

Canadian Federation
of Earth Sciences

The unified voice of Earth Science in Canada

Fédération canadienne
des sciences de la Terre

La voix unifiée des sciences de la terre au Canada

Newsletter no. 13, July 2012

Canada's efforts in promoting and protecting Geoheritage are growing

1. Geoheritage session and fieldtrip at GAC-MAC

(second article on p. 3)

A special session entitled *Preservation of Geological Heritage and its Contribution to Education and Economic Development* was held at the GAC-MAC meeting in St. John's. The session was convened by Amanda McCallum (NL), Godfrey Nowlan (GSC) and Pierre Verpaest (QC). The session saw 18 papers and 1 poster on geoheritage preservation in Ireland, Brazil and several areas of Canada including Newfoundland and Labrador, Nova Scotia, New Brunswick, Northwest Territories and Ontario. The *Geopark model* was examined and elaborated in a number of talks. During a panel discussion on the state of geoheritage protection in Canada panellists dealt with the situation in Ireland (Sophie Preteseille), Brazil (Débora Rios), Nova Scotia (John Calder) and New Brunswick (Randy Miller). The discussion centred on how geoheritage is protected in different jurisdic-

tions and how it is classified and recognized. The discussion also focussed around various modes of possible governance and management. The exchange of thoughts revealed that there are many different models for geoheritage protection, different types of agencies with responsibility for geoheritage, and many areas where geoheritage is not formally recognized. There is clearly scope for a major effort to draw together all the threads in Canada in order to understand the national state of geoheritage protection. The comparative contributions from Ireland and Brazil were especially instructive.

The session was followed by a field trip to the Bonavista Peninsula, an area that is considering applying for Global Geopark status. The participants were exposed to the rich cultural and geological heritage of the region. Wonderful

hospitality was laid on in several communities and an information session was held in the town of Bonavista for local residents and interested parties across the peninsula. There is little doubt that there is spectacular geoheritage in the region based around Ediacaran rocks and fossils and spectacular coastal scenery. It all looked stunning despite the dull, cool weather. The cultural history is equally compelling as the region was the first place Giovanni Caboti and his ship the *Matthew* visited in Newfoundland. The history of the Peninsula is dotted with fascinating cultural sites such as the union town of Port Union and the historic lighthouse in Bonavista. It is hoped that the visit by more than twenty geoscientists will have assisted the local communities in coming together with a letter of intent for a geopark.

Godfrey Nowlan



Dungeon cove, Bonavista Peninsula, NL (photo Godfrey Nowlan)



And..... they're off!

Never mind London: the geo-Olympic race will take place in Brisbane



Mark your Calendar and set your alarm clock: the vote for the IGC Bid will take place on August 9 at 4 pm in Brisbane.

The Canadian Bid for the 2020 International Geological Congress, organized by CFES, has been submitted. You can

download the bid document from www.igc2020.ca.

The bid will be presented during the 34th IGC in Brisbane (www.34igc.org/) by the Canadian delegation, which consists of: **Brian Grey** (ADM, NRCAN), **Donna Kirkwood** (DG, GSC), **Marc D'Iorio** (DG, NRCAN/Energy and IGC2020 president), **Bill Mercer** (chair, bid committee, CFES past president), and **Bill Stiebel** (CFES president).

The bid is a CFES initiative, but it could not have been achieved without the support of NRCAN and of a large number of sponsoring organizations, nor without the work of all committee members and their employers, who allowed them the time to work on this effort.

Canada will be highly visible at the Brisbane Congress with a large 4-sided booth (the Canadian Pavilion), which will be the hub for person-to-person lobbying for the Canadian bid. The pavilion will have one side for display of bid materials, one side for CFES materials and two sides for NRCAN materials. There will be Canadian wine tasting and a daily draw for the entire 'Geologic Journey' DVD set.

The only other bid is by South Asia. The Canadian bid is as good as it can possibly be, so we hope for a positive outcome.

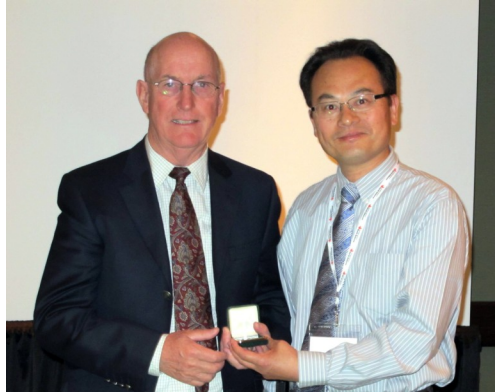


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Otto van Breemen presented with 2012 CFES Mentorship Medal



Otto van Breemen and Shoufa Lin (chair of the CFES Mentorship Medal committee).
Photo by Wouter Bleeker.

