BULLETIN DU GROUPE CANADIEN DE RECHERCHE EN GEOMORPHOLOGIE
LEPAYSAGECANADIEN
THECANADIANLANDSCAPE
THE NEWSLETTER OF THE CANADIAN GEOMORPHOLOGY RESEARCH GROUP
The Canadian Geomorphology Research Group
Le Groupe Canadien de Recherche en Géomorphologie
No. 30, July 2011

Big Bar Creek earthflow, interior British Columbia
Photograph by Tracy Brennand.

President's Message
Mot du Président

Greg Brooks, Past President

Since the 2010 Canadian Geomorphology Research Group (CGRG)-Annual General Meeting (AGM), a priority of the Executive has been to increase the number of conferences at which CGRG sponsored special sessions. Associated with these sponsorships, CGRG underwrites student awards for the best oral and poser presentations, as either the Slaymaker awards (at the meeting hosting the AGM) or the Dionne/Trenhaile awards (at the other meetings). In April 2011, CGRG sponsored a special session in the honor of Professor Robin Davidson-Arnott, the well-known Canadian coastal geomorphologist who recently retired from the University of Guelph, at the American Association of Geographers Annual Meeting, Seattle, Washington. In addition to holding its AGM at the May 2011, Geological Association of Canada Meeting in Ottawa, CGRG sponsored four special sessions on the themes of Arctic landscape evolution, Integration of process-based understanding of glacial systems in mineral exploration studies, Geomorphology and Quaternary geology, and Natural hazards. At the Canadian Association of Geographers Conference, Calgary in early June 2011, CGRG sponsored a special session on Dendrochronology. In August

Depuis l'assemblée générale annuelle (AGA) de 2010 du Groupe canadien de recherche en géomorphologie (GCRG), le comité de direction s'est fixé comme priorité d'augmenter le nombre de conférences auxquelles le GCRG participera en parrainant des séances spéciales. En plus de ces parrainages, le GCRG offre des bourses d'étude pour les meilleures présentations orales ou par affiches, soit dans le cadre des prix Slaymaker (remis lors de la réunion accueillant l'AGA) ou des prix Dionne/Trenhaile (lors d'autres réunions). En avril 2011, le GCRG a parrainé une séance spéciale en l'honneur du professeur Robin Davidson-Arnott, le réputé expert canadien en géomorphologie côtière qui a récemment pris sa retraite de l'Université de Guelph, lors de l'assemblée annuelle de l'American Association of Geographers tenue à Seattle (Washington). En plus d'organiser son AGA à l'occasion de la réunion de mai 2011de l'Association géologique du Canada, à Ottawa, le GCRG a parrainé quatre séances spéciales sur les thèmes de l'évolution du paysage arctique, l'intégration des connaissances sur les systèmes glaciaires, axées sur les processus, aux études sur l'exploration minérale, la géomorphologie et la géologie du Quaternaire, et les catastrophes naturelles. Lors de la conférence de l'Association

2011, CGRG is sponsoring a session dedicated to student presentations at the "Coherent flow structures in geophysical flows at Earth's surface" conference, Vancouver, as well as sessions on Glacier and ice sheet hydrology and Quaternary geology, paleoenvironments and geomorphology at the joint CANQUA-Canadian Chapter of the International Association of Hydrogeologists conference, Quebec City. Overall, this line-up consists of nine sponsored sessions at three national and two international meetings; each of the latter have a strong Canadian connection.

Although the number of conferences with sponsored session(s) (and indeed the overall number of sponsored sessions) is clearly a positive development, it should be noted that the sponsorship of these sessions came about because they were either organized directly by members of the CGRG Executive (or a recent CGRG Executive member), or the session organizer was directly approached by a member of the Executive with the offer of a sponsorship. A better situation, of course, would have been for CGRG members approaching the Executive with requests for sponsorship!

Many CGRG members will no doubt be aware of the Canadian bid for the 36th International Geological Congress (IGC) to be held in 2020. Although 2020 seems like a long time away and thus is difficult to plan for, this meeting represents an excellent opportunity to showcase Canadian geoscience (including geomorphology!) and the Canadian landscape. Towards this, CGRG has provided the Canadian Federation of Earth Sciences (CFES) with a formal letter of support for this bid, which will hopefully be successful. For information on how to get involved with this bid, contact Bill Mercer (bmercer@avalonraremetals.com), Past President, CFES, who is the IGC2020 Bid Committee Chairman.

