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GEOLOG

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Geological Association of Canada

Department of Earth Sciences

Memorial University of Newfoundland

St. John's, NF

Canada A1B 3X5

Tel: 709 737-7660

Fax: 709 737-2532

http://www.gac.ca

GAC | AGC

geolog@gov.yk.ca

Canadian Geologists

... an aging species

While the Olympic credo may be faster, higher, stronger, it seems that most Canadian geologists are older, wealthier, well-educated.

Details of the Canadian Geosciences Council Census have recently been made available. Although the numbers can be cut and manipulated several different ways, they clearly indicate a greying trend — about 42% of Canadian geologists are older than 50 years old. Although about 11% are currently beyond an assumed 65-year retirement age, the remaining 31% are within a 15-year window to retirement. At the other end of the scale, the numbers of youthful geoscientific recruits are small with only 13% younger than 35 years.

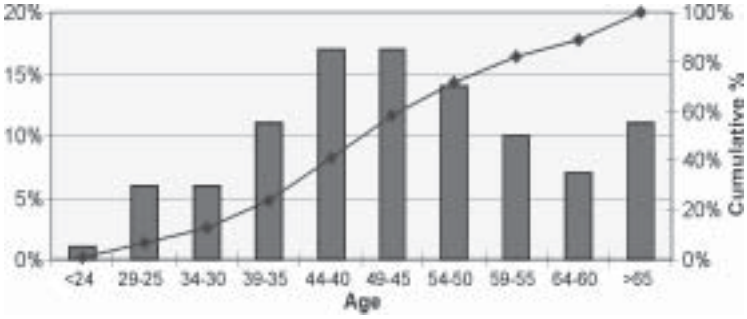
These are alarming statistics.

Even with the possible assumption that the numbers of youthful respondents may be underrepresented, demographic curves for a professional/technical discipline should not look like this with a rather skinny beginning and a wide bottom. As geologists move along in their careers, many typically fall off the chart by changing careers, becoming administrators or managers, etc … However, it is highly unlikely that someone on in another discipline, will at some mid-career stage, decide to become a geologist — there are no growth elements beyond youthful input.

Do these curves reflect reality?

Look around you. Certainly the demographics of many university geology departments, geological survey branches, and mining/hydrocarbon corporate environs throughout Canada are graying (see *Geoscience Canada*). Even worse, are those organizations that have encouraged early retirements of the greying faction and not replenished their workforce with youth. The GSC, in particular, is in this situation having annexed its acquired wisdom and subsequently failed to revitalize its ranks with youthful enthusiasm and ideas.

The advanced age of most geologists in Canada, in combination with an apparent deficiency of fresh recruits should be recognized as as a crisis in the works to those industry and government agencies that depend on developing geoscientific expertise. There is however, some good news that may encourage recruiting efforts. Canadian geologists are well-paid, with average salaries in the $75k range. This, no doubt in part, reflects its highly educated workforce with > 50% of respondants reporting graduate degrees. More ... pages 6-10



An Update on the Fate of the BC Geological Survey

Round 1 of 3 for the planned downsizing of the British Columbia Geological Survey (BCGS) went into effect March 31st, 2002. In this round, 8 regular positions were made redundant and three positions that were used to hire summer students were eliminated. Given the bleak outlook for the BCGS staff, 4 other staff elected to take the voluntary leaving incentive package and will be gone by March 31st.

In the 2002/03 fiscal year the BCGS will have 30 positions (down from 45), and another 15 or so positions will be eliminated over the next two years, leaving a staff complement of about 15. This year's budget was reduced by 25% from $4.0 to $3.0 million. The final budget target is expected to be about $1.0 M.

So far the new mandate of the GSB has not yet been clearly enunciated, but it appears that it will include maintaining the provincial geoscieince databases and managing any field survey work that emerges from the Public - Private Partnerships that the Government of British Columbia is developing. The current view of the new Government is it is not cost efficient to have government geologists conduct geological mapping and that it can be done more efficiently by contracting out.

The fate of ongoing joint field projects with the Geological Survey of Canada is also uncertain at this time. The fate of the five Regional Geologists who are housed in the Mines Branch is also uncertain at this time.

Clearly the fate of the BCGS is still very much in doubt. The GAC continues to be involved in discussions about the future of the BCGS and will keep you informed of any new developments.

INSIDE

GEOLOGICAL ASSOCIATION OF CANADA

The MISSION **of the Geological Association of Canada is to facilitate the scientific well-being and professional development of its members, the learned discussion of geoscience in Canada, and the advancement, dissemination and wise use of geoscience in public, professional and academic life.**

The VISION **of the Geological Association of Canada is a geoscience community that is knowledgeable, professionally competent and respected, whose input and advice is relevant, widely sought and utilized, and whose vital contribution to the economic prosperity and social well-being of the nation is widely acknowledged.**

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Fran Haidl, Regina, SK
fran.haidl@sem.gov.sk.ca

Philip Hill, Rimouski, QC
phill@nrcan.gc.ca

Carmel Lowe, Victoria, BC
lowe@pgc-gsc.nrcan.gc.ca

Michael Marchand, Calgary, AB
marchndm@telusplanet.net

Michael Michaud, Toronto, ON
mmichaud@srk.com

Harvey Thorleifson, Ottawa, ON
thorleifson@gsc.nrcan.gc.ca

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GEOLOGICAL ASSOCIATION OF CANADA
Memorial University of Newfoundland
St. John's, NF, A1B 3X5
Tel: 709 737-7660
Fax: 709 737-2532
Email: gac@sparky2.esd.mun.ca
Web: www.gac.ca

Editor
Craig J.R. Hart
Yukon Geology Program
Box 2703 (K-10)
Whitehorse, YT, Y1A 2C6
Tel: 867 667-8519
Fax: 867 393-6232
Email: geolog@gov.yk.ca

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GEOLOG (ISSN 0227-3713) is the quarterly newsmagazine of the *Geological Association of Canada*, St. John's, Newfoundland. GEOLOG is published for the benefit of GAC members and its content reflects the diversity of the organization. News items and short articles on topics of potential interest to the membership including public geoscience awareness are encouraged. Also encouraged are communications promoting interaction among academic, industry and government sectors. GEOLOG accepts and publishes contributions in both of Canada's official languages. Opinions expressed herein are those of the writers and do not necessarily represent the official positions of the GAC. GEOLOG is one of several forums provided by the GAC for scientists worldwide.

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GEOLOG (ISSN 0227-3713) est le bulletin trimestriel de l'*Association Géologique du Canada*, à St. Jean, T.N. GEOLOG s'adresse aux membres de l'AGC et son contenu reflète le caractère polyvalent de cette organisation. Nous invitons la soumission de nouvelles et articles courts pouvant intéresser les membres, incluant les thèmes de sensibilisation du public aux sciences de la Terre. Les articles suscitant des échanges d'opinions et d'informations entre les secteurs académique, industriel et gouvernementaux sont également la bienvenue. GEOLOG accepte et publie les articles dans les deux langues officielles du Canada. Les idées sont celles des auteurs et ne représentent pas nécessairement la position officielle de l'AGC. GEOLOG n'est qu'un des nombreux forums offerts par l'AGC aux scientifiques à travers le monde.

RECEVEUR DES POSTES: Veuillez faire parvenir les changements d'adresse à l'Association Géologique du Canada, dont l'adresse est indiquée ci bas.

ABONNEMENT: L'abonnement à GEOLOG est un des privilèges dont bénéficient les membres de l'AGC. On peut se procurer un formulaire d'adhésion par courrier ou par fax en communiquant avec l'Association Géologique du Canada. Une copie de ce formulaire peut aussi être imprimée à partir de notre site Internet. Le coût de l'abonnement pour non-membres.

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Why are these students happy? See page 24

This Spring 2002 **GEOLOG** benefits from the contributions and assistance of Karen Dawe, Sandy McCracken, Cecilia Edwards, Steve Morison, Nancy Chow, Alwynne Beaudoin, Harvey Thorleifson, Fran Haidl, Karen Johnston, Paul Johnston, Alan Morgan, Tim Corkery, Jeremy Hall, Bill Poole, Gordon Winder, Sharyn Alexander, Bruno Lafrance, Jennifer Bates, Eleanor Penney, Philip Hill, Carl Verley, Gregory Finn, Andrew Tims, Henry Lyatsky, Ric Syme, John Clague, Carmel Lowe, John Gatner, Lara Lewis, and Mike Melchin. Thanks to all, and regrets to anyone that I missed. Also, thanks to webmasters and webmistresses that have allowed me to use bits and pieces, logos and text from their websites. Karen Dawe and Sandy McCracken undertook the job of proofreading, although any faults remain the accepted responsibility of the Editor. This **GEOLOG** was produced with support from the Yukon Geology Program, Whitehorse, Yukon. Next Deadline is May 17th, 2002 — your contributions are welcome! CJRH

Préambule Presidential Preamble

The Future Of Canadian Geoscience Societies

A Case For Partnerships

In my first Presidential Preamble, I indicated that improving GAC's fisal position is an important priority for the future of our organization. At the recent Council meeting this past February in Vancouver, your Council wrestled with the approval of the 2002 Operational Budget. This exercise has shown that GAC must either increase its revenue base or decrease member services to remain a viable society over the long term. GAC Council has seen this issue coming over the past number of years and as a result has implemented a series of initiatives to deal our fiscal position. Examples include the implementation of the Publications Business Plan, membership drives (both individual and corporate), the formation of an ad hoc fund raising committee and recently the development of a 5-year operational budget "proforma" to provide the information that Council requires to make sound fiscal decisions.

Our Secretary-Treasurer, Elliott Burden produced a background paper for Council in 1995 on the, "Historical Trends for GAC Members and Finances 1969-1994". This paper showed interesting trends of an aging and declining membership, increased costs of conducting business, and publications that do not generate sufficient income to exceed expenses. While, the GAC membership base has remained relatively stable over the past five years, it has not re-bounded to the levels in the 1980's which typically exceeded 2700 members. Today's membership stands at approximately 2,400.

It is worthy of note that other societies appear to be wrestling with similar issues to GAC. In *GSA Today* (Vol. 12, No. 2), President Naldrett discusses the fiscal challenges facing their organization in an article titled, "Finances a Focus for 2002". In this article, President Naldrett indicates that, "membership dues entitle you to benefits that go far beyond what those dues can support". He goes on to further indicate that, " clearly until new revenue-generating activities have developed to their full potential, we will have a tough time over the short term in continuing to provide you with the services that have been paid for in the past largely out of investment income". This is a similar situation to that which the GAC is currently managing.

President McIntyre of the Canadian Society of Petroleum Geologists (CSPG), has indicated in the February 2002 Reservoir that his organization is investigating options for reducing the costs associated with the production of publications.

The continuing challenging of maintaining a healthy membership base, improving membership services within tight fiscal realities is a challenge facing all geoscience societies in Canada.

This is an issue that the Canadian geoscience community must face. Geoscience societies "compete" against each other for corporate sponsorship, individual members, attendance at annual general meetings and for the sale of publications. This is taking place during a time when student enrolment in post secondary geoscientific training is declining. Given these circumstance, it is possible that a rationalization of Canadian Geoscience Societies will occur either due to the inability of certain societies to continue as viable organizations or through partnerships, alliances and perhaps mergers.

The mission of GAC is, "to facilitate the scientific well-being and professional development of its members, the learned discussion of geoscience in Canada, and the advancement, dissemination and wise use of geoscience in public, professional and academic life". Given this broad mission statement and the long history of GAC providing national geoscience leadership and the issues described above, it may be timely to actively pursue formal partnerships with other Canadian geoscience societies. Past, past President Couture supported this idea and ensured that a meeting of the organizing societies at GeoCanada 2000 occurred to discuss potential synergies and future relationships. The notion of geoscience societies sharing in costs such as the production of publications, general administration, advertising and supporting each other needs in dealing with controversial issues is quite attractive from both a corporate and strategic perspective. The example of the British Columbia Geological Survey is a case in point where this challenge would be best responded to with other partner geoscience societies who have membership interests in this issue. We are after all, volunteers who believe that a comprehensive geoscience database and innovative research activities are important for our country's future.

GAC's ten year Action Plan talks about, "forging strategic alliances, while respecting the distinct mandates and identities of our partner groups". This insightful Action Plan also promotes the theme of, "Towards a New Era of Earth Science Integration" with the following vision:

Imagine a world in which all branches of earth science work together. Consider the strength of such integration. Think of the tremendous results such an approach could achieve. The possibilities are profound. Our challenge, as earth scientists, is to look beyond the narrow scope of specialization and see the opportunities that will grow out of collaboration. Is it possible to bridge the distance that seemingly separates the specialized areas of today's research? At the Geological Association of Canada we believe it is not only possible, but imperative given the world in which we live. There is common ground.

The authors of this vision were prophetic and I believe it is now time to take action to realize this vision. This will require a strong effort on the part of GAC volunteers, HQ staff and a willingness in other societies to engage in the debate. Failure to face this challenge risks the collective future of all geoscience societies in Canada.

Your Council will be debating this issue and your Executive will continue to look into short term and long term possibilities of partnerships with other geoscientific societies. In the meantime, I encourage you to pass along your ideas, reservations, concerns and/or issues in regards to this debate. We need your input to ensure that we are approaching our future as an organization in an insightful manner with the interests of our membership at the forefront of the discussion.

I look forward to seeing you at Saskatoon 2002.

Steve Morison
GAC President

Oscillations

Walter Kupsch of the University of Saskatchewan has been awarded the GSA's History of Geology Award. • **Ned Gilbert** has been given status as an Honurary Member of AAPG for his pioneering role in the early development of the modern oil sands industry and his subsequent dedication to education and management training in the oil industry. Ned came to Canada from Wisconsin in 1944 with the Sun Oil Company (now Suncor) as a field geologist in Nova Scotia and has consulted in Calgary since his "retirement" in 1972. • **Charles R. Stelck** has been awarded the AAPG Distinguished Educator Award. A Professor Emeritus at U of Alberta. Dr. Stelck is specialized in Cretaceous arenacous foraminifera and endemic ammonites of western Canada, with strong relationships to petroleum geology. • **Wayne Nesbitt**, of UWO, was selected as a 2001-2002 Distinguished Research Professor, which provides resources for a year directed towards research efforts. Using a X-ray spectrometer that was recently acquired through a $2.3M CFI grant, Nesbitt plans to collect experimental information about the chemical properties of silicate magmas with respect to understanding the Earth's early evolution. • **James Macdonald**, last in Canada with the Mineral Deposits Research Unit at University of British Columbia, has moved from The Hague, to Brisbane, Australia as the Global Geoscience Leader for the newly amalgamated BHP-Billiton. • **Iain Samson** is the new chair of the Department of Earth Sciences at the University of Windsor, and **Brendan Murphy** is the new Chair of the Department of Earth Sciences at St. Francis Xavier University. • **Pedro Jugo**, of University of Alberta was awarded the Outstanding Student Paper at the American Geophysical Union. • At UBC 4th year student **Reza Tafti** was awarded the CIM (Canadian Institute of Mining, Metallurgy and Petroleum Resources) Book Prize, and Congratulations to M.Sc student **Alyssa Young**, won an "Outstanding Student Paper Award" from the Atmospheric Sciences Section of the American Geophysical Union for her research paper "Anomalous atmospheric circulations forced by volcanic aerosols" presented at the 2001 Fall Meeting of the AGU. • Recently arrived from Italy, **Francesco Macchioni** is undertaking a PDF with Paul Smith at UBC to work on details of the Early Jurassic post-extinction radiation as seen in faunas of the southern Coast Mountains. • **Mati Raudsepp** of UBC has been appointed as an Associate Editor of the Canadian Mineralogist for 2002-2005. • **James Scoates** has recently hired as Assistant Professor at UBC as a mineral deposit petrologist/geochemist. His major research interests are focused on the origin and evolution of magmas and high-temperature magmatic ore deposits. Teaching at Université Libre de Bruxelles in Brussels, Belgium since 1995, James is starting up a new research program on the chemistry of the platinum group elements in magmas and ore deposits. • **Dominque Weis** recently began as a Visiting Associate Professor at UBC. Dominique is a Belgian isotope geochemist with a broad background in hard rock geochemistry, oceanographic and environmental studies, and analytical techniques. Her recent main research focus has been on mantle plumes and the Earth's interior. • **Hans Hofmann**, adjunct professor at McGill University, was among 14 individuals chosen by the The National Academy of Sciences to receive awards honoring their outstanding scientific achievements. The awards will be presented in Washington, D.C. during the Academy's 139th annual meeting. Dr. Hofmann will receive the Charles Doolittle Walcott Medal — a medal and prize of $10,000 given every five years for achievement in advancing our knowledge of pre-Cambrian or Cambrian life and its history in any part of the world. Hofmann was chosen "for his pioneering discoveries of fossils that have illuminated life's early evolution, from Archean stromatolites and Proterozoic cyanobacteria, to the rise of multicellular organisms." • **Murray Gingras**, Professor of Geology at the University of New Brunswick in Fredericton, has received the 2001 Society for Sedimentary Geology (SEPM) Excellence in Oral Presentation Award. Dr. Gingras received the award for his presentation, "Assessing Permeability in Bioturbated Media". • **Joseph White** returned as Chairman of the UNB Dept. of Geology after a temporary Acting Vice President – Research assignment. • **Steven McCutcheon** was appointed Adjunct Professor at UNB and **Cliff Shaw** has been hired as UNB's new igneous petrologist. Cliff has a wealth of experience including industry-supported field-based research, but has moved into kinetics of reactions between silicate and oxide minerals and silicate melts, where he is an emerging leader in this field.

Oscillate recently?
Tell geolog@gov.yk.ca

Information for Contributors/Directives aux Auteurs

Submissions are preferred as **digital files** sent as e-mail attachments to geolog@gov.yk.ca or on a **disc** via the post to the Editor. Discs will be returned if sent with self-addressed mailer. Documents should be sent as unformatted text (*.doc, *.txt or *.rtf) files. Graphics should be as CorelDraw v.8 (*.cdr), Windows metafiles (*.wmf) or Acrobat (*.pdf) file types, and images should be at 300 dpi, greyscale without internal compression (preferably *.tif). Files greater than 1MB should be compressed or zipped before sending via e-mail. Additional information on other file formats can be obtained from the Editor. **Hard copy** text, graphics and photo images are also welcome. All contributions may be edited for clarity or brevity.

The **DEADLINES/ÉCHÉANCIERS** for submissions and advertising for next year's editions of GEOLOG are 17 May, 30 August and 22 November, 2002.

