

President's Preamble

I sit writing this on the first day of spring realizing this is my last President's Preamble and I am struck by how quickly my year as GAC[®] President has flown past. As ever, we all pave the roads ahead of us with grand intentions and I'd have to say that I have missed a few things that I wanted to do as GAC[®] President. I will however keep working on my "missed" self-assigned goals as Past-President. The biggest of my missed goals is to assemble new sponsorship packages that work. GAC[®] offers sponsors so much and yet it has been a challenge to gain new support over the last two to three years. I remain very optimistic that new sponsors can be identified in the future based on the just-completed two big (mineral and/or mining based) industry-focused shows: AME BC's Roundup (January) and PDAC's Annual Convention (March). The mood at neither was dire. And this bodes well, in my opinion, for GAC[®]-MAC in Whitehorse this coming June.

My personal interpretation of why conferences are less dire than (many) anticipated is two-fold. First, people and companies both are managing themselves differently in this prolonged depression of commodity prices that impacts spending of all kinds. Attendance at conferences has dropped about 30% from high numbers in 2010 through 2012. I missed my first PDAC convention in 26 years as attending from a Vancouver base is a big cost; a lot of people who are "lifers" did not attend PDAC this year. Speaking of lifers, those who were seen at either conference were mainly lifers, those who are truly committed to this field. Layoffs and reorganizations have been completed for some time now, so the faces seen are those that know this is a cyclic business and have been through this before. Second, I think that these depressed commodity prices and the markets are coasting along what would be termed the bottom. In previous years the question heard in conference venues revolved

around when would we hit bottom? And how low could we go? General consensus now is that we are there, we are at the bottom. This was the viewpoint held by the majority of stalwarts who I have spoken with that attended RoundUp and PDAC conferences. But what does this all mean to geoscience as we know it?

Well, being the ultimate optimist, I think that we have a stable "core" (pun intended) of knowledgeable geoscientists who are fully engaged in the pursuit of the chosen career and we are ready to get back at it! There are some caveats to recovery, as can be seen in the questions from worried students embarking on geoscience as a career and looking for opportunities. It is never easy to be part of a cyclic industry. It appears that funding, whether it be sponsorship of GAC[®] or scholarship/research dollars or investment in junior exploration, is evolving. What it is morphing into is something that is still unknown but it will be different than the last boom-years, as it was from the boom-times before that. So, how will we raise funds? And maybe where will these funds come from and what will they be targeted on? It is a hard question to answer although I wish I knew the outcome. I do know that we will all continue to provide high quality output regardless of what we do, and we must continually communicate the value of what we do in the geosciences.

Recently I received an email from a colleague who was travelling and working remotely. The bottom of the email had a most interesting, actually inspiring, 'Sent from' tag that this individual who owns the mobile device has obviously thought a lot about. The Sent from tag read: *"Sent from my iPad, which is made of mined and processed minerals that we depend on for everyday life. As we communicate together, let us be thankful geoscience makes it all possible"*. One could easily replace the word

GEOLOGICAL ASSOCIATION OF CANADA

The MISSION of the Geological Association of Canada is to facilitate the scientific well-being and professional development of its members, the learned discussion of geoscience in Canada, and the advancement, dissemination and wise use of geoscience in public, professional and academic life. The VISION of the GAC® is to be a multidisciplinary scientific society supportive of the entire scope of the geosciences in Canada. The GAC® aims to be a geoscience community that is knowledgeable, professionally competent and respected, whose input and advice is relevant, widely sought and utilized, and whose vital contribution to the economic prosperity and social well-being of the nation is widely acknowledged.

La MISSION de l'Association géologique du Canada est d'aider au développement scientifique et professionnel de ses membres, de favoriser les échanges géoscientifiques au Canada ainsi que de promouvoir et de diffuser l'utilisation éclairée des géosciences dans un contexte public, professionnel et académique. La VISION de l'AGC® est de faire connaître une communauté géoscientifique de grand savoir, dont les compétences professionnelles sont respectées, dont les suggestions et les avis sont pertinents, recherchés et utiles, et dont la contribution largement reconnue est considérée comme vitale pour la prospérité économique et le bien-être de la nation.

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The S.S. *Klondike* in dry dock beside the Yukon River in Whitehorse, Yukon. The S.S. *Klondike* is a restored sternwheeler, one of the vessels that transported goods and passengers between Whitehorse and Dawson City in the early 20th century. The vessel is now a National Historic Site. For more, see www.pc.gc.ca/eng/lhn-nhs/yt/ssklondike/index.aspx

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GEOLOG (ISSN 0227-3713; 1712-3747) is the quarterly newsmagazine of the Geological Association of Canada, St. John's, Newfoundland and Labrador. *GEOLOG* is published for the benefit of GAC® members and its content reflects the diversity of the organization. News items and short articles on topics of potential interest to the membership including public geoscience awareness are encouraged. Also encouraged are communications promoting interaction among academic, industry and government sectors. *GEOLOG* accepts and publishes contributions in both of Canada's official languages. Opinions expressed herein are those of the writers and do not necessarily represent the official positions of the GAC®. *GEOLOG* is one of several forums provided by the GAC® for scientists worldwide.

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GEOLOG (ISSN 0227-3713; 1712-3747) est le bulletin trimestriel de l'Association Géologique du Canada, à St. Jean, Terre-Neuve-et-Labrador. *GEOLOG* s'adresse aux membres de l'AGC® et son contenu reflète le caractère polyvalent de cette organisation. Nous invitons la soumission de nouvelles et articles courts pouvant intéresser les membres, incluant les thèmes de sensibilisation du public aux sciences de la Terre. Les articles suscitant des échanges d'opinions et d'informations entre les secteurs académique, industriel et gouvernementaux sont également la bienvenue. *GEOLOG* accepte et publie les articles dans les deux langues officielles du Canada. Les idées sont celles des auteurs et ne représentent pas nécessairement la position officielle de l'AGC®. *GEOLOG* n'est qu'un des nombreux forums offerts par l'AGC® aux scientifiques à travers le monde.

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Contributions for next issue

Please send items for next issue of *GEOLOG* by e-mail to Alwynne.Beaudoin@gov.ab.ca on or before **June 1 2016**.



A large copper nugget, weighing about 1175 kg, on display outside the MacBride Museum of Yukon History, Whitehorse. For more, see www.yukonmuseums.ca/treasures/mbm/17.html



Vicki heading off to her “remote” office

‘geoscience’ with ‘science’ or ‘dedicated hard-working people’ and it would remain a true statement. This is a very good example of what many of fail to do – explain outside our community the value of our chosen profession. What we all do, whether it be mapping outcrops, conducting laboratory analyses, writing papers or journal submissions, or volunteering for organizations like GAC[®], is adding to our knowledge and improving the greater world around us all.

Those of us committed to this vocation (and still attending conferences when we can, us lifers) should continue to communicate that geoscience and all its facets *remains* a solid and rewarding career choice to those who are truly passionate and engaged with it when students seek guidance as to whether they should continue. There are fears when beginning any new venture, whether that be selecting a path or drilling a new project or investigating a hypothesis. The world has not stopped requiring the knowledge we provide and there will be new avenues evolve so that we can provide it. We will find a way to share what we learn and make new advances – who would have thought that we would be able to carry around

computing power equivalent (or greater) than what put rockets to the moon in a wrist-band? And all of these gizmos are products of the minerals around us! It is absolutely fantastic! I am excited personally to work as a geoscientist and increase my knowledge and just maybe help (in a small way) some new exciting invention along. I think I may have just previewed some of my presidential address to be given in Whitehorse.