The CGRG AGM brings change to the CGRG Executive. Tracy Brennand is now CGRG President, Brian Menounos, the new Vice President, Pascal Biron, a new Member-at-Large, Michele Koppes, the new Newsletter Editor, Jordan Eamer, the new graduate Student Representative, and yours truly is now Past President. On behalf of the membership, I extend thanks to Duane Froese (the previous Past President), Ian Walker (past Member-at-Large), Scott St. George (past Newsletter Editor) and Genevieve Marquis (past Graduate Student Observer) for their many contributions to the Executive and the Canadian geomorphology community.

Tracy Brennand, new CGRG President.

canadienne des géographes tenue à Calgary au début de juin 2011, le GCRG a parrainé une séance spéciale sur la dendrochronologie. En août 2011, le GCRG parrainera une séance consacrée à des présentations d'étudiants lors de la conférence sur les « structures d'écoulement cohérentes dans les écoulements géophysiques à la surface de la Terre », qui se tiendra à Vancouver, ainsi que des séances sur l'hydrologie des glaciers et des inlandsis, et sur la géologie du Quaternaire, les paléoenvironnements et la géomorphologie, à l'occasion de la conférence conjointe de l'Association canadienne pour l'étude du Quaternaire (CANQUA) et de la section canadienne de l'Association internationale des hydrogéologues, qui aura lieu dans la ville de Québec. En tout, cette liste comporte neuf séances parrainées lors de trois réunions nationales et internationales, chacune de ces dernières ayant un lien étroit avec le Canada.

Bien que le nombre de conférences comportant une ou des séances parrainées (et bien sûr le nombre total de séances parrainées) représente une nette amélioration positive, il faudrait noter que le parrainage de ces séances a été suscité soit parce qu'elles étaient organisées directement par des membres du comité de direction du GCRG (ou un récent membre du comité de direction du GCRG), ou parce que l'organisateur de la séance a été directement contacté par un membre du comité de direction offrant un parrainage. Il aurait été encore mieux que les membres du GCRG présentent des demandes de parrainage au comité de direction!

Plusieurs membres du GCRG n'ignorent sans doute pas la candidature du Canada pour le 36e Congrès international de géologie (CIG) qui aura lieu en 2020. Bien que l'année 2020 semble bien lointaine et qu'il soit difficile de s'y préparer, ce congrès représente une excellente occasion de mettre en valeur le volet canadien des sciences de la Terre (notamment la géomorphologie!) et le paysage canadien. Dans cette optique, le GCRG a présenté à la Fédération canadienne des sciences de la Terre (FCST) une lettre officielle appuyant cette candidature qui, nous l'espérons, réussira. Pour obtenir plus de renseignements sur la façon de participer à cette mise en candidature, veuillez communiquer avec Bill Mercer (**bmercer@avalonraremetals.com**), président sortant, FCST, qui préside le comité de candidature pour le CIG 2020.

L'AGA du GCRG amène des changements au sein du comité de direction du GCRG. Tracy Brennand est désormais présidente du GCRG, Brian Menounos, le nouveau vice-président, Pascal Biron, un nouveau membre actif, Michele Koppes, la nouvelle éditrice du bulletin d'information, Jordan Eamer, le nouveau représentant des étudiants diplômés, et moi-même, le président sortant. Au nom de tous les membres, je tiens à remercier Duane Froese (le président sortant précédent), Ian Walker (ancien membre actif), Scott St. George (ancien éditeur du bulletin d'information) et Geneviève Marquis (ancienne observatrice représentant les étudiants diplômés) pour les nombreuses contributions apportées au comité de direction et à la communauté canadienne de la géomorphologie.

Student Profile
Annina Margreth, Dalhousie University

"I feel very fortunate to do research in remote areas and to be exposed to the gorgeous and vast landscapes in the Canadian Arctic and, coming from a small country, am fascinated by such large dimensions."

Annina Margreth is a Ph.D. student in the Department of Earth Sciences at Dalhousie University working with Dr. John Gosse in cosmogenic nuclide exposure dating. Her interest for landscape-forming processes was initiated while growing up on a dairy farm in the Swiss Alps. During her diploma study in Earth Sciences at the Swiss Federal Institute of Technology (ETH) in Zurich, she especially enjoyed the numerous fieldtrips she participated in. Her main focus was in Structural Geology and Applied Earth Sciences, which she reinforced during a European student exchange year at the Technical University Delft in the Netherlands, where she participated in a M.Sc. program in Engineering Geology.

Annina's interest in Geomorphology and Quaternary Geology was triggered during her diploma thesis under supervision of Dr. Christian Schlüchter from the University of Bern. Later she was invited to participate in fieldwork for a Ph.D. project at the Norwegian Geological Survey investigating the formation of saw-tooth shaped moraine ridges of an outlet glacier of the Jostedalsbreen ice field.

