

**Canadian Geoscience Education Network Annual Meeting**  
**9:30 a.m. – 4:00 p.m., May 28, 2009**  
**Department of Geology, University of Toronto**  
**Rm. 2119, 22 Russell Street**  
**Toronto**

*Present:* Charly Bank, Doug Boyce, Maria Cioppa, Laura Clinton, Ron Clowes, Al Donaldson, Fran Haidl, Russell Hartlaub, Stella Heenan, Lesley Hymers, Alan Morgan, Godfrey Nowlan, David Orenstein, Karen Pelletier, Debora Rios, Dave Rudkin, Vic Tyrer, Eileen Van der Flier-Keller, Christy Vodden, Barry Warner, Erica Williams.

**Report of the Secretary-Treasurer** (Christy Vodden)

As of April 30, 2009, the CGEN bank balance was \$8,667.57, which includes \$650 earmarked for the geoheritage project. In July 2008, the International Year of Planet Earth (IYPE) Canadian National Committee took over payment of all careers project invoices and the remainder of the \$5,000 grant from the Canadian Federation of Earth Sciences (~ \$1600) reverted to the general CGEN budget. Funds of \$16,500 were received since the May 2008 meeting, including two donations by Al Donaldson of speaker's fees (totaling \$550) to support geoheritage projects, \$1000 from The Canada Prize Awards Foundation to support CGEN objectives, and a \$15,000 grant from the Geological Survey of Canada for EdGEO. Outgoing funds of \$20,996.38 are detailed in the 2008-2009 financial report, attached as Appendix 1.

The CGEN website has moved to <http://www.geoscience.ca/cgen/>, where it is supported by our parent body, the Canadian Federation of Earth Sciences (<http://cfes-fcst.ca/>). A big thank-you goes to the previous host of our website, the Bedford Institute of Oceanography/Geological Survey of Canada (Atlantic). Their support over the past ten years is very much appreciated. The website has been updated and has a new feature: on the Executive and Members page, everyone's location has been added; this will help people interested in setting up our new regional chapters.

The CGEN membership is now 305, a total of 56 new members since last May.

**Report of the President and Introduction of New Executive** (Fran Haidl)

As her last duty as CGEN President, Fran congratulated Eileen Van der Flier-Keller for being selected as the 2009 E.R. Ward Neale Medallist, and introduced the incoming Executive (2009-2011): Godfrey Nowlan, President; Charly Bank, President Elect; Christy Vodden, Secretary-Treasurer, and herself as Past President. She thanked the outgoing Executive and the CGEN membership for their support and encouragement during her term. She noted that her top priority coming into the presidency had been to provide solid support to EdGEO and to the careers website. She said how very thrilled she was with their growth during the past three years – with EdGEO's expansion in both scope and number of teachers reached, and with the careers website up and running. She also had wanted to facilitate communication with other earth science outreach groups and felt that the CGEN/CFES Outreach Liaison Committee was a big step in that direction. Given CGEN's burgeoning membership, she was really pleased to see the rapid development of regional chapters since the first discussion about them at last year's AGM in Quebec City. She offered, as Past President, to lead a committee, if deemed appropriate, to follow up on raising enough money to support a pilot CGEN office with a paid staff member, and to provide any other support as needed. She ended by saying how exhilarating it had been to be able to meet and work with outreach "activists" all over Canada during the past three years.

Godfrey thanked Fran for moving CGEN ahead so successfully on so many diverse fronts, attributing her success and accomplishments, in part, to her skill in “nagging in the most pleasant and encouraging manner.” He also commended everyone who had recruited new members for CGEN, noting Diane Baldwin’s record enlistment of close to 25 NWT teachers.

### **CGEN Terms of Reference and Regional Chapters** (Fran Haidl/Charly Bank/all)

The revised Terms of Reference, incorporating all comments sent in by the membership and raised at the Vancouver meeting, were ratified with two minor revisions. Final text attached as Appendix 2. The next step will be to have the document translated into French and added to the CGEN website. (*Action: Christy Vodden*)

Key changes are the new regional chapters and the President Elect position. Charly Bank, as our President Elect, will be the point person for the regional chapter representatives. This is new ground for CGEN, so the development of the regional chapters (how they set themselves up and function), as well as connections between the appointed regional representatives and the CGEN Executive will very much be a work in progress.

Discussion focussed on regional chapters that have already self-identified (in Toronto, Ottawa and the Atlantic Provinces) and issues linked to defining what a region is for other parts of the country. It is clear that geographic distance in most parts of the country would limit actual meetings, but issues linked to curriculum revision would require a broader provincial/territorial connection. A possible strategy is to piggyback a chapter with an existing group interested in education/outreach (e.g. the Atlantic Geoscience Education Committee will act as a CGEN chapter for the Atlantic Provinces), and link any meetings to larger events (e.g. meetings of earth science or education professional groups).

All agreed that local groups will have to set up their regional chapters as best suits their situation, and that the real value will be their ability to support initiatives that best serve their region, promote national initiatives at a more local level, and receive input concerning curriculum issues. Regional chapters would also open up the possibility of further involving classroom teachers. Stella Heenan and Beth Halfkenny, for example, each maintain email contact with about 80 Ontario teachers who teach earth sciences and who would love to have a focal point at the regional level.

Strong ties between the regional chapters and the national group will be essential. In terms of national support for regional chapters, CGEN will continue to send out information notices, will fund meetings up to \$200 to allow for refreshments, and will promote them to the entire membership (organizers should alert Christy Vodden at [cgen@sympatico.ca](mailto:cgen@sympatico.ca) as to the time and place of the meeting ten days in advance so she can send out an email notice nationally; catering invoices should later be sent to her for reimbursement).

As a first step, all CGEN members are urged to look at their part of the country and see how a regional chapter(s) would best function and serve them. Charly would like to hear from organizers of regional chapters or from anyone interested in setting one up. People at the meeting who volunteered to follow up in their regions were Godfrey Nowlan (Alberta, plus he will contact key Quebec people), Charly Bank (Ontario), Fran Haidl (Saskatchewan), Eileen Van der Flier-Keller (BC), Karen Pelletier (will contact Diane Baldwin and Linda Ham to see how the territories should align themselves), and Lesley Hymers/Laura Clinton (will discuss with their Manitoba contacts). (*Action: All. To see who else may be in your “region” check out the CGEN members listing at <http://www.geoscience.ca/cgen/executives.html>. To keep Charly informed of developments and names of regional chapter representatives, email him at: [bank@geology.utoronto.ca](mailto:bank@geology.utoronto.ca).)*

### **Debriefing on Joint Assembly Education/Outreach Activities** (all)

The special session for educators “Earth Science Teaching: Issues and Practices,” May 25, organized by Charly Bank, Lesley Hymers and Deryk Jackson had about 35 participants, about a third of whom were teachers. Charly reported that the day was a success, with excellent discussions based on different perspectives. He was particularly struck by comments from U.S. participants who were quite impressed with the communications channels developed by CGEN. One particular area where the U.S. has taken a strong lead is in targeting lawmakers; something Charly thinks should become a priority for CGEN. (*Action: Charly will summarize ideas from discussions for circulation to CGEN membership.*) He said that he had been disappointed with the difficulties encountered in dealing the American Geophysical Union, which ran the Joint Assembly. Fees for teachers and confirming a date were especial problems, with the latter making it impossible to get Professional Development designation, which would have ensured higher teacher participation. Lesley Hymers noted that the session was particularly valuable for Mining Matters, providing both future directions where Mining Matters could provide support to teachers, and new connections with teachers who are keen to help them with workshops and use Mining Matters resources in the classroom.

The session, “Ideas for Effective Outreach,” organized by the same team had about 40 participants during the talks. Charly reported that the associated posters were not as lively as has been hoped, possibly because posters are not considered as prestigious as a talk, although, in point of fact, posters can have a higher impact in terms of one-on-one connections and exchange of ideas.

### **Plans for GeoCanada 2010** (Godfrey Nowlan/all)

Planning for the education/outreach component of GeoCanada 2010 will be going ahead on a fast track, and Godfrey welcomed input. So far, there is a commitment from EdGEO to run a workshop for teachers highlighting ten activities being prepared by Laura Clinton for integrating the earth sciences into curriculum for other sciences and social studies. Participating teachers will be offered an optional field trip to the Royal Tyrrell Museum of Palaeontology. Alan Morgan will donate a field guide to the Badlands and Drumheller region on a CD as a handout for the teachers. Suggestions for other content included: adding mining history and the impact of mining to the field trip (Erica Williams); presenting five or six top earth science stories in a non-technical way to the teachers (Stella Heenan); and a panel discussion (with representatives of school boards, ministries of education and education faculties) to upgrade earth scientists knowledge about the education system (David Orenstein).

If the dates for the education session at GeoCanada 2010 can be set well in advance, David Orenstein offered to get contacts in the Alberta school board associations and try to get Professional Development designation for the session, ensuring publicity throughout the school boards and higher teacher enrolment. (*Action: Fran Haidl/Godfrey Nowlan/David Orenstein*)

Eileen and Christy had worked up a special session “Communicating Earth Science to the Public” for the Joint Assembly, and then decided it would fit better at GeoCanada 2010, so postponed it for a year. Details for this need to be fleshed out, as there have been recent discussions about focussing the theme on how to communicate earth sciences to communities tailored to an industry audience. There also needs to be some thought as to whether this would work best as a session or a workshop.

Other suggestions for GeoCanada 2010 included:

- A poster competition for scientists (or grad students) on the ten best "geo-wonders" in their region. This might provide valuable new outreach materials for EarthNet, EdGEO and What on Earth, but would be difficult to organize.

- Inviting Calgary and region WHERE Challenge winners to present their entries.
- Inviting an astronaut as a keynote speaker or for a public lecture appended to GeoCanada 2010.

One huge difficulty for groups such as Mining Matters and the BC Mineral Resources Education Program is the fact that the CIM Mining in Society in Vancouver and GeoCanada 2010 in Calgary are scheduled for the same dates.

## **Core Projects**

**Careers in Earth Science project** (Godfrey Nowlan/John Clague): The English website is live (<http://www.earthsciencescanada.com/careers/>) and the French is in translation, thanks to the efforts of the original developers of content (notably Jenn Sabean) and the fundraising and management of the International Year of Planet Earth (IYPE) Canadian National Committee. This is a wonderful milestone for this CGEN project, which really took off when it was selected as a flagship project for IYPE.

