

# MERIDIAN



CANADIAN POLAR COMMISSION  
COMMISSION CANADIENNE DES AFFAIRES POLAIRES

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## "I Think That I Shall Never See..." Stalking the Elusive Polar House

Steven Bigras

The notion of a national centre for polar research is not a new one. *Canada and Polar Science*, the report that recommended the creation of the Canadian Polar Commission, described the "Canadian Polar House" as a national institution that would allow research agencies and interested groups to work together in a single location, easing communications without losing their independence. It would serve as the headquarters for the Canadian Polar Commission and house its executive office staff. It would host the Canadian Polar Information Network, and be a centre of Canadian polar activities, with information services, adequate public rooms and display



The CPC's Ottawa offices, Constitution Square

areas, and office space made available at reasonable cost to governmental and independent NGOs and associations.

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## Axel Heiberg—Intellectual Sovereignty or Xenophobia?

Ben LePage

I note that in the recent editorial by Mike Robinson and Peter Johnson (*MERIDIAN*, Fall/Winter 1999, "A Question of Intellectual Sovereignty"), there is a call for Canadians to let the authors know how they feel about the need for Canadian sovereignty over Canadian scientific resources, a well-articulated polar science policy, and a national vision to guide high-latitude research. As a Canadian Arctic scientist, I would like to add my thoughts on

those matters. First, I feel that it is necessary to point out that the editorial perpetuates misrepresentations of the A.W. Mellon-supported Axel Heiberg Fossil Forest project, and, like the numerous newspaper articles that appeared concerning this matter, suffers from omissions of key pieces of information about that project in its attempt to dramatize the need for a "national polar science and technology policy" and to suggest that the Axel Heiberg situation is analogous to the case of Walcott and the Burgess Shale.

## Editor's Note

The Fall/Winter issue of *MERIDIAN* reported on the controversy surrounding excavation of a fossil forest on Axel Heiberg Island in Nunavut. In response to ongoing interest in the project, we have included in this issue a response from Ben LePage, senior research scientist at the University of Pennsylvania and co-leader of the team that worked on the site in 1999 and will be returning there to conduct further studies this summer. As well, the Commission has set up an on-line discussion forum at [www.polarcom.gc.ca](http://www.polarcom.gc.ca) with additional information, including commentaries by Jim Basinger, whose work at Axel Heiberg first brought the significance of the fossil forest site to public attention, and Keith Greenaway, former Science Advisor to the Department of Indian Affairs and Northern Development. The CPC encourages Canadians to take part in the discussion—let us know what you think!

\*The following article represents the opinion of the author and does not necessarily represent the views of the Canadian Polar Commission.

The University of Pennsylvania research team is referred to as “the U.S. researchers.” Absent from this editorial is an acknowledgement that a Canadian is a co-leader of this research project and largely responsible for the proposal that led to its funding. I am a Senior Research Scientist at the University of Pennsylvania and co-leader of this project with Art Johnson (an American). This is made explicit in the A.W. Mellon Foundation letter announcing the award, and in the proposal sent to the Mellon Foundation. I invite the readers to look at these and all other documents that are referenced on the Web at <http://www.sas.upenn.edu/earth/arctic/>. I am a Canadian citizen, born, raised and educated in Saskatchewan.

I was James Basinger’s Ph.D. student at the University of Saskatchewan (1988–1993), and I have worked at the Axel Heiberg fossil-forest site in question for 10 of the 13 summers since I began my Ph.D. research. The appropriate land-use permit and scientific research licence required to carry out this research were granted by the appropriate Canadian agencies (DIAND, NRI, NIRB) to me, and not to any Americans. Thus, I am the responsible party, and it is for me to judge what gets done at the sites under those permits. Given the degree of Canadian involvement in the leadership and permitting, it is difficult to construe this project as a threat to Canadian intellectual sovereignty. It does, however, challenge the idea that senior Canadian scientists should have final say on allowing or excluding research projects from public lands in which they have an interest.

One important misrepresentation in the editorial involves the contention that “No fault was found with the Mellon fossil forest project in the above permitting process.” To the contrary, the correspondence contained on the website (<http://www.sas.upenn.edu/earth/arctic/pcsp2.jpg>) gives explicit

documentation that the scientific review committee overseen by PCSP expressed concerns over the amount of excavation in the original proposal, and that I responded appropriately to those concerns. Explicit in the later permit applications to DIAND and NRI were plans for a different approach, essentially the use of ground-penetrating radar combined with excavating logs as necessary (<http://www.sas.upenn.edu/earth/arctic/appe.html>). My response to these concerns resulted in a 20-fold reduction of the area excavated compared to that projected in the initial proposal. In response to claims of unspecified “damage” to the site made by journalists and one senior Canadian scientist, we were visited by officials from DIAND, PSCP, and Environment and Atmospheric Services Canada, including the Hon. Christine Stewart (Canada’s Minister of the Environment at that time) and her colleagues, at the height of the excavating phase of the project. None of those visitors expressed concern over our procedures at or since the time of their visits. In fact, Stewart was quoted as saying, “My sense is that there wasn’t a lot of stuff removed. I think there were samples taken out of the ground and measured to get an idea of the kind of forest that existed there, but those samples were put back into the ground” (Gleeson 1999).

The details of our procedures, which were designed to protect the integrity of the site and future scientific research efforts, and photographs of the excavation and subsequent restored sites are provided at <http://www.sas.upenn.edu/earth/artic/>. I was present during, and participated in, several prior excavations at the fossil forest site, none of which sought to protect the integrity of the site and future research efforts to the same degree as we did last summer. An idea of the nature of previous excavations is given in *Time* magazine (Lemonick 1986), *Canadian Geographic*

(Basinger 1986), and the scientific literature (Greenwood and Basinger 1993). Craters from stumps removed as early as 1986 are still evident today.

