

GeoGazette

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APGNS Members Recognized as Fellows of Geoscientists Canada at Geology Matters Conference

A ceremony was held at the 37th annual Geology Matters Conference in November to recognize sixteen members of Geoscientists Nova Scotia as Fellows of Geoscientists Canada. These individuals were inducted as Fellows at the June 1, 2013 meeting of Geoscientists Canada. The Nova Scotia Minister of Natural Resources, Zach Churchill, was on hand to help present the honours. A complete list of the Fellows is provided below the photo.

Geology Matters, a two day conference, held at the Westin Hotel in Halifax, provided a full program of professional development opportunities, including a short course on National Instrument 43-101, which was co-sponsored by Geoscientists Nova Scotia. The course was delivered by Craig Waldie, P.Geo, Senior Geologist, Compliance Review of the Ontario Securities Commission.

A special meeting of APGNS members was also held

during the conference to vote on the proposed *Geoscience Profession Act* and Regulations. The vote carried at the meeting and efforts are underway to finalize the new Act and Regulations. A proposed framework for Continuing Professional Development and Competency Assurance Program was also presented to members during the special meeting. Other opportunities to present this framework to members will be sought throughout 2014 before the Program is implemented beginning in 2015.



Back Row: Mark King, PhD, P.Geo, FGC; Pat Ryall, PhD, P.Geo, FGC; Paul LaFleche, PhD, P.Geo, FGC; Fred Bonner, P.Geo, FGC; Andy Cameron, P.Geo, FGC.

Second Row: Howard Donohoe, PhD, P.Geo, FGC; Bev Smith, P.Geo, FGC; Hon. Zach Churchill, Minister of Natural Resources; David Carter, P.Geo, FGC.

Front Row: Jeff Parks, P.Geo, President; Theresa Rushton, P.Geo, FGC; Heather Cross, P.Geo, FGC; Gavin Kennedy, P.Geo, FGC; Gordon Check, P.Geo, FGC.

Missing: Jim Fraser, P.Geo, FGC; Scott Llewellyn, P.Geo, FGC; Cliff Stanley, PhD, P.Geo, FGC; Chrystal Kennedy, P.Geo, FGC.

Geoscience Professional Practice Guideline: Nova Scotia Environment – Geoscientists Nova Scotia Joint Project



Nova Scotia Environment (NSE) is pleased to be involved in a collaborative project with the Association of Professional Geoscientists (APGNS). A Project Steering Committee with representation from APGNS, Engineers Nova Scotia (APENS) and NSE has been struck to oversee the development of a professional practice guideline / standard of practice (SOP) for conducting environmental investigations (Phase 1 and Phase 2 ESA) under the province's new Contaminated Sites Regulations. This collaborative project will

result in an APGNS Professional Practice Guideline that will facilitate the implementation of the Contaminated Sites Regulations. It is also intended to solicit support from environmental Site Professionals working in Nova Scotia through review and consultation. As a representative of the Project Steering Committee, NSE looks forward to on-going consultation with and feedback from practitioners and stakeholders on this project.

In other news, NSE continues to evaluate and improve the forms and checklists that must, under the Contaminated Sites Regulations, be submitted to the Department by site professionals. Several forms and checklists were updated on November 8, 2013. The changes made relate to the following three documents:

1. Confirmation of Remediation Checklist (CHK 700)
2. Record of Site Condition (FRM 700)
3. Declaration of Property Condition (FRM701)

The changes allow reports and work conducted by Site Professionals prior to the implementation of the regulations (July 6, 2013) to be recognized under the regulations as long as the information meets the intentions and requirements of the regulations and is accompanied by the appropriate checklists, completed by the Site Professional.

Site Professionals should check the NSE website frequently for the most up-to-date versions of checklists and forms. Please visit: www.novascotia.ca/nse/contaminatedsites/protocols.asp

Paul Currie
Senior Contaminated Sites Specialist
Nova Scotia Environment

Compensation Survey Results

Geoscientists Nova Scotia participated in the 2013 Compensation and Benefits Survey, which was undertaken in cooperation with the Association of Professional Geoscientists of Ontario and the Ordre des Géologues du Québec.