After graduation Annina started to work for a geological consultancy office, where she was involved in different geotechnical and environmental projects. Shortly afterwards she was offered a position at one of the construction sites for a major tunnelling project in Switzerland, the Gotthard-Base Tunnel, where she was responsible for the geological documentation of the excavation works, the prediction of geological conditions from borings, and risk management of potential geological hazards.

While working in industry Annina always knew that she wanted to continue her academic education with a Ph.D. somewhere abroad. Therefore, she applied for a Ph.D. project at Dalhousie University to research the geomorphology and glacial dynamics in the Canadian Arctic where she was attracted by the prospect of fieldwork on Cumberland Peninsula as part of a Geological Survey of Canada mapping project under co-direction of Art Dyke. The focus of her Ph.D. research is the application of cosmogenic nuclides for exposure dating, burial histories, and erosion rates to better understand polythermal ice dynamics and address the possible existence of biological refugia during LGM The newly acquired data will be combined with previously published glacial chronology and sea-level histories to constrain a high-resolution thermomecanical ice-sheet model.

Landslide near Notre-Dame-de-la-Salette, QC triggered by June 23, 2010 earthquake.
Photograph by Charles O'Dale.

Meeting report

Joint CGRG- and AAG-GSG/COMA sponsored sessions in honour of Robin Davidson-Arnott, coastal geomorphologist

Five special sessions co-sponsored by the CGRG and AAG-Coastal & Marine (COMA) Specialty Group at the 2011 AAG Annual Meeting in Seattle, WA (12-15 April) were held in recognition of the career contributions of Dr. Robin Davidson-Arnott (PhD, Toronto 1975) to Coastal and Aeolian Geomorphology. Robin's career spanned 35 years mostly at the University of Guelph where he trained over 40 graduate students, published 16 books/chapters, 60 peer-reviewed papers, and produced dozens of conference presentations and technical reports. His areas of research interest are truly 'coastal' in the broadest geographic sense and included research on nearshore bars, rip currents, beach and nearshore erosion and sedimentation, wave climate and sediment budget modelling, beach-dune dynamics, cohesive coast and bluff erosion, salt marsh morphodynamics and sedimentation, coastal management, and climate change impacts on the coastal zone. Add to this, years of service to the discipline as a Geographer and Professional Geomorphologist via involvement in the International Joint Commission on the Great Lakes and collaborative research with several municipal, provincial, and national parks. Much of this experience and wisdom is distilled in his recent text, "An Introduction to Coastal Processes and Geomorphology" (Cambridge University Press, 2009), which is designed as a staple for a senior level courses in coastal geomorphology. To many of his students, Robin is known as a kind, encouraging, and intelligent scholar whose patient and 'devils advocate' approach to mentorship fostered many careers and friendships. To his collaborators, Robin is the quintessential team player and 'polite Canadian' (despite his funny Trinidadian accent) who has helped lead or facilitate numerous collaborative research projects around the globe. The sessions drew over 30 oral papers over two days from past students and colleagues from around the world. On behalf of the CGRG and his colleagues, we would like to thank Robin for his years of service and contribution to our science and wish him all the best in his blossoming Emeritus career!

The five sponsored sessions were a big hit, with two packed days of sessions from colleagues and students (past and present) from around the world. The sessions were concluded with a CGRG-sponsored social (turned roast) in honour of Robin's achievements. My thanks to the CGRG Executive for sponsoring the event and to session organizer Dr. Chris Houser (TAMU) for pulling together such a rich group of speakers. Student presentations were exemplary and comprised 2 full paper sessions (10 papers total) and 2 posters. The 5-member evaluation committee deliberated for some time, given the high calibre of presentations, and the award winners show a coast to coast distribution as follows:

Trenhaile Award (poster): Casey O'Laughlin (Danika van Proosdij, supervisor) St. Mary's University, Halifax NS. "Spring-Neap Variations in Intertidal Hydrodynamics and Sedimentation in the Bay of Fundy"

