earth Science in the International

Year of the Planet Earth". Of course, I heard on the radio this morning that in fact earth scientists are sharing this illustrious year with the United Nations "International Year of the Potato", or IYP...so make sure when doing web searches to include the "E"! IYPE actually spans from 2007 until 2009 and Canada has just recently joined the international event. There are excellent educational materials already associated with this event and IYPE will provide earth scientists the perfect opportunity to "blow our own horn", while creating an outreach legacy. Speak to at least one person about earth sciences that you wouldn't normally...if you think about it, we in earth sciences have some great one-liner party openers!

One of the IYPE initiatives that particularly intrigues me is the GeoTime Trail: a 4.5 km long trail, each metre representing a million years. Signage along the path, one of which has already been constructed in Waterloo, indicates different geologic eras, epochs and events. Anyone who has tried to explain geologic time to a class of elementary school kids knows the difficulty in truly portraying the time scales involved. What a way to teach: outdoors, on a trail! So, check out IYPE, get ready, and get involved.

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## AGS ACTIVITIES

### Sandra Barr Award for Best Graduate Student Oral Presentation



The Atlantic Geoscience Society is very pleased to announce that the recently established award for Best Graduate Student Oral Presentation has been named after Dr. Sandra Barr. This Award will be presented each year to a M.Sc. or Ph.D. student who presents a paper at the annual AGS Colloquium.

Sandra's dedication to the AGS and to graduate student research is truly remarkable. She served as President of AGS in 1978-79, and has been the recipient of both the Distinguished Scientist Award (Gesner Medal) in 1995, and the Distinguished Service Award in 2006. Sandra has also been a member of the editorial board of Atlantic Geology for the entire period of its affiliation with AGS, now 22 years and counting. Since 1978, Sandra has maintained an unrivalled attendance record at annual AGS meetings, being absent only twice. At each meeting, she and her students have consistently delivered excellent presentations on their geological research throughout the Atlantic region.

During Sandra's tenure at Acadia University, she has supervised 42 Masters theses (fully 40% of all the Masters theses ever written in Geology at Acadia) plus co-supervised several at Dalhousie and UNB. She is renowned as an excellent, inspirational classroom teacher, and has helped her students to find rewarding careers in geology for more than 30 years.

AGS is very fortunate to have benefited from Sandra's many contributions through its history, and is honoured to have this award bear her name. Council thanks all Society members who took the time to submit suggestions for naming this new Award.

Michael Parsons  
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### AGS Membership

In an effort to keep our membership database up to date, we ask that anyone who has changed jobs, email addresses, or home addresses, please send their new contact information to Ann Miller.

Members who did not attend the colloquium, or who have not already sent in their dues must renew their membership.

Membership information and forms may be obtained from the AGS website at [ags.earthsciences.dal.ca/Join.php](http://ags.earthsciences.dal.ca/Join.php).

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# INTRODUCING THE CANADIAN FEDERATION OF EARTH SCIENCES (CFES)

Many AGS members will recall the CGC (Canadian Geoscience Council). In 2006/7, the CGC was reorganized into the Canadian Federation of Earth Sciences ([www.geoscience.ca](http://www.geoscience.ca)). CFES is comparable to the CGC in that it aims to be the unified voice of the Canadian Earth Science Community. In its structure, CFES is modeled after AGI, the American Geological Institute (best known for publishing *Geotimes* and for initiating “Earth Science Week” about 12 years ago). CFES requires membership dues from its member societies (currently about 14) and cooperation with industry has been firmly re-established. The first CFES president is Ian Young who is with Encana in Calgary. Ian hands over to Bill Mercer, a consultant and past president of the Prospectors and Developers Association of Canada in October of this year.

The reorganization of the CGC into CFES, essentially completed at the 2006 CFES Meeting in Quebec City, resulted in a new mission, vision, guiding principles and revised bylaws. In terms of concrete work, this means that CFES focuses on defragmentation of the Canadian earth science community, lobbying to federal and provincial governments on specific issues, and outreach.

