

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. 9

## NEW FACES ON CFES/FCST BOARD OF DIRECTORS

The CFES/FCST Board of Directors has a couple of new faces. At the council meeting in Calgary, we said goodbye to International Director Peter Bobrowsky, who served one three-year term. The Board thanks him for his contributions in this role and wishes him good luck as president-elect and subsequently president of the Geological Association of Canada. Peter was succeeded by Andrée Blais-Stevens of the Geological Survey of Canada. Andrée is a research scientist in the Natural Hazards team in Ottawa.

The Canadian Association of Geographers (CAG) nominated Mary-Louise Byrne, who is at the Dept. of Geography and Environmental Studies of Wilfred Laurier University in Waterloo as Director for CFES. Mary-Louise has extensive experience serving CAG, much of which as their treasurer and she has agreed to serve as CFES treasurer-elect.

The president of the Canadian Geoscience Education Network (CGEN) also serves as the CFES Outreach director. The CGEN presidency is a two-year term and changes at its AGM, held at the GAC-MAC convention. Godfrey

Nowlan has served in this role from 2009-2011. CGEN elected Charly Bank of the University of Toronto as its new president in May and CFES welcomes Charly as its new outreach director. However, Godfrey Nowlan also served as technical chair of the Canadian National Committee for the International Year of Planet Earth (CNC-IYPE) and in that role he also heads the CNC-IYPE legacy (a CFES responsibility since the closing of IYPE). In addition, Godfrey serves as chair of the Canadian National Committee for Geoparks. We are very pleased that Godfrey has agreed to stay on as director for Geoparks and CNC-IYPE legacy.

These are the faces of the Board:



Bill Stiebel, President  
(Stantec, Mississauga)



Bill Mercer, past president  
(Avalon Rare Metals, Toronto). Bill Mercer chairs the IGC2020 Bid Committee



Patrick Ryall, treasurer  
(Dalhousie University, Halifax)



Carolyn Relf, Director for  
CanGeoRef (Yukon Geological Survey, Whitehorse)



Godfrey Nowlan, director  
for CNC-IYPE Legacy and  
for Geoparks (GSC Calgary)



Mary-Louise Byrne, treasurer-elect  
(Wilfred Laurier Univ, Waterloo)



Andrée Blais-Stevens,  
International Director (GSC  
Ottawa)



Charly Bank, Outreach  
director (Univ of Toronto)



Office: Elisabeth Kusters,  
executive manager  
(Wolfville, NS)

**CFES/FCST IS A FEDERATION OF FOURTEEN CANADIAN MEMBER SOCIETIES IN THE EARTH SCIENCES.**

**CFES/FCST REPRESENTS CA. 20,000 CANADIAN EARTH SCIENTISTS, LARGELY IN THE THREE MAJOR INDUSTRY GROUPS (HYDROCARBONS, MINERALS, ENVIRONMENTAL/GEOTECHNICAL), GOVERNMENT AND ACADEMIA.**



**Nearly 200,000 references are already uploaded in CanGeoRef.**

CanGeoRef will be a subset of GeoRef ([agiweb.org/georef](http://agiweb.org/georef)), the earth science literature database built and maintained by the American Geological Institute (AGI). GeoRef has about 3 million references.

The Provinces and Territories and their clients stand to benefit most from CanGeoRef, because it is estimated that less than half of their total references are in GeoRef

and most of these are more than 15 years old. Alberta, Ontario, Manitoba and Newfoundland/Labrador were the first provinces for which missing references are entered into CanGeoRef. At this point in time, AB and MB are completed (including mineral assessment reports of AB) and ON (a huge set of about 17,000 references) will be completed before we launch the database in the Fall of 2011.

AGI and CFES recently hosted a webinar on CanGeoRef for

information specialists from provincial and territorial surveys. CFES will organize CanGeoRef launch events at the Open Houses of the Geological Surveys in the Fall.

A subscription to CanGeoRef will be significantly cheaper than a subscription to GeoRef, thus making it affordable for smaller companies and individual consultants. Subscribers to GeoRef will automatically have a subscription to the updated CanGeoRef literature database.

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## The next generation Earth Scientists

In our previous Newsletter, we wrote about Future Generations. We quoted an article by the Project Management Institute, in which trends in values of different generations were explored and we highlighted projects on mentoring and integration of various Canadian organizations

The Council of Chairs of Canadian Earth Science Departments (<http://cccesd.acadiav.ca>) is a member organization of CFES. CCCESD collects statistics of earth science programs across the country. The full set of statistics can be found on their website. We show here two figures and encourage you to investigate all.