Abstract: The purpose of this research was to investigate the variability in sedimentary processes over spring-neap tidal cycles to improve our understanding of their natural variability in the Upper Bay of Fundy. Studies were conducted within a confined terminal creek (2009) and an exposed salt marsh and mudflat (2010) over a full range of neap-spring tidal cycles. Field measurements of current velocity and suspended sediment concentration were made using Acoustic Doppler Velocimeters (ADV), an Acoustic Doppler Current Profiler (ADCP) and OBS respectively. Additional variables included sediment deposition, wave activity, detailed topographic surveys and meteorological conditions. The ADV data indicate that in a confined tidal creek, tides that surpassed bankfull level showed a generally even distribution of tidal energy, while tides that remained below bankfull showed strong flood dominance. Maximum current velocities ranged from 10 cm/s to 20 cm/s in the creek thalweg, and up to 30 cm/s on the creek bank. Within the tidal creek, more sediment was deposited during spring and transitional tides as opposed to during neap tides presumably due to increased inundation time. In contrast, preliminary analysis suggests that neap tides contribute more material to the surface compared with both spring and transitional tidal cycles at the exposed salt marsh and mudflat site. Both Hurricanes Bill and Earl resulted in significantly increased suspended sediment concentrations up to 4,000 mg/L, overwhelming any spring/neap differences. These data will be applied to sediment transport models being developed to assess the potential far-field environmental effects of tidal power activities.

Casey O'Laughlin (right), St. Mary's University, winner of the Trenhaile Award for best poster with his supervisor Dr. Danika van Proosdij.

Joint CGRG- and AAG-GSG/COMA sponsored sessions in honour of Robin Davidson-Arnott, coastal geomorphologist (cont.)

Jordan Eamer, University of Victoria, (left) winner of the Dionne Award for best oral presentation with Professor Robin Davidson-Arnott.

Dionne Award (oral presentation): Jordan Eamer (Ian Walker, supervisor) UVic, Victoria BC. "Morphodynamic and sediment budget responses of a foredune-transgressive dune complex to invasive vegetation removal, Pacific Rim National Park Reserve, British Columbia, Canada"

Abstract: Recently, there has been a shift from restoring coastal dunes as stabilized ecosystems to more dynamic systems that are geomorphically diverse, more resilient to erosion, and that offer greater ecosystem diversity, particularly for pioneering (and often endangered) species. This paper presents results from a large-scale dynamic restoration program implemented by Parks Canada to remove invasive marram grasses (Ammophila spp.) from a foredune-transgressive dune complex in Pacific Rim National Park, British Columbia, Canada. The program goal is to restore habitat for endangered Pink Sandverbena (Abronia umbellata) as required by the Species at Risk Act (SARA). Three sites were restored via mechanical removal of invasive marram grasses (Ammophila spp.) in September 2009. Sites represent cross-shore DEMs, ranging from 15000 to 30000 m2, that extend landward from the high tide line to forest stand. Subsequent semi-monthly, detailed total station surveys and repeat vantage photography are used to quantify and describe morphodynamic responses and volumetric changes within discrete landscape units (beach, incipient dune, foredune, transgressive dune plain) at each site over one year of observation. Regional estimates of sand transport potential derived from local data provide a relative estimate of aeolian activity responsible for observed changes. Correlations between dune activity and regional climatic variability indices are also explored. Results show sediment stores delivered via bar welding and berm development in the winter are transported into the foredune and transgressive dune plain in the spring, promoting rapid recovery of the seaward slope of the foredune and localized depositional lobe development in the dune plain.

- Ian Walker

Glacially streamlined landforms, Douglas Lake, southern British Columbia.
Photograph by Tracy Brennand.

