

## LOUISE FILION IS NOMINATED EMERITUS MEMBER OF CEN

Last November, CEN announced the nomination of Louise Filion as an Emeritus member of CEN. This honour is given in recognition of her outstanding scientific career in northern science and as an administrator who contributed greatly to CEN. **Louise Filion** is an internationally renowned scientist, an outstanding university professor and a remarkable administrator. She is one of the first women in Canada to become a specialist in northern environments and also the first woman to be appointed professor of geography at Laval University.



Louise Filion was awarded several senior positions that required sustained mental and physical effort. While based at Laval University, she was director of CEN, Director of the Research Commission, Vice-rector of Research, Director of the Department of Geography and Associate Dean for Research and Graduate Studies.

She has effectively conveyed her knowledge to thousands of students who bestow her great respect. The coaching offered by Louise Filion favours the transmission of scientific rigor, multidisciplinary perspectives, and special attention is given to the needs of society.

Louise Filion is a doer who influenced her workplace and still influences northern science. She joins honorary members Louis-Edmond Hamelin, Jean-Claude Dionne, Jean Huot and Branko Ladany.

## A WORD FROM YOUR STUDENT REPS

Hello everyone and a special hello to our new members!

Following the elections of February 10<sup>th</sup> held at CEN's annual student meeting, subsequent consultations were carried out at UQAR and the Devoted Student Committee (DSC) now boasts four (4) new student representatives who join Pascale Ropars, whose mandate was renewed for another year!

The student committee is officially composed of four representatives from the three founding institutions of CEN (U.Laval, UQAR and INRS-ETE). This year, we elected a fifth representative for the southwest section (UQAM, UQTR, U. of Montreal, U. Sherbrooke, etc.). Although this representative cannot sit in on CEN Board meetings, he or she is invited to participate in all other activities of the DSC and will be consulted prior to each Board meeting. Outgoing members of DSC are Frederic Bouchard (INRS -ETE), Tania Gibéryen (U. Laval) and Yanick Gendreau (UQAR). We thank them for their great work!

We would also like to remind you that CEN offers many awards and scholarships for its students for the publication of scientific papers, for presenting in conferences, and for internships abroad. A total of \$21 450 was awarded to 60 CEN students this year. For more details on the awards or to apply, see the "Students" section of the CEN website (<http://www.cen.ulaval.ca>). A new award is also available since 2011 for the final submission of your master thesis or your PhD thesis. Details of this new award along with an online form will be available shortly.

Your "Devoted Student Committee™"



Michel Paquette  
U. de Montréal



Rémi Lesmerises  
UQAR



Pascale Ropars  
U. Laval (Bio)



Yannick Duguay  
INRS-ETE



Valérie Mathon-Dufour  
U. Laval (Geo)

## PUBLICATIONS

**Nordicana-D** is a collection of environmental datasets published by CEN. Each Nordicana-D report corresponds to datasets requested by individuals. These datasets are obtained from the SILA network which is comprised of over 80 environmental and climate stations, located in eight bioclimatic zones in Quebec and in the eastern Canadian Arctic.

Nordicana-D follows suite to the Nordicana collection (1963-1998) which included reports, studies and scientific reviews published by CEN.

The book *Mondes Polaires, hommes et biodiversités des défis pour la science*, published in 2011 by Editions Recherche-Midi, showcases the multidisciplinary work of scientists conducted at both poles. The authors, including CEN researcher Najat Bhiry, mark the profound, rapid and sometimes irreversible changes felt near the poles, areas which act as sentinels to global warming. Biodiversity and landscapes are changing while simultaneously experiencing the direct and indirect effects of human impacts. A discussion on human interactions with these fragile environments concludes the manuscript.

## CONGRATS TO CEN STUDENTS!

**Thomas Richerol**, CEN PhD student, was awarded the **Editors prize** for the Frostbyte presented at the IPY 2012 Conference amongst over 200 submissions. As part of the Conference, the Association of Polar Early Career Scientists (APECS) invited everyone to catch Frostbytes - short abstracts of research recorded as an audio file, slideshow or video which share information about their research and attract delegates to their poster or oral presentation.

Five students won prizes at CEN's annual meeting held at UQAR from February 9-11, 2012. The Louis-Edmond Hamelin Award for excellence in communication went to **Genevieve Dufour-Tremblay** for her oral presentation.

**Alexandre Truchon** (MSc), **Nicolas Fecteau** (MSc), **Patricia Glaz** (PhD) and **Frédéric Bouchard** (PhD) each won a \$200 prize for the quality of their posters. CEN thanks EnviroNorth, the NSERC CREATE training program in Northern Environmental Sciences for the funding of these prizes.