## Projects and products

If you want to lobby, you need to have concrete data and information. The new Board of Directors decided to start with something extremely practical: a survey of the demography of our profession and projected future needs for trained geoscientists. This project has recently been completed and will be published separately (watch for the media release on the CFES site). In short, it shows that our profession is headed into a period of sharply increasing labour shortages and that the different branches each have their own distinct demographic issues. Thanks to our member organization CCCESD (Council of Chairs of Canadian Earth Science Departments), in particular to its secretary Rob Raeside, the demographics for Canadian academia represent the full 100% of its work force! The results of this survey will definitely be the subject of much discussion with governments and professional groups in Canada because labour shortages are projected across the board. Governments will need to take a new look at many issues relating to the Canadian talent pool.

CFES is also working to increase visibility and broad understanding of earth sciences by inviting five to six stellar individuals across the profession to the CFES Earth Science Advisory and Advocacy Panel (ESAAP), a high profile group that will help us increase efficiency and effectiveness in getting the word out about the importance of the earth sciences

for Canada. We expect to be able to present this panel to you in the fall of this year.

Also in the fall, CFES will host, together with CSPG, GAC, and the Royal Society of Canada, the conference “The Geoscience of Climate Change” at the Banff Center. As part of its lobbying effort, CFES wants to draw attention to issues that are based in earth science and have crucial social relevance, ideally a different topic every 2 or 3 years. Climate change is an obvious issue, and it was fortunate that CSPG and GAC wanted to combine their Nuna and Gussow Conferences for this goal. Andrew Miall, who started his term as President of the Royal Society last fall, was willing to function as technical chair. Registration for the conference is through the CSPG website. In addition, CFES participates in the technical committee of GeoCanada 2010.

Many Canadian earth science societies are active in outreach, often with amazing results and products. AGS stands out as the producer of the Last Billion Years, and the success of “LBY” has already resulted in plans for a similar book about all of Canada, “Four Billion Years and Counting, a Geologic History of Canada”. It will be written by a host of authors across the country and coordinated by Jennifer Bates, Rob Fensome, Graham Williams, and Godfrey Nowlan. The “FBY” book will be released as part of the International Year of Planet Earth (IYPE). CFES will hold copyright of “FBY” and is actively involved in fundraising and in the production/publication tasks. The Canadian National Committee of IYPE, in which CFES is active as well, has raised just about enough money to enable the book to be published.

The Canadian website of IYPE will eventually become the CFES website, a first impression of which can be obtained at [www.earthsciencescanada.com](http://www.earthsciencescanada.com). One example of the outreach projects hosted on this website is the Earth Science Careers section which is aimed at grades 9 and 10. Complete with videos of earth scientists at work, the project helps students understand how to get on the path to a career in earth science. The project is coordinated by IYPE, CGEN, and CFES.

The CGEN president (currently Fran Haidl) serves on the CFES board, thus ensuring communication between those active in outreach. As part of our defragmentation effort, we have launched an outreach directors’ liaison initiative, which involves a quarterly teleconference (attended by about 15 people) sharing ideas and exchanging information. One of the significant results of this effort is a merging of the different student chapters, so that – we hope – there will eventually be a single earth science student chapter in Canada.

CFES is not only about domestic issues. The international profile of Canada in earth sciences is very much our concern. In countries other than Canada, national science foundations safeguard and advocate international participation for all scientists. The particular roles and responsibilities of NSERC prevent it from acting in this manner and, until recently, the

Geological Survey of Canada (GSC) took up that role. This included paying membership dues for international research initiatives such as IODP, ICDP, and IGCP. The GSC will no longer be in a position to play this role, and there are good reasons for this change, but this means that new roles and responsibilities must be explored so that Canadian earth sciences does not become isolated from the international scene. CFES is very much involved in these discussions. We are fortunate to have welcomed Peter Bobrowsky, secretary general of IUGS, as CFES's new international director.

On June 14 and 15, CFES met for its semi-annual meeting in Halifax. We were grateful to be given the use of the Milligan Room of Dalhousie's Earth Sciences Department so that, during breaks, we could look out at that magnificent view across the Northwest Arm. We met with regional representatives including the AGS president. AGS is not a member of CFES, partly because AGS is a regional society and CFES was set up as a federation of national societies, although nothing in the CFES bylaws prevents regional societies from joining.

