

**Canadian Geoscience Education Network Meeting  
Winter Meeting, February 2, 2007  
Vancouver, B.C.**

*Summary Notes and Member Reports*

*Present:* Dileep Athaide, Diane Baldwin, John Boyd, Tania Demchuk, Chantal Dussault, Louise Fox, Richard Grieve, Fran Haidl, Cathie Hickson, Alan Morgan, Wendy Nielson, Godfrey Nowlan, Mariane Quat, Sheila Stenzel, Valerie Triggs, Bob Turner, Eileen Van der Flier-Keller, Christy Vodden, Erica Williams.

**Approval of Minutes from 2006 AGM**

Approved with no changes.

**President's Report** (Fran Haidl)

The Canadian Geoscience Council has become the Canadian Federation of Earth Sciences (CFES, pronounced "café"), with Ian Young as its President; Fran is the CFES Education Director. The bottom line for CGEN is very encouraging. CFES strongly supports outreach and education activities, and has identified the careers website project as an immediate top priority. CFES intends to continue an annual allocation to CGEN (currently \$5K), and CGC provided an additional \$5K to EdGEO in 2006. CFES is also undertaking a national survey of job needs in the earth sciences, which was something that CGEN had on its to-do list. It will now go ahead as a CFES initiative, and CGEN will have access to the report. CFES is also looking into getting charitable registration status, something that would have major implications for fundraising for all its aligned groups. More information and minutes of meetings can be found on the CFES website: <http://cfes-fcst.ca/>.

At the last meeting, "satellite" CGEN meetings to be held across the country were suggested as a way to encourage more networking and information exchange amongst CGEN members, and as a way to attract new members. Fran held the first one in Québec in November, with great feedback and five new members. *Action: CGEN members are encouraged to hold local meetings.*

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

At the end of December, the CGEN bank balance was \$20,990.70, all of which (except \$365.38 for the careers website) is general CGEN funds. Incoming funds since the May meeting include the CGC/CFES allocation of \$5,000 for 2005-2006 and \$210 from the trilobite tee-shirt fundraiser. The annual \$3,000 allocation to EdGEO for 2005-2006 was approved by the Executive just prior to the meeting, and the cheque issued. CGEN membership is now 196, an increase of 27 members since last January. The CGEN website (<http://cgen.bio.ns.ca/>) was updated in September, and a French version will be up and running by the May meeting. An updated "Funding Sources" was circulated to CGEN members on February 6, 2007.

## **Core project reports and issues**

### **Careers in Earth Science website initiative** (Fran Haidl for John Clague)

This project is picking up speed. John, with the encouragement and assistance of Ian Young, has contacted presidents of several earth science societies to ask for their support for the project, both in terms of funding and content, with an excellent response. In fact, the project is rapidly becoming a top priority for many groups. In the ensuing discussion, Diane Baldwin suggested that the provincial and territorial governments be approached for input on the education sections, and Chantal Dussault wondered whether industry could use the site for posting job opportunities. John's report attached as Appendix 1.

For information, the pilot website put together by Jenn Sabean and Jennifer Smith is viewable at <http://www.peterboro.net/~mjsmith/CGEN/index.htm> -- this is a prototype only, and the many excellent comments made by CGEN members previously have not yet been incorporated, pending funding. *Note: given the across-the-board priority assigned to this project, the CGEN Executive approved a \$5,000 allocation to it, upon receipt of a post-meeting funding request from John.*

### **EdGEO** (Eileen Van der Flier-Keller)

Report attached as Appendix 3. In 2006, there were 17 workshops, involving 377 teacher participants (50 more than in 2005!), with better representation across the country. Eileen was very encouraged by the additional \$5K from CFES. She also noted that CSPG was one of EdGEO's long-term, loyal and generous supporters.