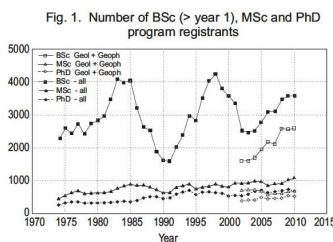


Figure 1 shows the cyclicity of enrolment in Canadian Earth Science programs over the last 40 years. It appears that the recent increase in enrolment, which began in 2003, is already leveling off. If this trend becomes a reality, we have an even bigger problem than we thought, because the large number of imminent retirees cannot easily be replaced.

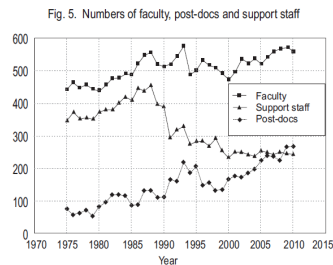


Figure 5 clearly indicates a shift in financial sources: universities are the source of funding for most support staff, whereas most post-docs are funded externally.

A big question is therefore: what motivates undergraduates to choose Earth Science as their major? Recent research by H. Houlton, summarized by AGI in Geoscience Currents no. 45 ([www.agiweb.org/workforce/currents.html](http://www.agiweb.org/workforce/currents.html)), shows what we have suspected all along: the choice is determined by a complex set of factors. Houlton has come up with several possible pathways that lead to an eventual career choice: Intrinsic interest (as fueled in early youth) lead someone to decide on a major in university, but critical incidents (supportive or non-supportive) during those undergraduate years influence whether the student remains faithful to that choice. If, subsequently, goals, career attributes coincide and desired career choices line up, the student may stick to its choice. Food for thought for recruiters!

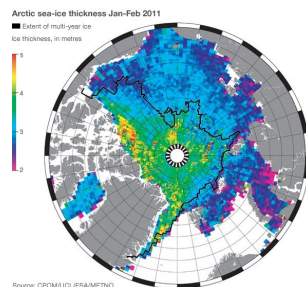
### Pathway Steps

- Innate Attributes/Interest Sources
- Pre-College Critical Incidents
- College Critical Incidents
- Current or Near Future Goals
- Expected Career Attributes
- Desired Career Choices



The YES Network (Global Network of Young Earth Scientists) has a Canadian Chapter in the making. Sign up as a member, also if you are older than 35! The latest YES Newsletter is at [www.geoscience.ca/hr](http://www.geoscience.ca/hr)

## ARCTIC ICE DECLINE



"The observed changes in sea ice on the Arctic Ocean and in the mass of the Greenland Ice Sheet and Arctic ice caps and glaciers over the past ten years are dramatic

## latest information and new data

and represent an obvious departure from the long-term patterns". This is the opening sentence of the latest report on Snow, Water, Ice and Permafrost in the Arctic, published by the Arctic Monitoring Program (a program of the Arctic Council, of which Canada is a member). [www.amap.no/swipa/](http://www.amap.no/swipa/)

Exactly quantification of the thickness and extent of Arctic ice has been very difficult to date. Cryosat-2 was launched in 2010 by the European Space Agency ESA. Scientists from the Centre for Polar Observation and Modeling (CPOM) in the UK and ESA

have been able to turn its data into ice cover maps.

The sea-ice thickness map shown here is based on data from January and February 2011. It shows thicker, rough, multi-year ice north of Canada and Greenland, stretching to the North Pole and slightly beyond. In large parts of the Arctic the map reveals thinner, first year ice. The black line marks the boundary between the first year and multi-year ice. This was the first time ice thickness was measured over the entire Arctic ice pack.

[www.cpom.org/news.html](http://www.cpom.org/news.html)

## RECOGNITION FOR STONEHAMMER ADVOCATE RANDY MILLER



**Dr. Randall Miller** (above) is curator of geology at the New Brunswick Museum in Saint John, NB. At the GAC-MAC Convention in Ottawa in May of this year, Randy was awarded the GAC's Ward Neal medal

"for sustained efforts in sharing earth science with Canadians", not only for his many years of promoting, explaining and illustrating the fascinating geology of New Brunswick, but especially for his tireless and long-time efforts towards what is now Stonehammer Geopark, the first Global Geopark in North America ([www.stonehammergeopark.com](http://www.stonehammergeopark.com)).

The Canadian National Committee for Geoparks is a committee of CFES/FCST. The committee helps communities to develop geoparks and the final vetting at National level (prior to a geopark proposal

being submitted to the Global Geoparks Network) is also the responsibility of this committee ([www.geoscience.ca/geoparks](http://www.geoscience.ca/geoparks)). CFES/FCST sends heartfelt congratulations to Randy for this much deserved recognition. Member association AGS awarded Randy with its highest honour, the Gesner medal, in 2010

The GAC awarded its Yves Fortier Earth Science Journalism award to Hilary Page and Karissa Donkin, two journalism students of St. Thomas University in Fredericton (NB) for their coverage of the Stonehammer Geopark process.