It has been a pleasure serving all members of GAC[®] as President over the past year. I look forward to what GAC[®] will offer in the future. I look forward to seeing many of you at “Margins Through Time”, the first GAC[®]-MAC in Whitehorse from June 1 to 3, 2016.

All the best to you for future success!

Vicki Yehl
GAC[®] President

GeoFact: May 14 1856: In his diary, Charles Darwin records that he began work on his 'Species Sketch', which would eventually become The Origin of Species.

Vice-President's Essay: On to Whitehorse!

As we get together at GAC-MAC in Whitehorse, I have to say that I am looking forward to this conference even more than some of the past meetings. To begin with, this visit to Yukon will be my first real travel to any of the territories, though I have previously overflowed Nunavut a few times, and possibly stepped into the southern edge of that territory across the bizarre jurisdictional boundary that intersects the Hudson Bay tidal flats near Churchill, Manitoba. I am excited about being in Whitehorse and seeing a bit of the Yukon – but beyond that, thinking about this meeting makes me realize how much GAC® and GAC-MAC have played a role in making me the Canadian I am today. If I had never attended our national conferences, I would never have developed anything like the understanding of Canada that I have now. I'm sure many of you will feel the same, if you stop to think about it.

Considering national meetings over the past 30+ years – including GAC-MAC conferences, GAC® section meetings, and Council business meetings – I realize that I have attended conferences in every province of this country at least twice, except for Prince Edward Island, where I have never been to a meeting (have we ever

had a national meeting there?). My view of some parts of this country has therefore been largely through the lens of GAC® and geological activities. This is not a bad lens through which to be viewing, as these activities must place many geologists in the top 1% of Canadians in terms of our experience of the country, especially if you take part in conference field trips and also do field research in your “everyday life.”

During your geological travels, many of you will have seen far more of the country than I have. The “back of beyond” is often the best part of Canada, and I think this has given us a deep and abiding love of the country and its geology, as well as a deep and abiding respect for the many perils of fieldwork. If I think back to past conferences and field trips, many vivid geological images come to mind: bright autumn sunshine on the coastal section at the UNESCO World Heritage Site at Joggins, Nova Scotia, torrential autumn rain on the Paleozoic succession in the Québec City area, an early summer visit to Silurian strata in the Niagara Escarpment of Ontario, and hiking into deep valleys at the dinosaur trackway sites near Tumbler Ridge, British Columbia.

Surrounding those geological images are other mental snapshots of this land, and a sense of our place in it, also gained during conference travel: getting lost in an intensely dark night on Saskatchewan's Cypress Hills, post-lunch napping on the warm gravel beach at Dipper Harbour, New Brunswick, dinners by the sea in Vancouver and Halifax, and evening beverages in the casino at Opaskwayak Cree Nation in northern Manitoba. Throughout these GAC® travels there have always been such great conversations about geology, the world, and life, and I feel fortunate to have seen and learned so much. As incoming GAC® president, my GAC-MAC will be bracketed by business meetings, so I will miss the field trips this time. I hope that you are at least considering the fabulous trips planned for this meeting: excursions such as those on the history of Klondike gold and Keno Hill silver provide such an opportunity to experience Canada and its geology.

Perhaps, as well as making us better scientists, GAC® helps us to contemplate the things that tie us together as Canadians, as we develop a better understanding of one another as scientists and as individuals. There are, of course, many specialist discipline meetings in our modern scientific era, but there is still a place for a national meeting that has the breadth of GAC-MAC.



GAC-MAC Paleontology Division field trip examines a dinosaur trackway site near Tumbler Ridge, British Columbia, August 2005



GAC-MAC field trip examining strata just below the Ordovician-Silurian boundary, Grand Rapids Uplands, Manitoba, May 2013

The “broad church” of this conference allows us to learn about fields we would otherwise never come into contact with, as well as developing a deeper and more current understanding of our own research areas. As a palaeontologist, where else could I develop an understanding of current diamond exploration, or of Precambrian continental development?

As diverse as our fields are, we also all operate in the same national climate, in so many regards, providing much material for fruitful discussion. We share the same federal government, many of us have similar provincial accreditation requirements, those on the academic side share funding sources, and those in applied areas work in similar regulatory and tax environments. As I write this in Winnipeg, where winter still holds on in late March, I observe that we are also all bound together by the fabulous Canadian seasons, with the possible exception of those in coastal British Columbia.

I know that conferences in distant parts of the country can be difficult to attend and nowadays many of us are pulling together travel support from a variety of small funding pots, probably combined with personal funds. If you can manage to get to this meeting, you will find it an incredibly enriching experience. Conferences in remote places might be more expensive and difficult to get to, but those who have been to out-of-the-way meetings will know that these are often the best – there is something vital about a special meeting, in a special place, with unique things to see and discuss. With all the attendees concentrated together, rather than spread through a big city, the conference achieves

an intensity and energy not seen at other meetings. Once on the ground in a strange and exciting place (such as Whitehorse, for me!), it is of course imperative that we balance conference attendance with developing a feel for the locale. Whitehorse is known for its museums, and being a museum professional I really look forward to the few hours that I will steal here and there in the program. The Manitoba Museum will, after all, be pleased if I develop an understanding of the Whitehorse museums, as much as an understanding of what is going on in Canadian geology. Because I have never been to the Yukon, I also have dreams of renting a car and getting out of town, but obviously this will depend on whether there is a half day available (and given the schedule of business meetings, this seems doubtful).

In some ways, GAC-MAC is a metaphorical “national dream” for research geologists, tying us together not with a ribbon of steel, but with a ribbon composed of electrons, data, knowledge, field boots, and conversation (and possibly beer). If we didn’t already have a GAC-MAC meeting, someone would need to create one. If we have to periodically evaluate and re-invent these conferences and GAC® itself, we shouldn’t consider this as a cause for anguish and trepidation: it is just in the nature of a long-lived organization.

I look forward to seeing and talking to many of you this year in Whitehorse, next year in Kingston, and also at that far distant future GAC-MAC meeting in Iqaluit . . . or Charlottetown.

Graham Young
GAC® Vice-President

Reading on the Rocks

Richard Waitt (2014) *In the Path of Destruction: Eyewitness Chronicles of Mount St. Helens*. Washington State University Press, Pullman, Washington. x + 413 pages. ISBN: 978-0-87422-323-1

When I was a grad student, the most devastating put-down one could receive from a fellow student during a colloquium was “that’s only anecdotal”. Anecdotal meant unscientific, unverifiable, and worthless. The recipient of such a critique was expected to crawl off into a corner and hide, suitably chastened. Fortunately, not all geoscientists dismiss such accounts so readily. On the contrary, anecdotal evidence and eyewitness accounts can be immensely valuable resources of fine-grained detail on geological events, especially natural disasters. Geoscientists can’t be everywhere. They may miss the start of an event or not be in the right location to document the unfolding of a geo-disaster. So having narratives from people who were actually there can help reconstruct what happened. As Richard Waitt came to realize for the Mount St Helens eruption, “no geologist scrutinizing the deposits could glean what they had witnessed being almost in the eruption” (p. vii). True, observers may recall events differently, and individual accounts may vary in detail. Yet, by careful sifting and comparison of multiple accounts, a structured narrative can emerge.