Eileen suggested that it would be useful and timely for CGEN to take a look at future directions for EdGEO. Some areas that she put forward for discussion were: (1) ways to capitalize on more workshop opportunities by participating in teacher conferences across the country and linking with Social Science groups to offer workshops that would fit with their curriculum; (2) fostering more pre-service teacher workshops; and (3) increasing coverage and access to workshops through the development of packaged workshops and training people to deliver them. Godfrey Nowlan suggested adding outdoor education linkages to the list. Erica Williams offered to explore possibilities with SFU re: practicum opportunities. Diane Baldwin suggested that EdGEO workshops should be expanded to include water. *Action: Eileen will discuss further at Yellowknife workshop. Funding from IYPE or the Canadian Geological Foundation could be applied for to help develop the packaged workshops.*

The next EdGEO newsletter will be available at the May meeting. *Action: Anyone wishing to submit articles should get them to David Mate as soon as possible: [dmate@NRCan.gc.ca](mailto:dmate@NRCan.gc.ca).*

### **EarthNet** (Godfrey Nowlan for Jennifer Bates)

Report attached as Appendix 4. After many years of solid funding from the Geological Survey of Canada, EarthNet is in a "no-money" situation, meaning that it has returned to its roots as a project that will have to be carried out on a volunteer basis supported by grants from earth science associations. As a core CGEN project and the largest earth

science educational resource website in Canada, regularized funding needs to be addressed urgently. *Action: Action Plan being developed by EarthNet Committee will be the basis for further discussion.*

New content development (especially the virtual field trips) is continuing, however, as is promotion of EarthNet to teachers. One initiative for CGEN members to consider is to link any web-based projects to appropriate sites of EarthNet (e.g. Glossary, Virtual Field Trip, Learning Resources, etc.). CGEN members can also help promote EarthNet, and are encouraged to do so. *Action: CGEN members can get supplies of promotional post cards from Jennifer and discuss content linkage possibilities with her at [jbates@nrcan.gc.ca](mailto:jbates@nrcan.gc.ca).*

### **Geoheritage Project** (Christy Vodden for Al Donaldson)

The Friends of Canadian Geoheritage project continues to be focussed in the Ottawa-Gatineau area, but it is hoped that this group will provide a model for other communities to follow. The Ottawa-Gatineau Geoheritage Project continues to be very active in providing geoheritage talks, leading field trips and putting on displays at community events. The manuscript for a book by Quentin Gall on “Building Stones of Ottawa” is in final draft, and the next step is to find a publisher. Al will lead a geoheritage field trip for non-geologists as part of the outreach workshop at the 2007 GAC/MAC meeting in Yellowknife.

### **Geoscape** (Bob Turner)

Geoscape projects are shifting focus and new partnerships are being struck for content and distribution. The Okanagan Waterscape was launched last week, the fourth in this series, which presents water, an issue of broad public concern, from a geoscientist’s point of view; a teacher’s resource kit is in development. This poster received funding from Environment Canada and the BC Government, both of which are actively promoting it as well. This represents a huge step forward in getting the poster out. A very attractive postcard has been produced to help promote the poster. Check out the Waterscape at: <http://geoscape.nrcan.gc.ca/h20>.

The northern BC geological highway map is in final stages, and it will be distributed through tourism offices – again another very strategic partnership. Community guides for Prince George were developed with the community’s science centre, Exploration Place, with water as focus for content. This is the fifth done in northern BC, and there are plans to do some for communities in southern BC – again partnerships with the province for funding, as well as with community groups, have been added much to the success of these projects.

Other news: the Nunavut poster is in development and is now with the Nunavut Geoscience Office; northern Saskatchewan is finished; and the one for NWT should be ready for Yellowknife 2007. Louise Fox presented an excellent, new promotional poster for Geoscape that she developed for a teachers’ open house at Science World. This model could be adapted for any part of the country and for various topics (climate change, water, hazards, etc.). *Action: CGEN members interested in this concept should*

*contact Louise to discuss adaptations (that she has offered to produce!),  
lfox@nrcan.gc.ca.*

In the ensuing discussion, Erica Williams pointed out that the posters are excellent, but that teachers have to be made aware of how to tie them to curriculum. She volunteered to work with Bob and Louise toward this end.

Alan Morgan reported that the Grand River Geoscape had been dropped from the NRCan Geoscape website because it was not available in French. Suggestions were that Grand River could be reinstated as a link from the NRCan website, or that Alan apply for a grant for translation.

