

ACD - Arctic Coastal Dynamics



5th International Workshop

Dept. of Geography, McGill University, Montréal, Canada

October 13-16, 2004



"Determining sediment sources and transport rates along high latitude coasts in order to interpret their geologic history and to predict their response to climatic and sea level changes"

Organizers:

Volker Rachold (AWI Postdam)
Wayne Pollard (McGill University)

Website: www.acd2004.mcgill.ca
Contact: acd2004@geog.mcgill.ca

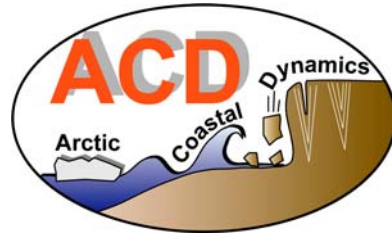


Table of contents

<u>TABLE OF CONTENTS</u>	2
<u>INTRODUCTION</u>	3
<u>CONTACT INFORMATION</u>	4
<u>LIST OF PARTICIPANTS</u>	5
<u>GUIDELINES FOR AUTHORS</u>	7
<u>REGISTRATION FEE</u>	8
<u>WORKSHOP PROGRAM</u>	9
<u>WORKSHOP FACILITIES</u>	15
<u>HOTEL & WORKSHOP VENUES – MAPS AND ADDRESSES</u>	16
<u>TRAVELLING FROM THE AIRPORT</u>	19

Introduction

Arctic Coastal Dynamics (ACD) is a joint project of the International Arctic Science Committee (IASC) and the International Permafrost Association (IPA). Its overall objective is to improve our understanding of circum-arctic coastal dynamics as a function of environmental forcing, coastal geology and cryology and morphodynamic behavior (<http://www.awi-potsdam.de/www-pot/geo/acd.html>).



Information on the latest developments of ACD, including the main results of the fourth ACD workshop (St. Petersburg, November 2003), was circulated in the 5th ACD Newsletter in March 2004 (<http://www.awi-potsdam.de/www-pot/geo/acd/acd-no5.pdf>).

The fifth IASC/IPA-sponsored ACD workshop will take place at McGill University in Montreal (Canada) from 13-16 October 2004 (<http://www.acd2004.mcgill.ca>). The main focus of the 2004 ACD workshop will be on physical, chemical and geological processes in Arctic coastal areas; however, a new theme being introduced at the Canadian meeting is the impact of coastal change on the inhabitants of the Arctic shore zones.

The four-day workshop will start off with a plenary session bringing participants up to date on developments since the St. Petersburg workshop in November 2003. It is anticipated that this will include presentation of the draft GIS version of the completed circum-Arctic coastal segmentation and classification map, the publication of a special issue of *Geomarine Letters* devoted to Arctic coastal dynamics, and status reports on the activities of the working groups which met during the last workshop in St. Petersburg.

The plenary session will also outline the taskings for the working group sessions which will take place over the following three days. It is anticipated that sessions will be devoted to (1) the definition and understanding of the processes involved in the transition from onshore to offshore permafrost, (2) the quantification of sediment and organic carbon fluxes from coastal erosion, (3) the transport and fate of that eroded material, (4) the impact of coastal erosion on human populations in the Arctic, (5) the analysis products of environmental forcing variables, and (6) the incorporation of this information into the GIS layers.

The workshop will afford scientists from various fields of Arctic coastal research the opportunity to exchange data and ideas through oral presentations, poster sessions, and discussion sessions. An important deliverable from the workshop will be a published report which will include extended abstracts of the presentations, as well as accounts of the working group activities and any data products produced by the groups.