The website is aimed at early high school students with a goal of encouraging them to move into earth science at the university level. It provides a very broad view of careers in earth science, ranging through the spectrum from academic to applied. Promotion of the site is essential and all CGEN members are asked to promote it within their circle of influence (*Action: All*) Some national publicity has already been done, with an ad in the national magazine “Canadian School Counsellor,” promotions in Mining Matters newsletters to teachers, and several notices through the CGEN email system. Further promotion (including production of handouts like bookmarks and business cards with the web address) will go ahead as funds become available. Funds will also be needed for ongoing support of the website.

Barry Warner, who is a member of the Committee of Chairs of Canadian Earth Science Departments (CCCESD), felt that CCCESD would be very interested in contributing to the upkeep of the website, as it addresses an issue of priority concern (enrolment) for them. The Careers in Earth Science website, with its links to all Canadian universities and colleges providing earth science programs, means that they don't have to each develop one for their school's website. He also noted that the CCCESD would be an excellent forum for ensuring accuracy of content, and he agreed to discuss the idea of each member of CCCESD providing funding and taking on some of the quality control duties. (*Action: Barry Warner to discuss with CCCESD and advise Godfrey Nowlan of their level of commitment and interest*)

**EarthNet** (via email Jennifer Bates): The EarthNet report is attached as Appendix 3. A generous donation from EnCana Corporation's Eastern Canada office has enabled new content development, with a focus on East Coast oil and gas, and the overall geology of the Atlantic Provinces. Virtual field trips are also being developed in conjunction with Parks Canada, and “Mastodons of the Maritimes” with the Atlantic Geoscience Society.

An immediate issue facing EarthNet is the need to find a new online home, as of the end of June 2009. Jennifer is investigating options. The longer term, persistent issue is the difficulty getting content from other parts of Canada. (*Action: CGEN members are encouraged to contribute field trip guides, images, and information on new resources or activities; send to Jennifer at [jbates@nrca.gc.ca](mailto:jbates@nrca.gc.ca).*)

Promotion is another area where CGEN members can help. (*Action: EarthNet promotion cards to add to your education packages are available from Jennifer Bates or Nelly Koziel at [nkoziel@nrca.gc.ca](mailto:nkoziel@nrca.gc.ca).*)

**EdGEO** (Laura Clinton): The EdGEO report is attached as Appendix 4. Thirteen EdGEO workshops were delivered during 2008-2009, with eight workshops in BC and two in Alberta, and one each in

Saskatchewan, Ontario and Nova Scotia. Six workshops are approved so far for 2009-2010. EdGEO continues to receive annual funding from the Canadian Society of Petroleum Geologists and CGEN. Thanks to the efforts of Jane Wynne, Fran Haidl and Eileen Van der Flier-Keller, a grant of \$15,000 from the Geological Survey of Canada was awarded in March to support a project that will deliver a comprehensive collection of relevant, classroom-ready resources in earth science for junior and intermediate grade levels. Additional funds (\$17,750) have been requested from the Canadian Geological Foundation to support this project and to develop ten curriculum-based lesson plans integrating earth science topics into the core subjects of physics, chemistry, and biology. A fund development committee will also be struck, and Laura will send out a call letter for volunteers with the details in the near future (Fran Haidl, Lesley Hymers, Godfrey Nowlan have already volunteered). The funds raised will support the ongoing operations of EdGEO. The campaign will kick-off, June 23, with a one hour teleconference with a professional fundraiser who has donated an hour of his time.

The EdGEO website will be translated into French, with the very welcome assistance of the Quebec Government (many thanks to Pierre Verpaelst and Pierre Rheume).

The latest news about EdGEO can be found in its annual newsletter: <http://www.edgeo.org/pdf/EdGEO-Newsletter-2008-2009.pdf>

**Geoheritage Project** (Al Donaldson): The Ottawa-Gatineau Geoheritage Project (OGGP), now in its seventh year, continues to make an impact in increasing public education/awareness of local geoheritage and lobbying municipal, regional and federal authorities with responsibility in the National Capital. The past year has had three major highlights:

- A Geoheritage Day was developed by OGGP member Beth Halfkenny of Carleton University and run in October 2008 linked to National S&T Week. Public response was positive and it will be run again in 2009.
- The Metcalfe Geoheritage Park, principal project of the Almonte Geoheritage committee (ancillary group of OGGP) was scheduled to open in May 2009, but this has had to be postponed because of upgrading of an adjacent hydro project. The park will have about 15-20 large specimens exhibiting local geology.
- OGGP member Quentin Gall's book "A Walking Guide – Ottawa's Building and Monument Stones," has been published by the Geological Association of Canada. A book launch will take place, June 18, as part of the first Ottawa regional CGEN meeting.

See Appendix 5 for full report of activities and accomplishments of the OGGP and efforts to encourage more local/geoheritage committees in Canada

Two items discussed at the 2008 annual meeting were re-tabled for action. Both are linked to the need to expand efforts to encourage the preservation and protection of Canada's geoheritage. The first step is to get appropriate legislation in place, at both the provincial/territorial and the federal levels; the second is an opportunity that needs to be taken advantage of.

*(Action All: CGEN representatives are needed from each province and territory to determine the present legislative state of affairs in their areas, and then identify potentially supportive politicians to achieve action. Anyone interested in helping should contact Al at [donaldson6427@rogers.com](mailto:donaldson6427@rogers.com).)*

*(Action All: Investigate ways to encourage the capture of geological information in your area revealed but rarely adequately observed/recorded in exposures created during highway work and excavation for construction.)*

**Geoscape** (Bob Turner/Godfrey Nowlan): Report for 2008-2009 attached as Appendix 6. The Nunavut Geoscape has been completed and should be available shortly. The focus for Geoscape has moved to “Geotour Guides,” which are developed in conjunction with communities based on the questions: where does your water come from; where does your energy come from; what local earth resources do we depend on; where does our garbage go; where does our waste go? The template can be adapted to any community and is available from Bob Turner at [BTurner@nrcan.gc.ca](mailto:BTurner@nrcan.gc.ca). Geoscape posters and related teaching materials are available at: <http://www.geoscape.nrcan.gc.ca/> and <http://www.geoscapegrandriver.ca/>.

**What on Earth** (Alan Morgan):

The University of Waterloo’s Department of Earth and Environmental Sciences has decided to continue to support “What on Earth,” with Alan and Peter Russell keeping a hand in as editors until such time as a new editor can be found. It is going to an entirely online format, as a downloadable PDF, and this opens up some really exciting possibilities about embedding PowerPoint, film clips, live links, etc. There are about 1,000 paid subscribers and they will be notified about this development in the final paper issue. The plan is to publish one more edition in July, in order to wrap up commitments to these subscribers, then they will be given the option of signing up for the email notice announcing new issues and providing the link. An entirely online format also opens the door to lots of new subscribers being signed up: for example, all EdGEO workshop participants could automatically be entered into the subscription database. In terms of archiving, all past paper-only issues will be scanned and made available in the archive on the website (<http://www.whatonearth.org/>), and this will be a wonderful resource for teachers. Promotion of these developments will be required through the CGEN membership and through CGEN’s other core programs.

The next issue, and final published one, will be linked to the Darwin celebrations and content is needed. (*Action: Alan to provide Christy Vodden with deadlines and other details so she can send out a call letter to the CGEN membership.*) There was also support for the idea of a readership survey, with Lesley Hymers offering assistance in crafting one based on her recent good experience with one for the Mining Matters newsletter. (*Action: Alan*)

**Geoparks** (Godfrey Nowlan)

Since UNESCO created the designation of geopark in the late-1990s, 58 have been created, mainly in Asia and Europe, with none in North America. The concept of a geopark is to meld a geological site with economic/tourism opportunities, thus ensuring the preservation of the site, increasing awareness about it, and bringing jobs/cash into the local community. Godfrey reported that a Canadian National Committee has just been set up to oversee and encourage the development of Canadian geoparks. He is the interim chair and the terms of reference are being drafted. Randy Miller, New Brunswick Museum, has put in a proposal for Saint John, and there is interest in developing ones for Bonavista, Newfoundland, and BC’s Wells Gray Park. The long-term goal will be to set up a North American network of geoparks. Information about developing Canadian geoparks will be sent out to CGEN as it becomes available. There is the possibility of retroactive designation, as well.

**International Year of Planet Earth (2007-2009)** (Godfrey Nowlan)

Since the Vancouver meeting, there have been two major IYPE Canada deliverables: the previously discussed Careers in Earth Science website and the WHERE Challenge competition. The WHERE Challenge for students was a great learning experience and plans are in place to run it again for 2009-2010 school year. About 1,000 students participated in developing the 208 entries received for the 2008-2009 competition. Judging was a lot of work, but worth the effort, given the positive benefits accrued through media coverage, community events for WHERE champions (the first prize winner was feted at a big event in Nelson attended by the mayor, and there will be a special event in Calgary for the second prize winner)

and positive awareness building of the earth sciences in schools across Canada. The Mining Human Resources Council and Avalon Resources have both linked to the winning entries, which are posted at: <http://www.earthsciencescanada.com/where/>.

Following considerable success in 2008, fundraising in 2009 has been disappointing for IYPE owing to the global economic crisis. In total, IYPE Canada has raised about \$400,000. The remaining major deliverables for IYPE Canada are the popular geology book “Four Billion Years and Counting,” which should be published early in 2010 (more details at: <http://www.earthsciencescanada.com/4by/>) and the Burgess Shale Conference to mark the centenary of the fossil discoveries at this site by Charles Walcott (<http://burgess-shale.info/>). More information about IYPE projects is at: <http://www.earthsciencescanada.com/iype/>.

Godfrey asked that anyone who had carried out an IYPE project, and who has not yet done so, to send him a brief synopsis for his records, as there will be a requirement for each participating country to produce a final activity report. (*Action All: Send project report to [Godfrey.Nowlan@NRCan-RNCan.gc.ca](mailto:Godfrey.Nowlan@NRCan-RNCan.gc.ca)*)

### **CGEN priorities for 2009-2011** (all)

Priorities for CGEN’s core programs were identified as:

- Raising funds to support a national promotion campaign and ongoing maintenance and further development of the Careers in Earth Science website (main comments from student feedback were about the need for games and videos on the site).
- Developing a network of volunteers across Canada trained to deliver a packaged version of the EdGEO workshop as a way to reach remote and rural communities, and the continued development of curriculum-linked activities.
- Contributing regional content to EarthNet.
- Encouraging the set up of geoheritage committees across Canada
- Promoting the new “What on Earth” website and availability online of back issues.