Otto van Breemen, recently retired from the Geological Survey of Canada, received the CFES Mentorship Medal from

Shoufa Lin, chair of the CFES Mentorship Medal Committee, during a special session entitled 'The Large Igneous Province Record of North America Through time' at the 2012 GAC-MAC conference in St. John's NL.

The Citation was read by Mike Villeneuve (GSC Colleague), who praised Otto for providing decades-long leadership in radiogenic isotope geochemistry at his lab at the GSC. Many of those who passed through his lab and benefited from his mentorship are now eminent researchers in Canada and elsewhere. In fact, the list of people who have been touched by Otto's guid-

ance reads like a Who's Who of radiogenic isotope geochemistry:

Otto van Breemen completed his BSc and MSc at the University of Alberta and then went on to Leeds for his PhD after which he stayed in the UK for 15 years. He returned to Canada and joined the GSC in 1981 with the objective of revitalizing the Geochronology Laboratory in order to bring particularly the Precambrian geology of Canada into a modern mobilistic framework.

In accepting the medal, Otto thanked his colleagues and reflected on the nature of the 'business of science' (see quotes on the left).

Summarized from the citation and acceptance. See for the complete texts www.geoscience.ca/awards.

*"It is not really possible
to control science as
good science is
achieved by people who
are stubborn and think
outside the box..."*

*"It is important to not
only stick to principles
but also to like science,
which is curiously
forgiving."*

Otto van Breemen

Two assessments from the Council of Canadian Academies

www.scienceadvice.ca

1. (IN PROGRESS) Harnessing Science and Technology to understand the Environmental impacts of Shale Gas extraction.

The Minister of Environment has asked the Council of Canadian Academies to provide an evidence-based and authoritative assessment on the state of knowledge of potential environmental impacts from the exploration, extraction and development of Canada's shale gas resources. The Minister has also asked

the Council to assess the current state of knowledge regarding associated mitigation options.

2. (COMPLETED) Forty Priority Research Questions for Ocean Science in Canada

With the longest coastline on the planet, and bordered by 3 oceans, Canada is acutely aware of the changes and stresses affecting the

world's oceans. A key challenge for Canada's science community is determining research priorities in the field of ocean science.

The 40 questions were grouped in four themes:

1. Improving fundamental scientific understanding,
2. Monitoring, data, and information management,
3. Understanding impacts of human activities,

CanGeoRef

www.cangeoref.org



Only one reference database contains all Canadian geoscience references: CanGeoRef.

There are currently more than 200,000 references in (weekly-

update) CanGeoRef: peer reviewed articles, (chapters) in books, Geological Survey of Canada titles, theses, reports and maps by provincial and territorial surveys.

You can have all this at the tip of your fingers for less than \$100/yr as an individual and only a few hundred dollars for a small to mid-size company. A demo is at www.geoscience.ca/cangeoref



Canada's efforts in promoting and protecting Geoheritage are growing:

2. Global Geopark Conference: from Japan (2012) to Saint John (2014)

The 5th International UNESCO Conference on Geoparks was held in Unzen Volcanic Area Global Geopark in southern Japan (12-15 May), attended by ca. 600 delegates from 31 countries. Presentations and public forums included one on geoparks & tourism and one on geoparks & disasters. There was also an interactive children's forum.

Canada was represented by delegates from Stonehammer Global Geopark and by Godfrey Nowlan, Chair of the CNC Geoparks (a CFES committee). Canada's bid to host the 6th International UNESCO Conference on Geoparks in Saint John in September 2014 was successful!

The conference took place in Shimabara, an area that experienced a volcanic eruption in the early 1990s. This disaster was turned into a Global Geopark in order to bring tourism back

and to educate people about volcanoes. Some buildings damaged by the pyroclastic flows and debris flows are preserved in their damaged state, allowing for public education. A new interpretive centre was built, showcasing a complete stratigraphic record of successive volcanic events and a simulated pyroclastic flow.

Consultations at UNESCO on Global Geoparks

Global Geoparks are supported by UNESCO but are not a formal program like World Heritage Sites or the Man & Biosphere Programme. This summer, consultations are taking place at UNESCO to obtain opinions regarding a formal UNESCO Geoparks Programme. The current financial situation at UNESCO would not allow funding for such a program, but it has been such a success with 88 Global Geoparks estab-

lished in 27 countries, that there is a desire to formalize the program. The UNESCO Secretariat is consulting with Members States to find ways to improve cooperation between UNESCO and the Global Geoparks Network. Meetings took place on 8 June 2012 in Paris and will be followed by further consultations with a target date for a UNESCO decision in 2013.

Godfrey Nowlan, chair CNC for Geoparks



Shimabara Peninsula and Unzen volcano (<http://en.globalgeopark.org/aboutGNN/list/Japan/6481.htm>)

IAH International Congress, Niagara on the Lake, Sept 16-21

"Confronting Global Change" is the motto of the 2012 IAH International Congress, which has attracted a *record number of abstracts and delegates* to beautiful Niagara Falls.