Contact Information

Workshop co-chairs

Volker Rachold

Alfred Wegener Institute for Polar and Marine Research, Potsdam Research Unit
Telegrafenberg A43, 14473 Potsdam, Germany
Phone: +49 331 2882174, Fax: +49 331 2882137
vrachold@awi-potsdam.de

Wayne Pollard

McGill University, Department of Geography
805 Sherbrooke St. W., Montreal, QC H3A 2K6, Canada
Phone: +1 514 398 4454, Fax: +1 514 398 7437
pollard@geog.mcgill.ca

Local organizing committee

Wayne Pollard, Nicole Couture and Hugues Lantuit

E-mail: acd2004@geog.mcgill.ca

Website: www.acd2004.mcgill.ca

List of participants

1. Michel Allard (Michel.Allard@cen.ulaval.ca) Université Laval, Sainte-Foy, Québec, Canada
2. Feliks Are* (fare@peterlink.ru), St. Petersburg State University of Means of Communication, St. Petersburg, Russia
3. David Atkinson (datkinson@iarc.uaf.edu), International Arctic Research Center, University of Alaska Fairbanks, Alaska, USA
4. Jerry Brown* (jerrybrown@igc.org), International Permafrost Association, Woods Hole, MA, USA
5. Georgy Cherkashov*/*** (cherkashov@vniio.ru), VNIIOkeangeologia, St. Petersburg, Russia
6. Nicole Couture (nicole.couture@mail.mcgill.ca) Dept. of Geography, McGill University, Montréal, Canada
7. George Delisle (G.Delisle@bgr.de), BGR (German Geological Survey), Hannover, Germany.
8. Gregory De Pascale (gregory.depascale@elf.mcgill.ca), Dept. of Geography, McGill University, Montréal, Canada
9. Dmitry Drozhov*** (ds_drozhov@mail.ru), Earth Cryosphere Institute, Moscow, Russia
10. Don Forbes (DForbes@nrcan.gc.ca), Geological Survey of Canada, Bedford Institute of Oceanography, Dartmouth, Canada
11. Oceana P. Francis-Chythlook (OceanaF@tnh-inc.com), Tryck Nyman Hayes, Inc., Alaska, USA
12. Shari Fox Gearhead (sgearh@fas.harvard.edu), Harvard University, USA
13. Allison Graves Gaylord (nunatech@usa.net), Nuna Technologies, Alaska, USA
14. Mikhail Grigoriev*/*** (grigoriev@mpi.ysn.ru), Permafrost Institute, Yakutsk, Russia
15. Olga Gruzdeva** (tais_olga@mail.ru), St. Petersburg State University of Means of Communication, St. Petersburg, Russia
16. Tim Haltigin (timothy.haltigin@mail.mcgill.ca), Dept. of Geography, McGill University, Montréal, Canada.
17. Scott Heyes (scott.heyes@mail.mcgill.ca), Dept. of Geography, McGill University, Montréal, Canada.
18. Azharul Hoque (azharulhoq@yahoo.com)
19. Hans-Wolfgang Hubberten* (hubbert@awi-potsdam.de), Alfred Wegener Institut for Polar and Marine Research, Potsdam, Germany
20. Torre Jorgenson (tjorgenson@abrinc.com) ABR, Inc., Fairbanks, Alaska, USA
21. Nina Kasyankova (van@vniio.nw.ru), VNIIOkeangeologia, St. Petersburg, Russia
22. John Keogak (rogersa@jointsec.nt.ca), Inuvialuit Game Council, Inuvik, Canada.
23. Patrick Lajeunesse (patrick.lajeunesse@ggr.ulaval.ca), Université Laval, Sainte-Foy, Québec, Canada
24. Hugues Lantuit (lantuit@geog.mcgill.ca), Dpt. of Geography, McGill University, Montréal, Canada
25. Gwyn Lintern (linterng@pac.dfo-mpo.gc.ca), University of Victoria, Victoria, Canada.
26. Sergey Nikiforov*** (nikiforov@geo.sio.rssi.ru), Shirshov Institute of Oceanology, Moscow, Russia
27. Rune Odegard (rune.oedegaard@hig.no), University of Gjøvik, Gjøvik, Norway
28. Stanislav Ogorodov (ogorodov@aha.ru), Moscow State University, Moscow, Russia
29. Kathryn Parlee (kaparlee@nrcan.gc.ca), C-CIARN Coastal Zone Natural Resources Canada, Dartmouth, Canada.
30. Wayne Pollard (pollard@geog.mcgill.ca), Dept. of Geography, McGill University, Montréal, Canada.