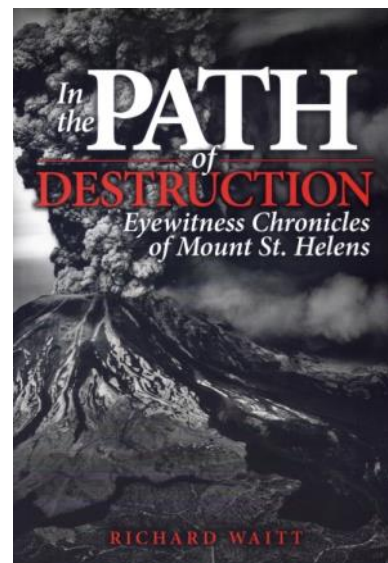
Waitt has patiently and comprehensively compiled exactly this kind of narrative from eye-witness accounts of the climactic eruption of Mount St Helens on May 18 1980. His narrative is wide-ranging and also covers the weeks and months of building tension leading up to the event. It is constructed from more than 300 interviews, some conducted within a few months of the event, others many years later. He has also incorporated information from contemporary documents, including reports, diaries, logbooks, and records kept by various agencies and rescue crews. Defending the validity of this oral history approach, he notes that “[t]he sheer number of compatible accounts from independent witnesses tested at length is some proof of reliability” (p. viii). This natural disaster was also well-documented in photographs. Waitt has included many of these, such as Gary Rosenquist’s iconic image sequence of the start of the eruption and landslide.

Waitt has arranged the accounts in chronological order, giving a minute by minute account of the eruption. The observations are also organized by quadrant, because people west and south of the eruption had different experiences to those downwind to the east. The eyewitness accounts make for complicated and often harrowing reading, but cumulatively they are fascinating.

Each eyewitness contributes part of the picture, detailing what they saw and experienced. Their fear and panic are palpable, as is their confusion and attempts to understand what was happening to them and make sense of the seeming arbitrariness of the destruction. The events endured by survivors of the eruption include being buried under fallen trees, thrown down by the blast, covered in thick layers of ash, experiencing burns and injuries, and making long difficult journeys on foot to escape the devastated area. Ash choked streams, turning water to hot sludge. As a result, survivors were unable to find drinkable water; many suffered thirst and dehydration.

Accounts given by specific individuals are at times hard to follow, because they often locate themselves by road numbers or other landmarks. The blast changed the landscape from a familiar place to a bewildering jumble of downed trees, scoured-out gullies, and debris flows. Known routes became impassable. Survivors had to clamber over, around, and through fallen timber and other obstacles. Chaotic terrain and ash also made the situation difficult for rescuers. Helicopter rotors stirred up ash, obscuring any survivors the teams were trying to locate and rescue.

As Waitt’s meticulous narrative shows, the months before the eruption were characterized by geologists being understandably cautious and unwilling to make



predictions about when an eruption would happen. USGS staff with most knowledge of the volcano were Dwight ("Rocky") Crandell and Don Mullineaux. Concerned about the volcano's character, as shown by the geological evidence, they had published articles warning of the potential for an eruption, but predicting the timing of an event was another matter.

There were various attempts by public officials to interpret the information provided by geoscientists and translate it into plans and concrete actions. In practice, this meant setting up exclusion zones around the volcano. But there was no consensus about what extent those exclusions zones should have and how access should be controlled. Nor was there a coordinated command structure in place to implement a plan. At the same time, there was pressure by the lumber industry to continue logging activity in the area close to the volcano. Cottagers and tourist resort owners, especially those around Spirit Lake, were belligerent and vocal about being forbidden to access their

property. This spirit of defiance coalesced around Harry Truman, a well-known local character and curmudgeon, who owned a lodge beside Spirit Lake. He was always good for a colourful quote and became something of a media darling in the weeks before the eruption, giving many interviews. Truman vowed he would never leave. He didn't and was one of the 57 known victims of the eruption. Another victim was David Johnston, a young USGS geologist, who was monitoring the peak. He radioed "Vancouver! Vancouver! This is *it*!" as the eruption started. One more short broadcast, then silence (p. 151).

Waitt himself was part of the geological team before the eruption, mapping and examining ash emitted in small plumes from the summit vent. He has continued to study the eruption and its aftermath. *In the Path of Destruction* is an excellent example of the insights to geological processes provided by eyewitnesses.

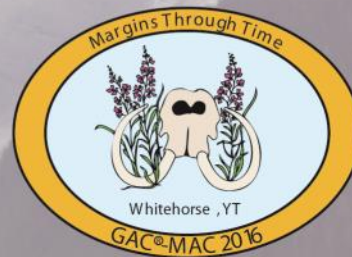
Alwynne B. Beaudoin
Edmonton, Alberta

Whitehorse 2016 GAC-MAC Joint Annual Meeting

Nestled in the heart of the northern Cordillera, Yukon's capital Whitehorse is surrounded by diverse geology spanning the Proterozoic to present. Join us for a multi-disciplinary technical program ranging from crustal neotectonics to low-pressure metamorphism and Beringian surficial geology. Field trips will include the geology of Beringia and the Klondike gold fields, a transect of Yukon accretionary terranes, and economic geology-focused trips in southeast Alaska, the Keno Hill silver district, and the Anvil Range Pb-Zn district.

Yukon sits on the margin of Laurentia and the margin of Beringia, making our geology second to none. Come join us on the margin of society for some unforgettable geology and our famous Yukon hospitality.

GAC-MAC 2016
Whitehorse, Yukon
June 1-3, 2016
www.whitehorse2016.ca
From Laurentia to Beringia: Margins through time



Events and Happenings

Atlantic Geoscience Society (AGS) Annual Meeting

Annual Colloquium and Annual General Meeting 2016
The 42nd Atlantic Geoscience Society (AGS) Colloquium and Annual General Meeting were held at the Holiday Inn, Truro, Nova Scotia, on February 5 to 6, 2016. The organizers, Tim Fedak, Bob Grantham, Rob Raeside, and Chris White with help from Ian Spooner and numerous student volunteers, facilitated an excellent meeting. About 170 registered participants enjoyed a full and diverse program that continues to stretch the boundaries of geoscience. Thanks are extended to Howard Donohoe for acting as the AGS special events photographer.

Friday's program started with a well-attended, day-long workshop on "QA/QC in Geology Research and Exploration" by Cliff Stanley (Acadia University). For those of us not fortunate enough to attend the work-shop, the afternoon was filled with meetings pertaining to the never-ending AGS business. Poster displays started Friday evening and remained available to view until late Saturday afternoon. Three concurrent sessions ran Friday evening: (1) Recent Research in Petrology and Geophysics, (2) Recent Research in Sedimentary and Surficial Geology; and (3) Dates, Rates, and Duration of Tectonic Processes-Timing is Everything.