Alan Morgan recommended that CGEN should promote the possibility of our parent body, the Canadian Federation of Earth Sciences (CFES), and the Committee of Chairs of Canadian Earth Science Departments lobbying ministries of education to ensure better profile of the earth sciences at the primary and secondary school levels. (*Action: Godfrey Nowlan to raise at next CFES Executive meeting*) David Orenstein suggested that teachers unions could be enlisted to add their voice to any lobbying on this front. Erica Williams noted that CGEN could also play a role in determining the age appropriateness of teaching earth science at different points of the curriculum.

### **Reports from CGEN members**

***BC Institute of Technology*** (Russell Hartlaub): The Institute’s Department of Mining and Mineral Exploration has seen increased enrolment and the incoming students generally have a better grounding in the earth sciences. Russell credits the B.C. Mineral Resources Education Program, run by Sheila Stenzel, for both improvements. The B.C. Institute of Technology, which is moving into a new facility in Burnaby, also offers online courses to target people in remote communities. Website: <http://www.bcit.ca/study/programs/6610diplt>.

***BC Science 10: Earth Science*** (Erica Williams): Earth science education at the Grade 10 level in B.C. has suffered another “hit” in terms of the number of hours allocated to teaching time. Erica reported that the content of the new textbook is riddled with errors, and she has continuing concerns about the age-

inappropriateness of the materials to be taught as required in the curriculum.

**Canadian Federation of Earth Sciences** (Godfrey Nowlan): CFES, CGEN's parent body is strongly supportive of outreach. Its financial resources are limited, however, and a priority for short-term for the CFES is fundraising to secure operating funds.

**Canadian Science Writers Association** (Christy Vodden): About 100 science writers from across Canada attended the 2009 conference in Sudbury, May 23-26, co-hosted by Science North and Laurentian University. There was good profile for the earth sciences in the program. During the gala banquet, the Yves Fortier Earth Science Journalism Award was presented *in absentia* to the Montreal Gazette's Marion Scott, who received it in person at the Joint Assembly.

**Canadian Society of Petroleum Geologists** (Mike DesRoches via email): CSPG outreach is alive and well, despite the effects of the oil-patch downturn on funding. The CSPG flagship outreach program, the Student Industry Field Trip (SIFT), ran (for its 32<sup>nd</sup> consecutive year!) in Calgary, May 3-15, with 31 students enrolled from universities across Canada to learn about the oil and gas business. Report attached as Appendix 7 summarizes their complete program of activities.

**Carleton University** (Al Donaldson for Beth Halfkenny): Carleton has a very active outreach program coordinated by Beth. Major initiatives include the new Geoheritage Day, which was such a success during the 2008 National Science & Technology Week celebration that it will be run again in 2009, and a summer school for teachers, which has seen a higher profile for the earth sciences in the secondary schools in Ottawa – three teachers now offer the optional earth science course and there has been an increase in undergrad enrolment in the earth sciences. In addition to Beth's active role in the Ottawa-Gatineau Geoheritage Committee and outreach programming, she has also built excellent links with junior naturalists. Report attached as Appendix 8.

**CRYSTAL program** (Eileen Van der Flier-Keller): Owing to major budget cutbacks NSERC has not been able to renew funding for this five-year pilot program. This is unfortunate, indeed, as it was proving highly successful in linking science and education faculties, but was still at the early stages of building trust and developing interesting collaborations. Each of the CRYSTAL projects, of which there are five (at the universities of Sherbrooke, Alberta, New Brunswick, Manitoba and Victoria), is looking for funding from other sources to keep things going. An education lab developed for first year earth sciences has been well received and may be disseminated through CGEN programs (EdGEO and EarthNet) and the Council of Chairs of Canadian Earth Science Departments (CCCESD).

**Geological Association of Canada** (Eileen Van der Flier-Keller): The GAC has instituted a \$10 membership for Canadian teachers, which gives them reduced rates for registration at the annual conference and publications, and access to GAC's regional sections. The GAC's 2009 Yves Fortier Earth Science Journalism Award went to Marion Scott of the Montreal Gazette. The deadline for next year's nominations is January 31, 2010, and CGEN members are encouraged to keep an eye out for good articles and submit them. (*Action: All*) GAC's quarterly magazine "Geoscience Canada" will honour Ward Neale in its September edition with a theme of outreach and education.

**Lithoprobe** (Ron Clowes): "Ghost Mountains and Vanished Oceans – North America from Birth to Middle Age," a popular, adult-oriented book based on LITHOPROBE studies and authored by John Wilson and Ron Clowes, was published by Key Porter Books in April. In Ron's national lecture tour as the 2009 Distinguished Lecturer for the Canadian Society of Exploration Geophysicists, he highlighted some of the public outreach efforts from LITHOPROBE, and gave public lectures on the topic



“Monstrous Earthquakes and Tsunamis,” which were very well attended (100 – double the expected attendance – in Yellowknife and 250 students in Whitehorse). A poster, for distribution in universities and elsewhere, is in the works. It is based on the trans-continental lithospheric cross section (Juan de Fuca ridge to Atlantic passive margin -- 6000 km long!). The Lithoprobe website (<http://www.lithoprobe.ca/>) has lots of educational resources, including the free, downloadable lesson plan prepared by Stella Heenan to accompany the children’s book about Lithoprobe, “Dancing Elephants and Floating Continents: The Story of Canada beneath your Feet.”

***Mining Matters*** (Lesley Hymers): Mining Matters has had a very busy year, with 19 workshops to date. Some highlights include the first Mining Matters workshops in Manitoba; two days of activities, attended by 24 teachers and close to 150 students, at the Prospectors and Developers Association of Canada annual conference; participation at the CIM Mining in Society event, which 7000 students attended; and collaboration with Science North on their new diamonds exhibit currently on show at Dynamic Earth in Sudbury. Resources for teachers are being updated and revised to align with changing curricula. Of note, the French “Discovering Diamonds” will be available in July, and this will provide opportunities for French workshops in Ontario and program expansion into Quebec. Connections have also been established with Newfoundland, and a Mining Matters workshop is being planned for later this year. The Mining Matters website has also been revised and relaunched (<http://www.pdac.ca/miningmatters/>), and three newsletters (targeted at industry; junior and intermediate teachers; and senior teachers respectively) are available. Full report is attached as Appendix 9.

***Newfoundland Geological Survey*** (Doug Boyce): Amanda McCallum has been hired to handle outreach for the NGS, and she is making great connections with groups such as the Atlantic Geoscience Society and Mining Matters. The NGS has been involved in public lectures at the Johnson Geo-Centre, which ran one a month as an IYPE project. Doug also recently gave a talk on trilobites at The Rooms linked to the opening of the “Trilobites on the Block” exhibit, which runs until July 1.

***Ontario Secondary School Teachers Federation*** (David Orenstein): As the Toronto PD representative, David worked with UofT to develop a very successful PD day that sold out (90 teachers) almost immediately, showing the interest in earth science professional development. He would like to work with the local CGEN group to come up with a larger proposal for PD, with a roster of speakers. David offered to assist CGEN in developing ties with the school boards and gain access to teachers, both tricky propositions without an “insider” to help with the linkages. (*Action: Charly, Lesley and David to work up plan for PD day.*) Godfrey commented that these types of connections would be very valuable in getting the next WHERE Challenge promoted in schools. (*Action: David and Godfrey to discuss connections within other provinces/territories via school boards and teachers’ associations.*)

***Royal Ontario Museum*** (Dave Rudkin): With the renovations complete, the focus at ROM has been installing the exhibits: the Teck Earth Treasures Suite of Galleries is now open, as are two-thirds of the palaeontology exhibits. Once the exhibits are fully in place, developing broad-based public education programming linked to them will begin. During the renovations, Dave and his colleagues have continued to do outreach informally (classroom visits, rock and mineral clubs, municipal museums), and the bimonthly identification clinics have been offered. ROM is also heavily involved in the Burgess Shale centennial conference at the Banff Centre in August. Funding was received from IYPE for the field volume.

***Saskatchewan Geological Society*** (Fran Haidl): The past year was a busy and fruitful one for this group. Of particular note, 254 teachers attended one or more of nine two-hour workshops held in Saskatoon and Regina in conjunction with Showcase 2008, a conference attended by almost all teachers in the province. Two of these workshops, in collaboration with Mining Matters, were the beginning of a new initiative to

encourage high school teachers to “wedge” earth science content into the biology, physics and chemistry curricula. The SGS also supported well-attended public lectures “Earthquakes, Volcanoes and Tsunamis” by John Clague and “Touching the Red Planet: the Geology of Mars from Meteorites to Missions” by Christopher Herd. Full report is attached as Appendix 10.

**University of Bahia** (Debora Rios): The university is taking its first steps toward developing an earth science education and outreach program. Two workshops are planned to help teachers teach the earth sciences, and, as a pilot project, earth science textbooks are being given to five schools in low-income areas of Brazil where there are few educational resources available. Debora is working with Jennifer Bates to get permission for her group to translate selected resources available on EarthNet into Portuguese. They are also setting up a meteorite awareness/identification program to encourage people to find meteorites and bring them to museums or universities.

**University of Toronto** (Charly Bank) The U of T Geology Department outreach programming targets mainly high-school teachers and their students, and is carried out with the help of enthusiastic undergrads, Mining Matters’ Lesley Hymers and Danforth Collegiate teacher Deryk Jackson. Highlights for the year included the annual earth science PD day hosted by the Geology Department for high-school teachers (90 attended); participation in “Girls Rock Science,” a series of 2.5-hour seminars on Saturday mornings for female high-school students facilitated by female faculty members, post-docs and graduate students; school visits from K-12 to the Geology Department; and the previously reported Joint Assembly sessions on outreach and education. Full report is attached as Appendix 11.

**Yukon Geological Survey** (Karen Pelletier): The YGS celebrated National Mining Week, May 11-17, with a focus on maps and gold. Teachers were invited to bring their students to an open house in the foyer of the main government building in Whitehorse, for activities such as making their own rock kits. The YGS and Yukon Chamber of Mines also visited two communities where kids and adults made their own rock kits and panned for gold. The turnout was excellent. During the summer, YGS will be putting together teaching rock and mineral collections using Yukon materials, and these will be a welcome addition to the classroom. YGS has also produced a geological road map and a wonderful series of four geological highway guides covering the Klondike Highway and the Alaska Highway.

**Timing for next meeting:** The 2010 annual meeting be held in Calgary on Thursday, May 14, the day following GeoCanada 2010. Mark your calendars!