Themes to be addressed are a.o. Energy & Climate Change, Groundwater Resource Analysis & Management, Groundwater/Surface Water Interaction, Groundwater Quality, Karst Hydrogeology. See www.iah2012.org

IUGS Rio+20 position

The goal of the Rio+20 UN Conference on Sustainable Development was to bring together governments, international institutions and NGOs to shape how to reduce poverty, advance social equity and ensure environmental protection on an ever more crowded planet. The IUGS released a position statement on Rio+20 noting that their goals are in agreement: http://iugs.org/uploads/Rio+20_IUGS_2.pdf

Chris Burn becomes CFES representative for PAGSE

Chris Burn, NSERC Northern Research Chair at Carleton University's Department of Geography and Environmental Studies, will become the new CFES Representative at PAGSE. He will start his duties this Fall.

Chris is a well-known and prolific Quaternary Arctic researcher who also recently published a [book on Herschel Island/Qikiqtaryuk](#)

Shortly before this Newsletter was to be released we were notified that Raymond Price, em. professor of Queen's University, was awarded the 2012 GSA Penrose Medal. The Penrose Medal, established in 1927 by R.A.F. Penrose Jr., recognizes outstanding original contributions that mark a major advance in the science of geology.

Supporting nominator Ron Clowes (UBC) stated "Ray Price is the undisputed authority on the origin & evolution of the Canadian Rockies"

Congratulations from the entire Canadian Earth Science Community!



advancements and state-of-the-art in landslide research and practice from around the globe.

Social events included the ice breaker reception, a Western BBQ, poster session, and awards luncheon. The awards included the Schuster Medal to American Derek Cornfoth and the Hans Cloos Medal to Russian Victor Ivosipov)

Roughly 430 delegates from 39 countries attended the Symposium. One short course, four mid-conference field trips, and a successful post conference trip to Turtle Mountain were attended. Turtle Mountain witnessed Canada's worst landslide disaster in 1903 killing at least 76 people. (also known as the Frank Slide in Frank Alberta).

Andree Blais-Stevens

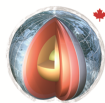


The Canadian Geotechnical Society, the Association of Environmental and Engineering Geologists and the Joint Technical Committee on Landslides (JTC-1) hosted the 11th International Symposium on Landslides (ISL) and the 2nd North American Symposium on Landslides at the Banff Springs Hotel from June 2-8. The theme of the meeting was **Landslides and Engineered Slopes: Protecting Society through Improved Understanding.**

Located in Banff National Park, the conference was set in the heart of the

Canadian Rocky Mountains and provided a stunning venue for the international landslide community to convene and share. This location was ideally situated to stage a series of pre-, post- and mid-conference field trips to provide delegates with a taste of the culture, geology and landslide issues of Western Canada and the Rocky Mountains.

The local technical committee, in partnership with the international advisory panel, developed a program of sessions and plenary lectures to highlight the



The CFES Newsletter is published four times per year in January, April, July & October. It is written and compiled by Elisabeth Kosters, CFES executive manager, unless otherwise indicated.

We welcome contributions!

Send submissions to
ekosters_cfes@magma.ca

All Newsletters are posted on
www.geoscience.ca/news

Subscribe to our twitter feed!

The CFES Twitterer follows 56 geoscience organizations and individuals. Their tweets alert us to important articles, reports and events

In addition to tweeting about CFES activities, we are thus also able to report on many topics relevant to all Canadian geoscientists. We will tweet the IGC2020 vote!

Click [here](https://twitter.com/ECKosters) and you'll find all our tweets and can decide about following us (<https://twitter.com/ECKosters>)

Some of the alerts you missed if you don't follow us:

[Will the shale gas boom lead to millions of new jobs?](#)

[BP Global Energy Statistics released](#)

[Chevron Canada and RDC/NL announce new academic chair at MUN](#)

[Did ancient granites make early life possible?](#)

[Estimated world supply of global earth resources estimated](#)

[Send your child to a summer camp at Science North in Sudbury](#)

[Superb video on estimated Sea Level Rise for the coasts of California, Oregon and Washington](#) - necessary: extend to BC!