Saturday's events started early with several concurrent sessions including: Tin-related Mineralization and Exploration in the Maritimes; Geoscience Education and Outreach: Creating an Awareness; Offshore Geology of Eastern Canada; Recent Research in Economic Geology; Advances in Carboniferous Geology in the Atlantic Provinces. Abstracts from the conference are published annually and are Open Access in the AGS journal *Atlantic Geology* (journals.lib.unb.ca/index.php/ag).

The guest speaker at Saturday evening's banquet and social was Gerald Gloade (Mi'kmaq artist from Millbrook and Program Officer at Mi'kmawey Debert Cultural Centre) who gave an informative and entertaining presentation on Mi'kmaq legends in



Lori Paslawski (R) receiving the Rob Raeside Award from AGS President Bob Grantham.

All photos in this article by Howard Donohoe

Atlantic Canada and how intertwined the relationship is between Glooscap and geology. Following dinner several prestigious AGS awards were awarded in recognition of worthy student presentations and professional accomplishments.

The new **Rob Raeside Award** for best undergraduate student poster went to Lori Paslawski (St. Francis Xavier University) and her co-authors Alan J. Anderson, Christopher MacFarlane, and Brandon Boucher for their poster "*Boron concentrations in spodumene-hosted fluid inclusions from the Tanco pegmatite, Manitoba*".

The **Graham Williams Award** for best graduate student poster went to Cody Paige (Dalhousie University) for the poster "*A UHV extraction line for in-situ produced cosmogenic ^{14}C to improve the reliability of dating strain markers*".

The **Rupert MacNeill Award** for best undergraduate student oral presentation went Christopher Sangster (Saint Mary's University) and his co-authors Georgia Pe-Piper, and Yuanyuan Zhang for his talk "*Fluorine-rich ferroan calcite and diagenetic zircon in the Newburn H-23 well: indicators of unusual diagenetic processes*".



Cody Paige (R) receiving the Graham Williams Award from AGS President Bob Grantham



Travis McCarron (R) receiving the Sandra Barr Award from AGS President Bob Grantham



Christopher Sangster (R) receiving the Rupert MacNeill Award from AGS President Bob Grantham



Charles Carlisle (L) accepting on behalf of Carlos Wong the Encana Best Poster Prize from AGS President Bob Grantham

The **Sandra Barr Award** for best graduate student oral presentation went to Travis McCarron (University of New Brunswick) and his co-authors Chris McFarlane and Fred Gaidies for his talk "P-T path of metamorphism for a garnet-zone schist in the western Cape Breton Highlands, Nova Scotia, Canada". An 'honorable mention' went to Jillian Kendrick (Memorial University of Newfoundland) and her co-author Aphrodite Indares for her talk "*Ti-in-quartz thermometry coupled with cathodoluminescence imaging: a novel tool for interpreting the metamorphic history of migmatites*".

The **Encana Prize** for best student poster in the Offshore Geology of Eastern Canada session went to J. Carlos Wong (Dalhousie University) and his co-authors Carla Skinner, Bill Richards, Ricardo Silva, Natasha Morrison, and Grant Wach for their poster "*1D thermal model of South Venture O-59, Sable Subbasin (Scotian Basin, Nova Scotia, Canada)*".

The **Encana Prize** for best student oral presentation in the Offshore Geology of Eastern Canada session went to Isabel Chavez (Saint Mary's University) and her co-authors David Piper, Georgia Pe-Piper, and Yuanyuan



Isabel Chavez (R) receiving the Encana Best Talk Prize from AGS President Bob Grantham



Chris White (R) receiving the Laing Ferguson - Distinguished Service Award from AGS President Bob Grantham.

Zhang for her talk "Black shale Selli Level recorded in Cretaceous Naskapi Member cores in the Scotian Basin".

The **Laing Ferguson - Distinguished Service Award**, given in recognition of exceptional and altruistic contributions to the Atlantic Geoscience Society and/or to foster public appreciation of Atlantic Geoscience over a long period of time went to Chris White (Nova Scotia Department of Natural Resources).



Dave Lentz (L) receiving the Distinguished Scientist Award - Gesner Medal from AGS President Bob Grantham



Dewey Dunnington (far left) playing with the *Mud Creek Boys* (from left to right) Peter Williams, Ian Spooner, and J.P. Huang

The **Distinguished Scientist Award - Gesner Medal**, given to a person who developed and promoted the advancement of geoscience in the Atlantic Region in any field of geology was awarded to Dave Lentz (University of New Brunswick).

The awards presentations was followed by the annual AGS Kitchen Party (hosted by *The Mud Creek Boys*) and open mike in the Oak Room, showcasing the instrumental and voice talents of so many of our members. As usual the AGS colloquium was a great success keeping with the spirit of open communication and the exchange of ideas through both formal and informal group discussions. It was an outstanding weekend and we are all looking forward to next year's conference.

Chris White
Atlantic Geoscience Society

Saving Green Cove, Cape Breton Highlands National Park, Nova Scotia

The announcement, when it finally came, was low-key, just a message sent to Friends of Green Cove on the morning of February 5, 2016, as reproduced below:

"As you are aware, in August 2013, the vision for the Never Forgotten National Memorial proposed to be built at Green Cove in Cape Breton Highlands National Park was announced. Parks Canada has been working with the Never Forgotten National Memorial Foundation towards the realization of this Memorial.

At this time, Parks Canada has completed a review of the entire Never Forgotten National Memorial initiative as well as the key elements and timelines within the Memorandum of Understanding (MOU) that guides this complex proposal. Based on that review, Parks Canada has concluded that there are too many key elements that remain outstanding for the project to be achieved by the planned date of July 1, 2017, including the availability of funds to the Foundation, agreement on the structuring of the funding for construction and maintenance, and a definitive final design plan.

I wanted to let you know that after careful consideration, Parks Canada has decided to withdraw from the MOU and the project. Parks Canada will no longer be working towards the realization of the memorial in Cape Breton Highlands National Park. As a result, the project will not be moving forward on Parks Canada land.



Fig. 1a. Green Cove, Cape Breton Highlands National Park in October 2014

Parks Canada appreciates the Never Forgotten National Memorial Foundation's vision in honouring Canadians who made the ultimate sacrifice for their country and wishes the Foundation success in its on-going pursuits.

*Regards,
Blair*

*A. Blair Pardy
Field Unit Superintendent, Cape Breton | Directeur de l'unité de gestion, Cap-Breton
Parks Canada Agency | L'Agence Parcs Canada
Louisbourg, Nova Scotia | Louisbourg, Nouvelle Écosse
B1C 2L2
Blair.Pardy@pc.gc.ca
Conserve, Restore and Connect with Nature |
Conserver, restaurer et se rapprocher de la nature*

Although relieved to hear this decision, I am disappointed that the key reasons that the construction of the monument and related infrastructure were opposed by so many of us were not mentioned in the announcement of its cancellation. No mention is made of the inappropriateness of a private foundation developing an area of parkland that belongs to all Canadians. No mention is made of the need to preserve the unique geological outcrop, on the list of geoheritage sites for Nova Scotia and features in a recent book by Hild and Barr on the geology of Nova Scotia¹. I am not convinced that our national parks are safe from such developments in the future.