31. Volker Rachold*/*** (vrachold@awi-potsdam.de), Alfred Wegener Institut for Polar and Marine Research, Potsdam, Germany
32. Pavel Rekant** (cherkashov@vniio.ru), VNIIOkeangeologia, St. Petersburg, Russia
33. Feliks Rivkin*** (f-rivkin@narod.ru), Industrial and Research Institute for Engineering of Construction, Moscow, Russia
34. N.A. Shpolyanskaya (strelets@rector.msu.ru), Geographic Faculty, Moscow State University, Moscow, Russia
35. Steven Solomon* (SSolomon@nrcan.gc.ca), Geological Survey of Canada, Bedford Institute of Oceanography, Dartmouth, Canada
36. Frits Steenhuisen* (F.Steenhuisen@let.rug.nl), Arctic Centre, University of Groningen, Groningen, The Netherlands
37. Irina Streletskaya*** (strelets@rector.msu.ru), Moscow State University, Moscow, Russia
38. Dmitry Streletskiy (strelets@udel.edu), Moscow State University, Moscow, Russia
39. Bob Taylor (botaylor@nrcan.gc.ca), C-CIARN Coastal Zone, Geological Survey of Canada, Bedford Institute of Oceanography, Dartmouth, Canada
40. Alexander Vasiliev*** (z_v_a_a@dio.ru), Earth Cryosphere Institute, Moscow, Russia
41. Marcos Zentilli (zentilli@dal.ca), Dalhousie University, Halifax, Canada.

* Steering Committee Member, **IASC Young Investigator, *** INTAS Team Leader

Guidelines for authors

Poster guidelines

Posters dimensions must be no larger than 120 cm x 120 cm. Authors are encouraged to provide letter or A4 format versions of their posters for other participants.

Posters will be put up on the Wednesday evening by the organizing staff at a poster reception in the Department of Geography. The posters will be then be moved to the conference venue for the remaining days. You are asked to provide the organizers with your poster on the morning of the first day of the workshop.

Talks

The time allocated for talks is 10 minutes, plus 5 minutes for questions. Please provide a member of the organizing committee with a CD or USB Memory Stick version of your presentation in advance (preferably during the ice-breaker or in the early morning of the plenary session). You should also set up a time with the organizers to test your presentation on the audiovisual equipment in the presentation room.

Registration fee

The registration fee for the workshop is \$CAD150 (\$CAD100 for students) and includes the venue, lunches and coffee breaks, the ice-breaker and the banquet. The registration fee can be paid either by credit card (Visa or Mastercard only) or in cash.

If you choose to make an advance credit card payment, use the [downloadable form](#) from the workshop website. *Please make sure to fax the form back to us (do not send by e-mail), since we need to have your signature.*

Workshop Program (draft)

October 11 and 12

Arrival

Tuesday, October 12, 2004

19:00 – 21:00 **Ice-breaker and registration**
Billiard Room of McGill Faculty Club, 3500 McTavish Street

Wednesday, October 13, 2004

Thomson House, 3650 McTavish Street

- 9:00 – 9:30 **Registration**
- 9:30 – 10:30 **Official Welcome**, *Alan Shaver, Dean, Faculty of Science (to be confirmed)*
- Introductory Remarks**, *Wayne Pollard and Volker Rachold*
- 10:30 – 11:00 **Coffee break**
- 11:00 – 12:30 **General outline of workshop program**, *Volker Rachold*
- Reports from 2003 ACD working groups** (10 minutes each)
- Coastal and Offshore Permafrost, *Hans Hubberten and Michel Allard*
 - GIS , *Frits Steenhuisen and Rune Odegard*
 - Environmental Forcing, *David Atkinson*
 - Biogeochemistry and Biodiversity, *Volker Rachold*
- 12:30 – 13:30 **Lunch**
- 13:30 – 15:00 **Plenary presentations** (10 minutes each)
- The Shape of Erosional Arctic Shoreface Profiles, *Feliks Are*
 - ACD Key Sites: The Basis for a Coastal Observational Network, *Jerry Brown*