Christy Vodden  
Secretary-Treasurer  
June 25, 2009

**Canadian Geoscience Education Network  
2008-2009 FINANCIAL REPORT**

Balance at last report (as of April 30, 2008) + \$13,113.95

Incoming funds:

Ottawa Rock Garden Society, Donaldson speaker's fee, 28/10/08	+\$500
Ottawa Life-Long Learning, Donaldson speaker's fee, 03/03/09	+\$50
Canada Prize Awards Foundation, 19/03/09	+\$1000
GSC Grant for EdGEO, 27/03/09	+15,000
Interest (May/07 – April/08)	<u>nil</u>
Total incoming:	+\$16,550

Sub-total: 29,663.95

Outgoing payments:

Nowlan, catering, Calgary regional meeting, 05/05/08	-\$62.50
Sabean, Careers project, 07/05/08	-\$945
Sabean, Careers project, 16/06/08	-\$1029
Pomerleau Traiteur, catering, AGM, 23/06/08	-\$462.23
Haidl, Saskatoon regional meeting, 29/12/08	-\$231.24
2008-2009 allocation to EdGEO, 03/02/09	-\$3,000
Stenzel, catering, winter meeting, 25/02/09	-\$251.56
Transfer of GSC Grant to EdGEO, 09/04/09	-\$15,000
Bank charges (May/08 – April/09)*	<u>-\$14.85</u>
Total outgoing:	\$20,996.38

<b>BALANCE (as of April 30, 2009)</b>	<b>\$8667.57</b>
CGEN portion:	\$8017.57
Careers portion:	\$0**
Geoheritage portion:	\$650

\* Charge of \$4.95/month if balance is under \$10,000.

\*\* As of July 2008, IYPE took over payment of all careers project invoices. The remainder from the \$5000 CFES allocated to CGEN for the project reverted to the general CGEN budget.

Note: Committed funds = \$425 (\$175 for website; \$250 for Joint Assembly Education Session).

Christy Vodden  
Secretary-Treasurer  
May 18, 2009

## **Terms of Reference for the Canadian Geoscience Education Network (CGEN)**

### ***Guiding Principles***

1. As the outreach and education arm of the Canadian Federation of Earth Sciences (CFES), CGEN's mandate is threefold:
  - to promote the teaching of the earth sciences at all levels of school and university;
  - to encourage the continuing education of earth scientists with respect to earth science outreach and K-12 education; and
  - to stimulate activities aimed at increasing the general public's appreciation and understanding of the earth sciences and, more broadly, of our planet.
2. CGEN will work to coordinate the efforts of the Canadian earth science community in these matters by providing leadership for core national activities and a forum for information exchange and networking amongst Canadian groups working in earth science education, with the goal of maximizing synergies and minimizing duplication of effort across the country.
3. CGEN will act as a forum for discussion of matters related to earth science education policies and practices in Canada.
4. CGEN will liaise with similar bodies in other countries as appropriate.

### ***Membership and Conduct of Business***

Membership in CGEN is open to anyone interested in public awareness and education in the earth sciences in Canada. CGEN should include representatives of all CFES member societies and associate members, other earth science and education professional associations or groups, universities, colleges, government research organizations, industry, and museums, as well as educators and communicators. Heads of all core CGEN programs and all CGEN's regional representatives should be members of CGEN.

CGEN will hold an annual meeting and others as needed or as opportunities arise. Ongoing business and information exchange will be carried out by email.

Regional chapters within each province/territory will provide a focus for issues and activities particular to their part of the country, and may call meetings as needed. They may also compile information within their region for national purposes. Regional chapters will contribute to goals outlined in CGEN's guiding principles above. Each regional chapter will select a representative to serve as the liaison person with the national CGEN Executive.

### ***Executive***

CGEN's Executive comprises a President, a President Elect, a Secretary-Treasurer and a Past President. Executive members normally should be in a particular office for no more than three years, and provision

should be made for succession and a reasonable turnover of the Executive. The CGEN President will report directly to the CFES and serve as the Outreach Director on the CFES Board of Directors.

### ***Roles and Responsibilities***

**President:** Provides leadership and vision to CGEN, chairs all CGEN meetings, serves as the CFES Outreach Director, and represents CGEN within the earth science community as required.

**President Elect:** Fills in for the President, as required, in chairing CGEN meetings and attending CFES meetings. Liaises with provincial/territorial representatives to facilitate communication amongst these representatives, the CGEN executive and other CGEN members.

**Past President:** Provides advice to the current Executive and fills in for the President as required, should the President Elect be unable to do so.

**Secretary-Treasurer:** Manages the treasury and supports the CGEN Executive and membership by preparing annual financial statements and minutes of the annual meeting, paying all invoices, keeping the website and membership list up to date, and ensuring the membership is made aware of news and opportunities through email notices.

**Regional chapters and regional representatives:** The chapters provide a focal point for CGEN within their province or territory through such activities as organizing meetings as needed or as opportunities arise; promoting CGEN and recruiting members; monitoring and responding proactively to curriculum changes to encourage the accurate representation of the earth sciences; and contributing information from their province or territory to CGEN core projects. Each chapter appoints a regional representative to serve as the communication link with the national CGEN Executive and other regional chapters.

*These terms were adopted at the inaugural meeting of the Canadian Geoscience Education Board in Edmonton on May 19, 1993. The name change to Canadian Geoscience Education Network was approved by the Canadian Geoscience Council (the predecessor to CFES) on September 11, 1994. An update of the terms of reference was approved by the CGEN membership on September 2, 2003. A major revision (including the addition of regional chapters, change of the Vice President position to President Elect, description of the roles and responsibilities of the Executive and the regional chapters and their representatives, plus some rewording) was approved by the CGEN membership and ratified at the May 28, 2009 annual meeting.*

## 1 Annual EarthNet Report to the Canadian Geoscience Education Network

GAC 2009, Toronto, Ontario

28 May 2009

### Overview

EarthNet ([www.earthnet-geonet.ca](http://www.earthnet-geonet.ca)) is one of CGEN's principal activities. The website is a source of earth science information for educators, students and members of the public interested in learning more about earth science. Examples are drawn from the varied and fascinating geology of Canada. Users can access and download reliable information for no cost. Since the site's inception in the mid 1990s, periodic assessments have been done to ensure current content and proper delivery mechanisms. EarthNet is currently in the midst of one such assessment. The search for funding is an ongoing activity.

Ensuring current and nation-wide content is the most challenging aspect of the site's growth. Generally, development of content is done on a volunteer basis. Modest financial support (~\$2-3K annual from successful proposals) allows for small contracts for technical and web development. A successful proposal to EnCana Corporation will allow for development of petroleum-focused content.

### Current content development

*Development funded by EnCana Corporation:* To build upon the existing energy content of the EarthNet website and further develop the geological content of the Atlantic Provinces of Canada.

- Conversion of hard copy Offshore Oil and Gas video teachers guide to digital web format plus conversion of video animation to web format and extraction of video clips to web format
- Adaptation of offshore maps and sections in digital web format (well locations & production status of offshore east coast wells; cross-sections of east coast offshore basins)
- Development of learning activity using the Hele-Shaw cell to demonstrate sedimentation, salt diapirs, faulting, etc. (photography, video and writing)
- Update of learning resources compilation
- Update of East Coast Oil and Gas section
- Update of plate reconstructions animation with Atlantic Canada focus
- Development of new animations (origin of oil, trap mechanisms)
- Development of web pages using the above content and posting of pages to EarthNet site

The maintenance of the Oracle database underpinning the Learning Resources and Glossary sections has been deemed time and money consuming; a return to the flat-file configuration is planned for these sections. The Geological Survey of Canada (Atlantic) will no longer have a web server as the end of June 2009 and EarthNet needs to find a new home. A few options are being investigated. The associated cost to move and maintain the site is not expected to be insurmountable.

### Ongoing development

- Virtual Field Trip: Geological vignettes for locations across Canada (with Parks Canada)
- Geology of Communities: Mastodons of the Maritimes (with the Atlantic Geoscience Society)

### CGEN contributions

CGEN members and regional chapters are encouraged to contribute to EarthNet. Field trip guides,

images, and information on new resources or activities are encouraged. All contributions to EarthNet are acknowledged on content pages and in the Contributors section.

### **Promotion**

Promotion of education materials is best accomplished by local groups and individuals. CGEN members play an important role in informing educators about available resources. Please request EarthNet promotion cards to add to your education packages from Jennifer Bates ([jbates@nrcan.gc.ca](mailto:jbates@nrcan.gc.ca)) or Nelly Koziel ([nkoziel@nrcan.gc.ca](mailto:nkoziel@nrcan.gc.ca)).

Jennifer Bates  
Chair, EarthNet Development

## **EdGEO Report to CGEN, May 28, 2009, L. Clinton**

This report provides an update of EdGEO operations during the last fiscal year (April 1, 2008 to March 31, 2009).

### ***Workshops***

Thirteen EdGEO workshops were delivered during the last fiscal year. A detailed table of the workshops is attached. There were eight workshops in British Columbia and two workshops in Alberta. Saskatchewan, Ontario and Nova Scotia each hosted one workshop.

At the time of this report, six workshops have been approved for funding for the 2009/2010 fiscal year.

### **Finances**

EdGEO workshop support for 2008/2009 amounted to \$18,537.56, with additional approved commitments of \$12,753.94 for 2009/2010.

The operating profit was \$6435.53. As of March 31, 2009 total assets for EdGEO were \$40,033.72.

The CSPG Education Trust Fund has pledged to renew its support of \$12,500 and CGEN has also renewed its support of \$3,000.

A grant of \$15,000 from the GSC was awarded in March to support a project that will deliver a comprehensive collection of relevant, classroom-ready resources in Earth science for junior and intermediate grade levels. The National EdGEO Workshop Program will work in partnership with volunteer EdGEO workshop facilitators to compile existing learning activities that have been used in teacher training. The learning activities will be made available for download on the EdGEO Web site. The resulting collection will avoid duplication of effort for future EdGEO workshops and leverage existing high-quality offerings. This project will greatly assist volunteer EdGEO workshop organizers by providing materials that can be used directly or adapted for use in new workshops.

Additional funds (\$17,750) have been sought from the Canadian Geological Foundation to support the above project and to provide the financial backing to develop ten curriculum-based lesson plans to integrate Earth science topics into the core subjects of physics, chemistry, and biology. The project will attract teachers of diverse science disciplines, and deliver a meaningful educational experience and important career information to high school students who are largely unaware of how Earth science impacts their daily lives.

A fund development meeting has been called on June 23, 2009. EdGEO is seeking volunteers to participate in this meeting to assist in raising needed funds for this important initiative. Following this June meeting, prospects will be approached in July to secure adequate funding for the operation of the organization.