This introduction serves to provide you with information about what CFES does and aims to do. As a regional society, AGS is unusual because of its enormous activity and productivity. AGS members may wish to consider their relationship with respect to CFES, and I hope this introduction will help your thinking on this matter.

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## NEW HELMSMAN AT GEOSCIENCE CANADA

*Geoscience Canada*, the flagship journal of the Geological Association of Canada (GAC), has recently made a change at the editorial level. After three years plus of distinguished service to the journal, the team of Steve McCutcheon (N.B. Geological Surveys) and Sonya Dehler (GSC Atlantic) has been allowed to retire and Reg Wilson (N.B. Geological Surveys) will take over the reins.

The journal publishes review-type and broad-interest articles about the earth sciences in Canada, and about developments in the earth sciences outside Canada, that are likely to be of interest to the Canadian earth-science community. Articles are typically written at a technical level that can be understood not only by specialist researchers but also by non-specialists in other branches of the earth sciences.

Types of articles include review papers, series papers, topical articles presenting new research results in a particular field (all

peer-reviewed), issues in Canadian geoscience (e.g. interaction of the earth sciences and Canadian society), book reviews, conference reports, commentaries, and letters to the editor. Series papers examine a specific topic over a period of several issues to several years, and are generally shepherded by Assistant Editors retained for that purpose. Current series include Great Mining Camps of Canada, Igneous Rock Associations, Economic Geology Models, Remote Predictive Mapping, Geology of the Parliament Buildings, and Geology and Wine.

The International Year of Planet Earth is the subject of a new series that will appear in the upcoming several issues. The series will feature reviews and personal perspectives from invited authors on a number of societally relevant themes, including health, climate, groundwater, oceans, soils, deep Earth, megacities, hazards, resources, and life. Incidentally, brochures on each of these themes are available in hard copy, and can be downloaded free from the IYPE website ([yearofplanetearth.org/index.html](http://yearofplanetearth.org/index.html)).

Another rapidly growing area of global-scale activity that I hope to bring to the pages of *Geoscience Canada* as a new series, concerns the related fields of geoheritage, geoparks, and geoconservation, which may be defined as preserving, promoting, or explaining geological features of scientific, cultural and aesthetic value. Anyone who was fortunate enough to sit in on the geoheritage symposium at the recent GAC-MAC in Quebec City will be aware of the enormous potential this concept has for bringing a knowledge and appreciation of geoscience to the general public.

*Geoscience Canada* is freely available over the internet to members of GAC, so if you aren't a member, please give some serious consideration to becoming part of "Canada's Geoscience Connection" at [www.gac.ca](http://www.gac.ca); the membership fee is less than the cost of a return trip from Bathurst to Halifax, or a dinner for two at a good restaurant. And if you have some material for an article, report, commentary or other, that would be a good fit for *Geoscience Canada*, please contact me.

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## REGIONAL NEWS AND UPDATES

### Fundy Geological Museum

As the Fundy Geological Museum embarks on its 15<sup>th</sup> season of operation, staff members anticipate welcoming our 325,000<sup>th</sup> visitor since we opened to the public in 1993. The museum provides residents of Cumberland County and our

visitors with an opportunity to learn about the region's rich natural heritage, including the record of our diverse geological history, Canada's oldest dinosaurs, and the Bay of Fundy tides.

Although 22,000 visitors are attracted to the museum each year, it is recognized that our future depends on the continued promotion of our region as a destination. With the recent opening of the Joggins Fossil Institute, northwestern Nova Scotia now has a core of significant sites, within the Fundy Shore-Annapolis Valley Tourism Region, that tell the stories of our rich natural and cultural heritage.

Earlier this spring the Department of Tourism, Culture and Heritage released a document entitled "A Treasured Past, A Precious Future: A Heritage Strategy for Nova Scotia, 2008-2013". The role and impact of Nova Scotia's natural heritage, in the development of the province's cultural heritage has been acknowledged. The Heritage Division is currently working on an interpretive master plan that will explore and articulate this relationship. As part of this activity, the Fundy Geological Museum is re-examining its role in the interpretation of the province's story to identify opportunities to renew and re-brand our programs, exhibits and services.