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

The next issue of “What on Earth” is in preparation, and will be available for the Yellowknife meeting. Articles are welcomed from CGEN members. As discussed at the May 2006 meeting, Alan and Peter Russell, who co-edit the publication, plan to step down sometime following the publication of the 20<sup>th</sup> anniversary issue. They have now committed to seeing it through to the end of 2008. No one has expressed interest in becoming the new editor, as of yet. Sheila Stenzel strongly supported “What on Earth,” calling it a valuable resource for secondary school teachers. All agreed that the CGEN Executive must work hard to find a new home for “What on Earth.” *Action: The offer is still open. Anyone interested in taking on “What on Earth” should contact Alan at [avmorgan@uwaterloo.ca](mailto:avmorgan@uwaterloo.ca).*

#### **Earth Science Education: Issues** (Alan Morgan/Stella Heenan)

As agreed at the Montreal AGM, there is a need for a questionnaire that would build on CGEN’s initial education survey and fill in the blanks about the state of earth science education in Canada, with the goal of developing a baseline “snapshot.” All agreed that this should be a contracted out project, and that Alan should discuss next steps with Stella and with Erica Williams who offered to help. *Action: Alan, Erica and Stella to put together action plan, for discussion at Yellowknife meeting.*

In the ensuing discussion, Erica made the point that it is essential to not only see what is in the curriculum, but, as well, to determine whether it is at a pedagogically appropriate level. Tanya offered the perspective that serious students aiming for the earth sciences probably don’t take courses at the high school level (the “rocks for jocks,” bird course syndrome), a point of view that requires a strategic think about how to raise student awareness of post-secondary school opportunities offered by the earth sciences, in that particular segment of “bright light” students who are aiming for the sciences, but not taking earth sciences in high school.

#### **International Year of Planet Earth** (John Boyd)

John is the newly appointed Chair of the Canadian National Committee (CNC) of IYPE. He summed up his vision for the Canadian effort as an opportunity to tell the public about the earth sciences and why they are important, as well as encourage young people to consider the earth sciences as a career option. He wants to focus on the innovative

contribution of the earth sciences to the high quality of life we enjoy, on exciting big science initiatives (e.g. Project Neptune), and on Canadian-led earth science projects, such as the Multi-Andean Project, that are helping developing countries. An important goal is to work at shifting entrenched negative public perceptions to positive ones (e.g. resource developers as opposed to exploiters). He sees a clear and strong tie in for IYPE with CGEN. The National Committee will be gearing up quickly, so stay tuned and plan to get involved. More details about IYPE and lots of downloadable promotional materials can be found at <http://www.esfs.org/>. One of the big challenges will be to find funding for worthy projects, and fundraising with the private sector will be a key role of the CNC/IYPE.

### **CGEN and IYPE** (all)

Seven wide-ranging project proposals were received from CGEN members as a result of the invitation from the CNC/IYPE, and they were each discussed in detail by those attending the meeting. *Action: John Boyd will consider CGEN comments and send response to project initiators from CNC/IYPE.*

John said that these project proposals were only the first wave. He considered them a good way to test the waters and see what level of interest there was in the outreach/education community and what level of funds would have to be raised. Further opportunities for project proposal submissions will be coming up in the future.

Other ideas that came up in the ensuing general discussion included branding all EdGEO workshops in 2008 as IYPE activities, connecting with the Canadian Science Writers Association to explore the possibility of them having an IYPE-theme for their 2008 annual conference, and discussing with organizers of the Canada-wide Science Fair their interest in having an IYPE prize at the national level in 2008.

### **Activity Exchange**

Eileen Van der Flier-Keller, Cathie Hickson, Diane Baldwin, and Sheila Stenzel put on excellent, and fun, demos of activities that they use in the classroom to illustrate volcanoes. Lesson plans/demos attached as Appendix 5 (viscosity), Appendix 6 (volcanoes, bubbles and magma), and Appendix 7 (Igneous Escapade). Thanks to each of them, and a special nod to Alan Morgan for being such a good sport – could it have been that tot of rum he added to the Coke in the viscosity demo?

### **2007 GAC/MAC in Yellowknife** (Godfrey Nowlan)

The agenda is filling up nicely for the education and outreach activities at the Yellowknife meeting. Enough abstracts have been submitted for a full-day special session on Friday, May 25 (“Geoscience Skills Development in Canadian Communities”). The one and a half day workshop, “Towards an Integrated Future in Geoscience Education and Outreach,” on May 26-27, will look at the future priorities of earth science education in Canada. It will also include a geoheritage field trip led by Al Donaldson to the Giant Section and the CGEN AGM (an abbreviated one on Sunday morning). Teachers will be encouraged (and supported financially) to attend these events. Registration via: <http://www.nwtgeoscience.ca/yellowknife2007/>.