The editorial notes that James Basinger, my Ph.D. thesis adviser and a researcher at the fossil forest site since 1986, “was not involved in this excavation” but omits reference to why he was not involved. According to newspaper accounts, he “politely declined” the opportunity to collaborate on this project (Struzik 1999).

The editorial suggests that, “Many of the conflicts that arise could be avoided by a far more open system of information exchange.” Apparently, this conflict could not be avoided in spite of our efforts to communicate. Basinger was consulted of my plans in 1996 and 1997 and was given preliminary and final copies of the proposal four and two months, respectively, before the proposal was

## NRI Approves Further Work on Fossil Forest

The Nunavut Research Institute has announced that it will issue a scientific research licence to a U.S.-based team planning to continue excavation of an Eocene-era fossil forest on Axel Heiberg Island. The licence has special terms and conditions, limiting the area to be sampled to 25 square metres and the total amount of material to be removed to 35 kilograms. In addition, the licence stipulates that a formal agreement be established for storage, handling, and repatriation of samples. The Government of Nunavut has indicated that site inspections will be carried out to ensure that the licence conditions are met.

considered for funding. In August 1998, two months before the proposal was considered for funding, the idea that the Mellon foundation would look favourably on a proposal from the U of S scientists to further their research at the site was communicated to Basinger. Basinger did not respond with any criticism of any aspect of our proposal until we met at the site in the summer of 1999, a year after he first received the proposal, nor did he express interest in additional support for his research to me, my colleagues, or the Mellon Foundation. Instead, in his words, he let “everyone involved in the approval process know that I disagree with this [project]” (George 1999; Gleeson 1999; Struzik 1999). He was apparently actively lobbying against an extension of the work that I began at this site more than a decade ago.

Another important misrepresentation, relevant to the editorial’s contention that this is analogous to the case of Walcott and the Burgess shale, is the claim that we “undertook a mass collection of fossil-forest specimens.” To the contrary, nearly all of our data are

measurements of mummified logs made as they lay in place. Nearly all of the material removed from the site was non-fossiliferous sand and mudstone, which has no bearing on the integrity of the forests. We collected about 10 tree tops (0.5–0.7 m in length) and 74 cross sections (5–6 cm in width) from 37 logs (2 cross sections per log), essentially a random sample of the hundreds of logs lying at or near the surface. This represents about 35 kg dry weight of wood. Samples for C, O, and H isotopic composition of wood cellulose were also collected, amounting to about half that amount. This is a trivial amount of wood, far smaller than the collection of wood that resides at the U of S, much of which I helped obtain. In addition, each excavated log is tagged and located on a high-precision GIS map. Those data and all raw data will be posted on the Web in appropriate time, effectively making these data freely available to anyone. As dictated by Canadian law, the materials now in the United States will be returned to Canada, preferably Nunavut, in reasonable time. Accordingly, there is virtually no chance

that the fossil record of the Axel Heiberg Eocene site will “reside outside our [Canada’s] geographic boundaries.”

The need for Canadian intellectual sovereignty over Canadian scientific resources, improved communication networks for northern scientists, and a considerably higher level of funding are self-evident given the decline in Canadian polar research. A more complete and more accurate accounting of the facts about the nature of our research effort on Axel Heiberg does not make a more compelling case for any of the needs identified in this editorial save one—a far more open system of information exchange.”

Basinger, J.F. 1986. “Our ‘tropical’ Arctic”. *Canadian Geographic* 106 (6): 28–37.

George, Jane. 1999. “Arctic fossil forest sparks U.S.–Canada research war”. *Nunatsiag News*, July 23, 1999.

Greenwood, D.R. and J.F. Basinger. 1993. “Stratigraphy and floristics of Eocene swamp forests from Axel Heiberg Island, Canadian Arctic Archipelago”. *Canadian Journal of Earth Sciences* 30: 1914–1923.

Gleeson, Richard. 1999. “Fossil Forest Fray”. *Northern News Services*, July 26, 1999.

Lemonick, M.D. 1986. “Unearthing a frozen forest”. *Time* 128 (12): 64.

Struzik, Ed. 1999. “Scientists battle over arctic turf in land that time forgot”. *The Edmonton Journal*, Saturday, July 23, 1999.

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The Commission’s current board of directors views the establishment of Polar House as an important, yet still unfulfilled, national goal. In its *Strategic Roadmap, 1999–2002*, the Commission identified the creation of a Polar House as one of several key objectives and set about to review strategies for its implementation.

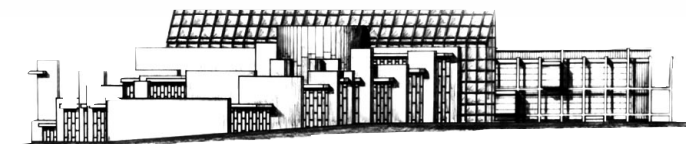
However, high ideals and the cold reality of public accountability tend to be incompatible. The Commission’s initial enthusiasm for the purchase of an appropriate property in the National Capital Region was rapidly quelled by Treasury Board Secretariat—holder of the federal government’s purse-strings—which informed the Commission that, as a “Schedule II” departmental corporation under the *Financial Administration Act*, it is not permitted to acquire property without Treasury Board approval. And unlike Crown corporations, departmental

corporations cannot even negotiate their own leases but must work through Public Works and Government Services Canada (PWGSC). That decision effectively undermined the Commission’s plans to augment its operating budget through additional revenue streams.