Meeting report
Joint GAC-MAC-SEG-SGA meeting, Ottawa, May 2011

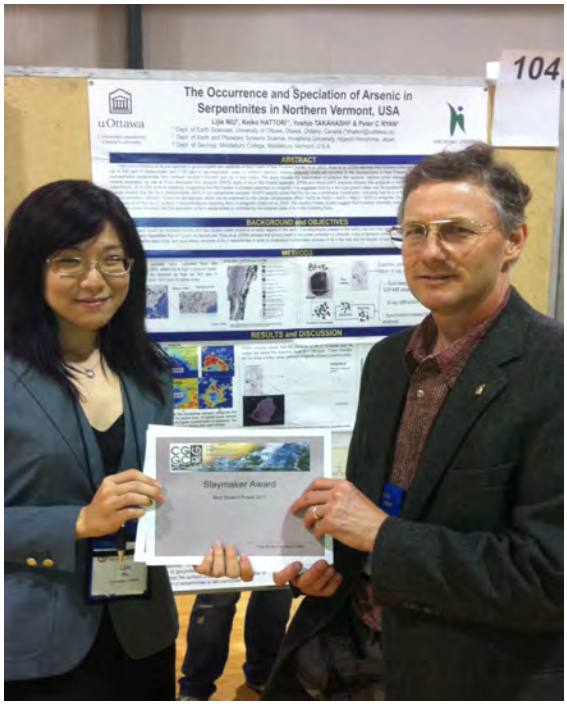
Greg Brooks

This year the CGRG Annual General Meeting (AGM) was held at the Joint Annual Meeting of the Geological Association of Canada, the Mineralogical Association of Canada, the Society of Economic Geologists and the Society for Geology Applied to Mineral Deposits (GAC-MAC-SEG-SGA) hosted by the University of Ottawa, Ottawa, Ontario, from May 25th to 27th, 2011. Complimenting the AGM, CGRG sponsored four special sessions at this meeting, comprising of: *Arctic landscape evolution: large scale geomorphic response to regional climatic, oceanographic, and geodynamic processes* organized by Duane Froese and John Gosse; *Living in a naturally hazardous place* organized by Greg Brooks and Réjean Couture; *Integration of process-based understanding of glacial systems in mineral exploration studies* organized by Hazen Russell, David Sharpe and Don Cummings; and a general session on *Geomorphology and Quaternary geology*. These sessions comprised a total of 29 oral and 6 poster presentations, a reasonable, but certainly not overwhelming response to the sessions.

Papers in the *Arctic landscape evolution session* focused on the role of geologic and geomorphic processes operating over greater than millenia timescales. Reflecting this long timescale, the session included papers examining the growth of the Princess Margaret Range mountains on Axel Heiberg Island (Marcos Zentilli), landscape evolution of the Eastern Arctic Rim which found contrasting patterns in rift flank uplift in the region (John Gosse and others), and the Plio-Pleistocene evolution of regional drainage of the northern Yukon and Richardson Mountains (Duane Froese and others). Specific to deposits preserved within the Arctic, papers focused on aspects of the sedimentation in the Boreal Sea during the Upper Cretaceous based on strata from Ellef Rignes Island, Nunavut (Adam Pugh and others) and aggradation within an Early Pliocene beaver pond preserved in deposits on Ellesmere Island (Travis Mitchell and others). Other papers examined the spatial distribution and transition from cold- to warm-based glacial thermal regions, based on geomorphology and geochemistry (Michel Lamothe and others), and polythermal ice dynamics within the coastal landscape of Cumberland Peninsula, Baffin Island, as interpreted from cosmogenic dating in combination with radiocarbon-dated shells and surfical mapping (Annina Margreth and others). Rounding out the session was a paper on an application of U-Th-^{4}He dating on speleothem composed of carbonate flowstone within Bear Cave, northern Yukon (Sarah Agosta and others).

The *Living in a naturally hazardous place* session consisted of papers on the theme of natural hazards. The first paper in the session (Struik and others) overviewed the development of a risk-based, land-use decision support system that is intended to increase community resilience to disasters. This provided an application perspective for the papers that followed, most of which focused on seismicity and landslides. The seismicity-related papers included a review of the compilation of a seismic site class map for the City of Ottawa map area, using geophysical data and the soil classification system defined in the National Building Code of Canada (Brooks and others), an overview of recent and planned risk assessment modeling studies in Ottawa to better understand potential losses from damaging earthquake scenarios (Ploeger and others), and the risk to fuel storage facilities in San Diego, California, from seismic ground motions and liquefaction (Jackson). A very interesting paper was presented on the importance and role that seismologists can have informing the public on fears and misconceptions about earthquakes and earthquake hazards following both local or international earthquake disasters (Lamontagne). Four papers were dedicated to various aspects of landslide studies. Very interesting was an overview of progress towards developing a Canadian landslide susceptibility map the compilation of which is obviously complicated by the large Canadian land mass and its diverse physiography (Bobrowsky and Dominguez). The other landslide papers were more site specific consisting of preliminary results from the dating of prehistoric sensitive clay earth flows in Breckenridge Valley, near Gatineau, Quebec (Brooks and others), dating of the Mystery Creek rock avalanche situated between Whistler and Pemberton, British Columbia, using cosmogenic dating which indicates a considerably older age than previous thought (Blais-Stevens and others), and an assessment of the timing of formation and subsequent movements of the Downie Slide, British Columbia, which is located on a mountain slope above Lake Revelstoke, a major BC Hydro reservoir (McCuaig). The session concluded with a paper examining the impacts of faulting on a volcanic cone using analogue models (Mathieu and others).

Annina Margreth (left), Dalhousie University, winner of the Slaymaker Award for best oral presentation with CGRG President Greg Brooks.