The survey represents the first time that the members of all of the geology-only professional associations in Canada have been polled. The highest survey response rate was from Nova Scotia (approximately 40%). The study is designed to provide geoscientists in the three participating provinces with industry standard guidelines for compensation and benefits available to them. The report is also useful for recruitment and for students who are considering geoscience as a career.

The survey found that, based on 71 responses, approximately 46% of Nova Scotia's professional geoscientists work in private practice, 30% work in the private sector and 24% work in the public sector.

The full report is available here:

<http://www.geoscientistsns.ca/LinkClick.aspx?fileticket=a78F4wCtDe0%3d&tabid=40>

Notice of Annual General Meeting

All members of Geoscientists Nova Scotia are requested to attend the Annual General Meeting of the Association and Luncheon on

Friday, March 28, 2014

1100 am to 115 pm

Great Hall, Dalhousie University Club

Luncheon Speaker: Matt Hall, Agile Geoscience
Editor of "52 Things You Should Know About Geology"

Several activities are planned for the day

Communications Policy Roundtable 9:30 to 11:00 am

Annual General Meeting 11:00 am to 12:00 pm

Luncheon and Guest Speaker 12:00 –1:15 pm

APGNS Continuing Professional Development Presentation 1:30-2:00 pm

Panel Discussion: NSE Contaminated Sites Regulations 2:00-4:00 pm

More details will be sent out by email

Nominations Report

The Nominations Committee of Geoscientists Nova Scotia is pleased to announce the positions for Executive and Council for 2014. In accordance with the Association by-laws and Council approved directives with respect to annual elections, the committee was tasked with identifying candidates for President, Vice-President, and three Councillors. A Call for Nominations was made to the membership on November 5, 2013. Nominations were closed on December 11, 2013. No nominations were received from the membership. Since the Committee provided a full slate of candidates (one for each position) and no further nominations were forthcoming, the **2014 Council-elect** and their terms of office are...

President	Scott McCarthy, P.Geo	2014		
Vice President	Paul Batson, P.Geo	2014		
Past President:	Jeff Parks, P.Geo	2014		
Councillors	Belinda Culgin, P.Geo	2015	Rick Horne, P.Geo	2014
	Mike MacDonald, P.Geo	2015	Jennifer McDonald, P.Geo	2014
	Scott Morash, P.Geo	2015	Beverley Smith, P.Geo	2014

New Councillors

Michael MacDonald joined Erdene Resource Development Corp in 2011 and is a professional geoscientist with 35 years of experience in mineral exploration, management, executive leadership and research. From 1982 to 2011 he held several public-sector positions with the government of Nova Scotia, Canada, including research scientist, industry liaison, Director of the province's geological survey and Executive Director of the Minerals Branch. Michael has published extensively on a broad range of topics including geochemical exploration for metallic mineral deposits and the geology and economic potential of granitic terrains. In the private sector, he has experience in exploration for base and precious metals, and oil and gas throughout Canada and Mongolia.

Scott Morash is a Senior Geoscientist and owner of Morash Environmental Consulting Services (MECS), a Nova Scotia based environmental consulting firm. Scott retired from Nova Scotia Environment and has 25 years experience as an Inspector Specialist. As such he was involved with inspection of approved facilities, investigation of complaints, enforcement of environmental regulations and development and presentation of staff training modules. He acted as a departmental resource person on such topics as Petroleum Storage, Motive Fuels and Dangerous Goods. Since retirement, Scott has completed Phase I Environmental Site Assessments (ESA's), supervised monitor well and test pit programs, collected soil and water samples for analysis, provided site supervision, provided report review and comment and completed approximately 150 environmental audits for a large real estate owner/property manager. Scott also has five years experience as a Petroleum Development geologist with several exploration companies based in Western Canada. Besides being a registered geoscientist in Nova Scotia, Scott is a Certified Engineering Technician with Technova.

Belinda Culgin No bio was available at publication but will be presented at the Annual General Meeting.

Respectfully Submitted

Fred Bonner, P.Geo (Chair)

Jennifer McDonald, P.Geo

Beverley Smith, P.Geo

A Message from the President

Colleagues,

Volunteering. To quote from Wikipedia, “volunteering is generally considered an altruistic activity and is intended to promote goodness or improve human quality of life. In return, this activity can produce a feeling of self-worth and respect. There is no financial gain involved for the individual. Volunteering is also renowned for skill development, socialization, and fun. It is also intended to make contacts for possible employment.”