Geological time does not end millions of years ago. Our natural heritage continues to play a daily role in each of our lives (cultural heritage), drawing visitors from around the world. The museum's exhibits and programs are currently based on the region's rocks, fossils and minerals, including agate, amethyst and some of Canada's oldest dinosaur skeletons. While these minerals and fossils are recognized as icons in their own right, we believe we have an opportunity to more fully interpret the role of the region's geologic past, in the development of another icon, the Bay of Fundy.

Refreshing the museum's interpretive plan will enable us to highlight two of the region's icons: the Bay of Fundy tides, and Canada's oldest dinosaurs. We believe that there are opportunities to explore elements that are not explored in the existing gallery, to enhance the connections between our museum and related heritage sites, to compliment and support the stories told by our partners, and to differentiate our own product.

The museum's board of directors and staff, in partnership with the Cumberland Regional Economic Development Association and the Nova Scotia Museum's Heritage Division, have been working to achieve this vision for a number of years. The re-branding project has now reached the stage where a refreshed story line is being developed. This activity will be carried out in consultation with members of the AGS Education Committee.

The Department of Transportation and Infrastructure Renewal has engaged an architectural firm to design a concept for the new exhibit gallery layout. The renewed story line will form

the basis of a request for proposals to develop a new concept plan for the exhibit gallery and museum program, and exhibit design. Funding has been received from the province to initiate this phase of the re-branding project, which should be completed by the end of this year. It is anticipated that the refurbishing the gallery and fabrication and installation of the new exhibits would be undertaken following the 2009 summer season.

The Fundy Geological Museum is a part of the Nova Scotia Museum Family and is operated by the Cumberland Geological Society.

Visit Nova Scotia's Jurassic Past at [fundygeo.museum.gov.ns.ca/](http://fundygeo.museum.gov.ns.ca/).

Project Prosauropod updates are available at [museum.gov.ns.ca/fgm/lab/lab.html](http://museum.gov.ns.ca/fgm/lab/lab.html).

Get the scoop on events at 27 marvelous museums by e-mail! Subscribe today at [museum.gov.ns.ca/news/subscribe.htm](http://museum.gov.ns.ca/news/subscribe.htm).

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## **St. Francis Xavier University**

We have had a busy year to date in Earth Sciences at St. Francis Xavier University and are particularly pleased with our recent graduates from the department. We have had five B.Sc. honours thesis defenses this year by Stephanie Blais, Sarah Hindle, Julia King, Andrew MacDougall and Erica Underwood. These theses covered a range of topics including petrology, hydrogeology, and climatology. Highlights included Sarah Hindle's work on the hydrogeology of crustal scale faults, which was awarded the first annual Dr. Randall F. Cormier Award for the Best Thesis in Earth Sciences and Andrew MacDougall's work on subsurface heat flow in general circulation models that was recently accepted for publication by Geophysical Research Letters. Andrew was also awarded the Professor Donald J. MacNeil Memorial Award for Earth Sciences at this year's convocation. Other award winners in the department included Julia King, who won the Mining Society of Nova Scotia Centennial Scholarship Medal and Amanda Ehler, who was awarded the Mary Tramble Memorial Award for Field Geology.

St. Francis Xavier University also experienced a good deal of success in the latest round of NSERC awards. Stephanie Blais, Andrew MacDougall and Carrie-Ellen Gabriel received NSERC Postgraduate Awards this spring. Stephanie will be continuing her studies at the University of Alberta and Andrew will be taking up residence at Simon Fraser University.

Carrie-Ellen is part of our growing M.Sc. program at St. Francis Xavier University and is studying under Lisa Kellman.

In other award news, Lisa Kellman and Dave Risk recently received a Canadian Foundation for Innovation “Leaders Opportunity Fund” award for their proposal “Infrastructure for Monitoring Environmental Gas Exchange Processes”. The Nova Scotia Research and Innovation Trust will provide additional funds for this project. This equipment is part of a larger effort to better understand current and future biogeochemical changes in global ecosystems. The new infrastructure will contribute immediately in soil monitoring of gas exchanges to examine source-sink magnitudes and controlling processes in soils of disturbed and undisturbed ecosystems; in experimental manipulations of gas exchange processes at field stations and in the laboratory setting; and in innovation in the areas of soil-gas exchange field measurements.