Indeed, the idea has not disappeared along with the announcement. A recent interview with the main proponent, Tony Trigiani, demonstrates that it is far from the case (www.thestar.com/news/insight/2016/02/28/the-mother-canada-memorial-dream-that-wont-die.html).



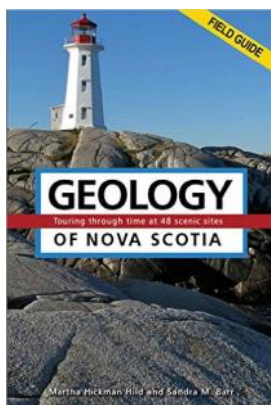
Fig. 1b. The proposed monument at Green Cove (from www.nfnm.ca/)

The lack of respect for the geological significance of the site and the need to preserve nature is clearly not a concern for the proponents of this development.

As I noted in my original letter published in the Spring 2014 issue of *GEOLOG*, the plan to build a huge war memorial and associated visitors' complex along a scenic shoreline adjacent to the iconic Cabot Trail in a national park is of national concern. Such a large and obtrusive structure has no place in a national park, an area dedicated to the preservation of our natural heritage. It makes a mockery of the Parks Canada motto (as seen in the last line of Blair Purdy's announcement letter above): Conserve, Restore and Connect with Nature.

The rocks at Green Cove are part of the Black Brook Granite Suite, spectacular rocks that form most of the eastern part of the Cape Breton Highlands National Park. The suite includes a variety of granitic rocks, both pink and grey, which vary from fine to coarse and show complex cross-cutting and mingling relationships. The granitic rocks are also cut by abundant pegmatite dykes that contain large crystals of quartz, feldspar, muscovite, and biotite. They also contain inclusions of partly melted older rocks into which the granite magma was emplaced about 375 million years ago at a depth of 10-15 km. Over time, the overlying rocks were eroded away, resulting in the wave-cut platform on which we can safely walk and see the rocks exposed today. It is a popular stop for both Park visitors and geological field trips because of the unique characteristics of the rocks and the accessibility of the site on an otherwise very rugged coastline. Green Cove is one of very few places where it is safe to walk on and view these rocks up close, rather than just seeing them as part of the scenery.

Sandra Barr
Antigonish, Nova Scotia



¹Hild, Martha H., and Sandra M. Barr, 2015. *Geology of Nova Scotia*. Boulder Publications, Newfoundland, 267 pp.

On The Road Part 2: Travel Blog: Howard Street Robinson Lecture Tour, Atlantic Leg, Feb 2016

This is the second travel blog post for the Howard Street Robinson Lecture Tour sponsored by the Geological Association of Canada. In February, I undertook the Atlantic leg of the tour where I gave four lectures in Halifax, Wolfville, and Antigonish. I gave lectures on: 1) Semi-permeable interface model for seafloor replacement-style volcanogenic massive sulphide (VMS) deposits, which was based on my recent paper in *Economic Geology* (replacement talk); and 2) Zn-rich volcanogenic massive sulphide (VMS) deposits, which is based on another recent paper of mine in an *Irish Association of Economic Geology Special Publication* (Zn-rich VMS talk).

Stop 1 – Halifax. My first stop of the Atlantic leg was at St. Mary's University on February 1, where I gave the replacement talk. There were some great discussions afterwards about fluid advection, replacement processes, and VMS deposits, and thanks to those that took the time to come. Special thanks to Jacob Hanley for organizing things in St. Mary's and to my hosts Kevin Neyedley and Mitch Kerr for showing me around, touring the facilities, spending time with me talking about their research, and their overall hospitality.



Great landmark and place to visit in Halifax!

Stop 2 – Wolfville. My second stop on the Atlantic leg was at Acadia University on February 2nd where I gave the talk on Zn-rich VMS deposits. There were a lot of great questions and discussions on recognizing magmatic fluids in VMS deposits, VMS in the Appalachians and the wonderful natural laboratory we get to work on! and A special thanks to Sandra Barr for the invite, her hospitality and arranging things on the tour (including the really cool place to stay while there

– the Blomidon Inn). It was also great to catch up with numerous people there including Sandra, Chris White, Cliff Stanley, Scott Swinden, and Peir Pufahl, and chat about tectonics, geochemistry, and VMS deposits. Thanks for taking the time.

Stop 3 – Antigonish. The third stop on the Atlantic leg was at St. Francis Xavier University where I gave the Zn-rich VMS talk on February 3. There was a great discussion about magmatic fluids, Zn contents of fluids, distribution of magmatic input in VMS through time (and lack thereof), water depth in VMS, and so on. I thank Evelise Bourlon for arranging the talks and other logistics. I would also like to thank Brendan Murphy and Alan Anderson for their hospitality there, for the great craft beer (when in Antigonish check out this place—The Townhouse Brewpub and Eatery), and the opportunity to chat about tectonics and ore deposits!



View looking out from the Blomidon Inn looking out over Wolfville with the Minas Basin in the background



View over St. Francis Xavier University campus

Stop 4 – Halifax. The final talk on the Atlantic Leg was at Dalhousie University where I gave the Zn-rich VMS talk on February 4. The discussion session was fantastic with lots of tangents into anoxia, framboids and sulfur isotopes, Irish-type Zn-Pb mineralization, secular distributions of VMS and metal contents, sources of

metals and fluids. Lots of fun. I would like to both Yana Fedortchouk and John Gosse for their hospitality and the discussions. I would like to especially thank John for the invite, arranging things, touring me around Dalhousie, and hosting me while there.

I apologize to all on the Atlantic Leg as it seems I was finishing a talk and running off to another destination. I wish I had more time at each place to talk more science. Thanks again to all for the hospitality, I know that you are all busy, but I really appreciate the time taken to host me!

Stay tuned, one more leg in Ontario and Quebec to come!

Steve Piercey

Department of Earth Sciences, Memorial University

Posted on: February 11, 2016

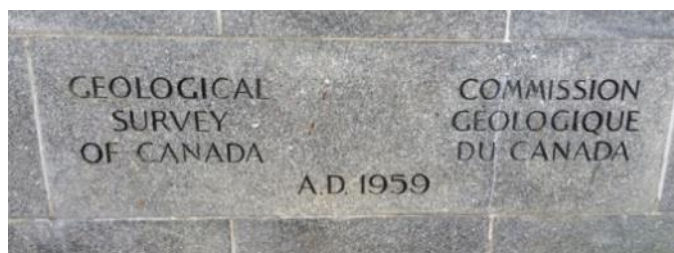
stevepiercey.wordpress.com

On The Road Part 3: Travel Blog: Howard Street Robinson Lecture Tour, Ontario Leg and Tour Summary and Statistics!

This is the third travel blog post for the Howard Street Robinson Lecture Tour sponsored by the Geological Association of Canada. In late February, I undertook the Ontario-Quebec leg of the tour. I gave two lectures in Sudbury and Ottawa before heading back ahead of a storm, unfortunately cancelling two lectures in Montreal and Kingston. At both Ottawa and Sudbury, I gave the lecture on the semi-permeable interface model for seafloor replacement-style volcanogenic massive sulphide (VMS) deposits.