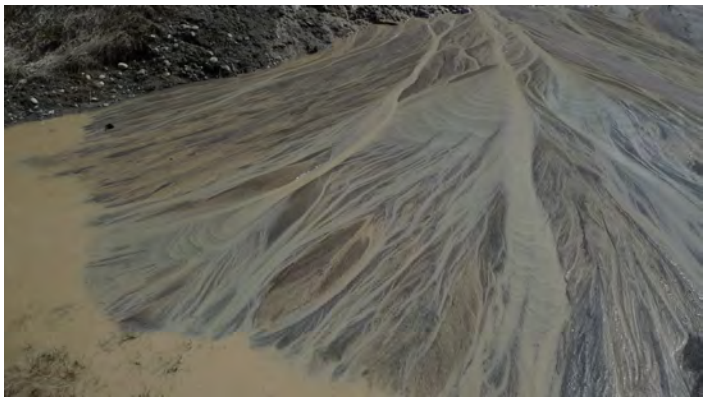
Lijie Nui (left), University of Ottawa, winner of the Slaymaker Award for best poster presentation with CGRG President Greg Brooks.

As might be expected from the title, the *Integration of process-based understanding of glacial systems in mineral exploration studies* session had a definite slant towards studies applied to mineral exploration. It consisted of papers on mineral dispersal patterns from the perspective of evaluating and integrating recent advances in understanding glacial processes beneath ice sheets (Leseman), presenting a preliminary framework for sedimentation in eskers with a research strategy for improving mineral exploration in glaciated terrains (Cummings and others), and the importance of understanding the ice-flow history of an area in order to recognize and correctly interpret palimpsest dispersal trains (Plouffe and others). More general geographically was the paper on the pattern and distribution of eight distinctive glacial erratic types in western Canada (Johnston and Schreiner). There were also more regionally focused papers on the complexity of hybrid tills and glacial flow patterns in New Brunswick (Seaman), the occurrence of fan-shaped dispersal patterns in East Arm of Great Slave Lake, Northwest Territories, which contrast markedly to the long, linear trains in nearby areas (Sharpe), and a summary of an investigation on characterizing glacial dispersion from the Kiggavik uranium deposit, Nunavut (Robinson and others).

The general session *Geomorphology and Quaternary geology* consisted of a diverse set of papers covering the topics of the Quaternary geology and ice flow history in McLeod Lake map area, central British Columbia, as derived from surfical geology mapping and till sampling (Sacco and others), the striation record preserved on the bedrock of the southern Quebec Applalachians that depicts seven distinct events (or phases) of flow directions (Shilts and Caron), a comparison of MIS 4 and 6 glaciations in the Yukon with the differences in extent thought to be due to variations in regional precipitation (Ward and others), and a test of the notion that the hills of Axel Heiberg Island are the product of rising salt diapirs during the Holocene using remote sensing (Zentilli and others).

There were several excellent student oral presentations in the four sponsored sessions. The Slaymaker award for the best oral presentation was given to Annina Margreth, Dalhousie University, for her paper *Arctic coastal landscape evolution influenced by polythermal ice coverage of Cumberland Peninsula, Baffin Island* (co-authored with John Gosse and Art Dyke), presented as part of the *Arctic landscape evolution* session. Her paper was excellent in all facets of the presentation (speaking, slide quality, complexity of the material, etc.). The Slaymaker award for the best student poster was awarded to Lijie Nui, University of Ottawa, for her poster *Arsenic distribution and speciation in Applachian serpintines in northern Vermont, USA*, presented as part of the *Living in a naturally hazardous place* session. Congratulations to the two award winners. (As an aside, if anyone ever wonders if sponsoring student awards is a worthwhile goal for CGRG, I strongly suggest that they attend a CGRG-sponsored meeting and see the reactions of the students when told that they have won one of the awards. It will be very evident that the student award program is hugely worthwhile.

Next year, the CGRG Annual General Meeting (AGM) will be held at the joint Canadian Geophysical Union and Canadian Water Resources Association (CGU-CWRA) meeting in Banff, Alberta, tentative schedule for June 4-8, 2012. Meeting planning is currently underway. We hope to sponsor a session or two at this meeting, and encourage you to contact the CGRG executive with session proposals as soon as possible.