Nous préférons que les articles nous soient soumis sous forme de fichiers numériques, annexés à un courriel, ou sur disquette, par courrier conventionnel adressé au Rédacteur en Chef. Les disquettes seront retournées si elles sont accompagnées d'une enveloppe affranchie avec adresse de retour. Les documents doivent nous parvenir en version texte non formaté (*.doc, *.txt ou *.rtf). Les graphiques doivent avoir un format CorelDraw (*.cdr), Acrobat (*.pdf) ou Windows metafiles (*.wmf), et les images doivent avoir ne résolution de 300 dpi dans un format non comprimé (préférablement *.tif). Les fichiers de dimensions supérieures à 1 Mo doivent être comprimés avant envoi par courriel. Veuillez communiquer avec le Rédacteur en chef en ce qui concerne la possibilité d'utiliser d'autres formats. Nous acceptons aussi une **copie imprimée sur papier** du texte, graphiques et images. Le Rédacteur en chef se réserve le droit de modifier l'article à des fins de clarification ou de brièveté.

The 2001 CGC Census of Canadian Geoscientists:

A Summary

Alan V. Morgan [1], John Gartner [2] and Jeremy Hall [3]
[1] Department of Earth Sciences, University of Waterloo, ON N2L 3G1
[2] Engineering Geologist, Gartner Lee Limited, Markham, ON L3R 6B3
[3] Department of Earth Sciences, Memorial University of Newfoundland, St. Johns, NF A1B 3X5

The Canadian Geoscience Council (CGC) was formed in 1972 on the basis of recommendations made by the Science Council of Canada. Membership is made up of representatives of the national scientific and technical societies in the Earth sciences, scientists from industry, from the universities and from government agencies. By this means the Council has become the umbrella organisation for the 12,000 scientists concerned with the geoscience of the natural environment of Canada and of its mineral, energy and water resources.

The CGC provides an open forum for communication, discussion and debate, to ensure the effectiveness and influence of the geosciences in addressing the needs and desires are the people of Canada. It is especially concerned with the quality of life, economic prosperity, and the maintenance and improvement of the natural environment.

The objectives of the Council include provision of expert advice to government and the general public on matters of significance to Canada and the world that involve geoscience and geoscientists. These include public awareness and education of geoscience in Canada; the organisation of Canadian participation in non-governmental international programmes in geoscience; and the provision of accountability and reporting centres for major co-operative projects, both national and international, in geoscience.

Over the last decade the CGC has been increasingly concerned with public awareness of geoscience, especially among school-age children and among policy-makers in government. CGC has also been involved with building consensus among geoscientists on issues such as professional registration, the integration of geoscience into Earth systems science, and the building of future R&D capacity in geoscience in Canada.

In order to comment knowledgeably about the status of geo (Earth) scientists in Canada a census was created to obtain a database on geoscientists in Canada, so that the CGC could better represent its members. It was felt that the more that was known of the profession and its members, then the more effective the CGC could be in representing their interests on serious geoscience issues facing Canada. And these issues are serious — as governments continue to under-fund, and in some cases even dismantle, the geological capabilities of government surveys — even though such surveys are the basis for wealth generation in Canada. (A previous issue of *Geolog* recently commented on the potential demise of the British Columbia Geological Survey).

In April 2000 the CGC Directors, after consultation with Council, committed to a review of geoscientists practising in Canada. A series of questions was designed to provide census information about age, approximate salaries, work experience, fields of practice, employment, working areas, membership in societies and organisations as well as professional registration.

The questionnaire was distributed in September 2000. This summary provides some of the initial feedback derived from census returns. Further analyses are in progress and will be published later. The census database - filtered to ensure anonymity of respondents - is being provided to members of CGC for their internal use, and may be purchased by others in digital format (for details, see the CGC website - www.geoscience.ca).

The Questionnaire

CGC had requested that all twelve Member Societies (and a few non-affiliated bodies that also represented large geoscience constituencies) distribute copies of the four-page questionnaire. Although two societies declined to participate, approximately 12,000 census forms were sent out by CGC in September 2000. In turn these were re-distributed by the participating societies and associations in their annual mailings between early September and year-end 2000. Included in the 12,000 were adequate numbers of copies circulated independently to the Geological Survey of Canada and to the different Provincial Surveys. CGC recognised that there could be multiple returns from individuals who belonged to more than one organisation/society/association, and requested that individuals should only respond once. CGC also tried to forestall any immediate non-compliance by including a small soft pencil for dealing with the computer-based answers on the census questionnaire. It was assumed that this might encourage individuals to start into the census immediately rather than putting it to one side to search for the required soft pencil.

This policy appears to have been successful, and by May 15, 2001, over 3,000 returns had been received, representing a minimum of a 25% reply. This is well above the standard returns provided by most questionnaires and indicates a high degree of interest and participation. The following summary is based on the 3098 returns.

The Questions

The questionnaire contained fourteen questions as follows:

1) Are you? Male/Female

2) Your age is? (10 categories from < 24 years to > 65 years).

3) Postal codes (to see what were areas of concentrations of respondents/employment)

4) Highest degrees/diplomas - Level of training (Education levels)

5) Nature of the highest degree (Geoscience/Geotechnical degree or diploma)?

6) Current employment (Geoscientist or geotechnical engineer)?

7) The sector of geosciences or geotechnics currently practised? (8 categories).

8) Employed by? (Employment by Sector — 15 categories)

9) Where do you spend the majority of your professional time? (11 categories).

10) What best describes your level of responsibility? (7 categories).

11) Current remuneration? (6 categories).

12) Membership in societies and organisations? (21 categories)

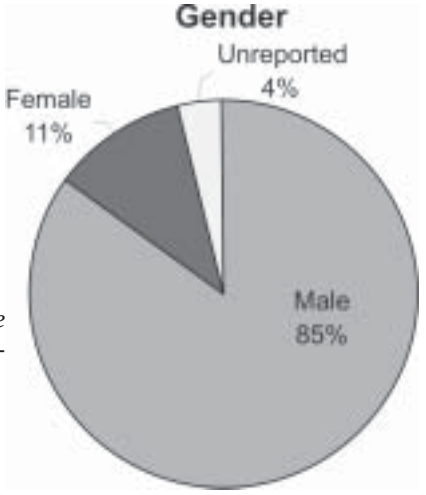
13) Whether a member of a provincially legislated geoscience registration organisation?

14) If not registered is this because? (followed by four choices).

Replies to the Questionnaire

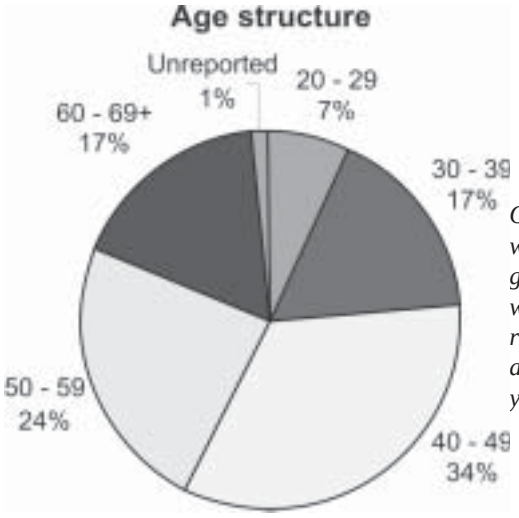
The following summaries provide a "broad brush" overview of the state of the Earth sciences in Canada at the start of 2001.

Question 1. Gender?



As expected, males in the profession (2633) far outnumber females (352).

Question 2. What is your age?



Over 40 % of working geoscientists are within 15 years of retirement, or have already passed 65 years of age.

Retirement ages vary widely across and within geoscience sectors, with many taking relatively early retirement from their employer (a fraction of whom then continue working as consultants), while others continue in employment well beyond 65, in institutions without a mandated retirement age. In the following analysis, we make the simplifying assumption of a standard retirement age of 65 years, conceding that this makes some of the conclusions appear rather more definite than is truly the case.A 65-year retirement age (but perhaps not withdrawal from the workforce) has already passed for 11 % of respondents. Excluding these and the "no reply" category, it is possible to project retirements with time. Cumulatively these can be expressed as follows:

Those with less than 5 years to retirement (in 2005) account for 7.3 %. Some 18.4 % have less than 10 years to retirement (in 2010); 34.7 % have less than 15 years to retirement (2015) and 53.8 % have less than 20 years to retirement (2020). For a typical working career of 40 years, these proportions — for the more elderly half of the respondents — are within a few percent of expectation assuming a constant recruitment rate. Table 1 provides an age breakdown with an assumption that an average age to graduation/employment is 24 years. What is clear from this is that in the younger half of the respondents, there is a strong bias towards the older part of it, confirming that recruitment has been extraordinarily low in the last ten years, and lower than average in the previous five years. This clearly indicates a major human resource problem when most of the rump of the distribution (in age groups 40-54) retires, in 10-20 years' time.

<24 years	(born 1976 or later/(graduating) 2000+	= 34
29 – 25	(born 1971-1975/graduating 1995-1999)	= 178
34 – 30	(born 1966-1970/graduating 1990-1994)	= 177
39 – 35	(born 1961-1965/graduating 1985-1989)	= 350
44 – 40	(born 1956-1960/graduating 1980-1984)	= 512
49 – 45	(born 1951-1955/graduating 1975-1979)	= 521
54 – 50	(born 1946-1950/graduating 1970-1974)	= 442
59 – 55	(born 1941-1945/graduating 1965-1969)	= 304
64 – 60	(born 1936-1940/graduating 1960-1964)	= 200
>65 years	(born in 1935 or earlier/graduated <1959)	= 333
Not provided		= 47

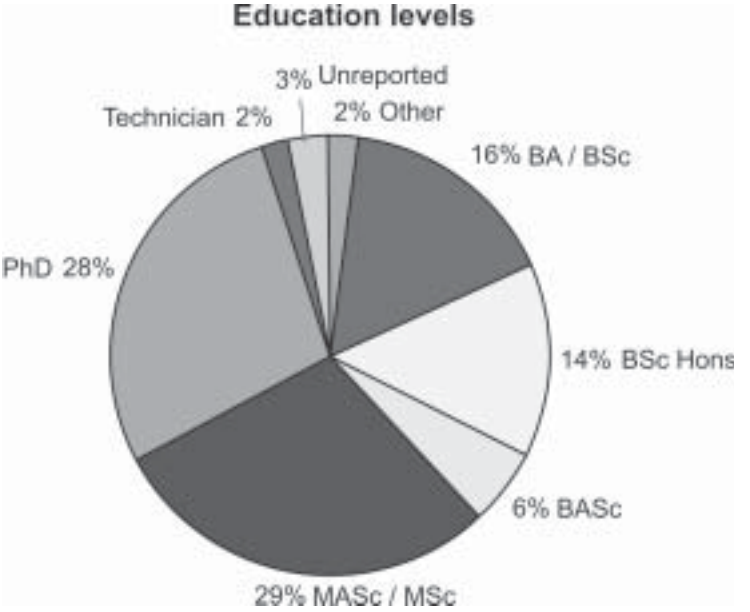
TABLE 1: - Age structure of Geoscientists in Canada

Those in academia can readily identify with the statistics presented in Table 1. First year class sizes fell dramatically from 1989 through the first half of the 1990's (at Waterloo, for example, from 340 participants in 1988-1989 to ~ 220 in 1995). The economic downturn and diminishing interest in Earth Sciences as a career seems to have detrimentally impacted employment in the age categories 2 and 3 in Table 1.

Question 3 on Postal codes.

These responses have not yet been analysed.

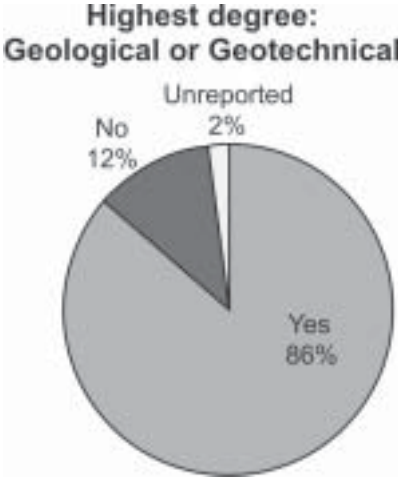
Question 4. Level of Training



Ours is a well-trained profession.

Almost 60% of respondents have advanced degrees (Masters and Ph.D.). Thirty-six percent have some form of Bachelors as their highest degree (General B.Sc., B.A. — 16%; B.Sc. (Hons.) or equivalent — 14%; B.A.Sc. — 6 %). Sixty-seven individuals (2%) have a technical diploma.

Question 5. Nature of degree

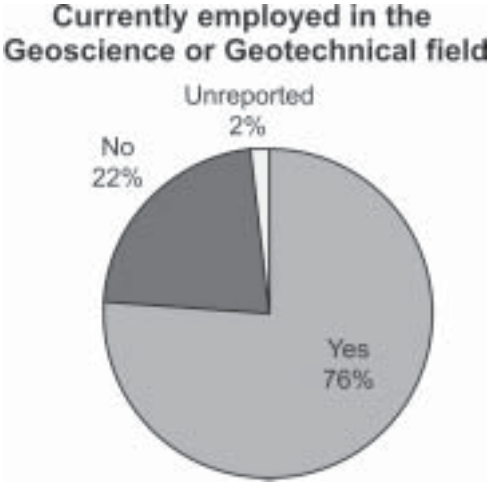


Over 85 % of respondents have at least one degree in geoscience or geotechnical engineering.

Eighty six percent (2678) of the respondents stated that their highest degree was in one of these two areas. A further 363 reported that their highest degree was not in geoscience nor in geotechnology. It is possible, perhaps likely, that many of these may have advanced degrees in business administration

Question 6. Are you working as a geoscientist or a geotechnical engineer?

Approximately 75 % of respondents are working as geoscientists or geo-technical engineers

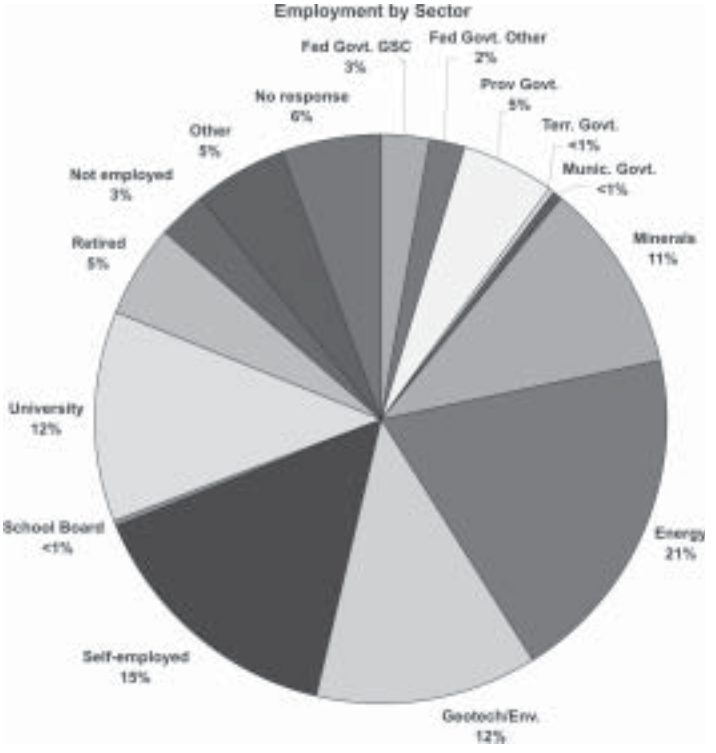


Positive replies came from 2,362 respondents while a further 682 said that they were not employed as geoscientists or in the geotechnical field

Question 7. In what sector of geoscience or geotechnics are you currently practising?

From largest to smallest these were: The Mineral sector, the Energy sector, the Engineering and/or Geotechnical sector, the Research sector, University teaching, the Environment, and Hydrogeology. Thirteen school teachers (0.42%) also responded to the survey.

Question 8. By whom are you employed?



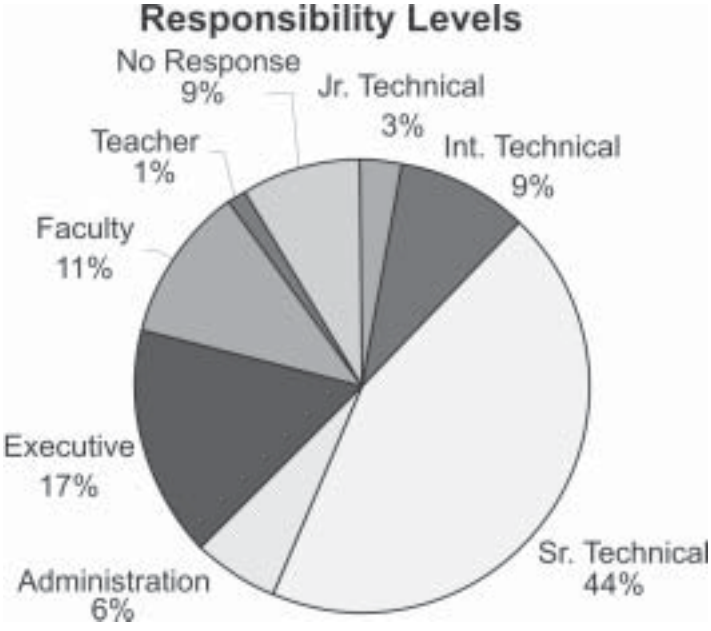
Responses to this question raised a number of points that need further clarification. According to the respondents, the Federal Government employs 5% (3% in the GSC and the remainder elsewhere). Provincial and Territorial Governments employ almost 6% (5 and < 1% respectively). Municipal governments also employ less than one percent. The Mineral sector employs 11%. The Energy sector seems to support about 21%. (Note that 22% reported "practising" in this area). The geotechnical and environmental area employs 12%, (respondents reported that 10% were practising in this area). Universities employed 12%. The "Retired" category made up 5%. "Not employed" were reported at 3%. Another 5% stated "Other" (these data have not been examined). There was "No response" from 6 %.

Question 9. Where do you spend the majority of your professional time?

Countries regarded "home of practice".

This question requested more than one response and the returns indicated 3,530 "filled in" categories. Accordingly it is difficult to produce a refined picture without a more detailed analysis. However, in general terms 79% of respondents spent the majority of their professional time in Canada. The second highest response was for the United States (5%). The next largest groupings were for South and/or Central America. Mexico was at 2%, the same for Europe, Asia and Africa (at 2% each). Approximately one percent reported for the Middle East, Australia and "Other". Russia was listed at < 1%.

Question 10. What summarises best your level of responsibility?



The majority of respondents (56 %) reported some technical level subdivided further into Junior (3 %) Intermediate (9 %) and Senior (44 %) Seventeen percent considered themselves to be in the Executive category. Faculty members reported as 9 %; suggesting the additional 3 % reporting employment in universities either consider themselves in the "Administration" category or in some sort of technical capacity. Finally, 184 respondents (6 %) consider themselves in Administration

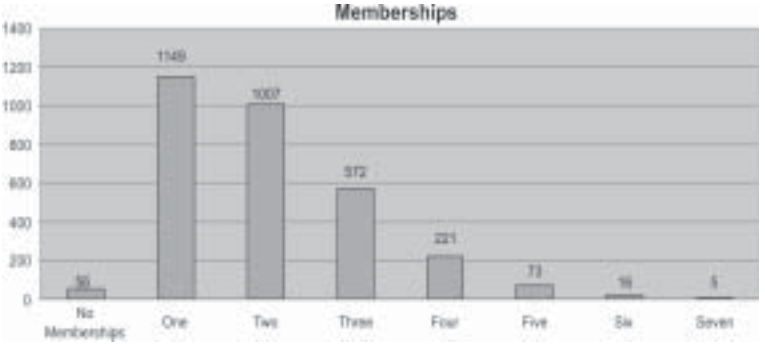
Question 11. What is your current remuneration?