### **EdGEO Executive Committee**

Laura Clinton  
Sheila-Dale Johnston  
Dixon Edwards  
Toon Pronk  
Jane Wynne



**EdGEO Regional Committee**

Charly Bank

Laura Clinton

Beth Halfkenny

Stella Heenan

Lesley Hymers

Amy Nishio

Claire Toner

**Contact Information**

Laura Clinton, Chair

94 Charest Place

Whitby, Ontario L1M 2B2

Tel: 416-433-0628

Email: [edgeo@edgeo.org](mailto:edgeo@edgeo.org)

Web site: [www.edgeo.org](http://www.edgeo.org)

### Summary of EdGEO Workshops (April 1, 2008 to March 31, 2009)

Locations	Grant Recipients	Date(s)	Focus/Highlights	Attendance	Grant
Port Coquitlam	GAC Cordilleran Section	April 18, 2008	Jointly presented by teachers and scientists. Techniques for learning about the Earth, including plate tectonics, earthquakes, volcanoes, geological time, fossils, rocks, and minerals. Targeted Grades 7 to 10 curriculum.	27	\$1,532.76
Kelowna	PAC-GAC	April 26, 2008	Focus on Grade 10 science curriculum. Topics included rocks, Earth's history, fossils, geological time, and plate tectonics.	65	\$624.57
Victoria	GSC Pacific Section	May 14, 2008	Earthquakes - five activity stations with hands-on activities. Activity stations focused on the following topics: what causes earthquakes, seismic waves, locating an earthquake, measuring the size of an earthquake, prevention and prediction, and earthquakes in Canada.	7	\$480.01
Ottawa	Carleton University	June 6, 7 and 8, 2008	Three-day workshop designed to equip teachers to deliver the Ontario Earth and Space curriculum (Grade 12). Access to teaching laboratories, rock, mineral and fossil collections and the expertise of faculty and staff.	8	\$1,919.26
Dartmouth	Bedford Institute of Oceanography	August 20 and 21, 2008	Presentation of basic geological concepts through a series of field trips. Targeted teachers from Grades 4 to 12 and educators from geoscience. Concepts such as rocks, minerals, the rock cycle, geological time, plate tectonics, and natural resources were interwoven with the field observations.	17	\$599.64
Victoria	School of Earth and Ocean Sciences, University of Victoria	September 9 to November 28, 2008	Designed for students attending a first year Earth science course and are intending to become teachers. Cover the same content as regular labs, but focus on activities and teaching pedagogies for the K-12 teaching environment. During eleven three-hour labs, students participate in two fieldtrips and gain knowledge of plate tectonics, earthquakes, minerals, rocks, surface processes, stratigraphy and	16	\$2,480.55

			fossils.		
Kamloops	PAC-GAC	October 24, 2008	Field trip in the Kamloops area	17	\$1,106.07
Swift Current	Saskatchewan Geological Society	October 14, 2008	Topics included diamonds, potash, uranium, coal, oil, gas, and fossils. Focused on Grade 7 curriculum.	15	\$336.57
Victoria	Pacific Section GAC	October 15 and October 22, 2008	The two workshops are offered for student teachers at the University of Victoria, through the Centre of Excellence in Teaching and Understanding Science, in the Faculty of Education. The workshops will focus on rocks, fossils, Earth history, plate tectonics, earthquakes, and volcanoes.	26	\$1,789.32
Campbell River	Pacific Section GAC	October 24, 2008	The workshop was requested by the school district located in Campbell River for a province wide professional development day. Topics included rocks, fossils and Earth history, plate tectonics, earthquakes, and volcanoes.	43	\$1,668.81
Calgary	Calgary Science Network	November 1, 2008	This workshop focused on the elements of Earth science included in Unit E (Planet Earth) of the Alberta Curriculum. Key concepts include: strata, rocks and minerals, the rock cycle, mountain formation, plate tectonics, chronological time scale, fossil formation, weathering and erosion, incremental change.	22	\$2,000.00
Saanich	Westwind SeaLab Supplies	February 20, 2009	Workshop I: Non-renewable resources, the influence of geology on how we live, natural hazards and Earth history in the context of global change. Workshop II: Linking hands-on study of near shore life on BC shorelines to explore how we interpret ancient worlds and the fossil record.	24	\$3,000
Calgary	Calgary Science Network	February 21, 2009	This workshop focused on the Grade 3 curriculum unit entitled Rocks and Minerals. A comprehensive workshop handbook provided the science background of each Specific Learner Expectation and activities designed to get the concepts across at a Grade 3 level.	30	\$1,000

### Summary of Approved EdGEO Workshops (April 1 to December 31, 2009)

Locations	Grant Recipients	Date(s)	Focus/Highlights	Anticipated Attendance	Approved Grant
Winnipeg	University of Manitoba	June 1, 2009	This professional development opportunity will take place at the University of Manitoba Star Lake Field Station in Whiteshell Provincial Park. The workshop will blend field-based learning with interactive classroom presentations. Entirely curriculum-based, the program will respond to the specific learning outcomes in the Manitoba Curriculum Framework of Outcomes.	30	\$3,000.00
Field	The Burgess Shale Geoscience Foundation	August 15 to 20, 2009	This workshop will provide teachers with a richer understanding of their earth science curriculum, enhance teachers' knowledge so that they may incorporate more Earth science examples into their pure science curricula, boost teachers' knowledge of the Burgess Shale fossils and show teachers how they may use the Burgess Shale fossils to teach their curriculum. Teachers will be provided with the skills and resources needed to create their own field trips and activities with their students.	16	\$2,000.00
Toronto	University of Toronto	May 25, 2009	This workshop is scheduled as part of the 2009 Joint Assembly Conference. The focus of the workshop is to provide professional and instructional development opportunities for K-12 science and geography teachers. Teachers will be provided with opportunities to learn ways to integrate Earth science competencies into science and geography courses, access repositories where Earth science data, examine issues related to Earth science and teaching and engage in effective hands on learning.	75	\$950.00
Ottawa	Carleton University	June 5 to 7, 2009	This three-day workshop is designed to increase teachers' understanding of current issues in Earth Sciences, promote Earth Science education and give teachers the tools they need to teach the Ontario Earth Science Curriculum. Participants will have	20	\$2,850.00

			access to the Earth Science Department's teaching laboratories, spectacular rock, mineral and fossil collections, and the expertise of faculty and staff. Participants will take part in hands-on activities, interactive seminars, and participate in field trips in the Ottawa/Gatineau area.		
Vancouver	GAC Cordilleran Section	April 17, 2009	This hands-on workshop is being jointly presented by scientists and teachers and will cover the prescribed learning outcomes of the Grades 7 and 10 Earth Science and Socials 10 Units. Topics will include techniques for learning about the Earth, plate tectonics, earthquakes, volcanoes, geologic time, fossils, minerals and the rock cycle.	30	\$2,029.14
Mill Bay	Westwind SeaLab Supplies	May 1, 2009	The C.S.I. BC Creative Science Investigations workshop is an interdisciplinary 'wedging' workshop which demonstrates ways in which Biology and Earth science topics can be integrated in the middle to high school curriculum in BC. The focus will be on linking hands-on study of nearshore life on BC shorelines to explore how we interpret ancient worlds and the fossil record.	20	\$1,924.80

**Report for Canadian Geoscience Education Network Meeting,  
TORONTO, May 28, 2009**

**Ottawa-Gatineau Geoheritage Project**  
(Submitted by Al Donaldson)

The Ottawa-Gatineau Geoheritage Committee met 7 times during the past year. Our executive membership remains at 15.

The Geological Association of Canada has just published “A Walking Guide – Ottawa’s Building and Monument Stones”, prepared by Quentin Gall, one of OGGP’s executive members. Now available from GAC (Miscellaneous Publication 7), it was on display during the 2009 GAC/MAC Annual Meeting, and can be purchased through the GAC website. On June 18 our local committee will hold an official book launch as part of the first Ottawa regional CGEN meeting. Executive members of bookstores, nature groups, science-related organizations, the municipal government and the National Capital Commission have been invited to this event.

Geoscience Canada launched a new Series of articles on Geoheritage in 2008. Three articles have already been published, two more are in press, and two more are under review.

Through the May 2008 - May 2009 report year, committee members of the Ottawa-Gatineau Geoheritage Project continued their established program in the National Capital Region, presenting displays during Canadian Rivers Day (June 8), Pinhey’s Point Summer Festival (Aug. 30, 31), the Ottawa Gem and Mineral Show (Sept. 26, 27), and Ottawa Heritage Day (Feb. 17). Members also presented 8 lectures at service-group, church group and public meetings, and guided three field trips (two with more than 50 participants). In addition, Geoscape and Geoheritage posters, brochures and handouts provided by OGGP are now on display at Petrie Island Park and the Billings Estate in Ottawa. Volunteer guides at the latter site, following up on a training session in local geology provided in 2007, offered a summer session for children on geoheritage, to enhance their own local tours.

Agreement by Ontario Ministry of Highways to preserve eight large rock specimens containing rare and distinctive primary structures (stromatolites and biofilm roll-ups in Cambro-Ordovician quartz arenite) from an outcrop of Nepean Formation, scheduled for removal during widening of Highway 417 remains in place. This work is behind schedule, but should take place in late 2009.

Official opening of Metcalfe Geoheritage Park, principal project of the Almonte Geoheritage committee (ancillary group of OGGP), also initially planned for 2009, has been postponed because of upgrading of the hydro project at the dam on the adjacent property. This disruption will cease by the end of the summer, so a two-stage approach to park development has now been put in place: A Geoheritage Information Day will be held Saturday Sept. 3, 2009, when about half of the display blocks are in place; the official opening ceremony will be held May 6, 2010. Almonte, a village with a population of 4400, is a hamlet within the village of Mississippi Mills, is 50 km west of Ottawa. Six of the proposed twenty blocks/boulders are already in place. One or more of the rescued Nepean blocks will be added to this outdoor display. The other Nepean blocks will go to museums and universities.

We are continuing to press the National Capital Commission to provide more recognition of geoscience components within the vast areas, building on our successful breakthrough last year via presentation of an OGGP brief to NCC board members, outlining ways in which aspects of geoheritage could be incorporated into their programs for the public. Follow-up sessions resulted in addition of geological information to the NCC website (including addition of a link to Geoscape), and provision of revised wording for new display panels in their new Visitors Centre at Chelsea.

Since being invited to join our committee last year, Beth Halfkenny of Carleton launched the first Geoheritage Day in Ottawa, held Sunday October 19. Although only publicized through the Carleton University website plus one brief radio announcement, it was a great success. Geoscience students, Faculty and OGGC members were stationed at key sites locally to explain geoheritage features for the full day. Plans are underway to hold this event again this year on Sunday October 18. Beth also looked after the Geoheritage display for the Summer Festival at Pinheys Point, a historical site 10 km west of Ottawa.