## IGC2020 BID COMMITTEE—PROGRESS

Work on the bid to host the IGC2020 congress in Canada is progressing. We have received endorsements from many important organizations and significant sponsorship towards our goal. The website for the Congress bid will go up very soon! Watch for news on the CFES/FCST website (better: subscribe to the RSS Feed). As we reported in our previous Newsletter, the congress venue will Vancouver.

The IGC selection committee must be informed in October of this year about the intent of each potential bid. The IGC Congress delegates will vote on the competing bids at the IGC Congress in Brisbane in August of 2012.

The Bid committee is chaired by CFES

past president Bill Mercer. Secretary is Peter Bobrowsky. CFES President Bill Stiebel is also a member of the bid committee and CFES executive manager Elisabeth Kusters is an ex-officio member. The other bid committee members are the chairs of the various subcommittees:

**Finance:** Bill Mercer

**Communications:** Godfrey Nowlan (GSC Calgary)

**Geology text:** Bob Schafer (BHP Billiton)

**Cultural and Social events:** Dave Huntley (GSC Calgary)

**Technical Program:** Jim Teller (University of Manitoba)

**North American Coordinator:** Andrew Stumpf (Illinois Geological Survey)

**Fieldtrips:** Alan Morgan (Waterloo Univ)

**Bid Document:** Dave Huntley and Peter Bobrowsky (GSC Ottawa)

**Logistics:** Garth Kirkham (Lomiko Metals, Vancouver)

**Congress Venue:** Debbie Hensbee and Bob Schafer (BHP Billiton)

**Video:** Lisa MacDonald (PDAC)

**If you want to contribute to this effort, do contact CFES at [cfes@magma.ca](mailto:cfes@magma.ca)**

**On June 28, the Canadian Science, Technology and Innovation Council ([www.stic-csti.ca](http://www.stic-csti.ca)) released a major report on the state of Canada's Science, Technology and Innovation system.**

The report (**State of the Nation 2010**) shows that Canada's *strengths* are a strong talent pool and a robust public research capacity. Canada's *two main challenges* are to increase private sector investment in innovation and to improve Canada's capacity to transfer knowledge to markets.

Particularly, Canada must increase Gross Domestic Expenditure on R&D (GERD), which lags behind that of the G7 and other leading innovators and has been declining since 2006.

Business financing of R&D performed by universities has grown substantially but there is insufficient insight in knowledge transfer to the business sector. STIC/CSTI advises to improve collaboration between public and private sectors.

STIC./CSTI is chaired by Dr. Howard Alper.



**Canada's National Network of Natural History Museums** has produced a National Collections Development Strategy that will help safeguard the integrity of Canada's Natural History Collections and encourage collaboration in documenting the country's biodiversity. There are nearly 20 million specimens in these museums, about 1/3 of Canada's total collection. ANHMC is an observer organization of CFES/FCST.

[www.naturalhistorymuseums.ca](http://www.naturalhistorymuseums.ca)



In May of this year, CFES/FCST became an affiliate member of the International Union of Geosciences / IUGS. The International Geological Congress resorts under IUGS.

## ALBERTA'S FUTURE—even without oil?

Alberta continues to surprise. The province issued two major reports within a week from each other.

**1.** The first report, 'Shaping Alberta's Future', was issued by the Alberta Premier's Council for Economic Strategy, chaired by former Federal Trades Minister David Emerson ([www.premier.alberta.ca](http://www.premier.alberta.ca)).

The report states that, whereas Alberta's economy currently largely depends on the sale of fossil fuels to the US and whereas Alberta's resources are massive and not in danger of running out, the sole dependency on this industry makes the province economically vulnerable. The vulnerability

is partly due to the fact that heavy oil is becoming increasingly unpopular and that rapid technological developments and political will shall eventually move society away from a fossil fuel-based economy.

And thus, the council advises, Alberta would do well to be ahead of that situation and envision and invest in an entirely different economy. The panel advises the province to radically change its tax system and to invest in 5 flagship initiatives to help enable it to transform its economy: energy, advanced technology, aboriginal youth, water and a 'shaping the future' fund. This latter fund should ensure that money produced by converting non-

renewable assets today is invested to secure prosperity for future Albertans.

**2.** The second report was released by Alberta's environment minister Rob Renner, who thus followed up quickly with his promise on establishing proper environmental monitoring of oil sands extraction. [www.environmentalberta.ca](http://www.environmentalberta.ca)

The expert panel, chaired by Hal Kvisle, formulated twenty recommendations, most importantly to completely overhaul the current system to arrive at one that is grounded in rigorous science, but yet incorporates traditional knowledge and is publically accessible.



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## ON THE WEB

### International

**International Union of Geosciences** [www.iugs.org](http://www.iugs.org). Subscribe to its monthly newsletter through this link.