Almost half of those practising in the Earth Sciences reported annual salaries over $75,000.

Question 12. Are you a member of any of the following organizations?

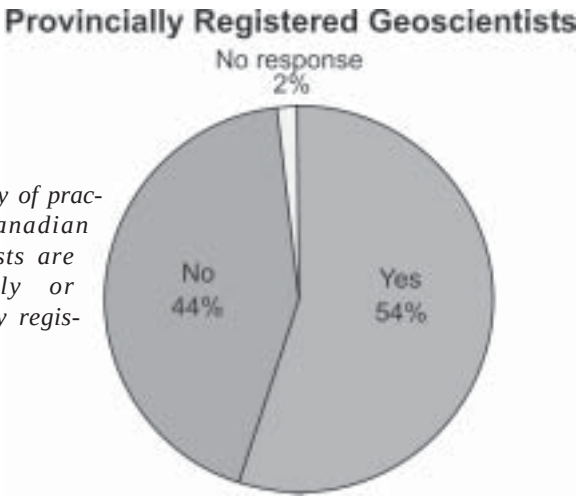
AEG	=	123
BC&YCM	=	254
CAG	=	120
CANQUA	=	86
CEGS (KEGS)	=	112
CGS	=	511
CGU	=	130
CIM	=	856
CMOS	=	10
CSCOP	=	10
CSEG	=	457
CSPG	=	418
CWLS	=	134
GAC	=	1135
IAH-CNC	=	163
MAC	=	146
MINAC	=	41
PDAC	=	563
RSC (EOASD)	=	41
OTHER	=	911
None of the above	=	38

Table 2. Memberships in Various (Canadian) Geoscience Organisations



Respondents with one or more memberships in Canadian Geoscience Organisations

Question 13. Are you a member of a provincially legislated geoscience registration organisation?



The majority of practising Canadian Geoscientists are Provincially or Territorially registered.

1,694 responded yes, 1,356 said no. Only 48 respondents (2 %) chose not to reply. Question 13 was supplemented by the following.

Question 14. If you are not registered, is this because…

(a) You are not involved in work that needs registration?
There were 478 respondents (15.4 %) that replied in this category

(b) Your Province has legislation, you are practising - but are not required to register?
One hundred and eighty (5.8 %) checked this box.

(c) Your Province does not require registration?
Three hundred and twenty-six (10.5 %) checked here. These can be checked against postal codes (see Question 3 above), to see whether geoscientists are aware of provincial and /or territorial regulations, but this has not yet been completed.

(d) Other (not analysed)
The final category was replied to by 282 respondents (9.1 %). This section also needs to be analysed at length.

Conclusions

The Canadian Geoscience Council's 2001 Survey of Geoscientists in Canada gives a useful insight of a well-educated group of scientists who provide an invaluable service to the country. Based on an assumption of a 65 year "retirement age" the results show that more than 40% of the geoscientists will retire within 15 years. This is a warning for the not-so-far future of *ca*. 2015. At that time the pronounced reduction of Earth scientists (who entered the profession in the early- and mid- 1990's) will provide a shortfall of middle management professionals. The census also shows that almost half of the respondents (48%) practice in the energy and minerals sectors of the economy while 29% are in the environmental/geotechnical/hydrogeological fields and 23% are in the university and research sectors. The majority of the geoscientists still practice in Canada, even in this time of globalization, and more than 50% are paid over $75,000 annual salary.

There is a great deal of additional material that can be culled from the returns. This will be the subject of later papers. The basic data from the survey has been sent to each of the participating Member organisations within CGC.

Acronyms used in the Report

AEG = Association of Exploration Geochemists
BC&YCM = BC and Yukon Chamber of Mines
CAG = Canadian Association of Geographers
CANQUA = Canadian Quaternary Association
CEGS (KEGS) = Canadian Exploration Geophysical Society
CGS = Canadian Geotechnical Society
CGU = Canadian Geophysical Union
CIM = Canadian Institute of Mining, Metallurgy & Petroleum (Geology Division)
CMOS = Canadian Meteorological and Oceanographic Society
CSCOP = Canadian Society of Coal and Organic Petrology
CSEG = Canadian Society of Exploration Geophysicists
CSPG = Canadian Society of Petroleum Geologists
CWLS = Canadian Well Logging Society
GAC = Geological Association of Canada
IAH-CNC = International Association of Hydrogeologists Canadian National Chapter
MAC = Mineralogical Association of Canada
MINAC = Mining Association of Canada
PDAC = Prospectors and Developers Association of Canada
RSC (EOASD) = Royal Society of Canada (Earth, Oceanographic and Atmospheric Sciences Division)

April 20th is Sir William Logan's birthday

CELEBRATE

GO FOR A WALK!!

2001 Provincial Geologists Medal

Mark Fedikow

Manitoba Geological Survey

The Provincial Geologists Medal is awarded by the Committee of Provincial Geologists (CPG) to an individual who has produced outstanding work at one of Canada's provincial of territorial Geological Surveys. The award recognizes major contributions in the areas of geoscientific research and related applications that serve the mandates of the respective Geological Surveys.

The Provincial Geologists Medal is awarded annually; in 2001 the winner was Dr. Mark Fedikow of the Manitoba Geological Survey. Mark was unfortunately not able to attend the September presentation of the award at the Energy and Mines Ministers Conference in Quebec City. Mark received his award in November from the Hon. MaryAnn Mihychuk, Manitoba's Minister of Industry, Trade and Mines, at the Manitoba Mining and Minerals Conference 2001.

Mark is a native of Ontario and studied at the University of Windsor where he received his BSc in 1975 and MSc in 1978. Before joining the Manitoba Geological Survey in 1977, Mark worked at the University as a laboratory demonstrator and research assistant and as an exploration geologist in British Columbia.

Mark's early work in Manitoba included studying the potential for massive sulphide depositional environments in the Archean Superior Province and metallogenetic studies in the Proterozoic Flin Flon greenstone belt, Kisseynew gneiss belt and the Superior Province. Mark left the Manitoba survey in 1978 to complete a PhD in exploration geochemistry at the School of Applied Geology at the University of New South Wales in Australia. While studying in overseas Mark also worked as a geological and geochemical consultant on various projects throughout Australia.

Mark returned to Manitoba in 1981 and resumed his career with the Manitoba Geological Survey as a mineral deposit geologist. Mark has been a Councilor in the Association of Exploration Geochemists and has acted on numerous technical advisory committees on matters ranging from remote sensing to nuclear waste disposal.

Citation

Dr. Mark Fedikow has worked as an exploration geochemist and mineral deposits geologist for the Manitoba Geological Survey for 20 years. Mark is an internationally recognized leader in the development and application of multi-media lithogeochemical surveys in support of mineral exploration in both Precambrian and Phanerozoic terrains in Manitoba. His diverse research background includes pioneering studies of rock alteration and multi-media geochemistry in support of gold and base metal exploration and the statistical analysis of regional, multi-media geochemical data sets.

Most recently, he and his colleagues in the Manitoba Geological Survey have expended a tremendous effort towards the completion of a detailed, surficial geochemical and diamond indicator mineral survey in the under-explored and remote parts of the northwestern Superior Province in Manitoba. This project encapsulates Mark's dedication to leading, rather than following, the exploration of the Province's mineral endowment. This effort resulted in a major diamond staking rush in northeast Manitoba, as well as enhanced gold and base metal exploration in the region.

Mark's work is always based on extensive and solid field investigation. He has developed techniques proven to be effective in Manitoba's diverse terranes, providing the exploration industry with new tools in the search for unexplored mineral deposits. Although primarily a geochemist, Mark also has a solid mapping background that has proven essential in placing geochemical anomalies in a geological context.

Mark has demonstrated a keen insight into the processes that concentrate metals in the crust. His scientific curiosity has made him instrumental in the discovery of many new mineral occurrences, including mineral deposit types new to Manitoba. For example, Mark designed and oversaw collaborative studies with the Geological Survey of Canada, the University of Manitoba and Birch Mountain Resources Ltd. on the recently-discovered Prairie-type microdisseminated mineralization hosted by Paleozoic carbonate rocks.

This nomination recognizes Mark's prolific publication record, characterized by innovative and timely reports that have found wide acceptance in both the mineral exploration industry and the research community. Of the more then 150 publications he has completed, 11 are in refereed journals and special volumes and a further 41 are technical reports. The 75 presentations he lists include numerous PDAC, CIMM and GAC/MAC events as well as several visits to International Geochemical Symposiums.

One of Mark's greatest assets is his ability to communicate his knowledge and ideas to a wide range of people. Mark maintains a relentless enthusiasm for new mineral discoveries. This, more than any other factor has allowed him to become one of the principal contacts within the Manitoba Geological Survey for the exploration community. Mark is an effective and recognized teacher, and has done an admirable job in communicating his comprehensive knowledge of a wide range of mineral deposit types and exploration techniques through short courses and field trips. He is a patient teacher to many student geological assistants and has acted as a supervisor to undergraduate and graduate university theses.

Mark Fedikow exemplifies the expertise and enthusiasm that exists within provincial geological surveys across the country and is truly a worthy recipient of the 2001 Provincial Geologists Medal.

Retain BC Geological Survey Expertise

Honourable Richard Neufeld
Minister of Energy and Mines
PO Box 9060, Stn Prov Govt
Parliament Buildings
Victoria BC V8W 9E2

Dear Minister,

Re: British Columbia Geological Survey Branch

We would like to add our voice to those who have been urging your government to reconsider its decision to dismantle the Geological Survey Branch of your Ministry. As a group of retired officers of the Geological Survey of Canada we will undoubtedly be perceived to have a bias in support of our colleagues in your ministry. However, our argument may not be quite the same as the one you have heard from our colleagues in the mineral industry and we respectfully request a moment of your time to present it in this letter.

Geological surveys have been around for a long time. In many countries they were amongst the first science-based agencies of government. In Canada, for example the national geological survey was formed in 1842, some 25 years before Confederation. The reasons behind these early surveys are clear: the governments of the time needed information on frontier lands in order to promote the economic development of natural resources for nation building. Within Canada, the provincial geological survey organizations were started for these purposes and for most, the main mission is still the production of geoscience information to stimulate and promote mining and oil, gas and coal development activities.

But a major shift has been taking place in the geoscience world. Increasingly, the issues that require the application of geoscience skills and knowledge are driven by public concerns over such things as potable water resources, maintaining the ecological integrity of public lands, the protection of the environment from man's activities and, conversely, the protection of people from nature's activities (earthquakes, volcanoes, landslides, avalanches) and other public health issues linked to the environment. Climate change and global warming are no longer vague possibilities but are likely probabilities. These and similar issues are driving major shifts in science-based organizations, including geological surveys. In order to respond to these new issues, institutions are evolving and incorporating skills in a variety of disciplines, including geology, biology, and environmental sciences. It is important to note, however, that the roots of many of these new issues lie in understanding fundamental geological and hydrogeological processes. Thus, many of the traditional geoscience skills and technologies that are used, for example, in mineral and fuels exploration (bedrock geological mapping, geochemical surveys of rocks, soils, glacial deposits and waters, structural analysis of rock strata etc.) are still very much at the base of these new requirements. The geological surveys of tomorrow will be different from those of today, but they will rely on many of the same skills and technologies.

It is for the reasons outlined above that we believe that the preservation of cores of geoscience expertise, such as that in British Columbia's Geological Survey Branch, are vitally important to good governance in Canada, both at the provincial level and at the national level. The valuable expertise and operational capabilities that exist in the Geological Survey Branch were built up over many years of investment on the part of the taxpayers of British Columbia. This major investment can be destroyed very quickly, but it would require many years and great expense to create it again.

We understand and sympathize with the need for governments at all levels to find ways to reduce expenditures. We further understand the difficult decisions and compromises that have to be made in these circumstances. We can appreciate that geoscience does not loom large in the general public consciousness and that it might be a relatively easy target for reduction or elimination. Having said this, however, we urge that it be given a fair and thoughtful hearing. It has given good service to the public in the past and we are confident that it will give equally good value in the future.

We thank you for taking the time to consider our views.

Yours sincerely,

Charles H. Smith Raymond A. Price D. Christopher Findlay William H. Poole

Four retired officers of the Geological Survey of Canada

B.C. Government Responds to the GAC's Letter from President Morison

(see GEOLOG v. 30-4)

BRITISH COLUMBIA

Geological Association of Canada
JAN 24 2002
RECEIVED

January 18, 2002

Mr. Stephen R. Morison
President, Geological Association of Canada
Department of Earth Sciences
University of Newfoundland
St. John's, NF, A1B 3X5

Dear Mr. Morison:

Thank you for your letter regarding geo-science survey services.

I can assure you that we believe there is great economic potential within our mining industry and we look forward to revitalizing that sector of our economy. We are working hand with people within the industry and stakeholders to listen to their concerns, to identify the problems and to work together cooperatively to meet some of the existing challenges.

I can also tell you that contrary to some of the information that has been circulating, we are not eliminating geo-science work. I have enclosed a copy of the statement made by the Minister of Energy and Mines, the Honourable Richard Neufeld, which elaborates further on this and other points regarding the mining industry in our province.

We appreciate receiving your comments; they will definitely be included in our discussions.

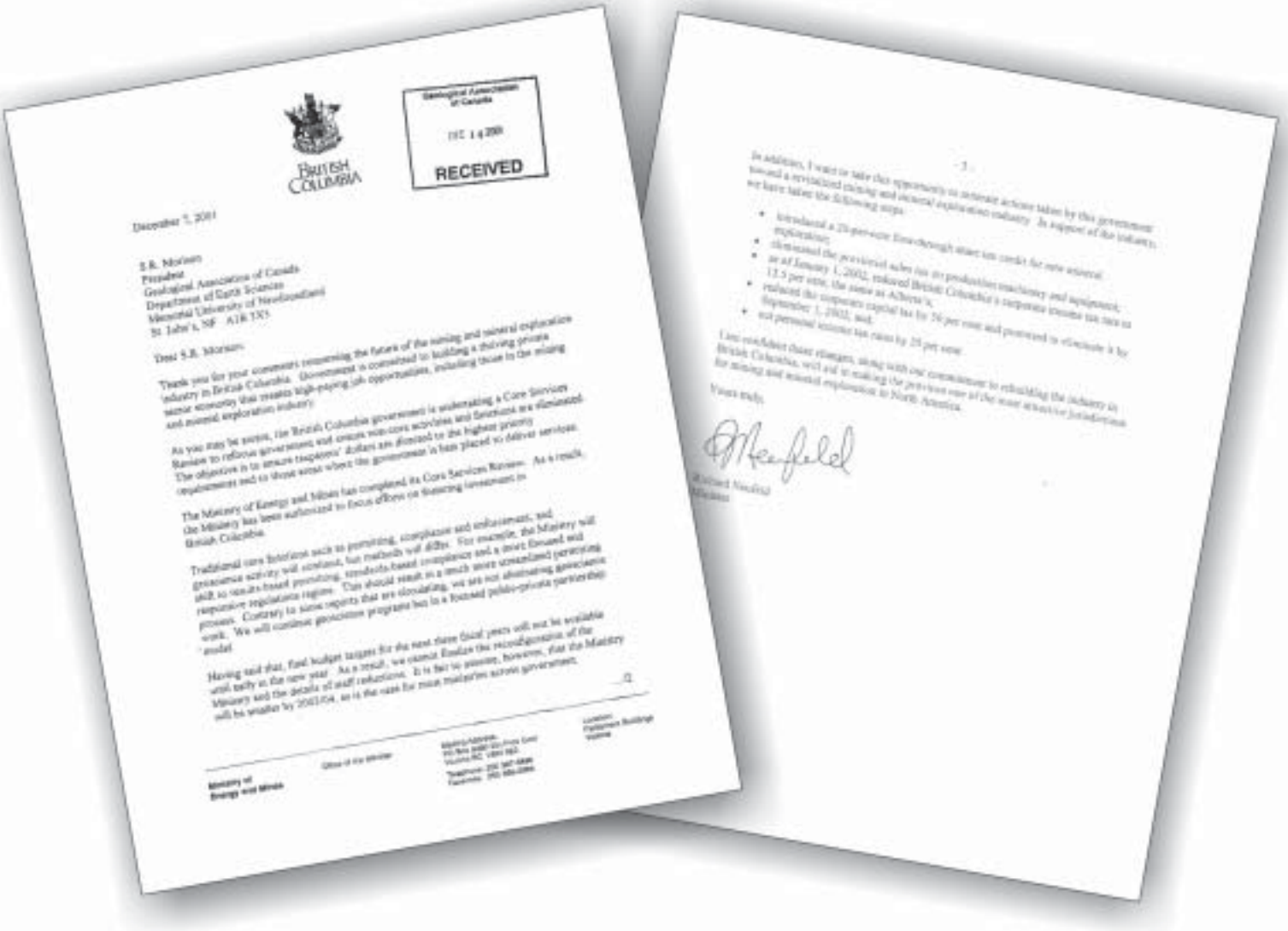
Sincerely,

Gordon Campbell
Premier

Enclosure

pc: Hon. Richard Neufeld

Office of the Premier



BRITISH COLUMBIA

Geological Association of Canada
DEC 14 2001
RECEIVED

December 7, 2001

S.R. Morison
President
Geological Association of Canada
Department of Earth Sciences
Memorial University of Newfoundland
St. John's, NF A1B 3X5

Dear S.R. Morison:

Thank you for your comments concerning the future of the mining and mineral exploration industry in British Columbia. Government is committed to building a thriving private sector economy that creates high-paying job opportunities, including those in the mining and mineral exploration industry.

As you may be aware, the British Columbia government is undertaking a Core Services Review to refocus government and ensure non-core activities and functions are eliminated. The objective is to ensure taxpayers' dollars are directed to the highest priority requirements and to those areas where the government is best placed to deliver services.

The Ministry of Energy and Mines has completed its Core Services Review. As a result, the Ministry has been authorized to focus efforts on fostering investment in British Columbia.

Traditional core functions such as promoting, compliance and enforcement, and geoscience activity will continue, but methods will differ. For example, the Ministry will shift to results-based permitting, standards-based compliance and a more focused and responsive regulatory regime. This should result in a much more streamlined permitting process. Contrary to some reports that are circulating, we are not eliminating geoscience work. We will continue geoscience programs but in a focused public-private partnership model.

Having said that, final budget targets for the next three fiscal years will not be available until early in the new year. As a result, we cannot finalize the reconfiguration of the Ministry and the details of staff reductions. It is fair to assume, however, that the Ministry will be smaller by 2003/04, as is the case for most ministries across government.