Pulsing aggradation on an alluvial fan, Lusk Creek, Kananaskis, Alberta. Photo by Michele Koppes

CGRG Special Session at the CAG in Calgary

A wonderful turnout greeted the special dendrochronology session at this year's annual meeting of the Canadian Association of Geographers in Calgary in early June. The event sponsored by the CGRG, saw eight Master and Ph.D. student presenters competing for the coveted Jean-Claude Dionne prize for best oral presentation. The talks ranged in subjects from dendrogeomorphological investigations of past glacier activities in the British Columbia Coast Ranges, to a series of dendrohydrological investigations covering water resource changes on the Sunshine Coast, to paleoreconstructions of the Athabasca River flow regimes. As is common for these events, the judging panel of Brian Luckman, Olav Slaymaker and Shawn Marshall had their work cut out for them. Of particular mention from the judging panel was Kara Pitman's talk on scuba diving in a high elevation lake to collect her subfossil wood samples, and Jill Harvey's talk on Little Ice Age activity of glaciers in the central Coast Mountains. In the end the consensus winner was announced by the head judge Dr. Brian Luckman, and he called forward Colette Starheim. Colette won for her talk entitled "Investigating the paleohydroclimate of west-central British Columbia using a multi-species tree-ring network". Colette said shortly after her win, "I was initially stunned when my name was announced, but totally excited to win the award. It means so much to me, especially given the extremely high caliber of all of the other presenters". Colette should be packing her bags anytime soon as she plans to head down to New Zealand to pursue her Ph.D. later this fall in Christchurch.

Colette Starheim (right), University of Victoria, receiving the Dionne Award for best student oral from Professor Brian Luckman.

Dr. Michele Koppes
J. Ross Mackay Award winner

Duane Froese, Past President, CGRG

On behalf of this year's J. Ross Mackay Award committee, I am pleased to announce this year's winner Dr. Michele Koppes, Assistant Professor of Geography at the University of British Columbia.

Dr. Koppes was nominated for a body of work she has produced over the last decade, establishing the controls on the relative rates of erosion by fluvial and glacial processes, and disentangling these contributions from tectonic and dynamical ice contributions over a range of timescales, and placing these within the context of anthropogenic influences. Her nomination highlighted one particular publication, co-authored with David Montgomery:

M.N. Koppes and D.R. Montgomery 2009. The relative efficacy of fluvial and glacial erosion over modern to orogenic timescales. Nature Geoscience, 2, 644-647.
http://www.nature.com/ngeo/journal/v2/n9/abs/ngeo616.html

The committee and nominating group highlighted this work for integrating her previous field studies in Alaska and Patagonia with a review of global contributions of rivers and glaciers to erosion across a range of timescales. That paper compared modern measures of erosion from glaciers and rivers with long-term estimates and human activity in a global context. The committee felt this work challenges conventional wisdom that glaciers are more erosive than rivers, and found that both rivers and glaciers can erode to keep pace with the highest rates of uplift. Koppes and Montgomery found that human activity and climate change are having a major influence on erosion rates, and in fact erosion from agricultural lands in some areas is comparable with that from tectonically active mountain ranges.

Dr. Koppes received her PhD from the University of Washington in 2007. She joined UBC originally as a Teaching Postdoctoral Fellow, and joined the faculty as an Assistant Professor in the Department of Geography in January 2010. A profile of her research was included in the CGRG Newsletter in July 2009.

Dr. Koppes will deliver the Mackay award lecture at some future CGRG sponsored meeting, to be determined.

Meeting announcement
GAC/MAC Winnipeg 2013

The 2013 Geological Association of Canada (GAC) and the Mineralogical Association of Canada (MAC) Annual Meeting will be held **22-24 May 2013**, in Winnipeg, Manitoba.

First Call for Special Sessions (SS) and Technical Sessions (TS)*

Session Submission Deadline: October 1st 2011

Please send proposed session titles and descriptions to
Mostafa Fayek (fayek@cc.umanitoba.ca) and/or
Christian Böhm (christian.bohm@gov.mb.ca)

Special Session (SS) and Technical Session (TS) descriptions should be a maximum of 100 words (excluding the title, organizers names, affiliations and email), and include a brief statement regarding the significance of the session (e.g., dedication) and outline the type of contribution the organizer would like to include in their session.
*Abstracts that are submitted, but do not fit in a SS or TS will be organized into General Sessions (GS) (e.g., Mineralogy, Geochemistry, Geophysics).

EXAMPLE (SS):
SS 1. Understanding minerals: from chemistry to structure, from structure to chemistry (Session dedicated to Frank C. Hawthorne)

EXAMPLE (TS):
TS 1. Uranium in the Environment
Organizer: M. Fayek, Dept. Geological Sciences, University of Manitoba (fayek@cc.umanitoba.ca)
Uranium in natural (e.g., uranium deposits) and anthropogenic (e.g., nuclear waste disposal sites) systems presents an increasing concern to humans in regards to ground water quality and habitat contamination. Contributions on subjects of uranium in various geologic settings, from uranium deposit research and their use as natural analogues for geologic disposal of spent nuclear fuel, to fate and transport of uranium in solution, as nanoparticles, and colloids, are strongly encouraged. In addition, topics on toxicities and threats to aqueous habitats are also encouraged.