The graduate student executive of the University of Ottawa contacted us in April, suggesting creation of a Geoheritage Calendar. Quentin Gall and Allan Donaldson took four of their members on a half-day tour of potential sites to be photographed for this project, to be completed during the fall of 2009.

An invited paper on Rivers and Geoheritage will be presented J.A. Donaldson at the Sixth Canadian Rivers Heritage Conference to be held at the Convention Centre in Ottawa, June 14-17. Donaldson write the chapter on Geology of the Ottawa River Basin for the document submitted to have the Ottawa River declared a Canadian Heritage River. Official acceptance of such designation by Parks Canada and the federal government is to be made during the first day of this conference.

As a follow-up to our suggestion last year of the need to seek legislation -- provincial and national - to protect significant geological sites across Canada, we have made contact with the Ontario Archaeological Society. Karen Lochhead of our Committee attended the May 9<sup>th</sup> meeting of their Ottawa Chapter, where a presentation was given on aboriginal quarries in the Niagara region that were worked as early as 4000 BP. She confirmed that this group would like to explore ways to work together to enhance legislative protection for sites of scientific and aesthetic value.

OGGC has applied to the Canadian Geoscience Council for a grant to reprint our OGGC information brochure, print information sheets for Metcalfe Geoheritage Park and provide funding to initiate a Geoheritage website. Results of this competition are to be announced in early June.

Beth Halfkenny organized and ran "School of Rock", an Enrichment Mini-Course at Carleton University, May 4-8, 2009. Designed for Eastern Ontario students in Grades 8 to12, this course has now been presented annually since 2007. In addition, she has organized and run three one-week springtime geoscience courses for teachers at Carleton since 2005.

In our 2008 Report, we put forth two suggestions related to geoheritage for CGEN action, but no feedback was forthcoming. These suggestions for action are restated below, with emphasis on the first one call to action in the first suggestion:

1. Expand efforts to encourage the preservation and protection of our geoheritage. There is a pressing need for legislation -- provincial and national - to protect geological treasures across Canada. As a start, **let's seek CGEN representatives from each Province and each Territory to determine the present state of affairs across the land, and then identify potentially supportive politicians to achieve action.**

2. Investigate ways to encourage the capture of geological information revealed but rarely adequately observed/recorded in ephemeral exposures created during highway work and excavation for construction.



## Report to CGEN, Geoscape Project 2008/2009

Geoscape activities are being currently carried under the GSC project “Targeted Geoscience Initiatives III – Cordillera” which focuses on enhancing mineral exploration success in central and southeastern BC. Bob Turner leads the outreach efforts of this project with four focus areas: a geological map for southern BC and three community and regional geoscience guides.

A focus of this outreach is to enhance the social license for mining and mineral exploration in southern BC, and embed that story in a larger view of how the community depends on the land around it. The community geoscience guides involve broad community involvement and partnerships, in 3 key southern BC areas: the Kamloops community and the West Kootenays and East Kootenays areas. The idea is to engage the community in the guides' development and hand over the finished product to the partners, for their further development and use, as an important part of the outreach strategy and legacy of the team's efforts.

1) ***GeoTour Kamloops community guide*** and related outreach activities. This is a partnership with city, local university, local high school teachers, local exploration community, and province.

Released April 2007 as a GSC Open File, a BC Geological Survey GeoFile and as web-delivered PDF file; available as a free download from all partner websites, as well as Tourism Kamloops site.

(e.g. [www.empr.gov.bc.ca/Mining/Geosurv/Publications/catalog/cat\\_geof.htm](http://www.empr.gov.bc.ca/Mining/Geosurv/Publications/catalog/cat_geof.htm).)

Related outreach activities: public lecture to over 200 people (Jan 08); workshop for teachers (Feb 08); presentations to city council and exploration community, and print/radio media coverage (April 08); field trip for teachers (Oct 08); field trip for public (May 09). This initiative won an Earth Sciences Sector of NRCan award in Nov 08.

The guide includes stories on the local flood and slope hazards, local mineral resources including the giant Highland Valley copper mine, interesting volcanic rocks, well known fossil beds and the local limestone quarry and cement plant, and sand and gravel/concrete and asphalt plants.

2) ***GeoTour West Kootenay community guide*** and related outreach activities. Partnership with local college, local exploration community, province. Release April 09.

3) ***GeoTour East Kootenay community guide*** and related outreach activities.

Partnership with local college, local exploration community, province. Release November 09. Public lecture Nov 09.

4) ***Geological Landscape Map for southern British Columbia***. For publication in 2009/10. Partnership with Province. Sister map to *Geological Landscape Map for northern British Columbia* released in 2008 (20,000 copies distributed through over 100 BC Tourism centres throughout BC, as well as GSC and BCMEMPR sales outlets).

Bob Turner

## Updating CSPG Outreach

### **CGEN Annual Meeting – May 28, 2009 CSPG Outreach Director, Mike DesRoches**

As the CSPG Outreach Director for 2009 I've been busy trying to familiarize myself with the many worthwhile and popular Outreach programs supported by the CSPG and with getting to know and learn from the many energetic and committed volunteers that are making these programs work.

The good news from the CSPG is that CSPG Outreach is alive and well. Our committees are intact and strong and are well into planning and implementing their programs for 2009. We're not immune to the oilpatch downturn though and are certainly feeling some of the effects, particularly in the area of funding our programs. Rather than cutting out entire programs though, where possible and practical, we have trimmed the budgets of some of the committees with the goal of keeping the core of the program alive but postponing any new initiatives or not funding low impact components until the fortunes of the 'patch' improve again.

The flagship program of CSPG Outreach has to be the Student Industry Field Trip (SIFT) which was just recently run in Calgary, for the 32<sup>nd</sup> consecutive year, from May 3-15th. From all reports, the program was once again a great success with the 31 students from universities across Canada having had a great time here but, more importantly, having learned a ton about the oil and gas business in a very short time. The SIFT committee was very diligent this year about doing everything possible to reduce their costs for running SIFT 2009. Their recent estimates indicate that they were able to trim nearly 15% from what they anticipated at budget time last year they would need to spend to run SIFT 2009 - great work in tough times. The final costs are not all in yet but it looks like the program will have cost about \$70,000 to put on this year. The SIFT committee and the CSPG want to express our gratitude to the corporate sponsors of SIFT 2009, for without their generous help in these interesting times, running a successful SIFT program would be much more difficult for all involved. The sponsors of SIFT 2009 (either in cash or in kind) were:

Platinum Sponsors: Conocophillips Canada, EnCana, Shell Canada

Prime Sponsors: Devon Canada, Imperial Oil

Gold Sponsors: Suncor Energy, Talisman Energy

Silver Sponsors: Canadian Centre for Energy Information, Canadian Natural Resources, Sundog Printing, Weatherford International, Green Bean

Bronze Sponsors (donations in kind): AGAT Labs, Alberta ERCB, Angle Energy, Apache, Ayrton Exploration Consulting, Bonavista Energy, Canext Energy, Ember Resources, Enerplus Resources, Golder Associates, Harvest Energy, MGM Energy, NEO Exploration, Nexen, OPTI Canada, Palliser Oil & Gas, Paramount Energy, Rigstar Communications, Royal Tyrell Museum, SAIT, Spearpoint Energy, University of Calgary

The University Outreach Committee is another busy and dedicated group of volunteers working in the Outreach portfolio. "University Outreach" for this committee means helping to run a wide variety of interesting activities, all directly benefiting university Geology students at schools across the country. By supporting, attending and providing modest cash awards to the best papers given at the three annual inter-university conferences: the AUGC, WIUGC and AESRC, the UO committee is helping to improve the awareness of our future geo-scientists to the Canadian Petroleum Industry. The committee also sponsors student chapters of the CSPG at a number of universities across Canada, providing the students with a modest subsidy to host a few social events to bolster the local Geology clubs and linking them to the many activities of the CSPG. At present, only about a third of the universities with Geology programs across the country are actively participating in this initiative so it is the goal of this committee to find ways to solicit more groups to join as chapters in future years. The UO committee is currently having discussions with the GAC about the possibility of better co-operation or merging the GAC's Logan Club and our Student Chapters program in order to provide better services to the students and communicate our respective messages to a broader audience. Another very popular program organized by the UO committee is the visiting lecturer program whereby knowledgeable scientists, mostly from the Calgary area, are sent to a number

of different universities to speak to the students on topical issues, usually relating to Petroleum Geology. This program has proved to be very popular and is well received and appreciated by the students and their professors alike. We have recently bid adieu to Erin Crerar, the excellent UO committee chair for the last several years so that she could take some time off to see the world. The chair position has been assumed by the very capable Simon Haynes though so he and his committee of volunteers are not likely to miss a beat.

Another CSPG group that has successfully run their annual Public outreach event for many years now is the Honorary Address committee. The Honorary address in 2008 was held on October 28<sup>th</sup> in the Jubilee Auditorium. The topic of “The Science of Big Wave Surfing” was a bit of a change from the usual more locally related subject matter (I haven’t seen too many surfers trying out the breakers of Chestermere Lake in the last year or two....) but it proved to be very interesting for all and lots of fun too. The talk was attended by around 1,800 school kids during the day and another 1,000 members of the public in the evening so the outreach aspect worked out extremely well. The HA committee has written an excellent summary of the event which can be found on the CSPG website at [www.cspg.org/events/events-honorary.cfm](http://www.cspg.org/events/events-honorary.cfm) and which also includes access to webcasts of the talks and a few others interesting tidbits. The committee has already managed to secure Brian Keating of the Calgary Zoo, a very popular and interesting speaker who is guaranteed to give a highly entertaining and interesting talk, for the 2009 Honorary address which will be given on either November 2<sup>nd</sup> or 3<sup>rd</sup> – stay tuned.

Last but not least, the remaining Outreach committees include the Graduate Thesis Awards committee, the 100 Student Jobs committee, KISP/K-12 and the Regional Graduate Scholarships committee. While perhaps smaller in scope than the larger committees described above, these groups are no less important to our ongoing Outreach efforts at the CSPG and for that reason I’m making it a priority to become more familiar with the activities of these groups so that I can better understand what they do and how they are helping the CSPG to reach out to individuals outside of our society.

Mike DesRoches

## Department of Earth Sciences, Carleton University Report of Outreach Activities, 2008/2009

Beth Halfkenny, 2155 Herzberg Building, 1125 Colonel By Dr., Ottawa, ON K1S 5B6 (613) 520-2600 ext. 8520  
bhalfk@earthsci.carleton.ca

The Department of Earth Sciences at Carleton University Outreach Program has had a very busy year with some new initiatives and growing community, school and teacher connections.