Ministry of Energy and Mines — Office of the Minister

- 2 -

In addition, I want to take this opportunity to reiterate actions taken by this government toward a revitalized mining and mineral exploration industry. In support of the industry, we have taken the following steps:

- introduced a 20 per cent flow-through share tax credit for new mineral exploration;
- eliminated the provincial sales tax on production machinery and equipment;
- as of January 1, 2002, reduced British Columbia's corporate income tax rate to 13.5 per cent, the same as Alberta's;
- reduced the corporate capital tax by 50 per cent and promised to eliminate it by September 1, 2003; and,
- set personal income tax rates by 25 per cent.

I am confident these changes, along with our commitment to rebuilding the industry in British Columbia, will aid in making the province one of the most attractive jurisdictions for mining and mineral exploration in North America.

Yours truly,

Richard Neufeld
Minister

Feds Release Ambitous Innovation Strategy

Industry Minister Allan Rock recently presented a strategy for making Canada's economy more competitive through innovation, defined as developing new ideas, putting ideas to work, having a work force that can use new ideas, and aggressively pursuing new markets. Although we enjoy an outstanding quality of life, the report cited challenges, especially low productivity causing falling incomes relative to the US that will cause an outflow of talent and capital, contributing to a decline in our standard of living. There are positive signs, such as fast growth in number of R&D workers, patent applications, and business R&D expenditures, as well as recent increases in federal funding to research and to development of highly qualified people. The reports states, however, that most of Canada's companies can no longer survive on domestic markets alone. It therefore was concluded that if Canada is going to compete, strategic and systematic moves to work faster and smarter than our competition are needed, through a culture that values excellence and entrepreneurship. The paper proposes goals, targets and federal priorities for the next decade in four key areas: knowledge performance, skills, our innovation environment, and communities.

Knowledge performance refers to finding better ways to create knowledge, bringing ideas to market, encouraging firms to reap more benefits from creating knowledge, and increasing R&D investment by all sectors. Targets to be achieved by 2010 included R&D performance among the top five countries in the world, at least doubling federal R&D investments, ranking among world leaders in the share of private sector sales from new innovations, and raising per capita venture capital investments to prevailing US levels. Federal priorities in university research include supporting the indirect costs of university research, leveraging the commercialization potential of publicly funded academic research, and providing internationally competitive research opportunities in Canada by increasing support to the granting councils, enabling more research grants at higher funding levels. With respect to federal S&T capacity, the government will consider investing in collaborative networks formed across departments, universities, NGOs and the private sector, in order to focus federal capacity on emerging issues and opportunities. With respect to the private sector, the government will provide greater incentives for the commercialization of innovations, provide more incentives to small and medium-sized enterprises to adopt leading-edge innovations, reward innovators, and increase the supply of venture capital in Canada.

Skills challenges include finding ways to develop, attract and retain mobile highly qualified people with the skills for a vibrant, knowledge-based economy. We have one of the most highly educated labour forces in the world, but we are experiencing a demographic shift that will result in fewer workers at a time when demand for high-level skills is increasing. A 5-year target was set to increase the number of adults pursuing education by 1 million, through to 2010 to increase admission to Master's and PhD programs by 5% per year, by 2002 to implement new immigration regulations, and by 2004 to improve Canada's performance in the recruitment of foreign talent. Government priorities in producing new graduates include financial incentives to graduate students, creating a world-class scholarship program, and establishing programs to support students combining formal academic training with work experience. The government also will increase the number of highly skilled immigrant workers, enhance the immigration delivery system, brand Canada as a destination of choice for skilled workers, and facilitate the entry of highly skilled workers across the country.

In the innovation environment, ways are needed to improve business and regulatory policies, marketing our advantages to the world, and keeping our tax environment competitive. To avoid trade-offs between public interest and business opportunity, Canada's systems that protect health, the environment, safety, privacy and consumer rights will be among the world's best. Scientific investments will be focused on emerging public policy areas, in line with our international competitors. A target was set to complete by 2010 expert reviews of Canada's most important business, regulatory and taxation regimes, substantially improve by 2005 Canada's profile with international investors, and implement by 2004 the Council of Science and Technology Advisors' guidelines to ensure effective use of S&T in government decision making. Government priorities in ensuring effective decision making include supporting a Canadian Academies of Science to build on and complement existing Canadian science organizations, undertaking expert reviews of stewardship regimes through international benchmarking, and collaborating internationally to address shared challenges. The government will work with provinces and territories to ensure that our tax system is internationally competitive, and will sustain an investment branding strategy that will include Investment Team Canada missions and targeted promotional activities.

Our communities must continue to be magnets for investment and opportunity, by having a critical mass of entrepreneurship and innovation capabilities, by housing internationally competitive industrial clusters, and by being part of a globally connected world. By 2010 Canada will strive to establish at least 10 internationally recognized technology clusters and significantly improve the innovation performance of communities across Canada, and by 2005, will ensure that high-speed broadband access is widely available. Priorities in supporting the development of globally competitive industrial clusters include accelerating community-based consultations to develop technology clusters where Canada has the potential to develop world-class expertise. The government will consider providing funding to smaller communities to enable them to develop innovation strategies tailored to their unique circumstances. Communities would be expected to engage local leaders from the academic, private and public sectors in formulating their innovation strategies.

The report acknowledged that the objectives are ambitious. Achieving them was said to depend on the willingness of large and small businesses, academia, provincial, territorial and municipal governments and Canadians to work together. A series of regional and sectoral meetings will culminate in a National Summit this fall, ensuring that actions are complementary and targeted. The report emphasized that Canada's quality of life and standard of living during the next decade will depend on how innovative we are with respect to jobs, the economy, a reputation for excellence and opportunity, an excellent health care system, first-rate schools, a clean environment, and social policies that reflect our values. Finally, the report states that the reward for becoming a more innovative society is that, as Canadians, we will be able to achieve a brighter future for ourselves and our children.

The text is available at http://www.innovationstrategy.gc.ca/cmb/innovation.nsf/pages/index.

Harvey Thorleifson
Geological Survey of Canada
Ottawa ON
thorleifson@gsc.nrcan.gc.ca

Commentary

A Failure to Teach

Dead silence was my answer a few years ago when giving a guest lecture to a graduating geophysics class at a major Canadian university — I'd asked these almost-graduates to explain the term *anomaly*. The silence grew denser, and palpably more perplexed, when I asked what sort of material an anomaly source is made of.

This experience has been repeated in other schools, and with many other senior classes. I have since found it useful to make-up a entire one-hour lectures on such fundamentals for graduates — a lecture the host faculty sometime request to be given ahead of a usual talk on real-life exploration examples.

The dual function of academic institutions has been part of the university tradition since Socrates: (1) to advance knowledge, and (2) to educate the young. Our modern universities' success in the first of these endeavors is in the eye of the beholder. In the second one, the failure could not be more naked.

Poor teaching is engineered into the academic system itself. University departments are financed based on the number of students in their programs, while the faculty receive few career prizes or penalties for how these students are taught. As a result, departments seek to attract as many students as they can, often by overselling the future career prospects, and then proceed to ignore the enrolled students as much as possible. The biggest failing occurs in the main educational focus that separates a university from a vocational school: the teaching of analytical ability.

Instructor indifference, arrogance, incapacity and a lack of accountability are among graduates' biggest complaints. Many professors lack the inclination, or the ability, to teach the analytical use of observed facts to arrive at a testable conclusion. In lectures, labs and assignments, analysis is often replaced with minor technical tasks, rote memorization, or conceptual dogmatism that insists on ignorance.

Students complain of their unaccountable instructors' perpetually incomprehensible accents or untreated personality disorders (*for the record, I have an accent, so no lapse of political correctness here*). Stories abound of garbled or vacuous classroom performance, gratuitously complicated or risibly trivial homework, exams unrelated to course material, and uninformed career advice. With the standards abysmally low across the board, instructor failure is seldom penalized or even officially noted. Formal complaints from students are easily avoided by bribing them with undeservedly inflated course grades.

Monkey-see-monkey-do, students are often taught a computer application - a stereonet or deconvolution program, for instance - without being told, from first principles, what stereonets or signal deconvolution actually do. Lacking basic understanding, these graduates later find themselves unable to upgrade as the technology changes.

A deceptive, common teaching-success measure is the proportion of new graduates in jobs. This short-term measure, which in geology and geophysics rises and falls with the commodity prices, does not consider the job quality - and many new "professional" employees are little more than glorified technicians. These young people are easily let go in the frequent industry downturns, and their lack of basic knowledge and adaptability leaves them obsolete after even a short period out of work. A new crop of graduates is by then available to take their place, with more up-to-date technical skills. Much more revealing is to see how many alumni are still in the profession after several business cycles, and what career levels they achieve.

Equally unrepresentative is to grandly showcase the Spectacularly Successful Alumnus, the CEO (until the next corporate takeover, at any rate), in pursuit of reflected glory. The circumstances of one person uniquely gifted or lucky may say little about the lives of the many.

The students, to put it bluntly, are being robbed on a colossal scale. Giving them a poor education violates the medics' Hippocratic oath: first, do no harm. The young graduates' unmet, unrealistic expectations down the road lead to broken careers and broken lives. Also robbed are their employers, families, and (remember them?) the taxpayers. What is certified as university education often amounts to little more than sketchy vocational training, without a central theme, thrown together *ad hoc*, and dismally delivered.

If the problem lies with the instructors, the solution lies with them, too. As long as teaching is seen by academics as an unavoidable nuisance, one to be minimized where possible as it interferes with publishing, the disservice will continue. Because dedication is impossible to legislate, accountability-based and market-based policy solutions could be brought in from the ongoing debate about the reforms of North American secondary schools.

1. Demonstrated ability in quality teaching must be made a top factor in academic employment and promotion.
2. Demotion and dismissal must be the price to professors for poor teaching .
3. Faculty tenure, which often shelters failure, must be abolished.
4. Standardized testing of students may be dull, but it has a passable claim to objectivity.
5. Testing instructors on their grasp of the subjects they teach could weed out the unqualified.
6. Above all, competitive consumer choice must allow students, armed with tuition vouchers, to easily bolt into a network of leanly-organized private universities.

Talking more about the plain teacher ethic might also help. Genuine teacher commitment is risking all to run a banned, underground school under the Taliban. Anyone who measures up, please rise.

Henry Lyatsky
Lyatsky Geoscience Research & Consulting Ltd.
Calgary, AB
lyatskyh@cadvision.com

Association News

Things are cooking at GAC!

A Report from the Vice-President

Council, Executive, and Headquarters staff are working hard to ensure that the organization is responsive to your concerns and needs. I thought this would be a good time for me to review some of the key developments and issues that have preoccupied Council and Executive over the last year.

Publications

Publications are a key element of GAC's package of member services. Through the leadership of Sandy McCracken, Council has worked hard to place our publications program on a more professional and fiscally sound footing. A business plan has been adopted for publications, and we recently hired a new headquarters staff member (Karen Dawe) to oversee publications and to ensure that the venture is a break-even or money-making enterprise. You will soon see the fruits of this investment; a number of new publications will appear this year and more are scheduled for release in 2003 and 2004. Karen is eager to work with GAC members who have ideas for books. I can assure you that she will make the task easy for you; I encourage those of you who are considering preparing a new book or other publication to contact Karen (*kfmdawe@esd.mun.ca*).

Communication

GAC communicates to optimize the work of the association, to enhance the standing of our profession, and to share information. We communicate with our members through (1) *Geolog*, which is superbly produced by Craig Hart, (2) a Web site (*http://www.gac.ca*), (3) a new optional e-mail list (you can subscribe on the GAC Web site), and (4) e-bulletins. E-bulletins will be used to rapidly communicate critical information to our members. We will use e-bulletins sparingly – each must be approved by Council, so don't worry, we're not going to swamp you with chatty e-mails!

We recognize that the future of GAC and, more broadly, earth sciences in Canada will be determined by our success in attracting young people, thus GAC is working hard to increase involvement of students in the organization. Council has allocated funds to support student chapters; we now have six – University of British Columbia, University of Regina, University of Toronto, University of Windsor, Acadia University, and Memorial University of Newfoundland – and are looking for more. We are also discussing the idea of appointing a student serve on Council.

Advocacy

Advocacy is focused communication aimed at influencing policy decisions. The importance of advocacy has become apparent during the last two years due to the Mount Logan debate and the dismantling of the B.C. Geological Survey. In both instances, GAC played a major role on behalf of the Canadian earth science community. The BCGS issue, however, highlighted the need for a more proactive role by GAC. Steve Morison (GAC President) is exploring the possibility of establishing alliances with other concerned Canadian societies to provide information and advice to governments and policy makers on earth science issues.

Corporate Identity

A key factor in ensuring a healthy GAC is corporate identity, imparted by the style of the organization. This identity is conveyed by our awards, membership requirements, and activities. Council looking at the issue of corporate identity. Among other things, it is re-examining and rationalizing GAC awards to increase their stature and to maximize their benefit to GAC. It is also debating GAC's membership structure.

Science Program

GAC's science program is delivered largely through annual meetings and Nuna conferences. Our annual meetings are set through 2006 and include Saskatoon (2002), Vancouver (2003), St. Catherines (2004), Halifax (2005), and Montreal (2006). GAC developed software to support abstract submission and registration for the St. John's meeting in 2001. This software has been adapted for use at Saskatoon and future annual meetings.

GAC has traditionally met jointly with MAC; occasionally, it holds joint meetings with CSPG, SEG, and other societies. Both GAC and MAC are looking into partnering with other societies, rather than always meeting with each other. The intent is to deliver a more varied program to members, while capitalizing on cost efficiencies of larger meetings. We welcome input from you on this matter.

At its last meeting in February 2002, Council approved a proposal for a Nuna Conference on Timescales, which will be held at Mt. Tremblant, Québec, in March 2003. The organizing committee comprises John Westgate, Andrew Okulitch, Mike Villeneuve, and Godfrey Nowlan.

Finances

GAC, like many other organizations, faces some serious financial issues. For years, our membership numbers have declined, yet the services we provide have increased. Depending on how you examine the statistics, 15-25% of our membership (mainly students and retired members) pay reduced fees that barely cover, or do not cover, our actual operating expenses per member. It costs about $158 per member to provide current services; our dues are $90 for Associates and Fellows and $25 for students. Other sources of revenue currently do not make up the difference, thus we are running deficits. After significantly cutting expenditures in 2001 and 2002, Council approved a budget with a deficit of about $60,000 for 2002. The deficit would have been over $100,000 had we provided the same level of service as in 2001. These numbers suggest that the organization must either further reduce its expenditures (translate this as a significant reduction in services to members) or increase

its revenues. Some savings are possible by placing *Geolog* and *Geoscience Canada* on the web, but Council will not make such changes unless GAC members endorse them. Even if implemented, these economies are unlikely to solve the basic problem of an aging membership and an accompanying decline in membership revenues. New strategies are being considered to raise revenues, including: (1) establishment of a permanent fund raising committee to engage in an aggressive campaign to raise corporate support, (2) establishment of a Geological Association of Canada Foundation to serve as GAC's charitable status organization, perhaps along the lines of the recently established Society of Economic Geologists Canada Foundation, (3) corporate sponsorship of specific GAC activities, (4) sponsorship of GAC publications, (5) creation of a GAC bequest program, (6) establishment of corporate endowment funds, (7) review and revision of existing corporate sponsorship campaign.

As one of my close colleagues always says at the end of a telephone conversation, "That's all I have for now". Hope to see you in Saskatoon.

John Clague
GAC Vice-President

GAC Launches Email ListServer

The Geological Association of Canada recently launched an Email List as an interactive communications tool for members. Members are encouraged to use this new tool to exchange ideas or concerns about topical geoscience issues, report exciting new scientific discoveries, describe a unique data set, comment on a new geoscience proposal, publication, or conference presentation, or solicit solutions for geoscience problems that keep them awake at night!

Subscription to the GAC Email List is optional. If you are a GAC member and you wish to subscribe, you can use the online form at: **http://www.gac.ca/List/List.html** provided your browser is set up to send email. Otherwise simply type, or copy and paste, the command:

subscribe gacl

into the body of an email and send it to **majordomo@esd.mun.ca**. (Note that the "l" in gacl is a letter, not the number 1).

What is an Email List?

An Email List is simply a list of people's names and Email addresses that is used to send messages or announcements to many people at once. Individual lists are comprised of persons with a shared interest. Persons who have requested to join a list are said to be subscribed. Any subscribed member can send a message to the Email List. Messages are distributed immediately, and most subscribers receive their copy within 1 to 20 minutes depending on their location and the electronic mail system they are operating. Consequently, Email lists are a highly interactive means of communication for persons with a shared interest. Email lists are normally created and managed by a list owner (or sometimes several owners for large lists) using specialized software. The list owner is also responsible for all administrative matters and for answering questions from the list subscribers.

GAC's Email List was created by Darren Smith at Memorial University of Newfoundland using the Majordomo software engine. Marg Brazil designed a web interface for the Email List and Eleanor Penny (GAC Headquarters) is responsible for subscriptions (and unsubscriptions) to the Email List. Address harvesting is not permitted and commercial advertisements are highly discouraged. To find out more about GAC'e Email List point your browser to

Utilize GAC's new Email List to share your discovery or solicit feedback from your colleagues. Remember GAC's membership crosses disciplinary boundaries and sectors, so items of general geoscience interest are particularly welcome. We look forward to hearing from you!

HOWARD STREET ROBINSON FUND

The Robinson Fund was established in 1977 by the Geological Association of Canada, using a bequest from the estate of Howard Street Robinson. The fund is dedicated to the furtherance of scientific study of Precambrian Geology and Metal Mining by:

- sponsoring an annual Distinguished Lecturer Tour whose focus alternates between Precambrian research and economic geology (lecturer alternately chosen by the GAC's Precambrian and Mineral Deposits divisions);
- supporting Special Projects including publications, symposia and conferences.

Proposals for special projects on Precambrian Geology or Metal Mining should be submitted to the Robinson Fund Committee. Projects should be sponsored or organized through the GAC or one of its Divisions or Sections. Proposals that have a wide appeal or degree of accessibility to the GAC membership are preferred.

For further information and proposal submissions, please contact:

Benoit Dubé, Chairman, Robinson Fund
Geological Survey of Canada
2535 Laurier, CP 7500
Ste-Foy, QC, G1V 4V7
(418) 654 2669
dube@gsc.nrcan.gc.ca

A Vision for GAC Communications

GAC promotes geology by holding conferences, publishing books, presenting awards, and by communicating to optimize our activity and support our profession. We communicate with members through *GEOLOG* and e-communications, with prospective members through membership drive, with Universities through campus reps and student chapters, with constituent communities through lecture tours, with the profession through *Geoscience Canada*, with policy-makers through advocacy, and with the general public through outreach. Our communications are delivered with the aid of a well-designed corporate identity. Following the establishment of a Communications Committee that incorporated the Education Committee under an expanded mandate, and with several initiatives underway, there is a need to clarify the GAC communications strategy.