Why am I quoting wiki definitions? For the last several years, your APGNS Council, Boards and Committees have been diligently executing our Five Year Strategic Plan to strengthen the Association with respect to four key areas: Value for Members; Licensure Awareness, Compliance and Enforcement; Awareness of the Profession and the Association; and Good Governance. We are making strides towards meeting our goals, but the “doers” are few and yet there are so many of you that have skills that we can call on to participate on committees, complete specific tasks, or whatever your time allows. **We need your help!**

You have asked for more out of the Association. We have heard you. We rolled out affinity programs; increased our communications with you and others; provided professional development opportunities; strengthened our governance, policies and procedures; and started to improve our fiscal position. We can do more and we need your good ideas to do that; however, we (Council, committees, etc.) are only a handful of the nearly 200 members (P.Geo’s, LTPs and MITs) of the Association. **We need your help!**

Members typically fall into three categories when it comes to volunteering with an organization: 1) ‘I paid my dues - see you next year’; 2) ‘Call me if you need help’; or, 3) ‘I’m here, what can I do for you’. I know volunteering is not for everyone but I would like to see more people step up to help. How can we help you do that? I personally like to volunteer, and at times it is to the chagrin of my family because I do it a lot. It gives me a sense of community involvement and satisfaction that I helped to shape the direction of whatever I am doing, whether it be one of the business associations, youth organizations, or special interest clubs that I belong to. The English idiom, “Many hands make light work” applies here. If many of you offer a little time we will get to where we need to go. That is developing and managing the Association. Some of you might even find that you have more to give as you develop the “feeling of self-worth and respect” and have the “fun” that the Wikipedia definition alludes to. To paraphrase John

“...volunteerism benefits both society at large and the individual volunteer by strengthening trust, solidarity and reciprocity among citizens, and by purposefully creating opportunities for participation.”

2011 United Nations State of the World's Volunteerism Report



F. Kennedy “Ask not what your Association can do for you, ask what you can do for your Association”. We need to remain a vibrant and well oiled Association. **We need your help!**

I look forward to hearing from you.

Kindest regards,
Jeff Parks, P.Geo
president@geoscientistsns.ca

Professional Development

The Professional Development Committee, chaired by Diane Webber, P.Geo, has been active over the past several months. Professional Development opportunities are now consistently posted on the Geoscientists Nova Scotia website, and so members are encouraged to check regularly for opportunities that may be of interest. In addition, the committee is busy developing a Continuing Professional Development and Competency Assurance Program, which will be incorporated into the new *Geoscience Profession Act and Regulations*. The following is a list of selected current professional development opportunities and conferences available:

- PDAC Convention, Toronto, ON, Mar 2-5, 2014, PDAC Short Courses
- CWRA Regional Conference, River Temperature: a Physical, Biological and Climate Change Perspective, Mar 5-6, 2014, Université de Moncton, Moncton Campus
- 3rd Atlantic Canada W.A.T.E.R. Symposium and Forum, March 22, 2014, Dalhousie Faculty of Agriculture Campus, Truro. Craig Waldie, P.Geo at Geology Matters
- 2014 GAC-MAC Annual Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Fredericton, University of New Brunswick, May 21-23, 2014
- Coastal Zone Canada 2014 Conference, Halifax, NS, World Trade and Convention Centre, June 15-19, 2014



Geoscientists Nova Scotia Administrative Changes

We have completed the relocation of our administrative functions and changed our mailing address. The new address is 1460 B Bedford Highway, Bedford, B4A 1E4. The phone lines have not changed.

We would like to thank Sandra Warner for her service to the Association. In 2013 we restructured our staffing requirements to gain efficiencies in service to members.

Tara Wall, In the Black Bookkeeping, has been contracted to take on the accounting and general administrative duties. She can be reached at the administration.assistant@geoscientistsns.ca.

Sarah Carter, Assistant Registrar, assists in the assembly for review and administration of member (MIT) files, and prepares registration reports for various external organizations. Sarah can be contacted at scarter@geoscientistsns.ca.