- Establishment of Standardized Stations to Monitor the Response of Permafrost to Climate Change, *George Delisle*
- Modeling Block Failure in Vertical Cliffs of Arctic Coasts Underlain by Permafrost, *Azharul Hoque*
- Initiation of a Study on the Flux Transformation of Organic Carbon Across the Eroding Coastline of Northern Alaska, *Torre Jorgenson*
- The Human Dimension of Arctic Coastal Change, *Kathryn Parlee / Don Forbes (to be confirmed)*

15:00 – 15:30 **Coffee break**

15:30 – 17:00 **Plenary presentations (cont'd):**

- Arctic Coastal Dynamics of Eurasia – Results of Two ACD-Related INTAS Projects, *Volker Rachold*

Overview of posters (1 minute each)

- Snow regime, coastal climate, and permafrost near Umiujaq, Nunavik, Canada, *M. Allard, G. Delisle, R. Fortier, D. Sarrazin*
- Circum-Arctic melt season trends, 1950 – 2000, *D. Atkinson*
- Geochemistry of exogenous processes of Russian Arctic coasts, *G. Cherkashev, B. Vanstein, N. Kasyankova*
- Field observations of storm-induced water levels for Elson Lagoon, Barrow, Alaska, *O. Francis-Chythlook*
- Detection and Mapping of Permafrost Degradation on Herschel Island, Yukon, using RADARSAT-1, SPOT and IKONOS Satellite Data, *P. Budkewitsch, W. Pollard, F. Leduc, C. Omelon, E. Gauthier, K. Molch*
- Additional Erosion Observations for the Elson Lagoon Key Site, Barrow, Alaska, *O. Francis-Chythlook, J. Brown*
- Results of a wave climate study for Elson Lagoon, Barrow, Alaska, *O. Francis-Chythlook*
- Distribution of ice-bonded sediments and massive ground ice across the land-water interface in a transgressive barrier-lagoon-delta system, Beaufort Sea coast of Yukon Territory, Canada, *D.L. Forbes*
- Inuit Knowledge of Environmental Change Documented and Communicated through Multimedia Technology: An Interactive Poster, *S. Fox Gearheard*

- The Importance of Metadata for Archiving and Promoting Spatial Data Discovery, *A. Graves Gaylord, C. E. Tweedie, M. Sadak, P. Webber, J. Brown, G. Sheehan, W. Manley, L. Lestak, N. Auerbach*
- The degradation of coastal permafrost and the development of sub-sea permafrost in the near-shore zone of the Laptev Sea, *M.N. Grigoriev, V. Rachold, H-W. Hubberten*
- Sediment and organic carbon fluxes in connection with eroding permafrost coasts of the Siberian Arctic, *M.N. Grigoriev, A.A. Vasiliev, V. Rachold*
- Bottom sediments on the erosional shoreface of the Laptev Sea, *O. Gruzdeva, F. Are, V. Rachold*
- Cryogenic Structure and Ice Content of Coastal Sediments, Western Siberia, *M. Kanevskiy, I. Streletskaya, A. Vasiliev*
- Identification of stabilized and revegetated retrogressive thaw slumps floors on an ice-rich Arctic coast using landsat near-infrared imagery, *H. Lantuit, N. Couture, W.H. Pollard*
- Short-term evolution of coastal polycyclic retrogressive thaw slumps on Herschel Island, Yukon Territory, *H. Lantuit, N. Couture, W.H. Pollard, T. Haltigin, G. De Pascale, P. Budkewitsch*
- Erodibility and Sediment Strength in Kugmallit Bay, Southern Beaufort Sea, *G. Lintern, P. Hill*
- Geomorphological Seabed Mapping Based on GIS-Technology, *S. Nikiforov, Y. Pavlidis, V. Rachold, D. Aibulatov*
- Bathymetric Seabed Mapping Based on GIS-Technology, *S. Nikiforov, Y. Pavlidis, V. Rachold, D. Aibulatov and A. Artem'ev*
- The Role of Wave Energy in Dynamics of Arctic Coasts Formed by Deposits with Low Ice Content, *S. Ogorodov*
- Features of statistical distribution of organic carbon in continental permafrost of Arctic shore (East Siberian Sea shore line), *V. Ostroumov, V. Rachold*
- The main results of assessment of human impact on Arctic thermal-abrasion coasts in the process of industrial expanse, *F. Rivkin, N. Ivanova, M. Koreisha, A. Popova, I. Chehina, N. Pahomova*
- Suspended particulate matter dynamics in the Northern Dvina delta, the White Sea, during the flood, *V.P. Shevchenko, A.S. Filippov, A.N. Novigatsky, L.E. Skibinskiy, A.V. Leshev, S.P. Alexankina, D.A. Kazakov, V.B. Korobov, L.Yu. Vasilyev, V.B. Sedelkova, V.T. Grishman*