GEOLOG

GEOLOG, which is administered by the GAC Publications Committee, is our highly successful, quarterly newsmagazine that is published for the benefit of GAC members. *GEOLOG* presents news from the Association, Departments, Divisions, the profession, the science, Sections, Student Chapters and Surveys, as well as ads, advocacy, announcements, book reviews, columns, coming events, commentary, conference reports, features, letters, and tributes.

E-communications

GAC e-communications include the web site, the Email List, and E-bulletins. The web site provides members, the geoscience community, and the general public with information about our association and its sections and divisions, including membership, meetings, activities, awards, publications, links, and job postings. The Email List is an optional member service that facilitates discussion and exchange of ideas. Non-optional E-bulletins are used to rapidly communicate critical information to our members following Council approval.

Membership Drive

Communication with current and prospective members facilitates member retention and recruitment, and identifies priorities for enhancements to the Association. Interaction with current members determines their level of satisfaction and increases their likelihood of renewal. Contact with persons wishing to become members is designed to answer questions and provide a membership application form. Communication with prospective members indicates the benefits of membership, and identifies issues that are preventing prospective members from joining, so that GAC can respond to these concerns.

University Affairs

GAC interacts with University faculty and students through campus reps and student chapters. Student chapters work through existing student clubs to facilitate interaction with GAC, support career development, and foster exchanges between students and experienced geoscientists. Student chapters are eligible for grants, student events at our annual conference, links on our web site, and publication of news in *GEOLOG*.

Lecture Tours

GAC lecture tours previously were an honour associated with Medals, but a new format is now being considered. Lecturers can be a stimulus for meetings that facilitate interaction among members of the profession. A re-designed speaker program could better promote GAC, facilitate the activity of Sections, and encourage interaction among university, geological survey, and private sector geologists.

Geoscience Canada

Geoscience Canada, which is administered by the GAC Publications Committee, is our widely respected, quarterly journal that publishes papers of broad interest on the status of and developments in the science and profession. Review papers are published to describe progress in a field, topical articles discuss the interaction of the profession and society, and short notes present the results of research. Also included are features, series articles, conference reports and book reviews.

Advocacy

Advocacy is focused communication that influences policy decisions in the short to medium term. The President, who has the authority to take quick action and whose office enhances the impact of the message, leads campaigns such as the Mount Logan debate of 2000 and the BC Geological Survey issue of 2001-2002. A campaign may include an email poll of Council, press release, media interviews, E-bulletin to Members, and contact with policymakers. The President and other GAC representatives also carry out advocacy through the Canadian Geoscience Council and various committees. The Advocacy Coordinator plays an ongoing role by preparing reports on policy developments for *GEOLOG*, and through roles such as representing GAC on the Partnership Group for Science and Engineering.

Outreach

GAC outreach helps Canadians to appreciate the natural world, thereby assisting them in making wise decisions regarding resource management, response to geological hazards, and environmental stewardship, and promotes the importance of the profession, thereby attracting capable persons to careers in our field. The Outreach Coordinator facilitates conference sessions, *Geoscience Canada* and *GEOLOG* content, Neale Medal and Fortier Award activity, outreach publications, web site content, activity by Sections, Divisions, and Student Chapters, grants to locally-based and volunteer-inspired projects, and joint action with the Canadian geoscience community such as the Canadian Geoscience Education Network.

Corporate Identity

A key factor in ensuring our success is the GAC corporate identity that is imparted by the awards we present, our membership requirements, the character of our activities, and the visual impression conveyed by our brochures, conference material, letterhead, logo, manuals, medals, membership cards, membership certificates, publications, and the web site.

Summary

Recent enhancements to *GEOLOG* and *Geoscience Canada* have been a great success, a refined strategy for outreach is in place, university affairs have been revamped by the launch of student chapters, and advocacy has been improved by experience gained in recent campaigns. E-communications and membership drive are under review, while discussions on lecture tours and corporate identity have been initiated. The Communications Committee welcomes feedback from members on any of these topics (gac@esd.mun.ca).

Publication Corner

The GAC Publications Business Plan: Phase II

The GAC Publications Business Plan of October 2000 proposed a strategy for the development of a sustainable publications business. The first step in implementing this plan was the hiring in September 2001 of a Publications Director, Karen Dawe, to handle the business functions of GAC Publications. Karen has undertaken a number of initiatives to assist authors and editors through the publication process. In addition, she has developed a new marketing strategy for GAC Publications, and she has been actively investigating ways of reducing publication and distribution costs for the Association.

Presently, GAC has a portfolio of over twenty publication proposals, some in very advanced stages, others not much beyond the concept stages. Hiring a Publications Director leaves the Publications Committee free to encourage and develop new publication ideas, which was the second critical step outlined in the Business Plan. Significant discussion on how this will be accomplished took place at a 15 February Committee meeting in Vancouver. The following is a summary of that discussion and an outline of Phase II implementation plan.

Stimulating More Publications

A publishing house's reputation is important. GAC is already recognized as a publisher of good scientific volumes and periodicals; GAC's objective is to make GAC Publications the publisher of choice for Canadian geoscientists.

Authors and editors are looking for high quality of product, packaging and promotion, and rapid publication is essential. Time available is the greatest impediment, and we recognize that authors and editors need the maximum amount of support in the publication process.

GAC Publications will...

1. Provide a stimulus to publishing through:
   - A dynamic, proactive Committee that generates and harvests ideas
   - Evaluating publication ideas at monthly conference calls
   - Bringing well-developed ideas to potential writers
   - Keeping control of costs so that books are accessible
   - Simplifying the publication process for authors/editors.

2. Provide assistance:

At proposal stage with…
   - An immediate acknowledgement of book idea, and assistance with completion of the simplified, initial proposal form
   - A decision on approval in principle by the Publication Committee within 1 month and with a Champion then being assigned to the proposal
   - A Champion and Publications Director working together with the author/editor to draft a publication agreement specifying responsibilities, milestones and deadlines
   - Guidance on manuscript formatting, illustrations, and digital file requirements provided to authors/editors.

At manuscript stage with …
   - Regular calls between Champion and author/editor to maintain energy level and enthusiasm, and to solve problems
   - Monthly progress reports by Champions to Committee
   - Progress being documented on web site as milestones are met.

At publication stage with …
   - Expedient processing with milestones outlined in publication agreement
   - Copyediting and indexing.

3. Provide recognition for authors' and editors' efforts through:
   - The inclusion of portraits and biographies in book and on promotional materials
   - Book promotion, book reviews, press releases
   - Service Awards.

4. Provide support to Divisions and Sections with their publishing initiatives by:
   - Offering storage facilities, handling sales, and marketing.
   - Entering into cooperative ventures on new publications, sharing risks and profits.
   - Offering advice from manuscript through printing stages.

Publications Committee Structure

The Publications Committee has been revised to ensure that Phase II of the Business Plan is successfully implemented. It now comprises a Chairperson and four Members at Large, a Short Course Coordinator, the Editors of Geoscience Canada, Geolog, Palaeontographica Canadiana and the Canadian Journal of Earth Sciences, and two publications representatives from Divisions/Sections. Three Ex Officio members from GAC Executive (Finance, Secretary-Treasurer and Vice-President) are also part of the Committee, and the GAC President also attends our meetings. Rounding out the Committee are staff from Headquarters (Publications Director, Publications Manager, and the Marketing and Advertising representative). This is a large Committee, but in fact, a number of the members, such as the Editors and the GAC Executives, are fully occupied with their principal duties.

The Committee members that are fully dedicated to Phase II are the Chairperson, the four Members at Large, the Short Course

Coordinator, plus the Headquarters staff. These first six will serve as the Champions for the proposals in the publications portfolio and will actively solicit new additions to the portfolio. Headquarters staff will oversee the printing, distribution and marketing of the new publications. Monthly conference calls of the Committee will maintain momentum and focus on two principal activities: progress review on each publication, and the development of new publication ideas.

The Publication Committee encourages authors, editors and publication Chairpersons from its Divisions and Sections to participate in its meetings and monthly conference calls. Each and every member of the Committee is committed to open communication and receptive to any and all ideas which will ensure the successful implementation of Phase II. Please do not hesitate to contact the Committee with your idea!

GAC Publications Committee

Sandy McCracken (Chairperson); Phil Hill, Carmel Lowe, Mike Marchand, Danielle Giovenazzo (Members at Large); Dick Wardle (Short Course Coordinator); Steve Morison, John Clague, Elliott Burden, Steve McCutcheon (GAC Executive Members); Godfrey Nowlan, Craig Hart, Keith Dewing, Brian Jones (series Editors); Dirk Templeman-Kluit (MDD publications representative); Karen Dawe (Publications Director); Arlene Power (Publications Manager); Cecilia Edwards (Marketing/Advertising representative).

Canadian Journal of Earth Sciences

Volume 39, Number 1, January 2002

Seismic refraction profiles in the Gulf of Saint Lawrence and implications for extent of continuous Grenville lower crust
H.R. Jackson

A new bird from the Upper Cretaceous Two Medicine Formation of Montana
David J. Varricchio

Late Pliocene fossils of Ecuador and their role in the development of the Panamic bioprovince after the rising of Central American Isthmus
Walter Landini, Giovanni Bianucci, Giorgio Carnevale, Luca Ragaini, Chiara Sorbini, Gigliola Valleri, Michelangelo Bisconti, Gino Cantalamessa, and Claudio Di Celma

Origin of vertical shafts in bedrock along the Eramosa River valley near Guelph, southern Ontario
Micheal Kunert and Mario Coniglio

Saddle reef auriferous veins in a conical fold termination (Oldham anticline, Meguma terrane, Nova Scotia, Canada): reconciliation of structural and age data
D. Fraser Keppie, J. Duncan Keppie, and J. Brendan Murphy

Nature of the basement to Quesnel Terrane near Christina Lake, southeastern British Columbia
S.L. Acton, P.S. Simony, and L.M. Heaman

Deformation of Upper Carboniferous coal measures in the Sydney Basin: evidence for late Alleghanian tectonism in Atlantic Canada
M.R. Gibling, W. Langenberg, W.D. Kalkreuth, J.W.F. Waldron, R. Courtney, J. Paul, and A.M. Grist

The first 20 years (1978–1979 to 1998–1999) of ice-wedge growth at the Illisarvik experimental drained lake site, western Arctic coast, Canada
J. Ross Mackay and C.R. Burn

Comparison of diagenetic fluids in the Proterozoic Thelon and Athabasca Basins, Canada: implications for protracted fluid histories in stable intracratonic basins
C. Renac, T.K. Kyser, K. Durocher, G. Dreaver, and T. O'Connor

Volume 39, Number 2, February 2002

U-Pb zircon age constraint for late Neoproterozoic rifting and initiation of the lower Paleozoic passive margin of western Laurentia
Maurice Colpron, James M. Logan, and James K. Mortensen

Map symbology and analysis of box and polyclinal folds, with examples from the Rocky Mountain Foothills of northeastern British Columbia and the Liard Ranges of southeastern Yukon Territory and southwestern Northwest Territories
Glen S. Stockmal, Thomas E. Kubli, Lisel D. Currie, and Michael R. McDonough

Seawater composition during deposition of Viséan evaporites in the Moncton Subbasin of New Brunswick as inferred from the fluid inclusion study of halite
Oleh Petrychenko, Tadeusz Marek Peryt, and Brian Roulston

Potential-field modeling of a Proterozoic half-graben near Blackwater Lake, Northwest Territories, Canada, and its implications for the Fort Simpson Magnetic Anomaly
B.C. MacLean and W. Miles

Sediment transfer by shallow landsliding in the Queen Charlotte Islands, British Columbia
Yvonne Martin, Kenneth Rood, James W. Schwab, and Michael Church

The paleoenvironment of *Tyrannosaurus rex* from southwestern Saskatchewan, Canada
Elisabeth E. McIver

The Early Permian floras of Prince Edward Island, Canada: differentiating global from local effects of climate change
Alfred M. Ziegler, Peter McA Rees, and Serge V. Naugolnykh

Coeval migmatites and granulites, Muskoka domain, southwestern Grenville Province, Ontario
Hilke Timmermann, Rebecca A. Jamieson, Randall R. Parrish, and Nicholas G. Culshaw

Petrology, age, and tectonic setting of the White Rock Formation, Meguma terrane, Nova Scotia: evidence for Silurian continental rifting
Lisa A. MacDonald, Sandra M. Barr, Chris E. White, and John W.F. Ketchum

Organic substances in cave drip waters: studies from Marengo Cave, Indiana
Philip E. van Beynen, Henry P. Schwarcz, Derek C. Ford, and G.T. Timmins

Division/Section Updates

MDD Activities

GAC's Mineral Deposit Division continues to be extremely active with efforts in publications, short courses, and conferences. The current executive includes Stephen J. Piercey (Chair), Frank Santaguida (Vice-Chair), Andrew G. Conly (Past-Chair), Gary S. Wells (Secretary) and Robert (Bob) J. Cathro (Treasurer).

Publications

Sales of the *VMS Deposits of Latin America* volume continue to do well and continue to be sold from the GSC-Vancouver office. Favourable reviews of the volume appeared in *Economic Geology and Mineralium Deposita and* will increase the exposure of the volume to an international audience, and ultimately increase sales.

The *Sullivan Volume* was released for sale at the conference and field trip commemorating the closing of the Sullivan mine in Kimberley, BC on November 8-9th, 2001. Given the high quality of the papers in the volume, the world-class nature of the Sullivan deposit, and the current prices for Zn, this volume will likely be a strong seller for MDD and GAC both nationally and internationally to industry, government and academic audiences.

An *Atlas of Opaque Minerals* is being assembled by Dan Marshall who is continuing to push ahead with this project and is collecting and compiling information from contributors. It is anticipated that this will be a as successful as MDD's Alteration Atlas.

An *Atlas of Structural Geology for the Field Geologist* is to be a joint publication between the MDD and STGD (Structural and Tectonic Geology Division) will be edited by Sandy Cruden (U of T), Shoufa Lin (U. Waterloo) and Benoît Dubé (GSC-Quebec). At present, the project is its early stages and a call for contributions has been put forth.

Saskatoon 2002

MDD will have a strong presence at the Saskatoon meeting and will be sponsoring or co-sponsoring numerous symposia, special sessions, field trips and short courses. At present MDD is co-sponsoring a special symposia on "*Applications of Synchrotron Light Sources to the Earth Sciences*" with MAC. Other special sessions include: "*New Insights into Archean Gold Deposits: Yellowknife EXTECH III*", "*The Albian-Cenomanian Central Saskatchewan Kimberlite Field and Relationships to Western Canadian Sedimentary Basin Host Strata*", and "*The Athabasca Basin and It's Uranium Deposits*." In addition, Bruce Kjarsgaard who is organizing the special session on Kimberlites in Central Saskatchewan has approached MDD about helping sponsor a one day kimberlite "drill core" short course to examine vent, pyroclastic and resedimented (fluvial and marine) facies kimberlites.

MDD is sponsoring or co-sponsoring four field trips, including: "*The Eastern Athabasca Basin and It's Uranium Deposits*", "*Tectonic and Sea-floor Hydrothermal Evolution of the Paleoproterozoic Snow Lake Assemblage, Flin Flon Belt*","*Shear-Hosted Gold Occurrences in the Proterozoic La Ronge Volcanic Belt, Northern Saskatchewan*", and "*EXTECH III – The Gold is Out There (Yellowknife Gold Belt)*".

Short Course Information

I am pleased to report that Bob Linnen (University of Waterloo) has joined the MDD executive as Short Course coordinator. Bob replaces Iain Samson who resigned the position this spring due to new commitments as chair of the Department of Earth Sciences at the University of Windsor.

Interest has been expressed to plan a short course on uranium mineralization and exploration for the AGM in Vancouver in 2003. MDD is also in discussions with Wayne Goodfellow and Jan Peter to have a short course on "Sedimented Rifts and Stratiform Sulphide Deposits" at the Vancouver 2003 meeting as well. This short course would likely involve a two-day "hands on" and lecture format course with discussions on many of the world's largest Zn-Pb-Cu geological environments (e.g., Sullivan, Iberian Pyrite Belt, Bathurst) with an associated field trip.

GAC NUNA Research Conference

In 2001 MDD co-sponsored and participated in the GAC NUNA Research Conference on Directions in Canadian Deposit and Metallogenic Research in the Next Decade at Queen's University, March 15-16, 2001. Alan Galley, chairperson of the meeting, and co-authors have completed the final report which have been variably published in *Geoscience Canada* and *The Society of Economic Geologists (SEG) Newsletter*.

Howard Street Robinson Lecturer for 2001-2002

Biannually the MDD has the honour of choosing the Howard Street Robinson Lecturer. The Howard Street Robinson lecturer is funded by the Robinson Fund of the GAC and is "for furtherance of scientific study of Precambrian Geology and Metal Mining." This year the MDD has the opportunity to present Dr. **Larry Hulbert** of the Geological Survey of Canada as the Howard Street Robinson Lecturer. Larry is one of Canada's experts in magmatic Ni-Cu-PGE systems and will be presenting talks on PGE deposits and their potential in Canada. Given the current interest in PGE deposits in North America and current prices for PGE's this lecture series will be of broad interest.

Stephen J. Piercey
Chair, Mineral Deposits Divsion
Sudbury, ON

GAC Paleontology Division announces the new *Pikaia* Award

The *Pikaia* Award is awarded in recognition of a recent contribution to research on any aspect of Canadian paleontology, or by a Canadian to paleontology, that is judged to constitute an outstanding accomplishment in the field. The award will typically go to an individual, but more than one individual may be considered for the award in the case of multi-authored works.

The outstanding accomplishment may be a single paper or monograph or a series of closely related papers. The award will normally go to an individual who is no more than 15 years past their last degree.

The *Pikaia* award is named after *Pikaia*, an early cephalochordate known from the Burgess Shale. It is awarded biennially in even-numbered years. The winner shall be recognized at the Geological Association of Canada Annual Awards Luncheon and the award presented at the annual Canadian Paleontology Conference.

The Paleontology Division Awards Committee shall be responsible for selecting a candidate(s) from sponsored nominations and recommending their selection to the Paleontology Division Executive who shall inform the Council of the Geological Association of Canada of the award.

Each Awards Committee is given complete independence in decisions about how it defines "outstanding accomplishment."

Anyone may submit nominations to the Awards Committee for consideration, but nominations must be signed by at least three members of the Paleontology Division. Nominations should include a citation of no more than 300 words, suitable for publication and for reading at the time of the award. The nomination should be supported by a Curriculum Vitae and biography which describe the candidate's achievements. An original and four copies of each nomination should be submitted to the Chair of the Awards Committee. Unsuccessful nominations remain in the pool for one additional selection process and may be updated by the nominators as required.

The *Pikaia* Award is awarded at the discretion of the Awards Committee. It need not be awarded if the Committee concludes that it is not warranted. Unsuccessful nominations remain in the pool for one additional selection process and may be updated by the nominators as required. These, as well as the revised Billings Medal award guidelines will be posted on the Paleontology Division web page soon. Although the deadline for nominations has closed for this year, additional information can be obtained from the committee chair : John Storer, Yukon Paleontologist, Chocolate Claim Building L-2A, 303 A Strickland Street, Whitehorse, Yukon Y1A 2J9, Fax: 867-667-5377; Email: John.Storer@gov.yk.ca

The other awards committee members are: Dennis Braman, Royal Tyrrell Museum, and Guy Narbonne, Queen's University.