### **CGEN priorities for 2007-2009** (all)

All agreed strongly that the careers website was CGEN's number one priority for the near-term, and that there be continued support of all other core CGEN activities (EdGEO, "What on Earth," Earth Net, Geoscape and geoheritage). The issue of secure funding for EarthNet will require CGEN support and effort, and will be informed by the EarthNet action plan, which is in development.

As part of the EdGEO discussion, Eileen Van der Flier-Keller had offered many suggestions for future directions for EdGEO, as well as the issue of recruiting new (and more) people to take over CGEN projects. This is a broad area of concern for many non-profit groups in the earth sciences, as volunteerism numbers are dropping. One position coming open soon in CGEN circles is the editor of "What on Earth" which has been housed at the University of Waterloo for 20 years. The CGEN Executive will explore the possibility of finding another academic institution interested in taking it on, perhaps on a ten-year rotation. The concept of Friends of Canadian Geoheritage is still at an early stage; further discussion on how to "go national" with it will be required at the Yellowknife meeting.

John Clague, via email, suggested that CGEN compile an inventory of all publicly available Canadian outreach materials (books, posters, field guides, maps, and other products) with short summary, sources, costs, etc. The list would be a valuable resource for both teachers and earth scientists. *Action: Jennifer Bates should be asked for input on this, as it would sit nicely on EarthNet.*

Alan Morgan suggested, as part of CGEN's evolution, there could be some assessment of the pros and cons of CGEN becoming an independent national education group. Given the current encouraging level of support from CFES, others were reluctant to support the idea, but agreed it was an option to have on our wavelength for future consideration. Others felt strongly that there were clear benefits to being linked to a larger national group.

For the big picture, Dileep Athaide suggested that CGEN should be building climate change and environment themes strongly into its activities, given the rising public priority attached to these issues. He made the point that the earth science community has valuable input to the public discussion. Fran agreed, and said she would carry this message to the CFES Executive, as this was a broader initiative than just CGEN.

### **Reports from CGEN member groups**

#### **Mineral Resources Education Program of BC** (Sheila Stenzel)

New resources include:

- A poster "Industrial Mineral, Metal and Coal Operations of BC," which has a downloadable teacher's information package at <http://www.bcminerals.ca>,
- A book "Mineral Mania" written as a Grade 5 classroom project in Delta, BC,



- A colouring and activity book “I am an Exploration Geologist” aimed at introducing vocabulary to young children.
- And lots more good resources and information at the website link above.

The MREPBC student activities at the Cordilleran Roundup were a great success, once again. A highlight was the Rockhounds’ Treasure Hunt.

**Science And Innovators in the Schools** (Cathie Hickson)

This BC program connected with about 120,000 students in the past year. They need more volunteers to meet the demand for earth science placements. Contact details can be found at: [http://www.scienceworld.bc.ca/pdf/SIS\\_Newsletter\\_2006.pdf](http://www.scienceworld.bc.ca/pdf/SIS_Newsletter_2006.pdf).

**NWT Outreach** (Diane Baldwin)

The NWT/Nunavut Chamber of Mines is developing a CD “Mining Now,” similar to the one produced by NRCan, but from a northern perspective. It is in a beta version for testing, but should be available in the next few months.

**Curriculum revision in BC** (Erica Williams)

There are continuing concerns about the revised BC curriculum linked to the lack of earth science topics included in the K-12 curriculum, as well as the errors and appropriateness of pedagogical levels in what remains. Erica is preparing a document to send to the Minister of Education, and would welcome CGEN input once it is ready. *Action: Erica to forward document to Christy for circulation to CGEN reviewers.*

**Edmonton Outreach** (Dixon Edwards via email)

The Alberta Geological Survey is providing advice to the Canadian Petroleum Discovery Centre at Devon on the geological aspects of their renovations and expansion, and to the Frank Slide Interpretive Centre, which is being redeveloped. Dixon is also part of the advisory committee for the geology gallery redevelopment at the Royal Alberta Museum. He is working on the “Building Canada” chapter for the book project Geology of Canada (now titled “Four Billion Years and Counting”), and provided an Alberta rock for the Air India Memorial. Dixon also continues to offer building stone tours in Edmonton, including an innovative indoors one for a disabled person in an Edmonton mall.

**Saskatchewan Geological Society (Fran Haidl)**

Full report attached as Appendix 8.

**Timing for next meeting :**

An abbreviated AGM will be held in Yellowknife on the morning of Sunday, May 27, as part of the outreach/education workshop.