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## Acadia University

Acadia’s Spring Convocation was held on May 12<sup>th</sup>. Four students received BSc degrees in Geology, two of which were BSc Honours degrees. In addition, four degrees were awarded in Environmental Geoscience, 4 degrees in Environmental Science with Honours, and 3 regular BSc degrees in Environmental Science. Four students received MSc degrees in Geology. We wish all of our graduating students the best of luck and good fortune.

Ian Spooner and a host of coauthors, including former students Bryan Martin (now at MUN) and David Mazzucchi (UVic), presented a paper at the joint meeting of the Canadian Geophysical Union and the Canadian Geomorphology Research Group which was held in Banff, AB from May 11-14th. The talk was entitled “The Effects of Climate Change on Fen Morphology and Blanding’s Turtle Habitat in Nova Scotia” and was presented in a session devoted to the biogeosciences.

The department also was well represented at the GAC-MAC meeting in Quebec City on May 22-25, with poster presentations by undergraduate student Kara-Lynn Scallion and graduate students Matthew Tucker, Tamara Moss, and Pizye Nankamba. In addition Sandra Barr was co-author on talks by John Waldron and posters by Chris White and Adrian Park.

Linda Lusby is the incoming president of the Canadian Universities Environmental Science Network (CUESN) for a 3 year term. The CUESN links program heads from environmental science programs in universities across Canada.

The organization was originally formed to share best practices among environmental science programs and to participate actively in the both accreditation of programs and registration of individuals.

Dr. Peir Pufahl is collaborating with a team of NASA-funded scientists led by Clark Johnson from the University of Wisconsin – Madison to explore the signature of early life in ancient Earth rocks such as iron formation. While in the field in northern Ontario in early June they used a miniature, state-of-the art X-ray diffractometer to analyze the composition of these rocks. This prototype is similar to the instrument that will fly on the Mars Science Laboratory rover to investigate the past or present ability of Mars to support life.

The department is pleased to welcome a new adjunct professor, Dr. David Risk of St. Francis Xavier University. David will be collaborating with Canada Research Chair Nelson O’Driscoll on their mutual interests in biogeochemistry.

After having successfully avoided the job for 32 years, Sandra Barr will become acting head of the Department of Earth and Environmental Science on July 1, standing in for Rob Raeside who continues as Acting Dean of Science. Sandra was honoured to receive the Career Achievement Award of the Volcanology and Igneous Petrology Division of the Geological Association of Canada at the annual meeting of the Division in Quebec City.

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## University of New Brunswick

Pamela Dickinson defended her Ph.D. thesis in June entitled “Geomorphological Processes and the Development of the Lower Saint John River Human Landscape”, supervised by Profs. Bruce Broster and David Black. We had two defences in May. John Evangelatos defended his M.Sc. thesis on “A Magnetic Investigation of the Ile Rouleau Impact Structure, Lac Mistassini, Quebec”, which was supervised by J.G. Spray and K. Butler. Simon Craggs defended his M.Sc. thesis on the “The Structural Control and Tectonic Evolution of the Campbellton Region, Northern New Brunswick, Canada”, which was supervised by J.G. Spray.

We also had a healthy number of successful undergraduate theses completed this year. Justin Bernard presented on “Controls on Mineralization of the Naartok East Gold Deposit, Hope Bay Volcanic Belt, Nunavut” (supervisor: David Lentz). Susan Brodie presented on “Double S Zone deposit, Lac Turgeon Granite, north shore of the St. Lawrence Seaway, Quebec, Canada: mineralogic, petrogenetic, and geochronologic constraints” (supervisor: David Lentz).