To suggest that bricks and mortar can be a panacea for the various ills afflicting high-latitude research in Canada is, of course, naive. Polar House can only be effective if there exists in Canada a genuine desire to consider polar science and technology, and research and development, as national priorities. However, as some observers have pointed out, even co-locating the various

bits and pieces of Canada’s polar administration currently scattered among a dozen or more federal offices in Ottawa would be a step in the right direction. The Commission is continuing to work with PWGSC to identify a building which may be used as a “Polar House”; in the meantime, it will provide at least a modest alternative in its current location by setting up a resource centre with several work stations and a small collection of magazines and reference materials—a “Polar Room,” perhaps . . .

Steven Bigras is the Executive Director of the Canadian Polar Commission.



Conceptual drawing of the “Canadian Polar House,” 1993

# Building Better in Polar Climes: An Overview of CMHC's Northern Research

Aleta Fowler

The North's uniqueness cannot be overemphasized. We are given extraordinary beauty—vast regions of wilderness and *aurora borealis* overhead. We are also given vast challenges in our climate, our isolation, and the diversity of our many cultures which comprise this generic “North,” as perceived by the South. Further challenges are presented when interfacing with those outside the North. Our lack of population and our remoteness means that many decisions affecting us are made in the South. For much of the year, for many of us, the rhythm of getting firewood and water, travelling to a destination at minus 40°, dealing with the honey bucket and lack of power, fixing what's broken because often there's no one else around who can, feeding the dogs, and helping our neighbours as they would help us, is a rhythm fairly unique to the North—and each area within the North is unique.<sup>1</sup>

Canada Mortgage and Housing Corporation (CMHC) has been conducting research specific to northern needs for approximately 20 years.<sup>2</sup> This research, in combination with that undertaken by numerous other northern entities, has produced significant technical advances in the ability to produce homes which perform well under northern conditions. I have been placed in the North by CMHC, as a researcher, to address northern housing needs and opportunities in context. In the North, that context is all-encompassing.

Housing directly relates to every element of northern life—community sustainability and health, economic development, the environment, use of natural resources, cultural imperatives, and education and training.

For administrative purposes, the “North” covered by CMHC work includes Labrador, Nunavut, Nunavik, the Northwest Territories, and Yukon. In practical terms, this focus gives “North” work significant overlap with any remote location (such as northern Manitoba) and most communities with a sizeable Aboriginal population (such as any reserve). Prior CMHC work in the North made notable advances in building technology and foundation options.<sup>3</sup>

However, the North probably holds the unwelcome distinction of having about the worst housing in North America—tied possibly only with on-reserve housing. Meanwhile, in southern Canada, as governmental funds were becoming scarcer and direct housing assistance was becoming more limited, CMHC realized it needed to present models of best housing practices for replication by private and public entities.

CMHC began to think of “the house as a system,” recognizing the inter-relatedness of housing components. Two models, a “social model” and a “technical model” grew out of this. The first model, known as Flex Housing, approached housing from a societal standpoint, acknowledging that individuals come with varying degrees of physical capabilities, that people age, and that family structures and living rhythms are subject to change. Flex Housing plans for future modifications which can be customized to individuals and households. For example, blocking is in place for future handrails, non-load-bearing walls can easily be reconfigured, and functional areas of the home, from light switches to sinks, are easily adaptable for use by young and old, from an upright or seated position. The second model was the “Healthy House.” Five basic goals were outlined: occupant health, energy efficiency, resource

efficiency, environmental responsibility, affordability, and economic viability.

Two background tools were used in the North to determine how to build on prior research. In September 1998, a client consultation was undertaken across the North, and interviews were conducted with more than 100 people allied with northern housing provision. This will be repeated every two years (including this year) to ensure that CMHC is responsive to actual northern needs and opportunities. Second, the Circumpolar Housing Forum, first held in 1998 and scheduled for September 2000 (<http://nwthc.gov.nt.ca/forum/>), produced 12 recommendations, based on input from domestic and international delegates working in housing and related industries. These included: the need for partnerships between sectors—public and private, east and west, domestic and international; issues of sustainability; financing; information collection, sharing, and consolidation; training (particularly to foster community economic development and promote the ability to export expertise abroad); and the need to keep the community at the forefront of housing development.

Baseline research is still being done. One of the most basic studies, “Comparison of Northern Housing Costs,” will examine all hard and soft costs of housing, from the community infrastructure to the finished home. Using a statistically valid representation of communities across the North, the project will seek to determine why housing is so expensive—and where the costs are substantially skewed in specific locales; from this, affordability can be addressed. In north Baffin, for example, existing houses were purchased in Nanisivik, about 20 km distant, and moved over a newly constructed winter road and across a mountain pass, then skidded across the pack ice to Arctic Bay, where they were placed on new fill and foundations, and





*Steenberg Construction's bed and breakfast in Iqaluit, Nunavut—a commercial application of "Health House" techniques in northern Canada.*

completely retrofitted, at about 75 per cent of the cost of new construction on the site—a saving of roughly \$40,000 per home.

Other research is examining building technology. A study on foundations will be available later this year, with summary information posted on the NoRTH website and on the "About Your House" series. A second study of ventilation systems is also underway.