Precambrian Division Keeps Busy

The Precambrian Division has been very active even although you can't tell from the inconsistency of the publication of the Division newsletter. We are still seeking an editor for the newsletter. If any one of you out there is willing to take on this responsibility for next year or so it would be greatly appreciated!

- The Precambrian Division is responsible for nominations for the Robertson Lecture tour for 2003/04. I would like to put forward a call for nominations from our membership. Please forward nominations, including the nominee's name, title of lecture and a short CV to tcorkery@gov.mb.ca. Under the new nomination system candidates will be proposed by the sponsoring division (the Mineral Deposits Division and Precambrian Division on an annual alternating basis) and all members of the HSR Committee. A letter of support by a member of the sponsoring division or of the HSR Committee accompanied by a short CV must be attached to all the candidates proposed for the Lecture Tour.

- The current executive are Tim Corkery (Chairperson), Chris Beaumont Smith (Vice Chairperson), Shoufa Lin (Secretary Treasurer), Ric Syme (Past President), and Councilors Lorne Ayers, Mike Easton, John Percival and Normond Goulet. The term of two of our councilors will end this year. I look forward to nominations from our membership to fill their shoes. An election roster will be emailed to the membership and election of the new councilors will take place at the Annual Business Meeting in Saskatoon.

- The Division reinstated the best Precambrian poster at GAC/MAC. Last year the award was won by Hai Tran of the University of Saskatchewan. The selection committee found it difficult to select between Ph.D. and M.Sc. posters in St. John's and at the annual business meeting decided to award $100 for the best poster in each of the Ph.D. and M.Sc categories.

- Current membership approaches 250 (~ 50 more than last year).

- At GAC/MAC Saskatoon 2002 the Precambrian Division will sponsor the field trip to Southeast Manitoba. Mesoarchean accretion at the western Superior craton margin, Lake Winnipeg" to be led by **John Percival, Alan Bailes** and **Vicki McNicoll**.

- At GAC/MAC Vancouver the Precambrian Division has had a proposal for a Special Session on "Tectonic Controls on Paleoproterozoic Mineralization" to be organized by Chris Beaumont Smith (cbeaumont@gov.mb.ca) accepted. Two currently active programs in Manitoba/Saskatchewan dealing with mineralization in the Flin Flon and Lynn Lake regions will form the beginnings of the session. An invitation will be put forward to include the wide variety of mineral deposit types in the Trans Hudson Orogen in Canada and other productive Paleoproterozoic regions in the world.

Tim Corkery
Chair, GAC Precambrian Division
tcorkery@gov.mb.ca

During 2001, the GAC Cordilleran Section remained active. Current executive includes Carl Verley (President), Peter Mustard (Past President), Brett Gilley (Vice President) and Jane Howe (Treasurer). The Section remains in positive fiscal territory with financial reserves having increased from the previous year. This increase is mainly due to revenue generated from publication sales ($4,122), specifically Cordilleran Section publications (Rocky Mountain Transect Guide Book).

At the last Council of the Cordilleran Section proposals for new publications were brought forward. Council was unanimous in their support to pursue these opportunities. It is hoped that positive news on these will be forth coming by our next report. Heather Sparks of the GSC-Vancouver accepted the position of Secretary. Maggie Dittrick of the BC Geological Survey joined council. The Section sponsored student chapters of the GAC at both UBC and SFU and hopes to be able to encourage geoscience students in these institutions with whatever help is available.

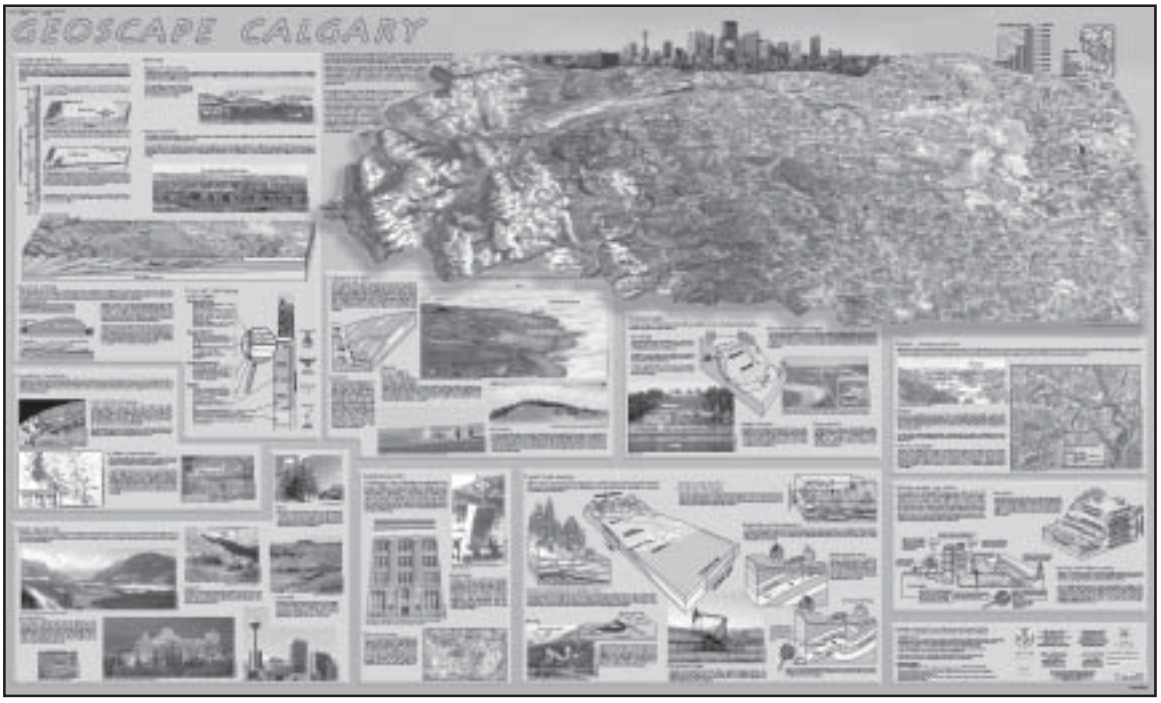
The Section has held several "Brown Bag" discussion groups. These are essentially noon meetings on a variety of topics that are open to any one in the local geoscience community. During the Fall these meetings were held in the B.C. & Yukon Chamber of Mines boardroom - which they have generously made available to us at no cost. This winter and spring the meetings will shift to the GSC boardroom - which again has been made available to us at no cost. The meetings have been well attended so far. The speakers and topics at the meetings included:

- Morgan Poliquin: Mexico - an Exploration Update
- James Laird: Gemstones of B.C. - the next Bonanza!
- Keith Patterson: Geological Controls on Zn-Pb-Ag Mineralization at the Nanisivik MVT Deposit and Exploration Potential of the Borden Basin, Baffin Island, Nunavut
- Chris Sampson: Morrison Porphyry Cu-Au Deposit, Babine Lake, B.C.

Council appreciates the support that it has received from the local geological community in organizing the Brown Bag discussion groups. Our newsletter was published at the end of November and distributed to members by mail and email. The newsletter is on the Section's website: http://www.sfu.ca/earth-sciences/gac/

The Section also sponsored refreshments as a BCGS MapPlace workshops held in December. Additionally, the Section has taken on responsibility for Publications for the upcoming GAC-MAC-SEG conference to be held in Vancouver in 2003.

Carl Verley
GAC Cordilleran Section
Vancouver, BC



The latest Geoscape poster has just been printed. It features a satellite image of the Calgary-Canmore area, plus Rock Resources (industrial mineral resources), Sandstone City (Calgary's brick and sandstone heritage) Fossil Fuel Energy (hydrocarbon resources); Water Under our Feet (groundwater and surface water), Landscapes Then and Now (the geology of Calgary area), Mountain Building (the mountain-building story), Calgary on Ice (how the ice age helped sculpt our landscape), Location, Location (Calgary is fortunate to be relatively earthquake-free), Rivers - Friend or Foe (rivers as both a resource and a threat), and Sliding Slopes (slope stability, a minor hazard).

Available for $15 from: Geological Survey of Canada (Calgary), 3303-33rd St. NW, Calgary, Alberta T2L 2A7.
Tel. 403-292-7030 Fax 403-299-3542 E-mail: gsc_calgary@nrcan.gc.ca
Website: http://www.nrcan.gc.ca/gsc/calgary/products/index_e.html
See also: http://wwwnrcan.gc.ca/gsc/education_e.html or http://www.geoscape.org
Aussi disponible en français.

Student News

WIUGC 2002: GeoFantasy

The 38th Annual Western Inter-University Geological Conference (WIUGC) took place January 10-13th, 2002, at the Fantasyland Hotel in Edmonton, Alberta. Over 350 geology students from across Western Canada flocked to Edmonton, where they were greeted by students from the host University of Alberta. WIUGC is a weekend get-away for Canadian earth science students and an opportunity for these students to present their own research in a professional setting and compete for best talk or poster awards. This conference also gives a chance for students to make contacts with other soon-to-be geologists and to have a great time in the process.

Student delegates gave 24 talks on topics ranging from feldspar crystallization to the ichnology of a barrier island system. It was decided to continue with the tradition of the poster sessions started by the University of Manitoba last year and this year over 15 posters were presented. The quality of these presentations was exceptional and the judges had a very difficult time picking the winners.

The winners of the best talk and poster presentations are as follows:
Best Undergraduate Talk: *Mike Schultz, University of Alberta*
Runner-up Undergraduate Talk: *Matthew Dumala, Univ. of British Columbia*
Best Graduate Talk: *Pedro Jugo, University of Alberta*
Runner-up Undergraduate Talk: *Kimberly Earle, Univ. of Alberta*
Best Poster: *Kim Tait, University of Manitoba*
Runner-up Poster: *Melissa Rotella, University of Victoria*

Not only were the days of the conference packed with excellent presentations, but the nights were also packed with entertaining social events. Highlights included the Beer and Bull event on Thursday night where the University of Regina went on to win their 3rd consecutive Boat Race, the Great WIUGC West Edmonton Mall Pub Crawl on Friday night, and the awards banquet on Saturday night. And I'm happy to report that we have yet to break the tradition of the bun fight, it was alive and well at this year's conference, although much to the chagrin of the hotel. One other event I'd like to mention is the outdoor hockey game that was organized between UBC and the U of A (although I'm not so happy to report that UBC won).

The keynote speakers for the awards banquet on Saturday night were Leo and Deryl Kelly, a father and son mountain climbing team who made an attempt at summitting Mount Everest this past summer. Their speech was thoroughly enjoyed by all participants (who wouldn't enjoy looking at pictures from the summit of Everest?).

We are very pleased with the comments we have received in the past few weeks regarding the performance of the student delegates in the talks and the overall organization of the conference as a whole. Organizing an event of this magnitude is no easy task, especially for 12 university students who, in the beginning, had no idea what they were doing! And although we had a lot of fun in the process, we are more than happy to than happy to sit back, relax, and look forward to attending next year's conference in Saskatchewan at the University of Regina.

Cynthia Hagstrom
WIUGC 2002 Chairperson
University of Alberta
Edmonton, AB

(Top) Best Undergraduate Talk Winner Mike Schultz from the U of A receiving his award from Brad Hayes of the CSPG. (Bottom) Cameron Rennie, from the University of Manitoba, awarding a plaque on behalf of the U of M to Cynthia Hagstrom of the U of A

X-Country Support for GAC Student Chapters

The new GAC Student Chapter Program is off to a great start. Six GAC Student Chapters have been established since the program began in September 2001. The program now links student organizations from across the country, from Newfoundland to British Columbia.

University of British Columbia
- Representative: Fionnuala Devine
- Faculty Advisor: Greg Dipple
- Community Advisor: Jim Ryan, Geological Survey of Canada

University of Regina, Geology Student Society
- Representative: Cameron Demmans
- Faculty Advisor: Kathyrn Bethune
- Community Advisor: Fran Haidl, Saskatchewan Energy & Mines

University of Toronto
- Representative: Dermot Antoniades
- Faculty Advisor: Steve Scott

University of Windsor, Jull Earth Science Club
- Representative: Adrian Forsyth
- Faculty Advisor: Ihsan Al-Aasm

Acadia University, Fletcher Geology Club
- Representative: Peter Budgell
- Faculty Advisor: Sandra Barr
- Community Advisor: Chris White, Nova Scotia Dept. of Natural Resources

Memorial University of Newfoundland
- Representative: Victoria Hardy
- Faculty Advisor: Derek Wilton
- Community Advisor: Frank Blackwood, Geological Survey of Newfoundland and Labrador

Student Associate Members of GAC are an important part of the Association and represent its future. Establishing GAC Student Chapters will facilitate interaction between geoscience students and GAC, support the academic and career advancement of geoscience students, and link students and practicing geoscientists. GAC invites other geoscience student clubs at Canadian universities to become GAC Student Chapters. Information on starting a chapter is available on the GAC website at www.gac.ca.

A grant scheme, the GAC Logan Student Chapter Grants, has been initiated to provide financial assistance to Student Chapters for professional activities such as field trips, industry speakers, outreach and attendance at the GAC-MAC Joint Annual Meetings. Grant levels are presently $500 and the first round of applications is under review. Applications for 2002 are due in by October 15, 2002. Details are available at www.gac.ca.

Universiy of Windsor GAC Student Chapter

***University of Toronto** GAC Student Chapter field trip to Timmins, Ontario in January 2002. Inside the Placer Dome office, Timmins (front row) Allan Wainwright, Dermot Antoniades, Allan (Geologist, Placer Dome), Sharyn Alexander, Natalie Caciagli Warman, (back) James Siddorn, Nicole Januszczak, Erik Barr (Senior Geologist, Placer Dome), John Burke, Mort Shannon (Chief Geologist, Placer Dome).*

GAC Awards MUN Students

GAC staff were invited to a formal presentation and reception on the afternoon of March 6th to present three GAC awards to Memorial University of Newfoundland's graduate and undergraduate students of the Department of Earth Sciences. It was a very pleasant event that not only recognized the top students, but also highlighted the presence of GAC in the department.

The first GAC award, the Student Prize was presented to undergraduate Crystal Hoffe by Secretary-Treasurer, Elliott Burden (below left). The Student Prize is awarded annually to outstanding students enrolled in B.Sc. earth science programs at Canadian universities. The prize consists of a one-year basic membership in GAC that includes a subscription to Geoscience Canada and GEOLOG, plus a free GAC publication of their choice.

The second GAC award, the Maureen Penney Memorial Scholarship was presented to undergraduate, Heather Hunt by Associate Secretary-Treasurer, Karen Johnston (below centre). This award, donated by the GAC, honours the memory of Maureen Penney, who was the Associate Secretary-Treasurer of GAC from 1983-1989 – a tragic automobile accident claimed her life in 1989. The award of $600, is based primarily on academic achievement, but other factors, such as involvement in student activities, are taken into account.

The third GAC award, the Postgraduate Scholarship in Environmental Science, was presented to Vanessa Lee by Elliott Burden (below right). Lee was unable to attend, therefore Department Head Dr. Jim Wright accepted on her behalf (Burden and Wright joked about which would appear to be the 'student' when the photo was published.) The amount of $2000 is awarded to a student undertaking a graduate program in an aspect of environmental science and is tenable for one time only. Nominations are open to MUN students in their first or second year of full-time studies in an appropriate Masters or Ph.D. level program.

SYNCHROTRON RADIATION:
EARTH, ENVIRONMENTAL & MATERIALS SCIENCE APPLICATIONS

Mineralogical Association of Canada Short Course 2002
May 25 - 26, 2002, prior to the 2002 GAC/MAC meeting
University of Saskatchewan, Saskatoon, Saskatchewan

The short course will present what synchrotron radiation is, what the latest techniques are, what types of Earth, environmental and materials science problems can be investigated using synchrotron techniques, what the Canadian Light Source can do, how one gains access to the CLS and other sources, and how data are reduced and analysed for specific techniques.

Most of the material will be at a level of understanding for most upper undergraduate and graduate students although recent results and ideas presented throughout the lectures will appeal to both pure and applied researchers working on Earth, environmental and materials sciences. The presentations of the first day (90-minute lectures) will be broad overviews of various aspects of synchrotron research. The second day will be dedicated to more specific applications and some of the lecturers go through the reduction and analysis of real raw data with the audience (where appropriate). On the afternoon of the second day, there will be a tour of the Canadian Light Source. A symposium on *Applications of Synchrotron Light Sources to the Earth Sciences* will also be held during the GAC/MAC meeting.

Registration fee: $275CDN (students $150CDN)
For more information, contact Grant S. Henderson (henders@geology.utoronto.ca) at the Department of Geology of the University of Toronto, or visit the Saskatoon 2002 (www.usask.ca/geology/sask2002/) or the MAC websites (www.mineralogicalassociation.ca).

Sustainable Mining in the 21st Century

A Workshop for Geoscientists

presented by the

NUNA 2001 Committee on Sustainable Mineral Resources Development

as an outcome of the NUNA 2001 conference

"Future Directions for Canadian Mineral Deposits and Metallogenic Research"

2-3 May 2002

Fletcher Challenge Theatre, SFU at Harbour Centre
515 West Hastings Street, Vancouver, BC
(Immediately following the CIM Annual Conference)
Details at: http://conferences.eas.ualberta.ca/sum21/

Co-sponsored by: The Canadian Institute of Mining & Metallurgy (Geological Society), The Geological Association of Canada (Mineral Deposits Division), Society of Economic Geologists, Prospectors & Developers Association of Canada, Canadian Geoscience Council

Geological Association of Canada Announces a Nuna Conference

New Frontiers in the 4th Dimension:

Generation, Calibration and Application of Geological Timescales

Mt. Tremblant, Québec, Canada, March 15-18, 2003

Announcement

During the past 175 years, biostratigraphic schemes for each of the Phanerozoic periods have been developed and continually refined to the point that significant zones embrace 100,000 to 500,000 years. The 20th century witnessed the emergence of radiometric dating as a tool to quantify the age of events, with the pioneering work of Arthur Holmes leading the way in meshing of radiogenic ages (chronometry) with standardized chronostratigraphies to form the first modern timescale. The last 25 years has witnessed an explosion in the number of timescales proposed. These either cover the entire length of geological time (e.g., DNAG83, GTS89, Okulitch, 2002 and the upcoming GTS 2004), or concentrate on dissections of specific periods. Development, interpretation and application of modern timescales are now at a critical point because geochronologic and biostratigraphic data have now reached levels of precision and understanding that raise important new issues.