Gregory Lockhart presented on the “Midnite Mine: Uranium Mineralization and Monazite Geochronology” (supervisor: David Lentz). Theresa MacMillan presented on, “Geology, Petrology, and Geochemistry of Andesite flows and associated Intrusive Porphyry in the Spences Bridge Belt, Lytton, British Columbia: Implications for Precious-Metal Exploration” (supervisor: David Lentz). Erin Powe presented on “Petrology, Geochemistry, and Distribution of the Copper Zones at the Brunswick No. 12 Volcanogenic Massive Sulfide Deposit, Bathurst Mining Camp, New Brunswick” (supervisor: David Lentz). Lise Robichaud presented on “Geology and Architecture of Deformation Associated with the Scottie Creek Fault, Western Yukon” (supervisor: Joe White). For the Engineering design course (Geological Engineering group) Jeff Gilchrist, Daniel Guest, Matt MacKay, Chris MacPherson, Mark Randall, Jane Simmons presented “Design and testing of methods to search for evidence of seepage through an earth dam: Mactaquac Generating Station, New Brunswick” (supervisors: Karl Butler and Tom Al).

We have 8 new graduate students beginning their research this spring with Profs. John Spray, Karl Butler, Tom Al, Dave Keighley, Joe White, and David Lentz.

At the recent Canadian Institute of Mining and Metallurgy (CIM) Conference and Exhibition in Edmonton, UNB economic geologists won two national awards. Sean H. McClenaghan (Ph.D. student) and Prof. David Lentz, together with their co-author Chris Beaumont-Smith (Manitoba Geological Survey), won the Barlow Memorial Medal for best paper. The citation read “In recognition of an excellent paper entitled, *The Gold-rich Louvicourt volcanogenic massive sulfide deposit, New-Brunswick: A Kuroko analogue in the Bathurst Mining Camp*”. Alex Wills (Ph.D. student), Prof. David Lentz, and Gilles Roy (Xstrata Zinc) won the CIM Actlabs best student paper published in the CIM Geological Society journal Exploration and Mining. The citation read, “*In recognition of an excellent paper entitled, Felsic Volcanic Chemostratigraphy and Multiple Iron Formation Intersections: Resolving Geometry at the Brunswick No. 6 VMS Deposit, New Brunswick*”.

The Barlow Medal includes a plaque for the lead author, and the Actlabs award includes a cheque for \$1000 from Actlabs. These projects represent only a fraction of the research completed on mineral deposits in the giant zinc-lead-copper deposits in the Bathurst Mining Camp, which was supported by NB DNR-Minerals, Xstrata Zinc, First Narrows Resources, and Blue Note Mining, with several other mineral exploration companies exploring in this area. A few ongoing research projects in UNB Geology continue to focus on enhancing the exploration success in the region.



The UNB Geology Hale Trip, named after Prof. Ernie Hale who endowed the fund supporting this trip, went to Iceland this spring after final exams. The trip was organized by Erin Powe (4<sup>th</sup> year student) and was also attended by Prof. Cliff Shaw. The group of 11 students flew to Reykjavík from Halifax. They saw everything Icelandic, we hear, but Cliff found that the beer left much to be desired! The group photo above was taken on an outlet glacier from the main Vatnajökull glacier and was taken by the official Glacier Guide; it does look awesome doesn't it.

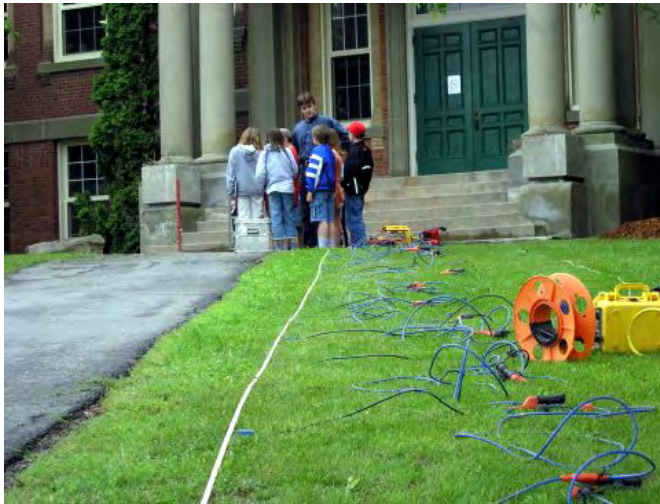
This spring, Profs. Chris MacFarlane and David Lentz, with UNB student Karen Grey, went to the Morila Gold Mine in Mali to undertake further research work to help Randgold find another deposit. This intrusion-related gold deposit has operated since 2000 and has been making approximately 80 million dollars profit each quarter. It represents a substantial contribution to the economy of Mali, as does mining in most east African economies.