- Effect of Massive Ground Ice on the Coastal Dynamics in the Russian Arctic, *N.A. Shpolyanskaya, I.D. Streletskaya*
- Remote sensing of bottom-fast ice in the Mackenzie Delta Region, Northwest Territories, Canada, *S. Solomon, G. Manson, P. Fraser*
- Organic Carbon in the Coastal Quaternary Sediments of Barents and Kara Sea, *I.D. Streletskaya*
- Coastal Erosion Along the Chukchi Coast Due to an Extreme Storm Event at Barrow, Alaska, *P. M. Sturtevant, L. R. Lestak, W. F. Manley, J. A. Maslanik*
- The Coastal Erosion Sediment and Organic Carbon Input to the Kara Sea, *A. Vasiliev*
- Measuring coastal cliff erosion by means of terrestrial photogrammetry in the Kongsfjorden area, Svalbard, *B. Wangensteen, T. Eiken, R. Ødegård, J.L. Sollid*
- Rock-loaded Icebergs in the Nares Strait a Threat to Navigation: Tracking Their Source and Possible Links with Arctic Warming, *M. Zentilli, J. Crealock*

18:00 – 20:00 **Reception**
 Dept. of Geography, Burnside Hall, 5th floor

Thursday, October 14, 2004
 Thomson House, 3650 McTavish Street

9:00 – 10:30 **Plenary session: Establishment of working groups and discussion of taskings, Volker Rachold**

- WG1: Definition and understanding of the processes involved in the transition from onshore to offshore permafrost
Co-chairs: Hans Hubberten and Michel Allard
Rapporteur: Pavel Rekant
- WG2: Impact of coastal dynamics on human populations in the Arctic
Co-chairs: Shair Fox Gearhead, Kathryn Parlee. Don Forbes
Rapporteur: Scott Heyes
- WG3: Analysis of environmental forcing variables
Co-chairs: David Atkinson and Sasha Vassiliev
Rapporteur: Olga Gruzdeva
- WG4: Compilation of the circum-Arctic coastal GeoInformationSystem

Co-chairs: Frits Steenhuisen and Rune Odegard
Rapporteur: Hugues Lantuit

- 10:30 – 11:00 **Coffee break**
- 11:00 – 13:00 **Working group meetings**
- 13:00 – 14:00 **Lunch**
- 14:00 – 15:30 **Working group meetings (cont'd)**
- 15:30 – 16:00 **Coffee break**
- 16:00 – 17:30 **Working group meetings (cont'd)**
- 17:30 – 18:00 **Recap of working group progress**