A new line of research, based on work done in southern Canada but with valuable input from northerners, is looking at the creation of sustainable communities. Specific projects for 1999–2001 include:

- *Monitoring of on-site wastewater recycling microsystems*—Preliminary results demonstrate a savings of approximately 40 per cent over piped systems, as well as a greatly reduced environmental impact, as reliance on lagoons and trucked services is eliminated.
- *Soil and flora restoration after ground disturbance*—In permafrost or discontinuous permafrost areas, the removal of ground cover for construction or other activities can lead to rapid building deterioration from erosion and blowing dirt. Developing affordable means of rapid revegetation may prevent or reduce such damage.

- *Northern "Healthy House" demonstration project*—Based on the southern model, the project will adapt the concepts of occupant health, energy efficiency, resource efficiency, environmental responsibility, and affordability and economic viability for optimal performance under northern conditions.

The connectedness of all elements in the North means that technical improvements can often be instrumental in resolving health and cultural issues, or enabling entrepreneurship and the development of a strong regional economy. In other words, building better housing is a key component in the creation of sustainable northern communities.

*Aleta Fowler is a Research Officer with Canada Mortgage and Housing Corporation in Yellowknife.*

<sup>1</sup> An "Images of the North" electronic image collection is being developed at the Canadian Housing Information Centre (CHIC), CMHC's library, in Ottawa. Images of the entire North, from housing to people to activities and more, will be available for viewing electronically and at the library.

<sup>2</sup> All research reports are available through CHIC which can be accessed via CMHC's main website at [www.cmhc-schl.gc.ca](http://www.cmhc-schl.gc.ca). Materials may be requested, borrowed, and/or ordered, or questions answered by calling toll-free at 1-800-668-2642 or sending an e-mail to: [chic@cmhc-schl.gc.ca](mailto:chic@cmhc-schl.gc.ca)

<sup>3</sup> Research work can be searched at CHIC by topic, including the "North." CHIC personnel can also locate information in response to e-mail or phone request.

<sup>4</sup> Referred to as "Flex Housing" at CMHC, an extensive selection of material exists, ranging from design checklists to photographs of flex homes to sample plans and cost information.

## Circumpolar Ecosystems 4

*Peter Johnson*

The 4<sup>th</sup> Circumpolar Ecosystems Conference was hosted by the Churchill Northern Studies Centre (CNSC) in Churchill, Manitoba, from February 16 to 22, 2000. The conference brought together representatives of local communities in Nunavut and northern Manitoba, government agencies, and scientists, the latter representing the research community at the CNSC as well as other researchers from Canada and the circumpolar Arctic. The meeting consisted of an introduction to indigenous and local cultures, two days of scientific talks and poster presentations (many highlighting the range of research being conducted from the Centre), and two days of field programs.

Two "town hall" sessions were also organized to link ongoing research to the town of Churchill itself. Discussion centred on the measurement and potential impacts of climate change and ranged from architectural styles of northern cultures to atmospheric aerosols. The single session allowed for discussion among researchers from the social, physical, and life sciences—a format that has enriched many Arctic workshops.

The conference was also an opportunity for those not working out of the CNSC to see the facilities available for a wide range of research programs and to appreciate the excellent work of the board and staff in maintaining the facility. At the same time, however, it underscored the fact that there is still a long way to go in improving research infrastructure so that Canada can once again assume a leading role in the areas of Arctic and sub-Arctic research. Peter Scott and the study centre staff are to be complimented on an excellent conference.

*Peter Johnson is Vice-Chairperson of the Canadian Polar Commission.*

## New IASC Regional Board Rep

Dr. Valoree Walker, Director of the Aurora Research Institute in Inuvik, N.W.T., has been named to the Regional Board of the International Arctic Science Committee (IASC). The appointment, for a period of two years, is effective April 2000. Dr. Peter Johnson, Vice-Chairperson of the Canadian Polar Commission, currently serves as representative to the IASC Council.

## Canadian Polar Information Network

The Canadian Polar Information Network (CPIN) can now be accessed through the Polar Commission's newly redesigned website at [www.polarcom.gc.ca](http://www.polarcom.gc.ca). As a central source of information on polar research, the CPIN includes a number of features, several of which will be further developed in the coming months.

- *InfoFind*—A metadata search and filing template that will be linked to a GIS-based mapping tool.
- *Polar Science Forum*—An interactive discussion forum on polar research, and current issues of interest to the polar science community.
- *Researchers Directory*—A searchable, on-line directory of Canadian polar researchers that allows individuals and organizations to update information.
- *International Partners*—Links to a variety of international organizations and agencies concerned with scientific activity in the Arctic and Antarctic.

- *Polar Resources*—A collection of online resources, including directories and databases, research institutes, government departments and agencies, NGOs, northern studies courses, an inventory of facilities and logistics, and the Arctic Science and Technology Information System.
- *About CPIN*—A guide to the resources on the CPIN and information on upcoming features.

For further information, contact Alan Saunders, Canadian Polar Commission, at (613) 943-8605.

## U.S. Boosts Science Funding

President Bill Clinton has recommended a 17 per cent funding increase for the National Science Foundation, as part of the White House's effort to boost U.S. capacity in five strategic areas:

- core investments designed to extend the frontiers of science and engineering;
- information technology research to further the information age;
- nanoscale science and engineering, examining the control of matter at the atomic level;
- biocomplexity in the environment, the dynamic interactions among the Earth's living and physical systems; and
- building a 21<sup>st</sup>-century workforce and strengthening educational infrastructure.

The proposed increase would bring the NSF's budget allocation to \$4.6 billion, representing a \$675-million increase over current funding levels.