Stop 1. Sudbury. It was great to be back at Laurentian University and Sudbury where I spent 6+ years of my career from 2001-2007. Being in Sudbury brought back a flood of fantastic memories. I will always be indebted to my colleagues at Laurentian who gave a young researcher a chance back in 2001 and continue to collaborate with me! Thanks! I gave the talk on February 22 and had a great discussion afterwards about sulfur and metal budgets in VMS, replacement

processes, and exploration. I appreciate the hospitality of my colleagues there especially Elizabeth Turner, my host, as well as Dan Kontak, Phil Thurston, Harold Gibson, Andy McDonald, and Mike Leshner for spending time with me while there.



Stop 2. Ottawa. I gave the replacement talk at the Logan Club of the Geological Survey of Canada on February 23. I have had a long history of collaborative research with the GSC, and it was great to give a talk to a fabulous audience and it was followed by a fantastic question session that dug into the details of replacement processes in VMS systems. I was given a lot of great info and suggestions and appreciate the material to think about. I would like to thank Chris Lawley for being my host and arranging things in Ottawa. I also appreciate those that spent time with me while there, including Jan Peter, Beth McClenaghan, Wayne Goodfellow, Roger Paulen, Jessey Rice, and Tom Skulski. I also thank Tom for the ride to the airport and the chat about Baie Verte! A special shout out to the Ashbury House Bed and Breakfast for their fantastic hospitality; a place worth checking out if you need a neat place to stay in Ottawa.

I had to cancel two of the final stops on the Ontario-Quebec leg in Kingston and Montreal due to weather. I appreciate the organizers in Kingston and Montreal for their patience with me on this and being so understanding. I'll try and get back at a later date. This also clues up the tour except for a talk or two in St. John's on home turf.

Some final statistics for the tour are (St. John's not included in the statistics below):

- Total cities visited: 11
- Total talks given: 18
 - ◊ Replacement talk: 8
 - ◊ Zn-rich VMS talk: 8
 - ◊ Seafloor vents talk: 2
- Total mileage: 22,700 km
- Lost fleece sweaters: 1 (Winnipeg?)
- Lost water bottles: 1 (Pearson Internat'l Airport)

This tour has been fun and I really thank all the people that took the time out to come see my talks and provide feedback and ask great questions; all of the local hosts that were so hospitable; and finally the people at GAC® that made this possible, including Alwynne Beaudoin, GAC® Lecture Tour Coordinator, James Conliffe, GAC® Secretary/Treasurer, and Karen Johnston-Fowler at GAC® headquarters.

Thanks again for this opportunity.

Steve Piercey

Department of Earth Sciences, Memorial University

Posted on: March 3, 2016

stevepiercey.wordpress.com

Two Logan Medal Winners named to the Canadian Mining Hall of Fame

Stewart L. Blusson (Logan Medal 2004) and Harold (Hank) Williams (Logan Medal 1988) were among the five most recent inductees to the Canadian Mining Hall of Fame. Inductions took place at the 28th annual induction ceremony and dinner, which was held at the Royal York Hotel in Toronto in January 14 2016.

The citation recognizes Blusson for his role in "the Lac de Gras diamond discoveries in Canada's North during the early 1990s" and "as an intellectual catalyst for this transformative event, which led to the development of Ekati, Canada's first diamond mine". He is also acknowledged for his philanthropy,

Williams is recognized for his work as "an expert decoder of complex geology and a meticulous map-maker, with a prodigious ability to integrate and synthesize data", especially as exemplified by his 1978 map "Tectonic lithofacies map of the Appalachian orogen". The citation also highlights his role in establishing Memorial University "as a leader in earth science research".

The Hall of Fame recognizes "the legendary mine finders and builders of a great Canadian industry". Biographies of Blusson and Williams, as well as of the more than 160 other inductees, can be found through the Canadian Mining Hall of Fame's website at www.mininghalloffame.ca

GAC®-PDAC Logan Student Prize Winners

Congratulations to the 19 recipients of the second annual *GAC®-PDAC Logan Student Prize*.

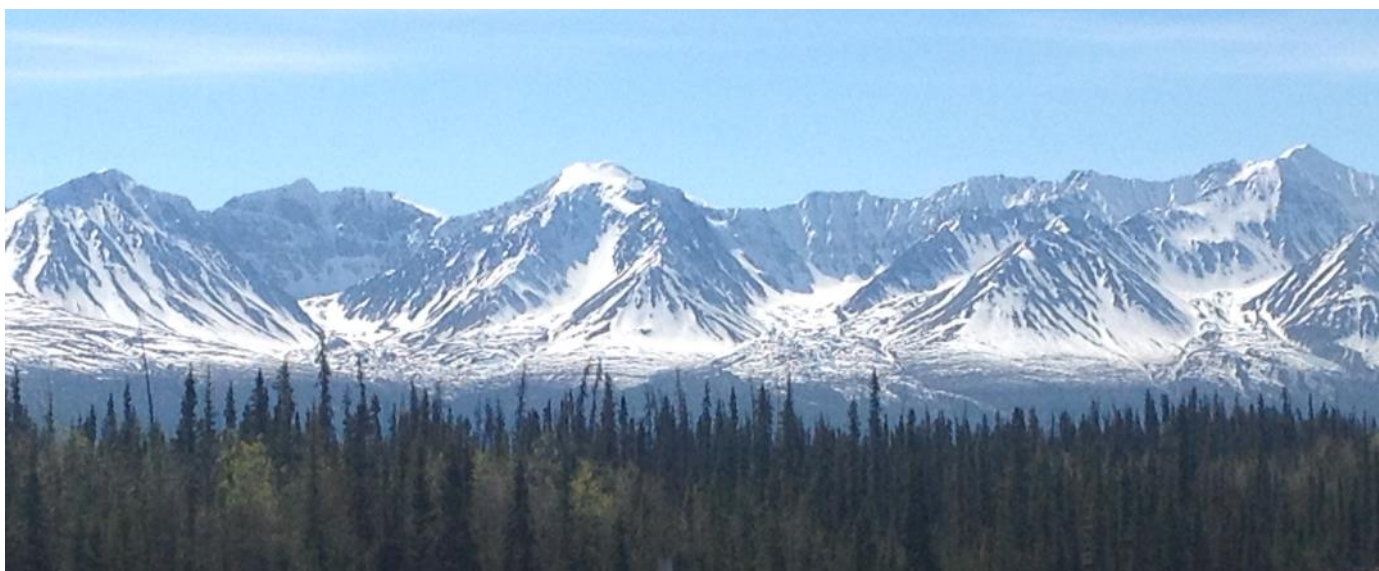
- Alexandra (Alex) Squires, Acadia University
- Sarah Pemberton, Brock University
- Samuel Metteer, Lakehead University
- Philippe Trudel, Laurentian University
- Paul Rakoczy, McGill University
- Supriya Singh, McMaster University
- Stacey Parmenter, Memorial University of Newfoundland
- Nigel Bocking, Queen's University
- Sarah Ellis, Simon Fraser University
- Stephen Bartlett, University of British Columbia
- Kelson Willms, University of British Columbia – Okanagan
- Andrea Morgan, University of Calgary
- Matthew Braun, University of Manitoba
- Britney Laturnus, University of Regina
- Matthew Nadeau, University of Saskatchewan
- Lingeswaren Rama Moorthy, University of Toronto
- Colleen Fish, University of Victoria
- Robin Taves, University of Waterloo
- Amalia Despenic, University of Windsor