Christy Vodden  
Secretary-Treasurer  
March 15, 2007

**REPORT FOR CGEN MEETING  
Vancouver, February 2, 2007**

*Careers in Earth Science project*

In 2005, CGEN applied to NSERC's PromoScience program for funds to complete the Careers in Earth Science website. A pilot website was created by Jenn Sabean and Jennifer Smith in support of the application with seed money provided by NRCan and CGF. Unfortunately, the application was unsuccessful, and further website development had to be suspended.

An opportunity to breathe new life into the project arose with the establishment of the Canadian Federation of Earth Sciences and the widespread recognition among Canadian earth science societies that making information on earth science careers available to children and school counsellors is a priority. In late 2006, acting on the encouragement of Fran Haidl, I contacted Ian Young (President of the Canadian Federation of Earth Sciences) and the presidents of several Canadian earth science societies in late 2006. I asked for their support in bringing the careers project to fruition. CGEN needs both contributions of information and illustrative material from the societies and money (ca. \$15K) to contract the services of Jenn Sabean to interface with the societies, compile material, and help design the website. General support for the project was voiced by Ian Young and Oliver Kuhn, President of CSEG, in a follow-up telephone conversation in December 2006. Since then, Ian has been working at putting a sub-committee together to help get things moving. He has asked CSPG, CSEG, and PDAC to provide contact persons to assist in the process. Ian indicated that he has an Administrative Officer with a background in human resources who can help facilitate the project. He will set up a conference call to talk about the next steps once he has heard back from CSPG, CSEG, and PDAC.



**EdGEO Report to CGEN**  
**E. Van der Flier-Keller**

**February 2<sup>nd</sup> 2007**

**2006 Workshops**

Seventeen EdGEO workshops were delivered in 2006 across Canada

	# of workshops	# of teachers	EdGEO cost/ teacher	
Alberta	5	109	\$75.28	
BC	5	135	\$66.47	
NWT	2	39	\$00.00	
Quebec	1	32	\$47.15	
Ontario	1	8	\$184.66	(2 weeks)
Saskatchewan	1	22	\$56.82	
Nova Scotia	1	21	\$6.60	
Manitoba	1	11	\$272.73	(4 days)
Total	17	377	\$24,553.11	

**2007 Workshops**

Two workshops are funded (Prince George and Vancouver), another EdGEO workshop will be offered at “Learning Odyssey Conference” run by the Saanich Teachers Association in Victoria. Drumheller and Field will not be running workshops this year. The pre-service teacher workshops in Victoria will take place again in the Fall. The Nova Scotia EdGEO Committee plans to run its field based workshop as well as take advantage of teacher conferences etc.

**Finances**

Total assets are currently \$13,114.77. We are recording a net loss for 2006 of (\$15,844.01), which will be offset by the CGEN grant of \$3000, and the CSPG grant of \$12,500 for which we will be applying in the next few weeks.

**Newsletter**

Please submit any articles or news items to David Mate ([dmate@NRCan.gc.ca](mailto:dmate@NRCan.gc.ca)) or myself ([fkeller@uvic.ca](mailto:fkeller@uvic.ca)) as soon as possible, for the May 2007 EdGEO newsletter.

Many thanks!

**FUTURE DIRECTIONS**

EdGEO is changing. While continuing to support our core workshops, we need to look to the future and consider;

- Capitalizing on more workshop opportunities at Teacher conferences, national, provincial and local e.g. school board professional development conferences
- Link with Social Studies groups to offer earth science workshops that fit with the social studies curriculum
- Foster more pre-service teacher workshops (Ottawa?)

- To increase the coverage and access to workshops, consider developing a set of packaged EdGEO curriculum-linked workshops that we would train people to give and send them wherever there is a request from a school.

EarthNet Report  
Meeting of the Canadian Geoscience Education Network  
Vancouver, BC  
2 February 2007

### Overview

Progress on EarthNet ([www.earthnet-geonet.ca](http://www.earthnet-geonet.ca)) has been almost non-existent since May 2006. At least, that's how it feels. Much of the time was spent ensuring the site's absence from the Government of Canada web world due to its incomplete bilingual status. As the same time, support from Natural Resources Canada for outreach activities within the science program structure was discontinued. The good news is the Geological Survey of Canada (Atlantic) continues to provide server space for the site. With this in kind support, the EarthNet project can exist.