## Products from the Human Role in Reindeer/Caribou Systems Workshop

In February 1999, 80 scientists, indigenous leaders, NGO representatives, and resource managers gathered at Rovaniemi, Finland, for an interdisciplinary workshop, "The Human Role in Reindeer/Caribou Systems." Several products from that workshop are now available for review, including a website at [www.rangifer.net](http://www.rangifer.net), a workshop report, and research plan. Researchers are also invited to participate in discussions via the newly established "Human-Reindeer/Caribou Systems" listserv by going to the "Join the Discussion" section of the [rangifer.net](http://www.rangifer.net) homepage. It is the hope it will become a forum for information exchange on circumpolar Human-Reindeer/Caribou Systems research planning, serve as a way of networking people with common interests in grazing systems, and help to build on the work undertaken at Rovaniemi.

For further information, contact: Gary Kofinas, Research Fellow, Institute of Arctic Studies, Dartmouth College, 11 Monadnock Court, Keene, NH 03431. Phone and fax: (603) 352-2407. E-mail: [kofinas@dartmouth.edu](mailto:kofinas@dartmouth.edu)

## NRI Restructures Iqaluit Operations

Due to increasing pressure for laboratory, office and research space, the Nunavut Research Institute (NRI) has restructured its Iqaluit operations. As a result, the Institute and Nunavut Arctic College will now be making available accommodation in Iqaluit through the single and married student residences of the College. In past years, researchers have been accommodated within the Research Centre.

Applications for accommodation can be obtained through NRI in Iqaluit. The rates are \$110 per week for students and \$120 per day for other researchers. Both rates include meals.

Also, given that researchers are now making extensive use of satellite telephones, the Iqaluit Centre will no longer be providing daily radio communication with researchers in the field. Those requiring continued radio communication will be directed to other local contacts. All other services through the Iqaluit facilities will remain the same. Arrangements for the Igloolik Research Centre will not change.

For more information about accommodation and facilities, contact: Ms Beth McKenty, Iqaluit Research Centre, Nunavut Research Institute, (867) 979-6734. E-mail: [iqrcnri@nunanet.com](mailto:iqrcnri@nunanet.com)

## SCICEX Cruises End

The U.S. Arctic Research Commission has announced the end of submarine cruises dedicated to polar scientific research under the SCICEX program. Funds for the planned overhaul of the U.S. Sturgeon Class submarine, *L. Mendel Rivers*, were not included in the President's budget submitted to Congress February 7, and the Navy has now issued orders for her decommissioning.

The use of submarines in the Arctic for science, as currently planned, will be on the "cruises-of-opportunity" basis described in the Report of the SCICEX 2000 Workshop (see <http://psc.apl.washington.edu/scicex/scicex2000.html>)

The Commission noted that while the U.S. Navy was prepared to lend support to the project, several factors led to its demise—a short time frame, high price tag, and lack of sufficient support from the oceanographic community.

For further information, contact Garrett Brass at [g.brass@arctic.gov](mailto:g.brass@arctic.gov).



*Canadian Senior Arctic Official James Moore addresses a meeting of Arctic Council representatives at Fairbanks, Alaska, April 2000. The Polar Commission was one of several departments and agencies represented on the Canadian delegation, and has been active in promoting effective information and communications networks within the circum-arctic community. An Arctic Council Ministerial meeting is planned for October 2000 at Barrow, Alaska.*

## 2<sup>nd</sup> Wadati Conference on Global Change and Polar Climate

The 2<sup>nd</sup> Wadati Conference on Global Change and Polar Climate will be held March 7–9, 2001 at Tsukuba Science City, Japan. Hosted by the Geophysical Institute, University of Alaska Fairbanks, and the Second Wadati Conference Executive Committee, the conference is intended to summarize understanding of climate change in the polar regions in the context of global change. The goal also includes an analysis of directions and perspectives on polar climate investigation to demonstrate a new level of emerging information and data. Science sessions will focus on: evidence of polar climate change; processes, interactions, and feedbacks in the Arctic and Antarctic; paleoclimatic reconstructions for polar regions; and climate modelling. For further information, contact: Hiroshi L. Tanaka, [tanaka@atm.geo.tsukuba.ac.jp](mailto:tanaka@atm.geo.tsukuba.ac.jp)

## Canada to Host 2001 Arctic Science Summit Week

Canada will play host to the 2001 Arctic Science Summit Week. To be held in Iqaluit, Nunavut, April 22–27, the event will bring together more than 200 scientists and science administrators to discuss means of better coordinating northern research and education programs. Meetings of individual organizations will be complemented by joint sessions focused on a particular theme—"building sustainable northern communities" is among those suggested for the Iqaluit event. Although participation in the committee meetings and workshops is normally restricted to members and invited observers, joint sessions are open, and contributions from other sources can be submitted for consideration by organizers. Members of the 2000 organizing committee are Peter Johnson (Canadian Polar Commission), Bonni Hycryk (Polar Continental Shelf Project), Marty Bergmann (Fisheries and Oceans Canada), and Bruce Rigby (Nunavut Research Institute). The Netherlands has been selected to host the 2002 Arctic Science Summit, and Sweden will host the 2003 meeting. This year's Arctic Science Summit Week was held April 2–7 at Selwyn College in Cambridge, U.K.



## Nunavut Research Licences

Applications for research licenses can now be submitted directly to the Nunavut Research Institute, online, through the webpage [www.nunanet.com/~research](http://www.nunanet.com/~research). The digital transfer of this information will speed up the processing of research licences, and the database of licensed research. Work is underway to launch a registry of licences which will be available online later this year, to be followed by a more interactive, online version of the research compendium and associated bibliography. For more information, contact Mary Ellen Thomas, Manager, Research Liaison.