We have changed our business mailing address to serve you better:

**Association of Professional
Geoscientists of Nova Scotia**
1460B Bedford Highway
Bedford, Nova Scotia
B4A 1E4

Office: 902.420.9928
administration.assistant@geoscientistsns.ca

Executive Director and Registrar's Report

The introduction of electronic payment through the secure link on the website has received overwhelming support from the members. We are working with the service company to make the link even more user-friendly and will introduce those changes in the coming months. Approximately 86% of members have paid their 2014 professional registration fees and 60% of corporate fees have been paid. This response puts the Association in a much better financial position than this time last year. The APGNS Register has somewhat stabilized in numbers (see table) but we feel there is still room for growth.

The work is continuing on the new Geoscience Profession Act, Regulations and by-laws. We are entering the phase of stakeholder consultation prior to submitting the documents to the legislature.

For more information, question or comments, please contact me registrar@geoscientistsns.ca or you can reach me directly at 902-420-9928.

David C. Carter, P.Geo, FGC
Executive Director and Registrar

Registration	P.Geo	License to Practice (LTP)	Member-in-Training	Student	Certificate of Authorization
Total	165	4	26	17	30

Geoscientists Canada Activities

The Geoscientists Canada (GC) Board of Directors met in November 2013 in Toronto and the Meeting of Members (Presidents and the Board) is slated for June 2014 in Saskatchewan.

APGNS members provided information and comments to the GC Securities Committee for submission to the Canadian Securities Administration (CSA) regarding the proposed revisions to National Instrument 51-101. The comments were described as well prepared and pertinent and we are grateful to Carl Makrides, P.Geo and Edwin Macdonald, P.Geo for their efforts on this file.

Recently, GC activities have been largely been conducted by the Executive Committee. The Strategic Planning Committee will meet with a facilitator in March 2014 to start work on the next version of the Plan. The Executive is compiling the legal review and submission for the Geoscience Definition Committee. The Governance Committee is working on an annotated version of the by-laws that should be available in early 2014.

APEGBC and APGO have entered into an incidental practice agreement (2 year pilot program), over the objections of several other Constituent Associations, including APGNS. This agreement allows unlicensed practice in either jurisdiction for up to 45 days. OGQ has expressed dissatisfaction with the current GC governance model and the Executive has requested a discussion by the CA's leading to the Members meeting in June.

Crystal Kennedy, P.Geo, FGC
Nova Scotia Director
Geoscientists Canada

Canadian Geoscience Standards Board Activities

On the weekend of January 25-26, 2014, Cliff Stanley, P.Geo, APGNS Representative to the Canadian Geoscience Standards Board (CGSB), and David Carter, P.Geo, APGNS Registrar, attended a CGSB meeting in Vancouver to monitor the progress of the Admissions Support Tools (AST) project. Although the meeting involved much repetition of previously discussed issues, several important results did eventually surface.

The main component of the AST project involves development of an entry-to-practice 'Competency Profile' (CP) that is intended to describe the tasks that a Professional Geoscientist should be able to do as an independent professional. The project consultant, working with a group of Subject Matter Experts (SME's) has completed the draft report. That report was approved for distribution to the constituent associations (CAs) for review and discussion. Feedback from the APGNS Council and Admissions Board will be sought via a webinar in March. We encourage any interested members to review the report and participate in the webinar. An on-line survey will be circulated in May 2014 to solicit comments and feedback from all members.

Theresa Rushton, P.Geo, participated in the SME group, which drafted the initial Competency Profile, after much consultation with the program consultant. Theresa attended a number of meetings across Canada to provide feedback from our perspective, and we acknowledge her efforts and thank her for her contribution.

Another component of the AST project is a survey of internationally-trained geoscientists to identify roadblocks in the admissions process. This will also take the form of an on-line survey in July 2014 but will be directed to members who have been admitted in the last 5 years.

The conclusions and recommendations regarding the viability of a centralized facility for assessment of applications were reviewed. In addition to the consultant's report, and after polling the meeting attendees, it was agreed that there is no support for a centralized facility. Instead, it was agreed that the fourth component of the AST Project should be a gap analysis of university programs and a review of experience in lieu of academics requirements.

The Executive and Board are also developing a Mutual Recognition Agreement (MRA) with the Geological Society of London (GSL).