The prize is awarded annually to one undergraduate student at each CCCESD-member department. The award has a monetary prize component, a one year



Dr Laurent Godin (R) presenting the GAC®-PDAC Logan Student Award to Nigel Bocking. Nigel is a 4th year B.Sc. Hons student in the Department of Geological Sciences and Geological Engineering at Queen's University. The presentation was made on March 31 in class in front of Nigel's faculty and peers

memberships to both GAC® and PDAC, and recognition in the form of a certificate. The selected students are expected to be academically sound, have good leadership skills (e.g., as they pertain to organizing field trips, geology club geo-events, etc.), and have done well at field school or otherwise show proficiency in field techniques. The prize recognizes students who are leaders and participate in advancing the study and application of geoscience. Students are usually in their final (i.e., graduation) year. For more information, see: www.gac.ca/wp/?page_id=11525



The mountains of Kluane National Park from the Alaska Highway near Haines Junction, southwest Yukon.
For more see www.pc.gc.ca/eng/pn-np/yt/kluane/index.aspx

Announcements

Geoscience Canada now to offer Open Access options

The publishing industry is changing at an amazing pace, and the most obvious shift we have seen is the jump from hardcopy printing to online publication.

Geoscience Canada took this big step a few years ago, and we are now introducing some new initiatives that will allow authors to gain *Open Access* format for their work. Open access means that articles will be accessible to all potential readers immediately, without any need for them to hold an active subscription to the journal. Many other journals have taken this step, and these developments are in part a response to new policies introduced by many research funding agencies, who are increasingly concerned that the results of the work that they sponsor is not always readily available. At the moment, all articles published in *Geoscience Canada* become freely available without subscription two years after their appearance, so we have in a sense always been part of the open access movement. Now, authors will be able to place their work fully in the public domain immediately, or after only one year.

Open Access is a wide topic, and opinions about it are diverse. A more detailed commentary on the topic as a whole appears in the latest issue of *Geoscience Canada*, and no subscription is required to find out more about it at: journals.lib.unb.ca/index.php/GC/article/view/24464/28349. This short note provides a quick summary of what open access is, and some details about our policy.

The open access movement has grown in response to the very high subscription costs that some commercial publishers impose for online personal and institutional access. It has led to the development of *Open Access Journals*, which do not levy subscriptions but instead fund operations by charging authors a processing fee following acceptance of their paper(s). Although such journals do subject contributions to peer review, not everyone is convinced that this process can remain impartial when revenues for a journal are directly linked to the number of papers that it publishes. *Geoscience Canada* has no intention of adopting this more controversial approach, and is fully committed to

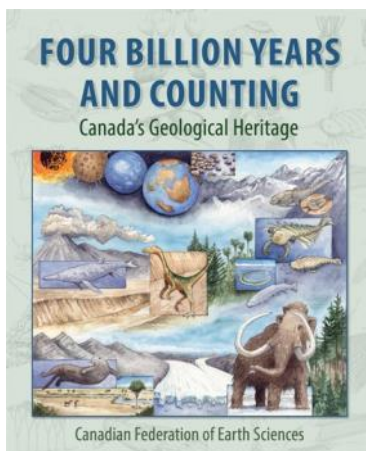
maintaining high standards through an impartial and objective review process. The approach that we are instead taking is modelled after initiatives developed by other non-profit, society-managed journals – we will become a *hybrid journal* in which open access fees will be an option for those who are interested, but will never be a requirement for publication. We do not want to have a situation where authors without institutional funding might not be able to submit papers for financial reasons. We will maintain our existing subscription fee structure, but we recognize that should large numbers of authors opt for open access, it must in the end affect subscription revenue. It remains to be seen how this latest balancing act will work out in the long run – we know that it is a leap into the unknown, but it is something we must do to maintain consistency with other geoscience journals. The fees are comparable to those offered by other journals of our general type, size and format. The formula is simple. If authors want their article to be freely available without any waiting period, the cost is \$1000, plus \$100 per printed journal page; a ten-page article can thus be made instantly available for \$2000. We will also offer a second half-price option based on the new requirements of Canadian funding agencies that research articles become open access after one year; the same ten-page article would cost \$1000 for this option. Once again, I emphasize that these fees are *optional*, and that no author will be required to pay in order to publish in *Geoscience Canada*.

I would be deluded to think that such an initiative will meet with universal approval, but open access is a new reality that we as publishers must respond to. In some respects, open access fees are not so different in magnitude to the “page charges” that many print journals requested to assist with the costs of processing and publishing articles. These two things, however, are not exactly the same, because open access charges give something more tangible in return for supporting the journal – they make research work available all around the world, quickly, easily and instantly. These fees will help support the costs of operating *Geoscience Canada*, but they will also support and enhance the impact and reach of published research.

Andrew Kerr
Scientific Editor, *Geoscience Canada*

Award for FOUR BILLION YEARS

We are very pleased to inform you that the book *Four Billion Years and Counting: Canada's Geological Heritage*, co-published by the Canadian Federation of Earth Sciences and Nimbus Publishing, has won the Association of Earth Science Editors' 2015 Award for Outstanding Publication in the Print category. The announcement was made at the association's 49th annual meeting, held last fall in Lawrence, Kansas.



This award recognizes a recently published earth science publication - book, map, journal, or other individual publication - that demonstrates outstanding editing, design, illustration, writing, effectiveness of production cost, and overall effectiveness in achieving its publication goal.

This is a prestigious and well-deserved award for which there was very stiff competition from other high quality publications. It is a credit to the editors and contributors who worked long and hard to complete the project, and to CFES and its member societies who supported the project in many tangible ways.

We are very proud of the recognition that this award brings and hope that you will share it with your society members who can also be justifiably proud of their involvement in this project. The full announcement will be posted on the CFES website.

Scott Swinden
President

Canadian Federation of Earth Sciences (CFES)

GeoFact: Apr 15 1815: Beginning of the eruption of Tambora volcano, Indonesia, the largest eruption of modern times. The eruption had significant effects on climate in subsequent years; 1816 was so cold in the northern hemisphere that it was called 'the year without a summer'.

RFG 2018

Resources for Future Generations (RFG 2018)

The conference "Resources for Future Generations 2018" will be held in Vancouver, British Columbia, June, 16-21 2018. It is being held under the auspices of the IUGS (International Union of Geological Sciences) and is sponsored and supported by CFES (Canadian Federation of Earth Sciences) representing the Canadian earth science community and its member societies. GAC® is one of three partner organizations in this initiative. The Resources for Future Generations conference (RFG 2018) takes its theme from a new IUGS initiative of the same name designed to mobilize geoscientists, policy-makers and other stakeholders to explore resource and related sustainability issues. The website for the conference has recently gone live at rfg2018.org. We invite you to visit the website and to consider how your society might contribute to and benefit from this conference.