## 51<sup>st</sup> AAAS Arctic Science Conference

The 51<sup>st</sup> American Association for the Advancement of Science Conference will be held September 21–24, 2000, at the Westmark Whitehorse Hotel, Whitehorse, Yukon. Those interested in chairing a session should contact the Yukon Science Institute, P.O. Box 31137, Whitehorse, Yukon, Y1A 5P7, Canada. E-mail: [ysi@taiga.net](mailto:ysi@taiga.net). The Conference Chair is Joan Eamer.

## ASTIS Database on the Web

The Arctic Science and Technology Information System (ASTIS) database, containing 46,000 records describing publications and research projects about northern Canada, is now available on the Web at <http://www.aina.ucalgary.ca/astis>. ASTIS is maintained by the Arctic Institute of North America at the University of Calgary and is made available on the Web for free with support from the Canadian Polar Commission. ASTIS includes all subjects, and covers all of Canada north of the southern limit of discontinuous permafrost, as well as adjacent marine areas. The publications cited in the database include both grey and peer-reviewed literature published from 1978 to the present. The 10,800 research project descriptions in ASTIS cover the period from 1974 to the present and are based on information supplied by the organizations that license field research in northern Canada. For further information, contact: Ross Goodwin, [rgoodwin@ucalgary.ca](mailto:rgoodwin@ucalgary.ca)

## Northern Science Award

The Inullariit Elders' Society of Igloolik, Nunavut, was named as the 1998 Northern Science Award winner. This marks the first time that an indigenous group has won the award.

The Inullariit Elders' Society has grown from an informal association of Igloolik Inuit elders who first got together in 1986. Elders formed this group to promote *Ighulingmiut* culture, language, and traditional skills. The Society was formally incorporated in January 1993.

One of the better known projects undertaken to date by the Society is the Igloolik Oral History Project. Since its establishment in 1986, the Oral History Project has collected approximately 400 interviews with elders, translated them from Inuktitut, and transcribed them into a computer data base. The material already collected fills 4,500 printed pages. The collected wisdom of the elders continues to grow and is now widely used as a major source for researchers studying Inuit culture and society.



*Arsene Ivalua, the president of the Inullariit Elders' Society, accepts the Northern Science Award from Nunavut MP Nancy Karetak-Lindell. (Photo courtesy of Sean McKibbin, Nunatsiaq News.)*



The Elders' Society has also worked with local school and youth groups to teach a younger generation land-based skills such as hunting and survival techniques and the Inuktitut language. Other topics covered have included skin preparation and sewing, tool making, traditional navigation, drum-making, song composition, Inuit values and philosophies, and archeological interpretation.

A committee of northerners and professionals selected the Inullariit Elders' Society for the Northern Science Award. The selection committee was made up of Dr. Milton Freeman, Dr. Joseph Svoboda, Ms. Eva Arreak, and Mr. Douglas Craig. The award was presented in January of this year by a committee from the Department of Indian Affairs and Northern Development.

Since 1984, the Northern Science Award has been awarded annually to people who, through their work in the sciences, have made significant contributions to the advancement of knowledge and understanding of the Canadian North. The Award consists of a medal and a \$4,500 prize.

For further information contact: Steven Outhouse, DIAND Media Relations, (819) 994-2044.

## Arctic Climate Modellers to Meet in Fairbanks, September 2000

ARC-MIP, the Arctic Regional Climate Model Intercomparison Project, will hold its first meeting at Fairbanks, Alaska, September 13–15, 2000. This meeting will coincide with the WCRP ACSYS Numerical Experimentation Group meeting which will be held the same week, from September 11–12.

In ARC-MIP, models developed by research teams from Canada, the United States, Europe, and Australia are invited to perform a common set of simulations over two common domains: one that covers much of the Arctic Ocean, and a second that concentrates at higher grid resolution over the western Arctic corresponding to the location of the SHEBA ice camp (see website at <http://sheba.apl.washington.edu/>).

The first workshop will be exploratory in nature, discussing the difficulties encountered in modelling the Arctic (clouds, surface schemes, dynamics, etc.), observations taken during the SHEBA experiment, and funding issues. The common simulations to be performed will also be defined during the workshop.

For further information, contact: Dr. Eric Girard, Project Co-ordinator, Department of Aerospace Engineering Sciences, Engineering Building, Room ECAE-130, University of Colorado, Campus Box 429, Boulder, CO 80309-0429. E-mail: [girard@terr.colorado.edu](mailto:girard@terr.colorado.edu) Website: <http://cires.colorado.edu/lynch/workshop/>

## CPC Expands Northern Network

In a move designed to improve regional representation, the Canadian Polar Commission has closed its Yellowknife office, effective March 31, 2000, and moved responsibilities for community liaison to three northern board members. The three—Josie Sias of Silver City Yukon, Richard Binder of Inuvik, N.W.T., and Jean Dupuis of Kuujuaq, Quebec—will serve as primary contacts with community and regional organizations, field requests for information, and help represent the Commission at regional conferences, symposia, and workshops. Other administrative responsibilities will be handled by the CPC's Ottawa office. For further information, contact Steven Bigras, Executive Director, (613) 943-8605.