Prof. Cliff Shaw is off on sabbatical to Frankfurt as the Mercator Visiting Professor in the Department of Mineralogy and Physical Chemical Mineralogy at Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany. He will be working on experiments on trace element partitioning during mineral melt reactions and on magma transport dynamics in the Eifel field (with Alan Woodland). More info on the Mercator program is at: [www.dfg.de/en/research\\_funding/scientific\\_contacts/mercator/index.html](http://www.dfg.de/en/research_funding/scientific_contacts/mercator/index.html)

Prof. Joe White is also on sabbatical this year (July 1<sup>st</sup> 2008 to 2009), and he won't tell anyone what he's doing... I wonder why? Prof. Chris MacFarlane is presenting at Prof. Paul Sylvester's ICP-MS Short Course at the Goldschmidt in Vancouver in mid July. Prof. Karl Butler and his applied geophysics group are working this summer on a variety of field projects related to near-surface geophysics including ongoing investigations of the link between seismo-electric phenomena and pore fluid type/mobility, as well as new



projects applying more established methods to the study of mineral deposits in the Bathurst mining camp and to nitrate contamination in fractured bedrock aquifers underlying areas of intensive potato cropping.



Prof. Karl Butler and Dr. Adrian Park hosted a very excited group of young students recently; in the photo above (courtesy of Mike West, M.Sc. candidate) you can see the seismic array laid out for the kids to see just how waves can move through the earth... if they all jump at once!

The “New Perspective on Mars” exhibit made up of giant photographs taken by the European Space Agency’s unmanned spacecraft, the Mars Express was on the UNB Memorial Hall campus this spring. Detailed text accompanied the images. This is the only Canadian venue for the exhibit, which ran from May 23 to June 27. With 3-D glasses you gain a new perspective of the Red Planet. The exhibit features giant photographs taken with a high-resolution stereo camera aboard the European Space Agency’s unmanned spacecraft, the Mars Express. There are striking images of ravines, riverbeds, cliffs and craters and a towering, miles-high volcanic mountain. Guest lectures in Memorial Hall by Alain Ouellet will discuss the Maple Leaf on Mars. Mr. Ouellet is the program manager of Planetary Exploration and Space Astronomy for the Canadian Space Agency (CSA); he is responsible for the CSA’s science missions that explore Mars and analog sites on Earth and astronomy missions. Prof. Spray was involved in arranging this outreach exhibit, he holds the Canada Research Chair in Planetary Materials, and he is the director of the Planetary and Space Science Centre at UNB Geology.

Dr. Adrian Park is arranging to run an EdGEO Workshop at UNB Geology with Science East later on in the summer.

Lastly, renovations for the Quartermain Centre will begin this summer, which will involve considerable renovation of the geology department. Robert Quartermain (CEO of Silver

Standard Resources and UNB Alumnus) donated to the creation of this outreach facility.

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## NEW RESEARCH INITIATIVE AIMED AT UNDERSTANDING TSUNAMI THREATS

(excerpted with permission from a 2008 DalNews article written by Marla Cranston)

*Azhii peralai*: from the deep ... large waves.

This is the expression for tsunami in Tamil, the oldest language in southern India. For an ancient dialect to have its own phrase for destructive waves triggered by earthquakes, the people of Tamil Nadu likely experienced tsunamis periodically through the centuries, says Halifax scientist Alan Ruffman who is an honorary research associate in the Department of Earth Sciences. What better way to predict the threat of future tsunamis than studying patterns from the past? Coastal sediments provide a potent geological record of recent and ancient tsunamis, he says, adding that the size of the sand particles can provide clues about the actual height of the water column.

This kind of research is relatively new. Much more study is required to develop statistics and timelines that can serve as a guide to help people in Southeast Asia better prepare for the next monster wave. To that end, the Shastri Indo-Canadian Institute has awarded a seed grant to help Dalhousie University develop a tsunami research partnership with the University of Madras in Chennai, India. In his funding proposal, Mr. Ruffman envisioned a long-term alliance to generate potentially life-saving new knowledge from research by faculty and students in the two coastal cities, starting with in-depth study of the history of tsunamis in the Bay of Bengal. This will range from detailed geological sediment studies to analysis of southern India’s early writings and folklore, to find human accounts of early tsunamis.