Friday, October 15, 2004

Thomson House, 3650 McTavish Street

- 9:00 – 9:30 **Plenary session. Taskings for the day, Volker Rachold**
- Presentation:**
 - Recent Coastal Dynamics and Sea Level Change on Melville Island,
 Western Canadian High Arctic, *Patrick Lajeunesse*
- 9:30 – 11:00 **Working group meetings**
- ArcticNet meeting**
 Co-chairs: Don Forbes, Wayne Pollard and Michel Allard
- 11:00 – 11:30 **Coffee break**
- 11:30 – 13:00 **Working group meetings**
- ArcticNet meeting**
- 13:00 – 14:00 **Lunch**
- 14:00 – 15:30 **Working group meetings (cont'd)**
- 15:30 – 16:00 **Coffee break**
- 16:00 – 17:00 **Working group meetings (cont'd)**
- 17:30 – 18:00 **Recap of working group progress**

19:00 – 22:30 **Banquet**
Main Dining Room, McGill Faculty Club, 3500 McTavish Street

Saturday, October 16, 2004

Peel and De Maisonneuve Rooms, Marriott Residence Inn

8:30 – 10:00 **Final plenary session**
Reports from working group chairs

10:00 – 10:30 **Coffee break**

10:30 – 12:00 **Discussion about ACD book and recap of workshop, *Volker Rachold***

Free afternoon / ACD Steering Committee Meeting

Sunday, October 17, 2004

9:00 **Departure from Montreal**

12:00 **Arrival in Quebec City**

12:00 – 12:30 **Lunch**

12:30 – 14:30 **Tour of the polar research vessel CCGS Amundsen**

14:30 – 17:00 **Free time to visit Old Quebec City or tour of Laval University's Centre d'études nordiques with M. Allard**

17:00 – 19:00 **Dinner at Cochon Dingue restaurant**

20:00 **Depart Quebec City**

23:00 **Arrival in Montreal**

Workshop Facilities

Workshop venue

Thomson House is the McGill Graduate Students' house. The workshop will be held in the ballroom on the second floor and private meeting rooms on the third floor. Lunches and coffee breaks will be served on the second floor.

There is a smoking room and a bar (open until midnight) on the ground floor which is open to the public.

Internet and e-mails

Internet and e-mails Thomson House is a wireless internet environment which uses encryption. If you are the owner of a wi-fi compatible card, contact the organizing staff (Nicole, Hugues, Tim or Greg) for connection to the McGill network using netconnect. Two laptops will be available in the ballroom for you to connect to the Internet and to check e-mail. Thomson House also has two desktop computers available on the ground floor for e-mail checking.

The hotel provides Internet access in rooms. Cables are available upon request at the reception desk.

Hotel & workshop venues - Maps and addresses

Hotel

We have reserved a block of rooms for conference participants at the [Marriott Residence Inn](#). The hotel is located at 2045 Peel Street and is less than a 5 minute walk from all conference venues. If you will be paying for your own hotel room, please make your reservation directly with the hotel, as they will need your credit card information. If you need assistance making your reservations, contact the local organizing committee and we will be pleased to help you.

To make reservations, call 1-514-982-6064 or 1-888-999-9494 (toll free from both Canada and the U.S.) or reserve by e-mail: reservations@residenceinn-mtl.com. Rates are \$CAD 135 + taxes for a 1-4 night stay, or \$CAD 126 + tax for 5 nights or more. These rates were guaranteed until September 12th. Daily breakfast is included, and the Marriott offers free dinner to customers on Wednesday evenings. Please mention the Arctic Coastal Dynamics workshop when making your reservations.