### Ongoing commitments include:

Junior Naturalist Club at Pinhey's Point – give presentation about local geology, rocks and minerals to elementary school age children and their parents and we have donated some local rocks and minerals for use at the site– July

Riverfest, Pinhey's Point - Geotours of the site and display table for ourselves and Friends of Geoheritage – August

STAO Conference – give workshop on teaching Earth Sciences and bring teaching resources

OCDSD High School Science Teachers PD Day Workshop – presentation; Earth Science Teaching Resources and Support – held in early February

Enrichment Mini-course Program run at Carleton University, University of Ottawa and Cite Collegiale each May – we present 2 one week-long courses, "School of Rock", and "Disasters" for 40 grade 8 to 12 students <http://www.emcp-pmce.org/>

PDAC Mining Matters workshops at the PDAC Convention – assisted with delivery of 3 workshops for teachers, elementary students and high school students – March

Discovering Earth Sciences Workshop – a 3-day Interactive Workshop for High School Teachers – consisting of instruction, hands-on activities and field trips to support teaching of Earth Sciences Curriculum – will be held in June this coming year

- Our 5<sup>th</sup> workshop, which was just completed June 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> had 10 participants from a varied background including two instructors from Algonquin College, 2 geography teachers, an elementary teacher and two teachers from French language schools. Funded by the Department of Earth Sciences, \$50 workshop fees, and generous EdGEO funding, we were able to provide 2 field trips on Friday and Sunday, and a day of in class instruction on Saturday, including the PDAC Mining Matters Discovering Diamonds Workshop presented by Stella Heenan, activity tasters, a visit from a teachers workshop alumni presenting his new activities, and a climate science conversation. Participants again received our Earth Sciences Teaching Resource Kit which includes a rock, mineral and fossil collection, identification tools and manuals, geological maps, our Teaching Resources CD and various resource guide, posters, flyers, and other materials we were able to collect from government agencies and industry, as well as information on how to find/access other resources. This was in addition to the course handouts binder. We had wonderful feedback this year including some great conversations about what their needs were and how we could help them to feel more confident teaching this material. The addition of geography specialists was most welcome as they added another dimension to the brainstorming.

*Some ideas that came out of these conversations were: target physical geography curriculum, build activities that are cross-curricular with other sciences math and geography, have an evening or event where teachers can meet and share ideas, have more intense instruction during PD days or during the evening over several weeks to give teachers more understanding of basic concepts, engage the geography teacher community, educate School Counselors, get Earth Science recognized by teacher education programs, look at Ontario's new Environment initiatives in the curriculum for places to wedge our content, run a field trip in fall for teachers (low water around Ottawa area – more exposed outcrops), build a bicycle friendly field trip, use snow banks cut by snow ploughs to do stratigraphy (!), provide field guide services to teachers wanting to run a field trip, add rocks to geography field trips*

### New Initiative this year:

**Explore Geoheritage Day** was held on Sunday October 16<sup>th</sup>, during National Science and Technology Week. The event ran from 10am to 3pm, with volunteer "experts" posted at 5 locations around the Ottawa area to introduce the public to the geological heritage of the region. Volunteers consisted of members of the Ottawa Gatineau Geoheritage Committee, undergraduate and graduate students and professors from Carleton University, and retired geoprofessionals. Our sites included parks and green spaces where people tend to go on a regular basis, as well as a tour of the building stones of downtown Ottawa presented by Quentin Gall. Volunteers were given red t-shirts, and

some stickers, bookmarks and polished stones to give to visitors, and were welcomed back at the Department of Earth Sciences at Carleton University after 3pm for a thank you luncheon. Some sites had hundreds of visitors, being as they were in popular Sunday strolling locations, and we had a great turn out overall given the small issues in advertising which will be addressed this year. Everyone was very enthusiastic about this project, and it would not have worked without the participation of so many people who gave up their time and talent for this day. Our date is set for this coming year's event, again to coincide with National Science and Technology Week, as Sunday October 18<sup>th</sup>, and will include at least 3 more locations. We think this could work in many urban locations and I would be happy to talk to anyone who wants to try it.

**Additionally we also:**

- hosted Grade 12 Earth and Space Science class for a day long visits, where students participated in lectures and activities
- visited Grade 12 Earth and Space Science classes with Volcanic Hazard, Mineral ID, Rock ID Activities
- visited 4 grade 4 classes for Mineral and Rock Identification activities
- loaned material to presenters for 3 grade 4 classes for Mineral and Rock Identification activities
- loaned rocks to LTS presenters for various school visits
- participated in presenting a workshops for PDAC Mining Matters for teachers, elementary students, and Grade 12 students at this year's PDAC convention
- guided field trip for Grade 12 Earth and Space Science classes to local outcrops
- assisted study group for Grade 12 IB Geography class, lithosphere unit
- guided Scout hike for 100+ kids and parents
- Participated in judges panel for Where Challenge, Ontario Region

We are also (still) preparing to receive a block of Nepean Sandstone that will be rescued by Al Donaldson's Georescue operation and have acquired our first stone – a lovely mylonite - for a local geology garden at Carleton University

## MINING MATTERS: 2008-2009 Program Summary- June 15, 2009

<b>SUMMARY</b>	<b>Total Number of Workshops</b>	<b>Total Number of Attendees</b>	<b>Estimated Student Reach</b>
Senior Workshops	10	201	6030
Intermediate Workshops	2	20	600
Junior Workshops	7	82	2460
<b>TOTAL:</b>	<b>19</b>	<b>303</b>	<b>9090</b>

### Teacher Workshops

<b>Location</b>	<b>In-Service Program</b>	<b>City</b>	<b>Teacher Attendance</b>	<b>Estimated Student Reach *</b>
Carleton University	Senior	Ottawa	11	
Manitoba Education Summer Institute	Junior	Winnipeg	30	900
Manitoba Education Summer Institute	Intermediate	Winnipeg	17	510
Manitoba Education Summer Institute	Senior	Winnipeg	8	240
Waterloo Region District School Board	Junior	Waterloo	18	540
Ontario Association of Geographic and Environmental Educators	Senior	Burlington	16	480
Vancouver District School Board	Senior	Vancouver	12	360
Ontario Secondary School Teachers Federation	Senior	Toronto	30	900
Queen's University Faculty of Education	Senior	Kingston	58	1740
Queen's University Faculty of Education	Junior	Kingston	7	210
Carleton University	Junior	Ottawa	5	150
Ontario University Institute of Technology (OUIT)	Senior	Oshawa	20	600
PDAC Convention	Junior	Toronto	7	210
PDAC Convention	Intermediate	Toronto	3	90
PDAC Convention	Senior	Toronto	8	240
York University	Senior	Concord	30	900
Thames Valley	Junior	London	8	240
Strathroy Community Christian School	Junior	Strathroy	7	210
Joint Assembly	Senior	Toronto	8	240

### Resource Awareness to Teachers

- Ontario Association of Geographic and Environmental Educators (Discovering Diamonds Workshop and exhibit booth)
- Science Teachers Association of Ontario (ex officio manner)
- Ontario Secondary School Teachers Federation Professional Development Workshop (Discovering Diamonds Workshop)
- PDAC Convention

- Mining in Society
- Joint Assembly

## **Resources**

**Junior:** The Province of Ontario released a new Science and Technology Curriculum in January 2008. To continue to provide the strong curriculum foundation associated with our materials, Mining Matters updated and revised our existing Junior resource *Deeper and Deeper*. Throughout the revised resource, students will experience the fundamental concepts and themes identified in the Grade 4 Understanding Earth and Space Systems strand:

- Change and Continuity: Rocks and minerals have unique characteristics and properties that are a result of how they were formed
- Structure and Function: The properties of rocks and minerals determine society's possible uses for them
- Sustainability and Stewardship: Our use of rocks and minerals affects the environment

*Deeper and Deeper* guides students to examine rocks and minerals and investigate their importance, and to discover the environmental and social benefits and costs associated with using products made from mined materials. Completion of the 30 activities in *Deeper and Deeper*, addresses 100 per cent of the expectations for Grade 4 Understanding Earth and Space Systems. In addition, the activities have been cross-referenced to *The Ontario Curriculum Grade 4* for Language, Mathematics, Social Studies, and The Arts.

**Intermediate:** The intermediate classroom resource, *Mining Matters II-The Earth's Crust* no longer meets the Ontario Science and Technology Curriculum. It was anticipated however that the resource is useful to Geography Teachers. In order to determine its value, Mining Matters engaged Wayne Andrew, experienced Geography Teacher and textbook author to complete a review of the current Mining Matters II unit, to determine its applicability to the Ontario Geography Curriculum. His review was positive, saying that it satisfied the expectations of Grade 7, and Grades 9 Academic and Applied Geography Curricula.

There is a plan in place to develop a new Mining Matters Intermediate resource. This process will involve a needs assessment and market survey, including a review of existing resources.

**Senior:** The French Discovering Diamonds Resource will be available to distribute in July. This will provide opportunities for French workshops in Ontario and program expansion into Quebec.

## **Provincial Expansion**

- Partially funded by MiHR
- Project focuses on the implementation of the senior classroom resource across Canada and the adaptation, production and implementation of one junior or intermediate classroom resource in a second province
- Developed a criteria matrix to evaluate the potential for expansion in each province and territory (Manitoba selected as the first province to focus expansion efforts and adaptation of junior/intermediate classroom resources)
- 2008 Manitoba
- 2009 Quebec and Newfoundland

## **Highlights**

- The resource receives positive reviews, from both Science and Geography Teachers
- Mining Matters has been approached directly by outside interests, inquiring about the Discovering Diamonds resource and workshops

- Resource and workshop interest remains among Pre-Service Teachers

### **Challenges**

- Marketing remains a challenge

### **Implementation Strategies**

- The present model is to provide training through shadowing an experienced presenter during a session, presenting a session jointly with evaluation and feedback, then presenting independently.
- This approach complements the partnerships being developed
- This model also provides flexibility in workshop scheduling and reduces cost associated with workshop delivery by training local presenters across the country.