## SCANNET/INTERACT: A CIRCUMPOLAR NETWORK OF STATIONS

In fall 2009, CEN joined SCANNET, a circumpolar network of terrestrial field stations. CEN's nine field stations now figure amongst this impressive network of 33 stations across the circumArctic. In participating to this international initiative, access to northern and alpine stations is facilitated, as well as information exchange, data access, networking, and opportunities to conduct inter-site comparisons. In 2010, SCANNET's INTERACT (International Network for Terrestrial Research and Monitoring in the Arctic; [www.eu-interact.org](http://www.eu-interact.org)) program obtained funding from the European Union. INTERACT aims to build capacity for identifying, understanding, predicting and responding to diverse environmental changes throughout the wide environmental and land-use envelopes of the Arctic. The project offers access to numerous research stations through its Transnational Access program.



INTERACT provides a platform to exchange information between research station managers and to disseminate information from participating research infrastructures related to ecosystem monitoring, station management and administration. CEN researchers, by collaborating with European Union funded scientists, can apply to INTERACT's Transnational Access program to obtain funds to conduct research at any one of the INTERACT sites.

This summer, thanks to INTERACT and partial CEN funding, two Russian scientists, Dr. Trofim Maximov and Dr. Aiaal Maksimov, will visit CEN's Whapmagoostui-Kuujuarapik station in June. Their visit aims to produce a quantitative forecast of changes in the balance carbon in Russia and Canada boreal larch forest ecosystems under global climate change conditions. To achieve this, they will conduct ecophysiological and biochemical studies of larch forest ecosystems in the surrounding area. Look for a detailed article on the research conducted in next fall's CEN Bulletin!

## SIX NEW RESEARCHERS AND A COLLABORATOR JOINED CEN IN DECEMBER!

The research interests of **Florent Domine** focus on snow physical properties and chemical composition, polar atmospheric chemistry, and the complex feedbacks between snow, climate vegetation and permafrost. He recently joined the Research Unit International UMI 3376 Takuvik (U. Laval and CNRS).

**Dominic Larivière** is assistant professor in the Chemistry Department of Laval University and Director of the Laboratory of Radioecology at Laval University. His research focuses primarily on radioanalytical and environmental chemistry.

**Martin Grenon** is specialized in mining engineering and, more specifically, on the modeling of fracture systems and the analysis of rock stability in open pit and underground mines.

Assistant Professor at the Department of Geology and Geological Engineering from Laval University, **Jean Michel Lemieux** specializes in quantitative hydrogeology. His research concerns the numerical modeling of groundwater flow in permafrost environments.

**Marc Amyot** is the Director of the Department of Biological Sciences at University of Montreal. His research interests focus on the biogeochemistry of contaminants in the environment, particularly in aquatic ecosystems.

**Danielle Cloutier** is an oceanographer and sedimentologist. She is interested in sediment dynamics and the protection of wetlands in cold environments.

## NORTHERN RESEARCH: PERMAFROST DEGRADATION & COMMUNITY DEVELOPMENT

Three CEN students are studying permafrost conditions in Pangnirtung and Iqaluit under the supervision of CEN researcher, **Michel Allard**. In the village of Pangnirtung (Baffin Island) the River Duval, whose extreme flood in June 2008 caused rapid erosion of permafrost, destroyed two bridges and questioned plans for community development. This event has raised many concerns. An important issue is the risk of recurrence of this type of catastrophic event considering that geomorphological and climatic factors are poorly understood.

Research efforts of **Pascale Gosselin** (MSc) seek to quantify the factors that caused the extreme flood of River Duval (water temperature, river flow, temperature and permafrost ice content) and to incorporate their impact in a numerical analysis, which will result in a risk assessment of recurrence. The students also hope, by this applied study, to advance fundamental knowledge of permafrost degradation by thermo-erosion.

CEN research professional **Andrée-Sylvie Carboneau**, and former MSc student, is producing maps of permafrost conditions and periglacial forms in the community of Pangnirtung. Her work determined the spatial distribution and extent of various surface deposits, the volume of ice in the permafrost and the thermal regime of permafrost. These data are essential in monitoring the differential response of permafrost to climate change, and for future urban planning. Indeed, the implementation and maintenance of residential and industrial areas, highway embankments, ditches and drainage network can now incorporate the risks of land subsidence and thermo-erosion in the area.

Iqaluit Airport is affected by numerous permafrost degradation problems (collapse holes, differential settlement, frost cracks, etc.). Geomorphological and geophysical characterization is performed to support the repair work provided by the Government of Nunavut. CEN student **Valérie Dufour-Mathon** (M.Sc.) has already completed several GPR surveys in the area to determine the thawing front depth, landfill thickness, main stratigraphic units, bedrock depth and to identify underground ice masses. She geolocated degraded infrastructure and undertook analysis of results from 10 drillholes. She also interpreted the results of groundwater measurements from a few wells and soil temperature data from thermistor cables. She plans a fourth field visit this summer to collect the accumulated data and to remove 15 new frozen soil cores to clarify the cryostratigraphy and geotechnical properties of the airport land.