The objective of the research, says Mr. Ruffman, is “to put a solid estimate on the return period of such devastating events. This would allow communities and governments to put in place the necessary tsunami warning systems and evacuation procedures for future events”. It could go much further than that, with such proactive steps as restoring mangrove vegetation, to help prevent tsunami erosion along coastlines, and even moving whole villages to safer locations.

“If the understanding of the very real and present tsunami hazard leads to better location of coastal villages, housing and infrastructure, then the financial and human losses during future tsunamis will be greatly reduced. But planners and governments will have to believe that the 2004 tsunami was not a unique event ... and there’s nothing like finding a signature of a historic event to convince the local policy-makers it has occurred before”.

The Shastri funding proposal suggests Dalhousie University would host a week-long series of workshops, seminars and social functions, attended by tsunami researchers from Madras, as well as local scholars and members of Halifax’s Indo-Canadian community. These events would be used to plan a cooperative research program, and explore opportunities for graduate student exchanges between the two universities. The core research team would include four Madras scholars, six Dalhousie University faculty members in Earth Sciences and Oceanography, and also researchers at the Bedford Institute of Oceanography.

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## UPCOMING EVENTS

### 24th International Applied Geochemistry Symposium (IAGS)

The Association of Applied Geochemists meeting will be hosted by the University of New Brunswick from **June 1<sup>st</sup> to 4<sup>th</sup>, 2009**. This biennial meeting is being held in cooperation with the International Association of GeoChemistry (IAGC) and the International Association of GeoAnalysts (IAG). Further information, including the first circular, can be found on the internet at: [www.unb.ca/conferences/IAGS2009/](http://www.unb.ca/conferences/IAGS2009/).

The local organizing committee is inviting proposals for themes, sessions, special sessions, and workshops. Thus far five workshops are planned for Sunday May 31st along with 3 pre-meeting and three post-meeting field trips to compliment the meeting. Session proposals should include a detailed title, three co-chairs (with representation from academia, government, and industry) and a 1 paragraph description of the session proposed. I would like all proposals in by July 1<sup>st</sup> to get the ball rolling and in order to reload our website.

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### Atlantic Universities Geological Conference, 2008

The AUGC, which holds the distinction of being the second longest-running geology conference in Canada, will be hosted this year by the University of New Brunswick Bailey Undergraduate Geological Society. The meeting will start during the evening of **Thursday October 23<sup>rd</sup>** and will end during the evening of **Saturday October 25<sup>th</sup>**.

Four field trips are being organized for Friday October 24<sup>th</sup>: (1) Precambrian stratigraphy and fossils of Saint John (Dr. Randy Miller, New Brunswick Museum); (2) Carboniferous stratigraphy and structure in the Sussex area with an emphasis on potash and natural gas (Drs. Adrian Park and David Keighley, University of New Brunswick); (3) Stratigraphic setting and environmental reclamation at the New Brunswick Coal site (Michelle Coleman, New Brunswick Coal and Dr. Karl Butler, University of New Brunswick); and (4) the intrusion-related Mount Pleasant W-Mo-Bi mine and Sn-Zn-Cu-In lodes, and the shear zone-hosted Clarence Stream Gold deposit, southwestern New Brunswick (Drs. David Lentz, University of New Brunswick, Kay Thorne, New Brunswick Department of Natural Resources - Minerals, and industry representatives).

The student presentations (oral and poster) will take place Saturday October 25<sup>th</sup> at the Wu Conference Centre located on the northern most part of the University of New Brunswick Campus. The conference dinner and Awards Gala will be held at the Fredericton Inn Saturday evening.

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### Conjugate Margins Conference Halifax 2008

*“Sharing Ideas - Embracing Opportunities”*

**August 13-15** at Dalhousie University  
[www.conjugatemargins.com](http://www.conjugatemargins.com)

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### EdGEO Rocks!

**August 20 and 21**

15<sup>th</sup> annual workshop: a 2-day fieldtrip to explore Halifax and its surrounds. Leaders: Terry Goodwin (Nova Scotia Department of Natural Resources) and Michael Parsons (Geological Survey of Canada).

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