Geological Association of Canada Student Photography Competition

The Geological Association of Canada is pleased to announce the winners of our Student Photography Competition, supported by the Jérôme H. Remick III Endowment Trust Fund.

Awards were given in two categories:

- Landscape photographs displaying Canada's varied scenery from a geological perspective
- Geological photographs showcasing spectacular geological features, such as outcrops, fossils, thin sections, minerals

Congratulations to all our winners, and thanks to our judges who had to make the difficult decision of picking winners from the large number of entries to this year's competition. We hope to make this competition an annual event, so pick up your cameras this summer and get snapping!

For details please see:
www.gac.ca/wp/?page_id=12365



1st - Alain Boudreau (University of British Columbia)
Rich colours fading into the grey ruggedness of the Mackenzie Mountains approximately 200 km NW of the Nááts'ihch'oh National Park Reserve.



2nd – Melissa Anderson (University of Ottawa)
At the end of a long day of fieldwork, we were rewarded by this serene sunset over one of the many lakes that dot the landscape near Yellowknife.



Joint 3rd – Johan Gilchrist (University of British Columbia)
“Evening at Cirque Lake” – Callaghan Reserve, British Columbia. Circular lake formed by a glacier that was protected from the sun on three sides during its last years of melting.



Joint 3rd – David Dockman (University of Alberta)
A view of basaltic sills from across Eureka Sound, Axel Heiberg Island, Nunavut.



1st - Sarah Pemberton (Brock University)
A 1.5m section of the largest cluster of cave pearls. This calcite formation can be found near the end of Hang Son Doong, Vietnam; the largest cave in the world.



2nd – Melissa Anderson (University of Ottawa)
This colorful magma chamber is the only one in the world you can visit, by descending 200m (through a small volcanic neck) below Thrihnukagigur volcano in Iceland.



3rd – Jeffrey Salvador (University of Calgary)
Honeycomb Rock Weathering: At the Yehliu Geopark in Taiwan, the dissolution of marine organism detritus in conjunction with the progressive decomposition of rocks influenced by sea salt has created these magnificent geologic structures.

Howard Street Robinson Fund

The Robinson Fund was established in 1977 by the Geological Association of Canada, using a bequest from the estate of Howard Street Robinson. The fund is dedicated to the furtherance of scientific study of Precambrian Geology and Metal Mining by:

- sponsoring an annual Distinguished Lecturer Tour whose focus alternates between Precambrian research and economic geology (lecturer alternately chosen by the GAC®'s Precambrian and Mineral Deposits divisions)
- supporting Special Projects including publications, symposia and conferences.

Proposals for special projects on Precambrian Geology or Metal Mining should be submitted to the Robinson Fund Committee. Projects should be sponsored or organized through the GAC® or one of its Divisions or Sections. Proposals that have a wide appeal or degree of accessibility to the GAC® membership are preferred.

For further information and proposal submissions, please contact: Patrick Mercier-Langevin, Chair, Robinson Fund, c/o Geological Survey of Canada, 490 rue de la Couronne, Québec G1K 9A9, Tel: 418 654-3101, E-mail: pmercier@nrcan.gc.ca

The Last Word

I thank all contributors to this issue of *GEOLOG* for their contributions. During the summer, if you attend a conference, participate in a workshop, undertake some fieldwork, prepare an intriguing fossil, spot an interesting outcrop, or visit a classic site, please consider taking an image or two and sharing your

observations with your colleagues in geoscience. I'd especially welcome fieldwork photographs and accounts. I'm looking forward to meeting more GAC® colleagues at the upcoming meeting in Whitehorse. Don't be surprised if I buttonhole you at the conference and ask for articles for *GEOLOG*! Alwynne B. Beaudoin, *GEOLOG* Editor

Information for Contributors

Contributions should be submitted by e-mail to Alwynne.Beaudoin@gov.ab.ca, with *GEOLOG* in the subject line. Contributions are welcome in either of Canada's two official languages. MS Word (.doc or .docx) is the preferred format for contribution but generic word processing (.rtf or .txt) files are also fine. Please do not submit PDF files. Up to four hi-res images may be submitted per contribution: preferred format is .jpg, RGB colour, with a minimum 300 dpi resolution at 5" x 3" size. Please ensure that images are cropped and colour-corrected, and provide a caption for each image, and an image credit line if needed. Contributors are responsible for securing permission to publish for any third-party images or images of living recognizable people. Diagrams (vector graphics) may also be submitted. Preferred format for graphics is Adobe Illustrator (.ai); make sure that the file is saved with "save text as lines" option enabled to ensure no font substitutions. Additional information on other file formats can be obtained from the Editor. Please do not embed images or graphics in your text document; images or graphics should be submitted as separate files. In your text, use a call-out in parentheses to indicate the approximate placement of each image and graphic. If files are larger than 10 mb, please contact the Editor for alternate delivery arrangements. Your contribution will be copy-edited to ensure consistent spelling and orthography and to correct any obvious typos or errors. Contributions may also be edited for clarity and length. If the Editor has questions about specific information in the text, she will contact contributors for clarification. Contribution deadlines are March 1, June 1, September 1 and December 1.

Consignes aux auteurs

Les contributions d'auteur doivent être soumises par courriel à Alwynne.Beaudoin@gov.ab.ca, en indiquant *GEOLOG* à la rubrique Objet. Les articles seront acceptés dans l'une des deux langues officielles du Canada. Les fichiers de format MS Word (.doc ou .docx) sont préférables, mais les formats génériques (.rtf ou .txt) sont aussi acceptables. Veuillez ne pas soumettre de fichiers au format PDF. Par article, jusqu'à quatre images haute résolution peuvent être soumises; format préféré est .jpg, couleurs RVB, avec un minimum de 300 PPP en taille 5 po x 3 po. Veuillez vous assurer que les images sont recadrées et leurs couleurs corrigées, qu'elles sont accompagnées d'une légende ainsi que des informations de référence le cas échéant. Il est de la responsabilité des auteurs d'obtenir la permission de publier toute image de tiers ou de personne reconnaissable. Des diagrammes (graphiques vectoriels) peuvent également être soumis. Le format préféré pour les diagrammes est celui d'Adobe Illustrator (.ai); assurez-vous que le fichier est sauvegardé avec l'option « Sauvegarder le texte comme ligne » activée pour éviter toute substitution de police de caractère. On peut obtenir des informations sur d'autres formats de fichiers en communiquant avec l'éditrice. S'il vous plaît ne pas incorporer d'images ou de graphiques dans votre texte; ces images ou graphiques doivent être soumis sous forme de fichiers distincts. Dans votre texte, veuillez utiliser des notes numérotées entre parenthèses pour indiquer l'emplacement approximatif de chaque image et graphique. Dans le cas de fichiers dépassant 10 Mo, veuillez contacter l'éditrice pour convenir des modalités de téléchargement. Vos articles seront révisés afin d'en assurer la cohérence orthographique et corriger les fautes de frappe ou erreurs évidentes. Les articles pourront aussi être corrigés pour plus de clarté et éviter des longueurs. Dans les cas où l'éditrice aurait besoin d'informations particulières concernant le texte, elle communiquera avec les auteurs. Les dates limites pour soumettre des articles sont le 1 mars, le 1 juin, le 1 septembre et le 1 décembre.