The Network of **Young Earth Scientists**: [www.networkyes.org](http://www.networkyes.org). A Canadian chapter is in the works. See elsewhere in this Newsletter

**International Geological Congress 2012**, Brisbane. The Second Circular and the Scientific Program have been released. [www.34igc.org/](http://www.34igc.org/)

The **American Geological Institute** has published its report on the Status of the Geoscience workforce. The report can be purchased for \$10.- from [www.agiweb.org/workforce](http://www.agiweb.org/workforce)

### Canada

**Partnership Group for Science and Engineering**: [www.pagse.org](http://www.pagse.org)    **Science Media Centre of Canada**: [www.sciencemediacentre.ca](http://www.sciencemediacentre.ca)

**Council of Canadian Academies**: [www.scienceadvice.ca](http://www.scienceadvice.ca); **Canadian Science Policy**: <http://sciencecanada.blogspot.com/> and <http://sciencepolicy.ca/>.  
Science, Technology and Innovation Council of Canada: [www.stic-csti.ca](http://www.stic-csti.ca).

Recent news from the **Mining Industry Human Resources Council** is at [www.mihrc.ca/en/news/MiHR\\_eneews\\_Nov2010.asp](http://www.mihrc.ca/en/news/MiHR_eneews_Nov2010.asp) and from the **Petroleum Industry Human Resources Council** at [www.petrohrsc.ca/homepage.aspx](http://www.petrohrsc.ca/homepage.aspx)

**Member Associations of CFES/FCST**: [www.geoscience.ca/about](http://www.geoscience.ca/about) and click on 'member associations'.

[www.geoscience.ca](http://www.geoscience.ca)

Subscribe to RSS feed!

## CALENDARS

Canadian Earth Science events: [www.gac.ca/activities/calendar.php](http://www.gac.ca/activities/calendar.php)

International Earth Science calendars:  
[www.agiweb.org/calendar/index.php](http://www.agiweb.org/calendar/index.php)  
<http://iugs.org/index.php?page=calendar>

### CANADIAN CONFERENCES

See for a more complete calendar  
[www.geoscience.ca/calendar](http://www.geoscience.ca/calendar)

### 2011

**21st Canadian Paleontology Conference**,  
August 19-22, Vancouver, BC,  
<http://132.156.108.208/cpc/index.htm>

**CNC-IAH and CanQua**, August 28-31,  
Quebec City – <http://geohydro2011.ca>

**CGS**, October 2-6, 2011, <http://panam-cgc2011.ca/index.php?lang=en>

### 2012

**Mineral Exploration Roundup**, Vancouver,  
BC, January 22-24, [www.amebc.ca/roundup/Overview-2012.aspx](http://www.amebc.ca/roundup/Overview-2012.aspx)

**4th International Professional Geoscientist Conference**, Vancouver, BC, January 22-24,  
[www.ccpge.ca/main/en/images/4792%20CCPG%20Conf%20Flyer.English.HR.jpg](http://www.ccpge.ca/main/en/images/4792%20CCPG%20Conf%20Flyer.English.HR.jpg)

**International Polar Year Convention**,  
Montreal, QC, April 22-27,  
[www.ipy2012montreal.ca](http://www.ipy2012montreal.ca)

**GAC-MAC convention**, May 27-29, St  
John's, NL, [www.gac.ca](http://www.gac.ca)

## MEMBER SOCIETY PORTRAIT



[www.gac.ca](http://www.gac.ca)

The Geological Association of Canada was born of the need to promote and develop the geological sciences in Canada. This has been the associations role since its inception in 1947, and while the recent restatement of the mission of the GAC (*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*) hints at some of the changes that have taken place since 1947, it also serves to confirm our unchanging number one priority: the science of geology.

What has changed? Geology has changed, so much so that the term Geoscience and Earth Science are commonly used both as synonyms for geology, but also as a way of expressing the expanded scope of geology. As in 1947, a huge compo-

ment of geology is practical, involving the exploration for, and extraction of mineral resources and hydrocarbons. However, it is also true that changes wrought both by Plate Tectonic and technological revolutions have been responsible for a massive broadening of the scope of geology, in which the solid earth is viewed now as but a part of the broader Earth System, encompassing the biosphere, hydrosphere and atmosphere. As a result, the Annual Conventions of the GAC now include sessions on climate change, discussions of ocean observatories, and workshops on planetary geology.

Ironically, both the future of the GAC and the challenge to its continued relevance therefore lies in continuing to serve and facilitate the practical application of Earth Science, for that is where Canada's prosperity and health is to be found, while also addressing the substantial challenges, including anthropogenically induced changes to the Earth System, that face us as a society, a country and a planet.

*Stephen T. Johnston, Past President GAC*

Photo: GAC council meeting, 1984.