Conference venues

All conference venues are located on the McGill Campus in downtown Montréal

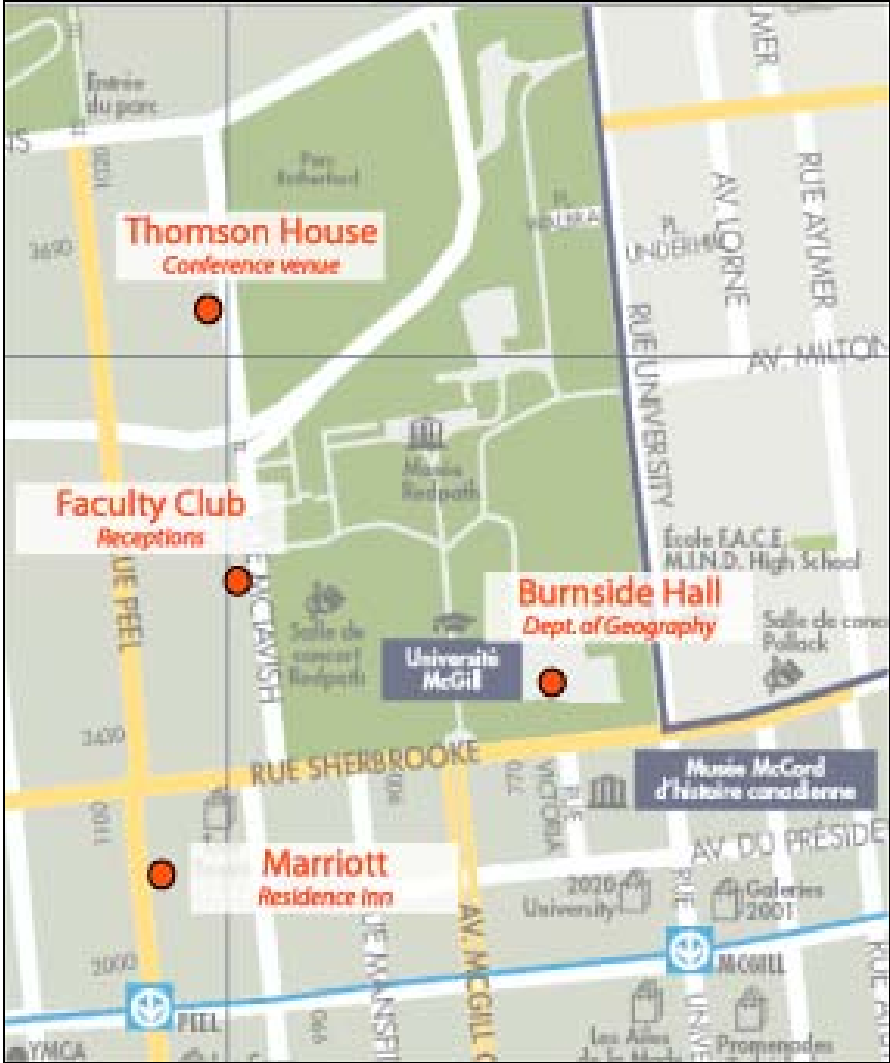
The workshop will be held in **Thomson House**, 3650 McTavish Street.

The ice-breaker and the banquet will be held at the **Faculty Club**, 3500 McTavish Street