## Northern Science Award—Recipient List

1984	<b>John Ross Mackay</b> University of British Columbia	1989	<b>William Pruitt</b> University of Manitoba	1994	<b>Ernest Frederick Roots</b> No Affiliation
1985	<b>Otto Schaefer</b> University of Alberta	1990	<b>Taamusi Qumaq</b> No Affiliation	1995	<b>Branko Ladanyi</b> École polytechnique de Montréal
1986	<b>Louis-Edmond Hamelin</b> Université Laval	1991	<b>George Hobson</b> McMaster University	1996	<b>Shelagh Grant</b> Trent University
1987	<b>Maxwell Dunbar</b> McGill University	1992	<b>Andrew Taylor</b> University of Manitoba	1997	<b>Graham Rowley</b> No Affiliation
1988	<b>Père Guy-Marie Rousselière</b> Oblate of Mary Immaculate	1993	<b>Josef Svoboda</b> University of Toronto	1998	<b>Inullariit Elders' Society of Igloolik</b> No Affiliation

## Polar Researchers Killed in Helicopter Crash

Canada's northern research community was saddened at the loss of two senior scientists this spring in a helicopter crash near Resolute. Malcolm Ramsay, a polar bear biologist and professor at the University of Saskatchewan, and Stuart Innes, a seal biologist and research scientist with Fisheries and Oceans Canada, had been conducting polar bear research in the vicinity of Resolute at the time of the accident. The Commission extends its deepest sympathies to both families.

## New AINA Executive Director

Karla Jessen Williamson has been named Executive Director of the Arctic Institute of North America, effective September 15, 2000.

Born in Appamiut, Greenland, she received her primary education in Greenland and her high school education at Maribo Gymnasium, Denmark. After moving to Canada, Karla received bachelor's and master's degrees in her third language, English, from the University of Saskatchewan. Her master's thesis dealt with Inuit child-rearing practices in Pangnirtung, Nunavut, as they relate to Inuit relationships with the land.

Karla is finishing her Ph.D. at the University of Aberdeen, Scotland. Her dissertation on Inuit gender relations in the post-colonial Greenland Inuit community specifically examines how Inuit women gain status through genderless empowerment. Karla

has published a number of articles and edited the *Journal of Indigenous Studies*. Before becoming Executive Director of the Arctic Institute of North America she taught at the University of Saskatchewan for 16 years.

## Arctic Ozone May Not Recover as Early as Predicted

A recent paper published in the journal *Science* suggests that recovery of the damaged ozone layer over the Arctic region may take longer than previously predicted. Dr. Azadeh Tabazadeh, lead author of the paper and a scientist at NASA's Ames Research Center in California, says the formation of more polar stratospheric clouds than anticipated above the North Pole will lead to additional ozone loss. The clouds provide the surfaces which convert benign forms of chlorine into reactive, ozone-destroying forms, and they remove nitrogen compounds that act to moderate the destructive impact of chlorine. Although surface temperatures in the Arctic are expected to rise, the upper atmosphere over the region is becoming colder and more humid, a condition that promotes the formation of polar stratospheric clouds. The manufacture of chloroflourocarbons for use as refrigerants, aerosol sprays, solvents, and foam-blowing agents was banned in 1996 in signatory countries under the terms of the Montreal Protocol and its amendments.

## 12<sup>th</sup> Inuit Studies Conference

The 12<sup>th</sup> Inuit Studies Conference will be held August 23–26, 2000, at the University of Aberdeen, Scotland. The central organizing theme of the conference is the increasingly complex and problematic relationship between people, resources, the environment, and global processes in the North.

## Scholarship Award

Lia Ruttan, a long-term resident of Fort Smith, N.W.T., and currently a Ph.D. candidate in the Department of Human Ecology, University of Alberta, is this year's winner of the Kennett Y. Spencer Memorial Scholarship. Lia is currently completing the required course work toward her degree, and this summer expects to begin her research in cross-cultural perspectives on parents' priorities for their children's education. This project will seek to examine the varying interests and priorities of parents for their children's education across the community's three ethnic groups—Dene, Metis, and non-Aboriginal. The scholarship (current value \$2,500) is awarded annually to a student at the University of Alberta for high academic attainment and original research carried out in any discipline pertaining to northern studies. The deadline for applications for the next competition is December 1, 2000.

## Climate Variability Announcement

The National Oceanic And Atmospheric Administration (NOAA), in collaboration with the Environmental Protection Agency (EPA), National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), and Electric Power Research Institute (EPRI) is announcing its interest in receiving research proposals. The proposals should be aimed at improving understanding of human health consequences related to climate variability and enhancing the integration of useful climate information into public health policy and decision making. For information access the website at <http://www.ogp.noaa.gov/C&GC/AO/health00.htm>

## Researchers Report Faster Rate of Global Warming

Researchers at the National Oceanic & Atmospheric Administration (NOAA) National Climate Data Center (NCDC) have found evidence that the rate of global warming is accelerating. In the past 25 years it achieved a rate of two degrees Celsius (four degrees Fahrenheit) per century—a rate previously predicted for the 21<sup>st</sup> century.

The NCDC team analysed recent temperature data, focusing on the years 1997 and 1998 when record high global mean average temperatures were set in 16 consecutive months. Such a phenomenon has not been observed since instruments began systematically recording temperature in the 19<sup>th</sup> century. The evidence suggest that there is only a 1-in-20 chance that the string of record high temperatures in 1997–1998 was simply an unusual event, rather than a change point, the start of a new and faster ongoing trend.