EarthNet's operations have regressed to its pre-2002 mode of functioning when development was on a volunteer basis and funding came in the form of grants (\$2000-3000 per year) given by geoscience societies for specific tasks. Great strides were made several years ago when ResSources GSC funding (\$25-30K each year for 3 years) permitted 'big picture' planning and implementation. This level of funding is a minimum requirement to grow this site into a true national online entity.

When the Geology of Canada book project was recently pitched to a geoscience group in Calgary, several people stressed the need (and even preference) for a digital product. EarthNet could be this product. There is no other Canadian site designed and on its way to delivering reliable geoscience information to educators and the public. The concept is solid. But funds must be obtained.

### Content development

Text and images have been gathered for almost 90 geological locations across Canada representing all provinces and territories. Images from Parks Canada (~30) are the current focus. Discussions with Parks Canada staff in Halifax in the summer were positive and everyone was keen to proceed with the partnership. At present, the text developed for these spectacular images needs to be reviewed by local and/or specialist geologists to ensure accuracy and appropriateness. Then, Parks Canada will add a section on each National Park mentioned. Translation to French is then required. Hopefully, these cameos will make it to the Virtual Field trip section by summer 2007.

Distribution of these images is as follows (number of Parks Canada images in brackets): British Columbia - 13 (6), Alberta - 10 (4), Saskatchewan - 4 (2), Manitoba - 5 (2), Ontario - 9 (6), Quebec - 10 (6), New Brunswick - 7 (2), Prince Edward Island 1 (1), Nova Scotia - 4 (2), Newfoundland and Labrador - 8 (3), Yukon Territory - 5 (3), Northwest Territories - 5 (3) and Nunavut Territory - 8 (3).

The Atlantic Geoscience Society is actively supporting EarthNet by placing links from its current web project in development (Mastodons of the Maritimes) to appropriate sections of the site (e.g. Glossary, Virtual Field Trip, Learning Resources, etc.). CGEN members are encouraged to make similar connections with EarthNet. The site will only grow and prosper with contributions of (or links to) activities, images and field trip materials, and recommendations of reliable hard copy

and digital resources and their sources. The current content priority remains images for the virtual field trips. Please note that contributions are acknowledged on EarthNet.

### **Database, Online Input Forms and Metadata**

In 2005, the ability to search EarthNet on a selected topic, region and/or grade level was deemed to be a worthwhile function. The GENCOM and CCGK programs of the GSC provided technical support for database development and creation of online input forms through 2005 to April 2006. The Oracle database structure was developed and existing site content was loaded. To ensure retrieval of this content using the search mechanism, metadata must be assigned to each piece of data. This tedious but important procedure began December 2005 and is ongoing. Only when this is finished can the top level search tool be added to the site. This tool would allow a user to retrieve all content on a certain topic for a particular region of Canada - an essential function for any site today.

First drafts of online input forms were produced in 2006. They allow for coding of existing online content in the Resources, Glossary, Activities, Virtual Field Trip and Hot Spot sections. Since May 2006, some editing to update content was done. Further development of these forms is required to allow for input of new content. Once achieved, these forms will reduce the dependency on a web developer. Content developers (given pass word access to these forms) could load, review and edit content.

### **Promotion**

EarthNet was soft-sold at various events: Science Teachers of Ontario Association conference (thanks to Beth Halkenney), Nova Scotia EdGEO workshop and Nova Scotia Association of Science Teachers conference. EarthNet promotion cards were distributed to geologists in Alberta, Nunavut, Nova Scotia, New Brunswick and Newfoundland to use in workshops and classroom presentations and to educators via the Natural Resources Canada S&T Week activities. The Geological Survey of Canada (Atlantic) and Atlantic Geoscience Society continue to include these cards in packages for educators.

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 obtain EarthNet promotion cards to add to your education packages.

### **Future**

As one of the core projects of the Canadian Geoscience Education Network, EarthNet must continue to grow. Future development of EarthNet must concentrate on attaining complete national coverage and building online forms that will allow for independent input by contributors. Funding and in kind support will be required. The EarthNet Committee needs to develop an action plan. A request for funding will be sent to CGEN for consideration.