### **British Columbia**

- Partnership with the Mineral Resources Education Program of BC (MREPBC) has been established to implement *Discovering Diamonds in BC* using the well established infrastructure of MREPBC.
- A train-the-trainer model has been implemented with educators in BC to build the capacity within MREPBC to deliver in-service workshops
- The B.C. Train the Trainer candidates participated in the Manitoba *Discovering Diamonds Workshop*
- Trainers supported the delivery of a *Discovering Diamonds* workshop in October 2008

### **Manitoba**

- Engaged John Murray of the Manitoba Department of Education, Citizenship and Youth, and Coleen McKellar, a secondary teacher located in Brandon, to adapt our *Mining Matters II – The Earth's Crust* resource to reflect Manitoba's geology, and resource and extractive activities.
- Developed an intermediate resource to address the specific needs of the province's curriculum, adapted our revised Junior resource *Deeper and Deeper* to include Soils and Erosion components still included in Manitoba curriculum.
- Held teacher workshops in August 2008 as part of the province's Education, Citizenship and Youth Summer Institute-presented our Junior resource, *Deeper and Deeper*, our Intermediate resource, *Mining Matters II*, and our senior resource, *Discovering Diamonds*.
- Cultivated new partnerships and Mining Matters Champions
- Need to identify Provincial Trainers remains
- Returning to deliver workshops in August 2009

### **Quebec**

- Expansion to Quebec delayed due to Provincial curriculum reviews
- Expected to be completed in 2009
- Curriculum Correlation will be underway as soon as Senior Teachers have been identified.

### **Newfoundland**

- A new GSC contact has been identified
- Expansion discussions will continue

### **Newsletters**

- Industry (1) - implemented a new design and layout, and increased page numbers to 8 pages-to ensure a more reader friendly newsletter, having more graphic elements, to communicate more effectively to our industry supporters (attached).
- Junior/Intermediate, Senior – distributed in January (attached)
- Associated readership survey resulted in a small data set and recommendations for future



content

### **First Nations Natural Resources Youth Employment Program Camp**

- Mining Matters participated in the 2008 First Nations Natural Resources Youth Employment Program (FNNRYEP), held in partnership with Outland Forestry and Confederation College.
- Seven week live-in professional and personal development program designed to facilitate future employment in the natural resource sector.
- Twenty-six youth, aged 15 to 19, traveled from 15 northern Ontario aboriginal communities to participate
- Mining Matters provided five days of thematic educational programming that included geosciences, environmental science, careers education and mining, as well as a visit to North American Palladium's Lac Des Iles mine operation.
- Program was well received by participants and partners
- Planning is underway for 2009 program delivery in Manitoba and potentially Nunavut.
- Interest in expansion of program to Quebec

### **Public Relations**

- Canadian Aboriginal Festival
- PDAC Convention (PDACMM Booth and Student Program)
- CIM Mining in Society
- Joint Assembly

Education and Outreach sessions: Oral and Poster sessions, and teacher workshop.

- Ideas for Effective Outreach, Ideas for Effective Outreach II Posters, Education and Human Resources General Contributions Posters
- Education and Outreach Workshop: Earth science Teaching: Issues and Practices

### **Public Outreach**

- Earth and Space Week presentation (Ontario Science Centre)
- Rock and Mineral Show (University of Waterloo)
- Canadian Aboriginal Festival
- PDAC Convention
- Mining in Society
- WHERE Challenge promotion and judging
- Ontario Mining Association-"So You Think You Know Mining" High School video competition

### **Communications**

- Aboriginal Program standing banner
- Aboriginal Program Pamphlet
- Program Poster

### **Other Activities-Mining Matters web site**

- Re-launch of Mining Matters web site in October
- Incorporated many new features
  - **Teachers:** an array of resources, from lesson plan, activity, and field trip ideas to recommended publications, audio visuals, and downloadable posters.
  - **Students:** homework support, games and quizzes, information on careers.
  - **Industry:** members can learn about our upcoming events or latest successes, peruse photos from previous events, or find out how to support the program.
  - **Aboriginal Outreach** content including workshops, natural resources camp, educator resources, and partners

## **Partnership Projects**

- ESRI-applications of geographical information systems to Discovering Diamonds resource.

Appendix 10

## **2008 Education and Outreach Committee Report Saskatchewan Geological Society**

### **Teacher Workshops**

Several SGS members were very active in the organization and delivery of ten teacher workshops attended by 269 teachers in 2008. In February, a total of 254 teachers attended one or more nine two-hour workshops held in Saskatoon and Regina in conjunction with Showcase 2008, a conference attended by almost all teachers in the province. Two of these workshops marked the successful beginning of a new initiative to encourage high school teachers to “wedge” Earth Science content into the Biology, Physics and Chemistry curricula. These two workshops focused on Saskatchewan resources, and, for the first time, SGS partnered with Mining Matters, an educational program sponsored by PDAC. In October, a workshop which also highlighted Saskatchewan resources was held in Swift Current in conjunction with the Chinook Teachers’ Association conference; 15 teachers attended.

Teachers attending these workshops each received a resource package that included several posters, a Saskatchewan Geological Highway map, rock samples and a workshop manual with curriculum-linked hands-on activities and abundant background information. Some Showcase teachers also received a USGS plate tectonic map, and, upon request, rock and mineral kits. The response to all the workshops from teachers was overwhelmingly positive. Teachers loved the hands-on activities presented in the workshops and really appreciated receiving a wealth of curriculum-related resources that they can use in their classrooms. Several teachers also commented on the value of the interaction between scientists and teachers.

The great success of these workshops can be attributed to the funding, in-kind contributions, and the hard work of many volunteers associated with all our partners: SGS, SMA, Saskatchewan Ministry of Energy and Resources, University of Saskatchewan, T. rex Discovery Centre, Mining Matters, EdGEO, APEGS, NRCan, teachers, individual geologists, industry (Shore Gold, Mosaic Potash, Potash Corporation of Saskatchewan, Caprice Resources) and SRC. A special thank you from the committee to the presenters at the various workshops: Sarah Coolican (teacher), Dave MacDougall (geologist), Gavin Jensen, Jeff Coolican, Erik Nickel, Kate MacLachlan and Fran Haidl (SK MER); Jim Duerksen (teacher); Kim West, Sandra Botis, Sally Meadows, Patricio Desjardins and Jit Sharma (U of S); Kim Mysyk (Laramide Petrographic Services); Heather Gibson (T. rex Discovery Centre); Stella Heenan (Mining Matters); Pam Schwann (SK Mining Association); Arnfinn Prueger (Potash Corp of SK); Murray Schultz (Mosaic Potash); and George Read and Adam Buchanan (Shore Gold).

### **Public Lectures**

This year at the 21<sup>th</sup> SGS Annual School Lecture series held on November 5 and 6, John Clague from Simon Fraser University delivered his presentation entitled “Earthquakes, Volcanoes and Tsunamis” at the IMAX Theatre. The lectures were attended by about 350 students from Regina Public and Catholic schools and Prairie Valley schools; the lower than expected attendance occurred primarily because of an unanticipated conflict with Remembrance Day ceremonies in schools on November 6. In the evening on November 5, John also gave a public lecture at the Science Centre to a capacity audience of 100 people. John fielded abundant questions from the audience at both the school and public lectures. Once again, on December 2, the SGS funded a public lecture in association with the Geological Survey Open House. Dr.

Chris Herd, University of Alberta, gave a presentation entitled “Touching the Red Planet: the Geology of Mars from Meteorites to Missions”. Over 200 people attended this popular event which included information on the recent meteorite fall in Saskatchewan. Dr. Herd was inundated by questions following the lecture.

The lectures and teacher workshops all provided SGS with opportunities to promote International Year of Planet Earth, which is being celebrated throughout the world in 2008 and 2009.

### **Geoscape Southern Saskatchewan**

Activity associated with Showcase 2008 resulted in finalization of several lesson plans that had been developed in 2007. It is anticipated that these will be added to the revamped geoscapesask website in the next few months. We continue to receive many requests for the “Geoscape Southern Saskatchewan” poster.

### **Building Stones of Regina**

In 2007, Dave MacDougall agreed to undertake the research for a “Stones of Regina” book. The first phase of this project resulted in compilation of a guide to building stones in downtown Regina and delivery of a tour by Dave in May 2008. The guide, “Once Around the Park...An Architectural & Geological Tour of Downtown Regina”, is now posted on the SGS website.

Fran Haidl  
SGS Education and Outreach Committee

## **Outreach by UofT geology department, report for CGEN annual meeting May 2009**

Outreach done by our department targets mainly high-school teachers and their students. For this I rely heavily on some excellent undergraduate students in our department (Ramona Dasrath, Nicole Debond, Tanushree Bose, Fraser McGowan to name a few) and my friends Lesley Hymers (currently filling in for Laura Clinton at Mining Matters) and Deryk Jackson (teacher at Danforth Collegiate). Highlights of our joint efforts include:

1. An Earth science day for high-school teachers is offered on one of their board-wide PD days. This has become a yearly event, and we have attracted about 90 teachers each year (more would come if we had more space, we cap it at 75 but don't turn anyone away). The event is advertised by the high-school teachers' union, and registration fills up within one hour of going online. The geology department hosts the event, including a lunch for all participants. Faculty from the geology department present current research that could link into the high-school curriculum, and we also offer a parallel hands-on session (Stella Heenan and John Etches contributed here). In the last workshop we included a very interesting discussion session to learn about teachers' needs and concerns. Evaluations show very high levels of satisfaction.
2. "Girls Rock Science" is a series of 2.5-hour seminars on Saturday mornings taken by female high-school students and facilitated by female faculty members, post-docs and graduate students. The Faculty of Arts and Science provides administrative support for advertising and enrolment. Small groups of students (cap is 25) have the opportunity to interact with researchers, learn about interesting topics, get involved in hands-on experiments, engage in discussions, and are able to ask questions about Earth sciences, university, careers, and life as a female scientist. Several students come repeatedly, and overall we reach about 150 students each year. Students comment very positively on this series. I note that most students hear about our series via their teacher.
3. We also welcome school classes (from kindergarten to grade 12) for which arrange age-appropriate activities with our mineral and rock teaching collection. On occasion we visit schools, especially if they are close by. Sometimes our doors open for the general public; for example during "Science Rendezvous" we offered the Great Rock Melting Experiment.
4. At the Joint Assembly we organized a special session "Ideas for Effective Outreach" and a workshop "Earth Science teaching: issues and practices". Both events brought together individuals from industry, academia, schools, government, and societies and provided an opportunity for sharing of information and resources. It is clear that most people are not aware that society needs resources to maintain living standards, and that Earth science in the broad sense is crucial in tackling many of our problems. The workshop attracted about 30 participants, including ten teachers. We thank EdGEO for financial support, and CGEN members for their invaluable assistance.

We cannot say for sure that the increase in Earth science courses at Toronto high schools (two years ago only 7 schools offered a course, in the coming academic year it will be 22) as well as a noticeable increase in our undergraduate enrolments is due to our outreach. However, anecdotal evidence tells us that our efforts are helpful. A paper co-authored by Lesley, Deryk, and myself with more details will soon be published in the Geoscience Canada special Ward Neale issue.

Charly Bank