Sponsoring Societies
Mineralogical Association of Canada (MAC)
Geological Association of Canada (GAC)

Meeting announcement
CGU-CWRA Banff 2012

The 2012 CGRG AGM will be held at the CGU-CWRA joint meeting in Banff, Alberta, June 4-8 (tentative). Meeting planning is currently underway.

We hope to sponsor a session or two at this meeting and encourage you to contact the CGRG executive with session proposals as soon as possible.

AGU Fall Meeting 2011 sessions

CGRG members would like to draw your attention to the following sessions at the AGU Fall Meeting 2011 in San Francisco, California, USA (December 5th-9th 2011). Abstract submission is now open at http://agu-fm11.abstractcentral.com/ and the deadline for submissions is **August 4th** 23:59 EDT. You can find further details at: http://sites.agu.org/fallmeeting/.

Don't hesitate to contact the session conveners should you have any questions about these sessions.

C23: Mountain Glaciers and Their Response to Climate

Mountain glaciers are rapidly retreating with consequences for downstream hydrology, including changes in annual discharge, increased seasonality, disappearance of melt-water fed springs and alterations to ecology and water quality. The influence of glaciers on watershed hydrology is complex temporally (from daily to seasonal to inter-decadal timescales) and spatially (from the immediate proglacial environment to regional scales). We invite contributions that study these systems and the impacts of changes to them through, but not limited to, field observations, glacier and water resources monitoring, processes analysis, modeling, and/or remote sensing. This session is not restricted to any specific region of the world.

Session Conveners:
Andrew Fountain, Portland State University, andrew@pdx.edu
Brian Menounos, University of Northern British Columbia, menounos@unbc.ca
Allen Pope, University of Cambridge, ap556@cam.ac.uk
Bryan Mark, The Ohio State University, mark.9@osu.edu
Michel Baraer, McGill University, michel.baraer@mail.mcgill.ca
Jeffrey McKenzie, Grenfell Campus, MUN, jeffrey.mckenzie@mcgill.ca

C36. Water at the Ice Bed Interface: Movement, Storage and Signatures

Meltwater is an important part of the glacier system controlling both the flow dynamics and stability of glaciers and ice sheets. Yet the spatial and temporal variability of glacier plumbing systems and their necessary links to glacier behaviour and dynamics are not fully understood. This session aims to facilitate the integration of knowledge from paleo and contemporary glacier settings, and to this end welcomes papers relating to any aspect of glacier hydrology. This may include, but is not restricted to: i) meltwater routing beneath glaciers and ice sheets; ii) meltwater storage and outburst floods; iii) numerical modelling of the hydrological system; and iv) glaciofluvial geomorphology/sedimentology.

Session Conveners:
Tracy Brennand, Simon Fraser University, tabrenna@sfu.ca
Matthew J. Burke, Simon Fraser University, mjburke@sfu.ca

NH13. Large Slope Instabilities: Characterization, Structural Controls, Monitoring and Modeling

Large slope instabilities occur in a variety of topographic and geological settings, both on Earth and other planets. They are typically complex, slow to very fast, and are important geomorphic agents, both in shaping topography and coupling slopes to rivers. Slope instabilities in active orogens contribute to erosion on a regional scale and pose risks to engineered structures.

This session will investigate aspects of large slope instabilities including:
- geologic and structural controls on regional distribution;
- causes and triggers;
- dating, mechanisms of deformation and failure;
- contribution to denudation and landscape evolution;
- appropriate investigative technologies;
- monitoring, modeling, and early warning approaches.

Session Conveners:
Giovanni Crosta, Michel Jaboyedoff, Federico Agliardi and John J. Clague

Join the Canadian Geomorphology Research Group

CGRG was established in 1993 at the International Association of Geomorphology Congress in Hamilton, Ontario. It provides a strong voice for geomorphology in Canada. Its objectives are to advance the science of geomorphology in Canada by 1) organizing and sponsoring technical sessions, workshops, and field trips, 2) publishing newsletters twice a year, 3) operating a listserver (CANGEORG) which maintains a comprehensive bibliography of Canadian geomorphological, Quaternary, and environmental geoscience publications, 4) supporting publication of technical reports and field guides, 5) presenting the J. Ross Mackay Award in recognition of a significant achievement by a young geomorphologist in Canada, and 6) co-operating with related earth science associations within Canada (GAC, AQQUA, CAG, CANQUA, CGU).

We encourage all earth scientists with an interest in geomorphology to join CGRG.

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