Jennifer Bates  
Chair, EarthNet Development Committee

## EDU Model for Volcanoes and Viscosity

### Demonstration: Volcanoes and Viscosity

#### Materials

- Newspapers (or a flat plastic lid or tray)
- 2 paper cups
- Can of coke to fill one cup (dark)
- 2/3 paper cup of honey, molasses or corn syrup (light coloured or clear)
- 2 drinking straws
- Wet cloth or paper towel for clean-up
- Rock Kits

#### Instructions

1. Spread newspaper or place lid/tray under cups.
2. Fill one cup nearly full with coke. Fill the other 2/3 full with syrup.
3. With a straw, blow bubbles into the coke until it flows over. Watch how it overflows and runs down the side of the glass.
4. With the other straw, blow into the syrup with the same intensity as used for the coke. (Nothing happens). You need to blow harder to make bubbles and get this 'magma' to erupt. Watch them blow up and pop. (Note: men with facial hair may not want to do this!).
5. Review the accompanying EDU Model sheet for this exercise and follow along as your TA leads the DISCUSS and UNDERSTAND.

Grade Level: elementary, but also good for high school

#### Explore (Questions for the Class)

"How might the eruptions of the coke (magma) vs. the syrup (magma) differ?"  
"Why?"

#### Discuss

"How does this relate to types of volcanoes that might form?"

Volcanic eruptions can be violent like Mount St. Helen's or Krakatoa, while others are less violent such as volcanoes in Hawaii. The eruption's violence depends on the temperature and viscosity of the magma. Viscosity describes how easy the magma flows.

In our experiment, the less viscous magma (coke) flowed down the side of the volcano (cup) and makes a flat, or shield, volcano. When magma is viscous

(thick and flows slowly like syrup), the eruption is violent (splattering all over). This is because gases and thick sticky magma get trapped and build up pressure. Magma then comes out quickly and explosively. Volcanoes produced from viscous magma are called composite volcanoes, and usually have steep sides.

### **Understand**

“What kind of volcano would you expect if the magma has an intermediate viscosity?”

\*Activity from Southern Vancouver Island Earth Science Fun Guide  
(*Demonstrated by Eileen Van der Flier-Keller*)

### **Volcanoes, bubbles and magma**

Take a healthy quantity of BAKING SODA, mix it with LIQUID DISH SOAP, then add a few drops of RED FOOD colouring. Mix the ingredients together until you have something of smooth consistency that is relatively easy flowing, but still very thick.

Place about 15 ml (about three teaspoons) of the mixture at the bottom of tall clear container. A narrow flow vase, a tall glass, or bottle will all work. Add about 50 ml (around 4 tablespoons) of VINEGAR. The reaction starts slowly (the thicker your baking soda paste is, the slower the reaction, so experiment), then builds up into a tower of pink foam that should come flowing out of the top of your vessel. Have a plate or lots of paper towels handy.

Small kids (k - 3) are just fascinated by the rising column and predicting whether it will "erupt"; for older kids you can use this demonstration as a base for discussion on the role of gas in magma and how expanding gases drive an eruption (among other things). I also use it to talk about volcano monitoring - what kinds of things would be happening at the surface as the magma is rising that could be monitored remotely. Kids love a visual, and even though this is pretty tried and true, using it as a basis for discussion of more complex things makes it new and interesting.

You can let the kids do this individually using clear drink glasses. Measure the soda paste and vinegar before hand, so you don't create a huge mess in the classroom. Kids love it, but teachers may not be so thrilled when all the kids have red soapy stuff all over their desks!

Science and Innovators in the Schools run for BC by Science world brings in a consultant named Deb Calderon to help volunteers create better presentations. She has lots of good tips and demonstration ideas. Her website is [www.wizbangers.ca](http://www.wizbangers.ca) and her blog is <http://www.zapitup.blogspot.com/>

Here are a couple of other sites that are not geology but are interesting sites for science projects

<http://www.thinkingfountain.org/>

<http://www.exploratorium.edu/>

and their teacher site for inquiry based research and teaching

<http://www.exploratorium.edu/ifi/index.html>

Cathie Hickson



Note: The document from Sheila Stenzel for this activity would not reproduce for the online version. Anyone wishing to get a copy may contact Christy Vodden at [cgen@sympatico.ca](mailto:cgen@sympatico.ca).

## 2006 SGS Education and Outreach Committee Report

submitted to

### Annual Report of the Saskatchewan Geological Society

In June of this year, the SGS School Liaison and Geoscape Committees brought to the SGS executive a proposal to restructure the two committees into one body. Under this proposal, the following structure would be in place:

The “SGS School Liaison Committee” would be renamed the “SGS Education and Outreach Committee (SGS EOC)”.