[Many tweets about the Goldschmidt Conference in Montreal](#)

[A new global compilation of global ocean salinity variations](#)

[Almost live stream video alerts from IODP, currently in the North Atlantic](#)

[A new YouTube channel about women and careers in STEM](#)

CALENDAR

Canadian Earth Science events: www.gac.ca/activities/calendar.php

International Earth Science calendars: www.aqiweb.org/calendar/index.php and
<http://iugs.org/index.php?page=calendar>

CANADIAN CONFERENCES

See also www.geoscience.ca/calendars

2012

IAH International Congress, Niagara Falls, ON,
Sept 16-23, www.iah2012.org

Canadian Geotechnical Society, GeoManitoba
2012, Sept 30 - Oct 3, Winnipeg, MB,
www.cgs2012.ca

International Conference on Geological
Repositories, Sept 30-Oct 3, Toronto <http://icgr2012.org/home.php>

CCCESD Annual Meeting, October 24-25, Ottawa.
[www.http://cccesd.acadiau.ca/](http://cccesd.acadiau.ca/)

CFES/FCST Council Meeting, Ottawa, Oct. 26-28.
www.geoscience.ca/cfes@magma.ca

2013

Atlantic Geoscience Society Annual Colloquium,
Feb 1-2, Dartmouth, NS, <http://ags.earthsciences.dal.ca/ags.php>

Prospectors and Developers Association of
Canada Convention, March 3-6, Toronto,
www.pdac.ca

Canadian Institute Mining, Metallurgy and
Petroleum Convention, May 5-8, Toronto,
www.cim.org

CSPG, CSEG, CWLS, Joint Annual Convention May
6-10, Calgary

Geological Association of Canada - Mineralogical
Association of Canada, May 22-24, Winnipeg,
gacmacwinnipeg2013.ca/

Canadian Association of Geographers, August, St.
John's, NL

Member Society Portrait:



The Chairs of university geoscience departments in Canada form the "Council of Chairs of Canadian Earth Science Departments/Conference des Directeurs de Départements de Géologie du Canada", usually referred to as CCCESD. The term *department* includes departments, schools, institutes, or centres that have distinct and separate administrative status. Members range from one-yr programs used as geoscience electives to departments with dozens of professors and a hundred or more graduate students. The objectives of CCCESD are to foster, coordinate, and promote education, training, and research in the earth sciences with particular emphasis on the needs, activities, and mandate of the earth science departments in Canadian universities. The members meet annually in the Fall in Ottawa

CCCESD began in 1974 as a result of a meeting of Heads of Canadian Geology Departments, convened by W. Tupper at that year's GAC/MAC in St. John's. For its first ten years, the group was rather loosely contained as a group of department heads struggling with similar issues: the need for more research funding, perceived underrepresentation on the allocation committee of the NRC, the problem that support for Canadian research was falling behind that of other countries, and a need for

Council of Chairs of Canadian Earth Science Departments



better statistical information about the geoscience education scene in Canada. Many of these issues seem surprising current in 2012!

CCCESD was formalized in 1985. The impetus was the Geological Survey of Canada which, as part of its HR planning mandate for the solid earth sciences, wanted to know what was in the pipeline which could match the expected national and provincial needs and, if necessary by special grants, encourage interest in areas where there was an expected deficiency. To collect these data the GSC agreed to support the Council financially but since it could only give grants to legal organizations, CCCESD quickly became formalized. The executive consists of the chair and a representative from each of the West, Quebec, Ontario and the Atlantic provinces. Currently 38 departments from 36 institutions participate in the Council.

As part of its mandate CCCESD took a number of initiatives. One of the earliest was the Jan. 1981 workshop "Next decade of Earth Sciences in Canadian Universities" where the idea of LITHOPROBE was first suggested. Endless meetings about professional registration culminated in an Extraordinary General Meeting (1985) where 22 attendees agreed unanimously to an Official Position on the Licensing and Registration of Individual Geoscientists (*Geolog* 1986 v15 Part 4, pp.39-43). Representations have been made to a.o. NSERC about the withdrawal of support for universities in key areas of national interest (e.g.

loss of ship time on DFO ships).

One of the major tasks of CCCESD is to maintain a statistical collection of the numbers of students (BSc, MSc, PhD) and professionals (professors, post-doctoral researchers, technical and support staff) and this has led to the recognition of the well-known boom-and-bust cycles in geoscience education. The data are maintained at <http://cccesd.acadiau.ca> – in 2011 Canada graduated nearly 800 students with BSc degrees in Geology, Geophysics or Geological Engineering, with close to 4000 students enrolled in Geology programs (loosely defined). An interesting trend has been the dramatic increase in the numbers of students taking elective courses in Geology – up from 10,000 a year in the early 1990s to over 40,000 a year today. Although faculty numbers have not changed so dramatically (circa 450 in the 1970s to circa 550 today), the number of support staff has steadily declined since the 1980s such that the ratio of support staff to faculty has dropped from about 0.85 to about 0.45.

CCCESD is unique in CFES in that its membership is particularly exclusive: its 38 members are all department heads, but its constituency is arguably the widest with potentially over 50,000 people who take, give, or provide support for all the university geoscience education in the country.

Rob Raeside, Secretary
Acadia University