PROGRAM & FORMAT

This three-day research conference will bring together a focused group of chronostratigraphers and chronometrists in a forum dedicated to the elucidation, discussion and bridging of key issues present in each of these disciplines. The program will consist of a mix of 1) invited overviews 2) contributed presentations, 3) posters sessions and 4) working and discussion groups. Examples of major issues to be covered include:

Calibrating time (Chronometry): Intercalibration of isotopic systems, calibration of paleomagnetic, biostratigraphic and isotopic systems, systematic uncertainties in radiometric data collection, ability to resolve geological from analytical biases, information transmitted by different minerals, interpolation between dated units, astrochronometric calibration.

Calibrating Strata (Chronostratigraphy): Correlation of global and local stratotypes, definition of stratigraphic boundaries, relationship of fossil record to chronological record, correlation of marine and terrestrial sequences, gaps in the age/fossil/stratigraphic database.

Integration: Calibrating biostratigraphic data to radiometric decay schemes and vice versa, is calibration to absolute time attainable?, calibrating and tracking rates of biological evolutionary change, is statistical analysis possible?, can chronstratigraphic data improve calibrations of chronometric data?

Application: Timescales in mineral and hydrocarbon exploration programs, Recent/Quaternary timescales versus older, how to define Age/Stage boundaries.

LOCATION & COST

The conference will be held at Hotel Club Tremblant (www.clubtremblant.com), a 5-star resort overlooking Québec's famous Mt. Tremblant vacation region (approximately one hour north of Montreal). This resort offers exquisite meeting facilities coupled with spa and recreation facilities in the heart of the Laurentian Mountains. Easy access to and from Montreal's Dorval airport is available by regularly scheduled transportation services. Registration cost will be around $600 with all meals (breakfast, lunch, dinner) and double occupancy in two-bedroom, two bathroom chalets included. Students are encouraged to attend and should note that financial assistance is available to offset registration costs.

EXPRESSIONS of INTEREST/FURTHER INFORMATION

Attendance is limited in an effort to ensure a balanced program. Please email: info@nunatime.ca, log onto www.nunatime.ca, or contact a convener to be informed of updates.

Conference Sponsors Needed! Log onto: www.nunatime.ca and click "Sponsorship"

Organizing Committee

Mike Villeneuve
Geological Survey of Canada
601 Booth St.
Ottawa, Ontario
Canada, K1A 0E8
Tel: (613) 995-4018
Fax: (613) 995-7997
Email: mvillene@nrcan.gc.ca

John Westgate
Dept. of Geology
Earth Sciences Centre
22 Russell Street
University of Toronto
Toronto, Ontario
Canada M5S 3B1
Tel: (416) 978-6375
Fax: (416) 978-3938
Email:
westgate@geology.utoronto.ca

Andrew Okulitch
Geological Survey of Canada
101-605 Robson St.
Vancouver, British Columbia
Canada, V6B 5J3
Tel: (604) 666-0788
Fax: (604) 666-1124
Email: aokulitc@nrcan.gc.ca

Godfrey Nowlan
Geological Survey of Canada
3303 - 33 Street North West
Calgary, Alberta
Canada, T2L 2A7
Tel: (403) 292-7079
Fax: (403) 292-6014
Email: gnowlan@nrcan.gc.ca

Conference Reports

Canadian Tectonic Group Strains

The 2001 Canadian Tectonic Group meeting was held on October 27th and 28th in Sudbury. Between 45 and 50 structural geologists and sympathizers gathered for one day of talks and posters followed by a one-day field trip across the Sudbury structure. The meeting was a great success. Talks and posters were given on Saturday by John Spray, Keith Benn, and students on the Sudbury impact structure. Frank Fueten and Paul Williams discussed new experimental and computer simulations of dynamic recrystallization and folding. Structural controls on gold mineralization were covered by Jerry DeWolfe and Shoufa Lin. Philip Simony and Paul McNeill presented new twists in the interpretation of Cordilleran geology. Strain was again stressed with talks by Fried Schwerdtner and Pierre-Yves Robin. These talks and several other talks and posters

showed the strenght and diversity of research interests of the structural geology community across Canada.

On Sunday, the sun cooperated with John Spray, the field trip leader, for a great day of geology across the Sudbury structure. The famous Sudbury breccia, shatter cones, and folded marbles of the Espanola Formation were visited by a convoy of vehicles and geologists. Thank you John for an excellent field trip!

Following our 20 years old tradition of cycling the meeting from Eastern, to Central, to Western Canada, the next meeting will be held next fall in Vancouver. Everybody is welcome. Lori Kennedy of UBC is the organizer of the meeting. Lori can be contacted at lkennedy@eos.ubc.ca.

Bruno Lafrance
Laurentian University
Sudbury, ON

In the center of the crowd, John Spray (UNB) is explaining the geology of the Sudbury impact structure.

A gang of structural geologists standing in front of beautifully folded marble of the Espanola Formation, Huronian Supergroup.

Sniff the Crust

2002 Lithoprobe-SNORCLE & the Cordilleran Tectonics Workshop

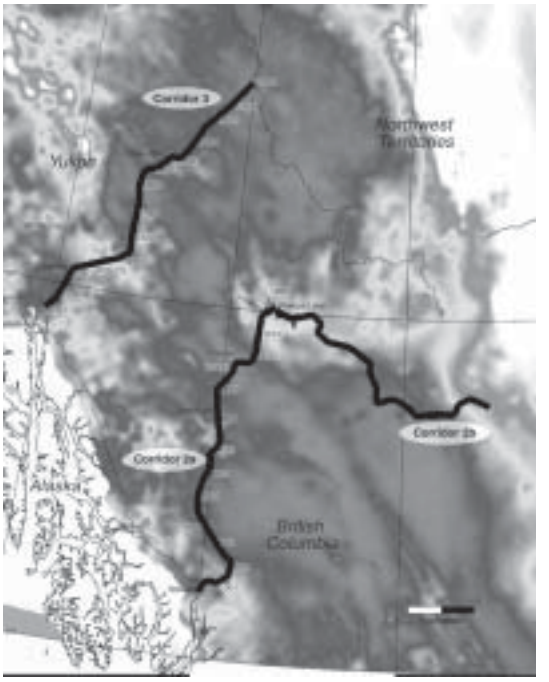
Approximately 110 researchers and students participated in the 7th, and last, joint Lithoprobe-SNORCLE (Slave-Northern Cordillera Lithospheric Evolution) and Cordilleran Tectonic Workshop (CTW) meeting that took place in the rain-drenched environs of the Pacific Geoscience Centre in Sidney B.C, February 21-23rd. After introductory words from Transect Leaders Frederick Cook and Philippe Erdmer, and Lithoprobe Project Director Ron Clowes, thirty technical presentations were given, and 18 posters were posted. An abstract volume was published (Cook & Erdmer 2002).

The SNORCLE-Lithoprobe project consists of crustal geophysics and supporting geoscientific research focused along three transects across the accreted terranes and ancestral North American rocks that comprise the northern Canadian Cordillera, and into the Slave craton. As such, the meeting's presentations were focussed on Yukon, northern British Columbia and western Northwest Territories, but several presentations of the southern Canadian Cordillera were also made within the extended forum that the CTW provides. SNORCLE's goals are to focus research on the architecture of accreted terrane assembly and the transition to the craton, the nature and structure of the deep crust, and processes of crustal growth.

Geophysical presentations were dominated by the application of electrical resistivity and magnetotelluric methods to interpreting the crustal structure of the northern Cordillera and the diamondiferous basement to the Slave Province. As well, geological interpretations of seismic reflection and refraction profiles that imaged basement features of the northern Cordillera were also prominent. A lithospheric section across the northern Cordillera, constructed from seismic reflection data, shows a remnant of the subducted Kula plate, images a Proterozoic subduction zone, and indicates that Stikinia, among the largest of the accreted terranes, appears to be coupled with its asthenospheric mantle. However, details of the crustal architecture along the SNORCLE transects remain controversial; two radically different interpretations of basement to the northern Cordillera were presented at the workshop (Cook and Erdmer vs. Evenchick and Gabrielse).

Several geological presentations generated significant discussion including: the application of Pilbarra-style granitoid gneiss-domes to account for tectonic development in the Slave province (Bleeker); Advances in understanding the chronology of Yukon's Proterozoic stratigraphy, orogenies and magmatism (Thorkelson and students); structural developments in the Valhalla (Simony) and Monashee complexes (Kuiper; Kruse; McNeill), Eagle Bay assemblage (Bailey and others), and Selkirk Fan (Gibson and others). The Foreland Belt was not ignored, as evidence of the chilling effects of deeply circulating meteroric fluids synchronous with folding and thrust formation was presented (Price). Large first-order advances are being made within the Yukon-Tanana terrane (Colpron, Nelson and others). Previously ignored in many Cordilleran tectonic models, researchers (mainly mappers) working on this California-sized terrane have established a stratigraphic framework in rocks that were previously considered to be too deformed to determine their protoliths.

Neotectonics was also a part of this workshop. Observation of anomalous heat flow in the northern Cordillera (Lewis and others) were combined with GPS measurements and seismicity (along the Mackenzie valley and Richardson Mountains) to show that the northern Cordillera currently moves in a NNE direction at a rate of about 5 mm/yr (Mazzotti and others).



Map of northern Canadian Cordillera showing locations of Snorcle-Lithoprobe transects 2 and 3 over backgound of contoured gravity data.

Among the more controversial presentations was Steve Johnston's wonderfully named "Great Alaskan Terrane Wreck" (see EPSL, v. 193) which attempts to reconcile the differences between paleomagnetic observations that suggest up to 3000 km of Late Cretaceous dextral displacement and geological relationships which can only accommodate 400-500 km. As well, the nature and timing of the associations between rocks of North America, Kootenay terrane and Quesnel terrane, as presented by Thompson and Erdmer, continue to heighten the pitch of the discussion.

Another prominent feature of the meeting, and a bridging element between deep crustal geophysics and geology, are the contributions of igneous petrologists studying mantle xenoliths and deep crustal melts, particularly Don Francis (McGill), Kelly Russel (UBC) and Dante Canil (UVic). Although concencus was not reached over which of these melts had sniffed the crust on their way up.

This, and previous SNORCLE-CTW meetings have several features that make them successes: the opportunity for integration of geophysical, geological and geochemical knowledge; integration of presentations of thesis research from students, even at the BSc level; the rare luxury of time and opportunity to sufficiently query the presenters and discuss their findings; and sponsored coffee and lunch breaks that give participants the chance to absorb the poster presentations; initiate potential collaborations and get caught-up with colleagues. SNORCLE has helped to catalyse a resurgence in northern Cordilleran geoscientific research that hopefully will remain an important component in future CTW meetings.

Cook, F., and Erdmer, P., 2002. Slave-Northern Cordillera Lithospheric Evolution (SNORCLE) Transect and Cordilleran Tectonics Workshop Meeting, Pacific Geoscience Centre, Lithoprobe Report 82, 165 p. Table of Contents available at: http://www.litho.ucalgary.ca/transect_info/snorcle/index.html

Craig Hart and Maurice Colpron
Yukon Geology Program
Whitehorse, Yukon

Atlantic Geoscience Society 2002 Colloquium

The AGS launched into its 20th year as an active and vibrant society at the 2002 AGS Colloquium and General Meeting held February 8-9 in Antigonish, Nova Scotia. The local host, the Department of Earth Sciences at Saint Francis Xavier, did a superb job organizing the two-day conference. The organizing committee chaired by Brendan Murphy and including Alan Anderson, Jennifer Dorrington, Millie Dunbar, Tony Evans, Jonathan Ferrier, Erica Gillis, Rebecca Hert, Matthieu LaPointe, Tom Martel, Gary McLearn, Cindy Murphy, Tara Oicle, Michael Parkhill, David Risk, Dave Shephard, Ian Spooner and Peter Wallace deserve a round of applause.

This year, 159 registrants including 82 students, travelled from various locations throughout Atlantic Canada and as far away as Ontario to attend the conference. Student participation has always been important for the annual conference. Over the last few years, their representation has equalled and at times even outnumbered the more >experienced= participants. Let=s hope this active participation by students continues as it speaks well for the future of earth science in Canada.

More than 43 talks were given during the eight concurrent sessions that ran from Friday evening through to late Saturday afternoon. Researchers from universities, provincial and federal surveys, and the private sector presented their current research in the Atlantic Provinces on topics ranging from geophysics to glaciology to groundwater. Nineteen of these talks were by students from Atlantic Canada universities. The poster session included 30 visual presentations of which 16 were prepared by students. I would like to thank the following people for organizing and chairing these interesting and thought-provoking sessions: Alan Anderson, Matthieu LaPointe, Tom Martel, Paul Ténière, Tom Al, Larry Amskold, Kate Bostwick, Clint St. Peter, Serge Allard, Michael Parkhill, Lisa Kellman, David Risk, Steve King, Chris White, Susan Johnson, Elisabeth Levac, Eugene MacDonald and Mike MacDonald.

As with any successful event, there are many people who are owed a vote of thanks. These include the following volunteers: Michael Parkhill for preparing the Abstract Volume and the Program, Peter Wallace for co-ordinating registration and publication sales, Brendan Murphy for heading the local organizing committee and pinch hitting as the conference photographer, Ken Howells for handling all the financial responsibilities, Reg Wilson and John Gosse for judging student posters, and Rob Raeside and David Piper for judging student talks. I would also like to extent appreciation to our corporate sponsors PCs-Potash (New Brunswick Division), Corridor Resources Incorporated and Nimbus Publishing. And there are always those who work behind the scenes to make a conference happen. On behalf of the AGS, I thank you all.

Business and Social Events

Friday evening was time for the AGS to celebrate its recent publication of AThe Last Billion Years@. This book written for a public audience has received a number of supportive reviews and is now in its third printing which in itself speaks of its success. A recent review by Ward Neale in Geoscience Canada stated A*The Last Billion Years* is a magnificent scientific, literary, and artistic achievement with wide appeal@. Yes, some have been surprised by the great public interest in the book and in people wanting to understand the world in which we live. So, now we know that the public is interested - they just did not know we call it earth science!

The Annual General Meeting is the time for the AGS membership to approve year end reports of the working committees and the treasurer and to vote on the incoming slate of executive and council. The 2002 AGS Executive includes Jennifer Bates (President), Reg Wilson (Vice-president), Peter Giles (Secretary), Ken Howells (Treasurer) and Tom Martel (Past-president). The Atlantic Canada geoscience community will be well represented by Councillors Tom Al, Jarda Dostal, Paul Durling, Murray Gingras, Linda Ham, Randy Miller, Dave Mossman, Brendan Murphy, Michael Parkhill, Alan Ruffman, Ian Spooner, Clint St. Peter, Peter Wallace, Dick Wardle and Tim Webster.

At the Saturday evening banquet, Gordon Fader of the Geological Survey of Canada (Atlantic) entertained the crowd with his talk entitled @Multibeam Bathymetry: A Revolution in Marine Geology.@ Many of you will already know that Gordon is a master of the public presentation and has a natural way of relating to his audience. This presentation was no different. The oceans are truly our last frontier and Gordon gave everyone insight into the future of marine geology and how geologists will approach the study of this vast unknown territory.

The Saturday evening banquet was also stage to the 2002 AGS Awards presentations. A list of the recipients (with incriminating photos) is included below. But, alas the true fun began once the tables were cleared and the room rearranged. For as long as I have been going to the Colloquium, the attendees have been a willing and appreciative audience for an ad hoc musical group of guitar, banjo, tin whistle and mandolin players. The rumour this year was that a bagpipe player was among the merry men - it is too bad we did not catch this on film! Let=s hope that what is becoming a tradition continues for years to come.

Atlantic Geoscience Society Awards

Student awards

Each year at the AGS Colloquium, students compete for two awards - best paper and best poster. Students enrolled in BSc, MSc and PhD programs compete side by side for these awards. In recent years, the entries have been of a very high calibre and this year was no exception. Judges assessed the submissions on scientific content, organization and presentation of data. The winners received a monetary prize and their names will be engraved on the respective plagues.

Rupert MacNeill Award - Best Student Paper

Dave Risk of Saint Francis Xavier was awarded the Rupert MacNeill Award for his talk entitled APhysical processes controlling soil respiration: results from four sites in eastern Nova Scotia@ authored by Dave Risk, Lisa Kellman and Hugo Beltrami.

Graham Williams Award - Best Student Poster

David Moynihan of Dalhousie University was presented with the Graham Williams Award for his poster entitled AMetamorphism and structure of the White Rock Formation in the Yarmouth area, Nova Scotia@ authored by D.P. Moynihan, C.E. White and R.A. Jamieson.

Distinguished Scientist Award (Gesner Medal)

The Gesner Medal is awarded to a person who has developed and promoted the advancement of geoscience in the Atlantic region through his or her own effort (ie. publications, maps, memoirs, etc.). This year Dr. Martin Gibling of Dalhousie University received the Gesner Medal. Martin began his studies at the University of Oxford, received his PhD at the University of Ottawa and spent three years teaching in Thailand before coming to the Atlantic Provinces in 1981 to join the faculty at Dalhousie University. Here, he has devoted considerable time studying the local Carboniferous sedimentology and stratigraphy, specifically the Sydney Mines Formation and the fossil cliffs of Joggins. Martin is also active in international research programs. Martin = s passion for geology is well known in the community and has been experienced first hand by his many undergraduate, masters and doctoral students.

Distinguished Service Award

The Distinguished Service Award is given in recognition of exceptional and altruistic contributions to the Atlantic Geoscience Society over a long period of time. This year Graham Williams and Rob Fensome were the recipients.

Atlantic Geology - the Society's Journal

Atlantic Geology publishes papers of regional, national and international interest including thematic issues. Those interested in publishing research findings need to contact Dr. Sandra Barr, Department of Geology, Acadia University, Wolfville, NS, B0P 1X0. Phone: 902-585-1340. Fax: 902-585-1816. E-mail: sandra.barr@acadiau.ca.

Parting Words

Please consider attending the joint AGS - Geological Society of America (Northeastern) conference to be held March 26-29 at the Westin Hotel in Halifax, Nova Scotia. Information about the conference and the Society's activities can be found on the AGS website at http://www.dal.ca/~walla/ags/ags.htm.

As a final note, I would like to encourage readers to participate in their societies and associations and to assist or perhaps instigate outreach programs in their local areas. These groups and programs are how we keep our earth science community vital and alive within Canada. I hope to meet you out there - our long term existence depends on it.

Jennifer Bates
AGS President
bates@agc.bio.ns.ca

Photos: 1. (opposite page, left) Banquet speaker Gordon Fader of Geological Survey of Canada (Atlantic) entertained the troops with his very interesting talk entitled "Multibeam Bathymetry: A Revolution in Marine Geology". Shouldn't he be wearing 3D glasses? 2. (opposite page, right) This may be the only published photo of the infamous musical tribe which each year performs for AGS attendees into the wee hours of the morning. 3. (top centre) David Moynihan (right) of Dalhousie University receives the Graham Williams Award for Best Student Poster from Reg Wilson of New Brunswick Department of Natural Resources and Energy. 4. (lower left) Dave Risk of Saint Francis Xavier University receives the Rupert MacNeill Award for Best Student Paper from AGS Vice-president Jennifer Bates 5. (lower centre) Rob Fensome (left) of Geological Survey of Canada (Atlantic) receives the AGS Distinguished Service Award from Alan Ruffman of Geomarine Associates. Rob shares this award with Graham Williams also of Geological Survey of Canada (Atlantic). 6. (lower right) Howard Falcon-Lang (right) of Dalhousie University accepts the AGS Distinguished Scientists Award (Gesner Medal) on behalf of the recipient Martin Gibling of Dalhousie University from AGS President Tom Martel.