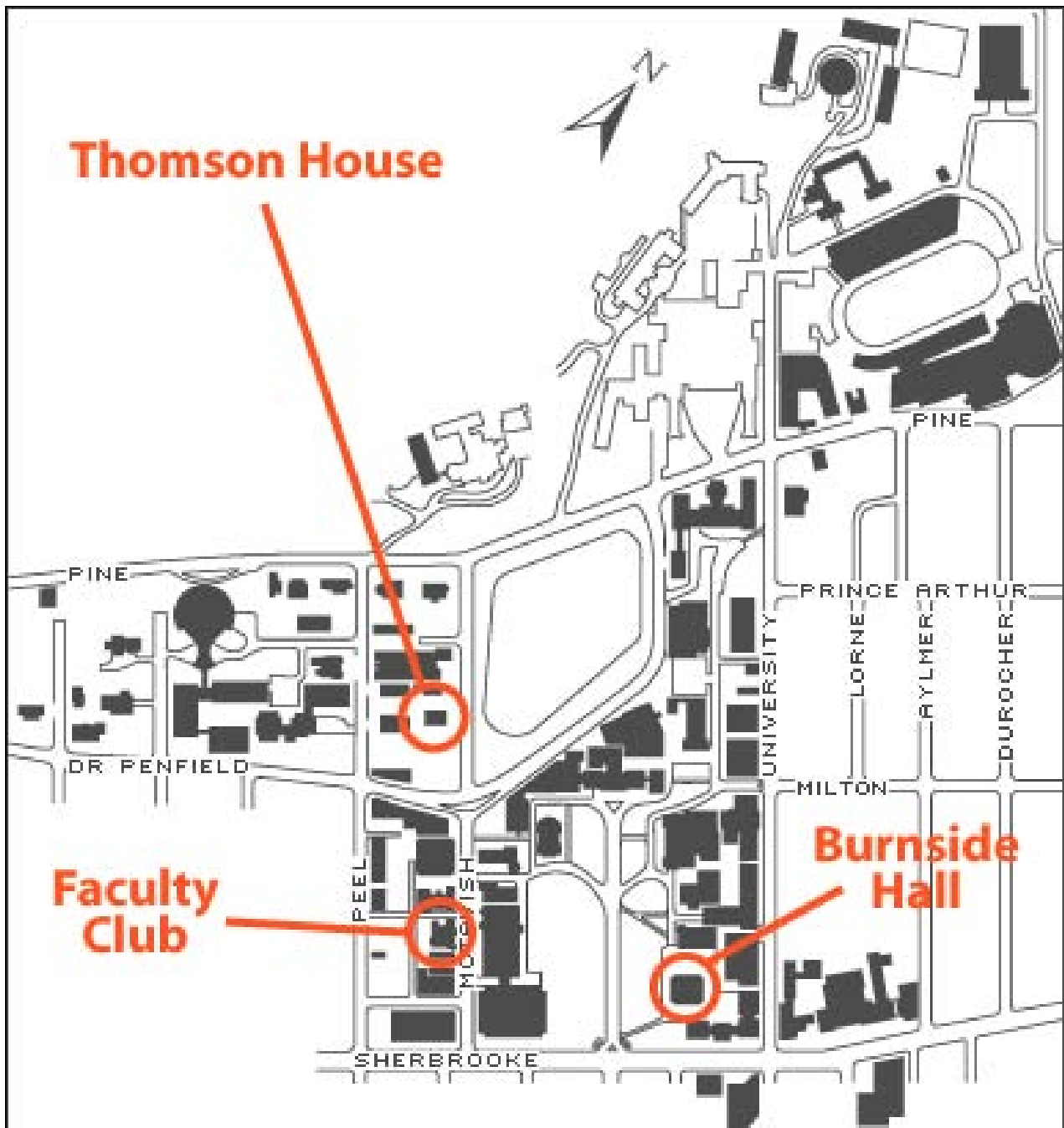
The reception for the opening of the poster session is in the Dept. of Geography, located in **Burnside Hall**, 805 Sherbrooke Street W.

Maps

Downtown map



Campus map



Travelling from the airport

Shuttle service

There is a shuttle service (Aerobus) from the Trudeau airport (formerly called Dorval). One-way tickets are \$ 12. This public shuttle leaves every thirty minutes from the Arrivals level. Book tickets at the booth before you board the bus. Tell the driver you are going to a downtown hotel. Disembark at the first stop once you reach the city centre (Bonaventure station). Here you will need to transfer to another shuttle (mini-bus) that will take you directly to the hotel. The mini-bus leaves approximately every 10 minutes and is free. Please note that your hotel is the Marriott Residence Inn and not the Marriott Chateau Champlain.

Taxi

The taxi fare to from the airport to downtown is \$CAD 31 each way.

Pick ups

We will be organizing group pick ups. Please let us know your precise arrival time and we will let you know if we will be able to arrange a pick up.

Driving

If you are driving, the hotel is located at 2045 Peel Street, between Sherbrooke Street West and De Maisonneuve Street West. If you are taking the Autoroute Ville-Marie (720) to reach downtown, take the de la Montagne/St-Jacques Street exit. Follow the signs to St-Jacques Street. Turn left on St-Jacques Street, then left again on Peel Street. The hotel will be several blocks up, on the right hand side.

Currency exchange

You can exchange foreign currency at the Trudeau airport, although you may get a better exchange rate downtown.