Cliff Stanley, Ph.D., P.Geo, FGC
Nova Scotia Representative
Canadian Geoscience
Standards Board

CGS Board Members

Bruce Broster, P.Geo (Chair), Professor of Geology and Chair,
University of New Brunswick, NB

Brent Ward, P.Geo (Vice Chair), Associate Professor of Geology,
Simon Fraser University, BC

Greg Finn, P.Geo, Associate Professor of Earth Sciences,
Brock University, ON

Clifford R. Stanley, P.Geo, Associate Professor of Geology,
Acadia University, NS

Deborah A. Spratt, P.Geo, Professor of Geoscience,
University of Calgary, AB

Derek Wilton, P.Geo, Professor of Earth Science,
Memorial University, NL

Malcolm Robb, P.Geo, A/Director,
Mineral and Petroleum Resources, NWT

Jim Teller, P.Geo, Professor of Geology,
University of Manitoba, MB

Kevin Ansdell, P.Geo- Associate Professor and Dept. Head,
University of Saskatchewan, SK

Normand Goulet, géo, Professor of Geology,
Université du Québec à Montréal (UQAM), QC

Geo-Travels

by Marcos Zentilli, P.Geo

Marcos Zentilli was born and educated in Chile, and continues to be obsessed with the geology of mineral deposits associated with Andean volcanoes.

Chile is a long (4,270 km) and narrow country. Whereas the Atacama Desert in the north is the driest place on earth, southern Patagonia has a glacial climate similar to Alaska's. The Andes developed since 200 million years ago by active subduction of oceanic lithosphere under the western margin of South America. For 200 million years, this powerful tectonic interaction has created a high mountain belt (up to 7000 m) that separates Chile from Argentina, provides spectacular views and great skiing from June to September. In the Jurassic the volcanic front was located along the present coast and migrated eastward with time to its present position near the international border, where there are geothermal fields and 120 active volcanoes. Erosion has removed the upper parts of volcanic complexes, exposing their deep intrusive roots, and myriads of ore deposits of copper-molybdenum, gold, silver and iron formed within them (e.g. Chuquibambilla, below). As a result, Chile contains about 30% of the copper resources of the world. Volcanic soils are very fertile, and the rivers flowing from the snowy mountains in the sunny central part of the country permit the cultivation of vegetables and fruits and the production of excellent wines. On the negative side subduction implies mega-earthquakes; luckily building codes are very strict.



The Torres del Paine National Park in Patagonia (51°S) was voted the 8th Wonder of the World in 2013. The wild animals are *guanacos* (camelid cousins of the llamas). The light colored rocks near the summit glaciers are granites intruded at several km depth 10 million years ago and now exposed, evidence of vigorous tectonics and glacial erosion (photo MZ).



Volcanic, mineral rich soils and abundant sunshine make the central valley, between the high Andean cordillera and coastal mountains, fertile ground for a variety of agricultural products, including table and wine grapes. A dwindling water supply is the main hindrance to farming of mountain slopes for grapes, avocados, kiwis and almonds. Concerns about thawing glaciers and depletion of groundwater supplies have blocked several mining and industrial projects (photos Sarah Ashford Hart).



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Geo-Travels (Continued)



Volcán Copiapó (27°S – centre of my Queen's PhD area) hid the mummy of an Incan child in a ceremonial platform at the snowy summit (6,052 m). Yellow patches are 19th century sulphur mines; we were the first (M Zentilli & M C Graves report 1990) to recommend drilling for gold there: in 2011 Hochschild Mining PLC announced the Volcán property contains 8.9 million ounces of gold. Porphyry type copper ore may lurk below. In the photo, geologists Enrique Grez and James A Walker (photo MZ).

Chuquicamata (22°S), a Cu-Mo porphyry type deposit mined for a 100 years as an open pit, will go underground in 2017. The mine footprint is the size of the Bedford Basin and the pit 1 km deep. The deposit formed at ~7 km depth at the roots of a volcano that was active 35 million years ago. I work as a consultant for the owners, state company CODELCO. Colourful supergene Cu minerals were mined by the Chilean native peoples for centuries.



Boiling water (at 86°C) and steam at El Tatio geothermal field (4320 m) near San Pedro de Atacama (23°S) is evidence of active hydrothermal activity related to volcanism; high concentrations of arsenic are problematic.

Recent touristic draw trumps renewed efforts to develop this geyser field for geothermal power (photo MZ).