Reading on the Rocks

Icefire

Judith and Garfield Reeves-Stevens (1998) Pocket Books, New York. ISBN 0-671-01403-X. 703 pages. $9.99 (pbk.)

Icefire is a long series of spectacular special effects on a cinematic Cecil B. De Mille scale - vast ocean waves sweeping along shorelines, thousands of people being killed in macabre ways, explosions galore, nuclear detonations, hi-tech gizmos, and destructive volcanic eruptions. And the mayhem involves a stock cast of characters that includes rogue military officers, militant environmentalists, and bewildered technocrats, linked by a plot device predicated on conspiracy and technological contrivance. There is a tenuous earth science tie-in, however. The pivotal event of the story is the rapid collapse of the Ross Ice Shelf in Antarctica. The collapse is triggered, not by climatic change, but by a series of deliberately placed nuclear explosions that detach the Shelf from its moorings. Then atmospheric thermonuclear explosions compress the ice sheet and cause a huge wave to form. This energy wave (a soliton wave) spreads out from Antarctica and propagates across the Pacific, generating massive tsunamis and tremendous loss of life wherever it reaches coastal areas.

Now why would anyone want to do this? This horrific disaster is deliberately engineered by Cold War warriors intent on disrupting the creeping detente that is spreading through the world. These reactionary shock troops are sickened and repelled by the waves of globalization, intense commercialization, and Americanization that are threatening to homogenize and overwhelm the diversity of world cultures. So they create this massive weapon, harnessing Antarctic ice to make an ocean wave aimed like a huge bullet at the entire Pacific Rim, and

especially the west coast US. In the subsequent confusion, destruction, and economic turmoil, they plan to seize power and re-establish what they see as the proper social and economic path for their country.

Of course, what technology designs, technology can defeat. Our counterattack is led by Captain Mitch Webber, a Navy SEAL and a NEST (Nuclear Emergency Search Team) leader. He is already in Antarctica, trying to track down the source of some disturbing readings received by the DIA (US Defence Intelligence Agency), when the wave starts. By coincidence, a former "significant other", now an adversary, is also in Antarctica. Dr Corazon Rey, a respected oceanographer, is also the leader of Earthguard, a gadfly environmental group. She is trying to publicize what she sees as a US violation of the Antarctic Treaty, that is, bringing military hardware to the continent. Mitch and Cory are the only two survivors of the initial bout of destruction that wipes out the McMurdo Research Station in spectacular fashion. With communications knocked out and no rescue likely, they have to get off Antarctica fast. In a Harrier jump jet, they try to outrun the wave, to warn New Zealand, Australia, and Hawaii of the havoc about to reach them, and alert the Pentagon to the nature of the threat.

Naturally, Mitch and Cory eventually save the world, though to do so they must use the very nuclear weapons that Cory has tried to eliminate. The particular geologic structures in the Pacific play a vital part in the resolution of the story. We see Mount Erebus in eruption, and the Pacific Ring of Fire igniting. We travel in many sophisticated vehicles on land, at sea, and in the air. Along the way we are introduced to dozens of acronyms and we learn a lot about military hardware, command structure, and communications technology. The tale certainly races along at a supersonic clip. It contains too much "techno-babble" and too few believable characters for my taste. But if you like fast-paced thrillers in the Tom Clancy mould, and recent world events haven't sickened you for imagined accounts of mass-killings and terrorism, then you'll probably enjoy this book.

Alwynne B. Beaudoin
Edmonton, Alberta

Mélange

Dear GEOLOG Editor

Alwynne Beaudoin's review of Charles Pellingrine's book *Dust* (GEOLOG, winter 2001) was perceptive and interesting. Perhaps the inclusion of E.O. Wilson "thinly disguised as Edwin Wilson" goes deeper than Beaudoin realized. Edward Osborne Wilson (now emeritus) is the Pelegrine University Research Professor at Harvard University. Hmmm.

Yours Sincerely,
Tomas Feininger
Geologist and Professor
Vieux-Québec, QC

Special Session on Natural Hazard Monitoring & Assessment

The Canadian Geophysical Union (CGU) will be presenting papers on Natural Hazards and Disaster Monitoring at their May meeting in Banff. This is also an area of study recently supported by the GEOIDE Network Centre of Excellence. Natural hazards such as earthquakes, volcanoes, landslides and floods have the potential to cause enormous loss of life and damage to property in Canada. Recent advances in high technology have produced a revolution in the precise mapping of surface topography and in the monitoring of ground motions associated with these hazards. This Special Session will include presentations on all aspects of monitoring ground deformation and slope stability including high precision geodetic measurements (GPS, InSAR, VLBI), absolute and superconducting gravimetry, sea level monitoring and strain gauge measurements, as well as papers on theoretical studies, on the establishment of monitoring networks, and case studies in which ground motions were detected .

Please visit the conference web site for detailed information (http://www.acs.ucalgary.ca/~cguconf/).

NWT Merger

The Government of the NWT and Department of Indian Affairs and Northern Development geology offices in Yellowknife will soon be merged into a super geobranch – not unlike similar moves in Whitehorse and Nunavut. They will be moving into a shiny new building, to be deemed the "C.S. Lord Northern Geoscience Centre", early next year.

Geoscied IV: Earth Science for the Global Community

The fourth international meeting for earth science teachers from elementary to university level and for earth scientists who deliver educational outreach programs through their communities, museums or science centers will be held in Calgary, August 10–14, 2003. The purpose is to share ideas and concepts in earth science education and in the development of programs that lead to an integrated understanding of the Earth. The innovative technical program will include keynote addresses, workshops, oral and poster sessions. Field trips will visit many world-renowned sites of interest including the Rocky Mountains, the Burgess Shale, the Royal Tyrrell Museum of Palaeontology, the Frank Slide and the Athabasca Glacier.

Visit http://www.geoscied.org for details.

Free Map

The fifty-first edition of the map, Principal Mineral Areas of Canada (900 A) has been released by NRCan's Minerals and Metals Sector and National Energy Board. The map is at a scale of 1:6 000 000. One copy is free of charge to residents of Canada and can be ordered from the GSC website, go to the publications section.

Sir William Edmond Logan's SILVER FOUNTAIN

On January 29, 1856, Queen Victoria bestowed knighthood on William Edmond Logan, for his contribution to the geology of Canada. He was the first native born Canadian so honoured. The citizens of Montreal organized a gala celebration, and commissioned a great trophy called the SILVER FOUNTAIN, which was made in England and presented in March 1859. This tribute was last seen in Montreal in 1871. Logan resigned as GSC director in 1869, and moved to live with his sister in South Wales. He died in Wales in 1875; his grave is in the church yard at Cilgerran and maintained by the GAC.

For over 30 years, Gordon Winder, Prof.(emer.) of Geology at the University of Western Ontario in London, ON has searched on both sides of the Atlantic - living relatives, museums, antique dealers, geological surveys, professional organizations, etc. NOTHING!! Any suggestions and actions for pursing the search would be appreciated. Contact Gordon at cwinder@uwo.ca.

Check websites - www.rootsweb.com/~autwgw/gen/logan-sf.htm or http://publish.uwo.ca/~cwinder/logan/

What to do with Tailings

The January 2002 version of the journal "Mining Environmental Management" is entirely dedicated to tailings, those potentially nasty residuals that come out of the back end of a mill. There are papers dedicated to managing uncertainties, review of tailing dam failures, designing dams, dry stacking and covering tailings, stability and reclamation. However little attention was give to alternatives to tailing storage. Thomas Pedersen, from the University of British Columbia, is an advocate for subaqueous disposal of sulphide-rich tailings. Although controversial, this method avoids many of the problems associated with subaerial long-term storage. An essay of this approach is available on the Canadian Geoscience Council website at: http://www.geoscience.ca/papersandreports/Pedersen.html

Calendar

2002

April 24-25
11th Annual Calgary Mining Forum & Alberta Geological Survey Open House, Calgary, AB.
Tel: 403 242-7745; E-mail: Phawkins1@compuserve.com; Web: http://www.meg.calgary.ab.ca/forum.html

April 24-26
XV Congreso Geologico Argentino, **El Calafate, Argentina**.
Web: www.cenpat.edu.ar/xvcga

April 28 - May 1
CIM Vancouver 2002, Mining, Minerals and Society - A Future in Balance, Vancouver, BC.
The Canadian Institute of Mining, Metallurgy and Petroleum. Tel: 514 939-2710; Fax: 514 939-2710; Web: www.cimvancouver2002.org

May 1-2
Canadian Mining and Industrial Expo 2002, Sudbury, ON.
Tel: 705 673-5588. Fax: 705 525- 0626. E-mail: dac@vianet.on.ca. Web: www.dac.shows.com

May 7-8
GSA Rocky Mountain Section Meeting, Cedar City, Utah.
Tel: 435 586-1934. Email: eves@suu.edu; Web: www.geosociety.org/sectdiv/rockymtn/02rmmtg.htm

May 12-15
Resourcing the Future - Mining, Minerals and Metals for Sustainable Development, Toronto, ON.
Global Mining Initiative, Dave Rodier. Tel: 416 982-7347; Fax: 416 982-3543; E-mail: rodierd@noranda.com

May 12-15
Mid Canada Mining Corridor Conference 2002, Flin Flon, MB.
Norman Regional Development, Industry Trade & Mines. Tel: 800 665-4774. Fax: 204 778-4192. Web: www.mysterynet.mb.ca/mining. E-mail: normanrd@mts.net

May 12-17
48th Annual Institute on Lake Superior Geology, Kenora, ON.
Peter Hinz (Co-chair). Tel: 807 468-2822; Fax: 807 468-2930. E-mail: peter.hinz@ndm.gov.on.ca; Web: www.ilsgeology.org/2002Mtg.html

May 13-15
GSA Cordilleran Section, Corvallis, OR.
Tel: 541 737-1226. E-mail: yeatsr@geo.orst.edu; Web: www.geosociety.org/sectdiv/cord/02cdmtg.htm

May 18-21
Canadian Geophysical Union/Canadian Society of Soil Science, Banff, AB.
Email: deaton@uwo.ca; Web: www.ucalgary.ca/~cguconf/main.html or www.cgu-ugc.ca

May 19-24
Basement-Cover Connections, **Rolla, Missouri**.
International Basement Tectonics Association. John P. Hogan. E-mail: jhogan@umr.edu

May 27-29
GAC/MAC 2002
From Plains to Shield: The Making of a Continents Interior, 47th Joint Annual Meeting of the Geological Association of Canada/Mineralogical Association of Canada, University of Saskatchewan, Saskatoon, SK.
E-mail: mel.stauffer@usask.ca; Web: www.usask.ca/geology/sask2002

June 3-7
CSPG Diamond Jubilee Convention, Calgary, AB.
Tel: 403 264-5610; Email: lori@cspg.org; Web: www.cspgconvention.org

June 3-7
6th International Conference on the Occurrence, Properties & Utilization of Natural Zeolites, Thessaloniki, Greece.
Tel: 30 31 99 77 89; Fax: 30 31 99 77 53; E-mail: misailid@chem.auth.gr; Web: http://icnz.lanl.gov/zeo2002.html

June 8-13
Clay Minerals Society 39th Annual Meeting, Boulder, CO.
E-mail: kathryn.nagy@colorado.edu; Tel: 303 492-6187; Fax: 303 492-2602; Web: http://cms.lanl.gov or www.colorado.edu/geolsci/cms

June 24-28
10th International Conference on Luminescence and ESR Dating (LED2002), Reno, NV.
E-mail: LED2002@dri.edu; Web: www.dri.edu/DEES/LED2002

July 1-5
16th Australian Geological Convention Geoscience 2002: Adelaide, Australia.
Web: http://www.16thagc.gsa.org.au/

July 7-12
16th International Sedimentological Congress, Auckland Park, Gauteng, South Africa.
Bruce Cairncross, Rand Afrikaans University. Tel: +27 11 489 2313. Fax: +27 11 489 2309. E-mail: bc@na.rau.ac.za; Web: http://general.rau.ac.za/geology/IAS2002/default.htm

July 9-12
Joint ISPRS COM IV-SDH 2002 - CIG International Symposium, Ottawa, ON.
GeoSpatial Theory, Processing & Applications. Web: www.geomatics2002.org

July 11-12
3rd Int'l Conference on Landslides, Slope Stability and The Safety of Infrastructures, Singapore.
CI-Premier Conference Organization. Tel: 065 7332922; Fax: 065 2353530; E-mail: cipremie@signet.com.sg; Web: www.cipremier.com

July 14 - Aug. 2
9th Int'l Platinum Symposium and Field Conference, Bozeman, Montana.
IGCP 427, SGA. Roger Cooper, Tel: 409 880-8239; Fax: 409 880-8246; E-mail: cooperw@hal.lamar.edu; Web: www.platinumsymposium.org

July 22-26
11th IAGOD Symposium & Geocongress. Sedimentary, Magmatic & Ore-forming responses to Compressional & Extensional Tectonics, Windhoek, Namibia.
Geological Survey of Namibia, Council for Geoscience of South Africa, IGUDS/UNESCO, Society of Economic Geologists (SEG) and Society for Geology Applied to Mineral Deposits (SGA). Tel. 264-61-251014; Fax: 264-61-272032; E-mail: alice@conferencelink.com.na; Web: www.geoconference2002.com

Aug. 8-11
American Quaternary Aassociation (AMQUA) 17th Biennial Meeting, Anchorage, AK.
E-mail: afdry@uaa.alaska.edu; Tel: 907 786-6845; Fax: 907 986-6850

Aug. 25-30
Gondwana 11, Correlations and Connections, Gateway Antarctica, Christchurch, New Zealand.
Tel: 64 3 364-2136; Fax: 64 3 364-2197; E-mail: s.hawtin@anta.canterbury.ac.nz; Web: www.anta.canterbury.ac.nz

Aug. 27-Sept. 3
Int'l Geochemical Exploration Symposium, Dublin, Ireland.
Association of Exploration Geochemists. Web: www.aeg.org

Aug. 31- Sept. 4
Emerging Concepts in Organic Petrology and Organic Geochemistry, Banff, AB.
Canadian Society for Coal Science and Organic Petrology/The Society for Organic Petrology . Tel: 403 292-7038; Fax: 403 292-7159; E-mail: Mfowler@nrcan.gc.ca; Web: www.cscop-tsop2002.com

Sept. 1-4
AusIMM 2002 Conference, Auckland, New Zealand.
Australasia Institute of Metallurgy. Tel: +64 9 373 5917. Fax: +64 9 307 3025. E-mail: conference2002@ausimm.co.nz

Sept.1-6
2002 International Mineralogists Association, Edinburgh, Scotland.
Web: http://www.minersoc.org

Sept. 9-11
Iron Ore 2002, Perth, Australia.
Fax: 03 9662 3662; E-mail: publications@ausimm.com.au; Web: www.ausimm.com

Sept.22-25
Applied Structural Geology for Mineral Exploration & Mining, Kalgoorlie, Australia.
Julian Vearncombe. E-mail: vearncom@iinet.net.au

Oct. 28-31
Geological Society of America, Denver, CO.
Tel: 303 447-2020; Fax: 303 447-1133; E-mail: meetings@geosociety.org; Web: www.geosociety.org/meetings/index.htm

Nothing but Net

Free Geological Software
Includes DEM drappers and Strat Column composers
worth typing in the long URL
http://www.nadn.navy.mil/Users/oceano/pguth/website/pl03000.htm

Canada Nunavut Geoscience Office
Would you like that in Inuktitut?
http://pooka.nunanet.com/%7Ecngo/

Blue Marble
True colour earth images that are out of this world
http://earthobservatory.nasa.gov/Newsroom/BlueMarble/

Canadian Mining Journal
Exploration: Trends and developments in 2001
http://www.canadianminingjournal.com/

Digital Library for Earth Science Information (DLESI)
Resources for people wishing to learn more about the earth
http://www.dlese.org/

CANADIAN ROCKHOUND
Always bookmarked as one of GEOLOG's favourites:
http://www.canadianrockhound.com

The Mineralogical Society
http://www.minersoc.org/

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Imagine being able to view the location of a property anywhere in the world and to see the properties surrounding it. Now you can - with map.InfoMine. Zoom in on any part of the world to view any of the over 3,500 properties currently in the dataset. Pan or Zoom Out to view the surrounding area. Use the Identify feature to click on a property and go directly to the detailed reports. Check out http://map.infomine.com (requires Internet Explorer 5 or above).

Order all GAC publications from:
Geological Association of Canada,
Department of Earth Sciences, Memorial University of Newfoundland, St. John's, NF A1B 3X5 Canada. Tel. (709) 737-7660; Fax: (709) 737-2532; Email: gac@sparky2.esd.mun.ca; Web: www.gac.ca

U.S. National Geologic Map Database

This web-based database (http://ngmdb.usgs.gov) consists of three parts: 1) a listing of all geological maps in the United States; 2) the Geologic Names database, and 3) the Paleontology database. When calling up a particular map, one can also find what stratigraphic units are present in that areas, as well as the location of any paleontological sample sites.

New Earth Science Education Listserver

A new listserv dedicated to improving earth science education, largely at the university level has been set up at the University of Tulsa. The geo-ed list features discussions on geoscience education reform, and issues related to improving undergraduate geoscience education. The list grew out of an AGU Chapman "Scrutiny of Undergraduate Education". The list is not moderated, but is a closed list - any subscriptions to the list go through approval by the list administrator.

Discussions on the list should be sent to: geo-ed@dlese.org. If you have questions regarding the list, please contact BryanTapp at: jbt@utulsa.edu

From Plains to Shield: The Making of a Continent's Interior

Des plaines au bouclier: la formation de l'intérieur d'un continent

GAC-MAC JOINT ANNUAL MEETING

Geological Association of Canada
Mineralogical Association of Canada

University of Saskatchewan
May 27–29, 2002

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Fax: (306) 966-8593;
E-mail: mel.stauffer@usask.ca;
Web: www.usask.ca/geology.

AGC-AMC RÉUNION ANNUELLE CONJOINTE

L'Association géologique du Canada
L'Association minéralogique du Canada

University of Saskatchewan
27–29 Mai 2002

Les 26 sessions spéciales / symposia, les sessions génerales, et les 14 excursions sur le terrain couvriront presque chaque aspect majeur des sciences géologiques, avec un accent porté sur la formation et l'évolution de l'interieur continentale et ses resources géologiques. Venez pour la géologie – Venez découvrier le Synchrotron – Mais surtout venez pour la visite...

Pour plus d'information contacter nous à:
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Courriel: mel.stauffer@usask.ca;
Web: www.usask.ca/geology.