- The activities that currently fall under the jurisdiction of the SGS Geoscape Committee would be transferred to the appropriate proposed sub-committees of the new SGS EOC.
  - School and public lectures
  - Teacher workshops
  - *Geoscape Southern Saskatchewan* lesson plans and website
  - Fundraising
  - Northern Connections (*Geoscape Northern Saskatchewan*, liaison with teachers Prince Albert and north??)
- For now, we have assumed that the sub-committees would continue to be chaired by the individuals who currently have lead responsibility for the activities that fall under the mandate of the appropriate proposed sub-committee, and that other members of the Geoscape Steering Committee will continue to serve on the sub-committees related to their current activities:
  - **Melinda:** School and public lectures
  - **Andrew:** Teacher workshops
    - Sarah, Kate
  - **Fran:** *Geoscape Southern Saskatchewan* lesson plans and website
    - Arden and Jeff
    - Working group leader: Jason Cosford
    - Consultants: Sarah, Jo Szostak, Paula Hammermeister
  - **Brian:** Fundraising
  - **Andre:** Northern Connections
- Each sub-committee will be responsible for ensuring that the EOC Co-chairs are kept informed of committee activities, and consulted as necessary.
- Each sub-committee will be responsible for working with the SGS Treasurer to ensure that finance records are correct and up-to-date.
- Other SGS members and educators will be invited to join one or more of the sub-committees.

#### School Lecture

This year at the 19<sup>th</sup> SGS Annual School Lecture series on April 27th, Shawn Harvey from Shoregold Inc. delivered his presentation entitled: “*Canada: A diamond producing country; Saskatchewan: A diamond producing province?*” to over 600 students in both the Public and Separate school systems. His presentation focussed the diamonds and the diamond industry through time and included updates on diamond exploration, diamond discovery, and diamond mining in Canada with specific focus on the potential of the Fort

à la Corne kimberlite field in Central Saskatchewan. The feedback from the students and the science consultants from both school boards was highly positive.

Shawn also spoke to the general public at the Royal Saskatchewan Museum with well over 100 people in attendance. Judging by the number of questions during the question and answer period as well as the number of people wanting to talk to Shawn after the formal part of the evening, this was a very well received lecture.

### Geoscape

This year has been a time of transition for the *Geoscape Southern Saskatchewan* team. A big thank you is extended to Mary Ferguson, co-chair of *Geoscape* committee, who departed for Abu Dhabi in July to accept a teaching position there. For now, Fran Haidl has accepted the challenge of co-ordinating the *Geoscape* lesson plans and website sub-committee of the restructured Education and Outreach Committee. Progress continues to be made on editing and posting of existing lesson plans on the *Geoscape* website, and efforts to recruit additional teachers to develop new lesson plans are ongoing. Funding for development of lesson plans and the website is supported by generous contributions from sponsors ([www.geoscapesask.ca/sponsors.php](http://www.geoscapesask.ca/sponsors.php)).

### Teacher workshops

Members of the Outreach and Education Committee continue to contribute to geoscience education through teacher workshops. A *Geoscape Southern Saskatchewan* teacher-geoscientist team presented a workshop at the Prairie Valley School Division's Teacher Conference in Regina in February. In July, two SGS members delivered a "Rock and Minerals" workshop for science teachers from across the province who attended ASSIST 2006 at the University of Regina. Teacher participants at both workshops received free copies of the *Geoscape Southern Saskatchewan* poster, relevant lesson plans and the Saskatchewan Geological Highway Map, as well as materials available from other organizations. A total of 38 educators attended these workshops; evaluations and feedback received from all participants were very positive.

### Other activities

We continue to promote our educational materials to the geoscience community and the general public. *Geoscape Southern Saskatchewan* posters are now available for purchase at the Chaplin Nature Centre and another gift shop associated with a popular tourist destination has also expressed an interest in selling the poster. SGS publications and activities related to Outreach and Education were highlighted in poster presentations at SANPOGS in Regina in April, and at the SIR Open House in Saskatoon in November.

Once again, our thanks go out to all members of the SGS Education and Outreach Committee (SGS EOC) and to the network of dedicated teachers, science consultants and geoscientists that help to ensure geoscience is alive and well in our schools.

Respectfully submitted,

Andrew Nimegeers and Melinda Yurkowski (SGS Education and Outreach Committee Co-Chairs)

Fran Haidl (Geoscape Sub-Committee Chair)

December 20<sup>th</sup>, 2006