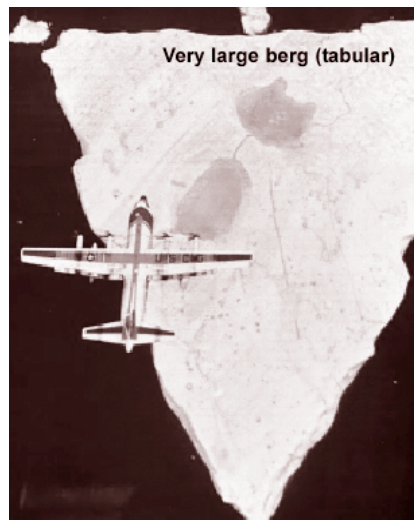
There is also strong evidence to suggest that the faster rate of climate change since

1976 is human-induced. Researchers are encouraging studies to help minimize the risks of climate change and prepare for more, and perhaps even more rapid, changes to come.

## Appointment to U.S. Arctic Research Commission

U.S. President Bill Clinton has appointed Dr. Jacqueline Mary Grebmeier, a specialist in polar biological oceanography at the University of Tennessee in Knoxville, to the U.S. Arctic Research Commission. Dr. Grebmeier's scientific research focuses on both Arctic and Antarctic oceanography, with a particular emphasis on understanding change in biological communities and related biogeochemical processes in high-latitude ecosystems that are likely to be vulnerable to climate variation. Dr. Grebmeier has also contributed to the scientific evaluation of potential threats to Arctic ecosystems from radioactive contamination.

## New Study Links Solar



Observers Guide to Sea Ice now available

## Activity to Climate Change

A new study by astronomers and climatologists suggests that the Earth's atmospheric temperature may be strongly linked to solar activity.

A press release issued March 2 says scientists from the Harvard-Smithsonian Center for Astrophysics, Long Island University, and the University of Nigeria compared the Earth's temperature with the size of holes in the sun's corona, during a two-decade period. The results appeared in the February 28 issue of the journal *New Astronomy*.

Coronal holes are gaps in the sun's outer atmosphere through which a stream of hot, supersonic particles known as the solar wind pours into space. The scientists' measurements suggest that the charged particles hitting the Earth's atmosphere may affect the properties of terrestrial clouds. In turn, significant changes in the cloud cover influence the temperature of the Earth's lower atmosphere, with temperatures falling with increased cloud cover.

The scientists say the results do not rule out the possible climate influence of man-made fossil fuels, such as carbon dioxide, which has been blamed for global warming. But the research suggests that there are other significant reasons for climate variations other than increases in carbon dioxide.

## NOAA Observers Guide to Sea Ice Available on Web

A "pdf" version of the "Observers Guide to Sea Ice," prepared by the University of Alaska Anchorage to the U.S. National Oceanic and Atmospheric Administration (NOAA, Seattle), is available at <http://www.engr.uaa.alaska.edu/ice/>. For further information, contact: Orson P. Smith, PE, Ph.D., Associate Professor, School of Engineering, University of Alaska Anchorage, 3211 Providence Dr., Anchorage, AK 99508-8054. Tel.: (907) 786-1910. Fax: (907) 786-1079. E-mail: [afops@uaa.alaska.edu](mailto:afops@uaa.alaska.edu)

# Horizon

12<sup>th</sup> Inuit Studies Conference  
23–26 August 2000  
Aberdeen, Scotland

51<sup>st</sup> AAAS Arctic Science Conference  
21–24 September, 2000  
Whitehorse, Yukon

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Canadian National Council of Public History  
(NCPH) Annual Conference  
April 2001  
Ottawa, Ontario

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E-mail: [dave\\_neufeld@pch.gc.ca](mailto:dave_neufeld@pch.gc.ca)  
<http://www.iupui.edu/~ncph>

2nd Wadati Conference on  
Global Change and Polar Climate  
7–9 March 2001  
Tsukuba Science City, Japan

Contact: Hiroshi L. Tanaka  
E-mail: [tanaka@atm.geo.tsukuba.ac.jp](mailto:tanaka@atm.geo.tsukuba.ac.jp)

Arctic Regional Climate  
Model Intercomparison Project  
13–15 September 2000  
Fairbanks, Alaska

# Websites

<http://www.polarcom.gc.ca>

The Canadian Polar Commission's website has been updated to include the Canadian Polar Information Network, an evolving compendium of on-line polar resources and links.

<http://www.climatechangesolutions.com>

Climate Protection Solutions (CPS) is Canada's emerging "megazine" of success stories, interactive tools, and resources on actions to reduce greenhouse gas emissions. The first completed sector of the site focuses on the actions individuals and families can take in their homes, transportation, and lifestyle choices to protect the climate.

<http://aix1.uottawa.ca/associations/aucen-acuns>

The Association of Canadian Universities for Northern Studies (ACUNS) works for the advancement of northern scholarship through education and research. The Association's website maintains information on northern research activities, educational opportunities, and conferences and symposia.

<http://www.bprc.mps.ohio-state.edu/polarpointers/PolarPointers.html>

A guide to polar websites maintained by the Byrd Polar Research Center at the University of Ohio.

[http://www.arcus.org/researcher/fr\\_Search.html](http://www.arcus.org/researcher/fr_Search.html)

A list of arctic researchers maintained by the Arctic Research Consortium of the United States.

<http://www.spri.cam.ac.uk/lib/organ/canada.htm>

A directory of polar and cold-regions organizations maintained by the Scott Polar Research Institute at Cambridge University.

<http://www.urova.fi/home/uartic>

The home page of the University of the Arctic.

<http://www.civilization.ca/membs/canhist/frobisher/frint01e.html>

A new website sponsored by the Canadian Museum of Civilization, "Inuit and Englishman: The Nunavut Voyages of Martin Frobisher," contains archaeological and historical information from sites at Kodlunarn Island where Frobisher and his men set up camp, as well as from historical documents

<http://www.ualberta.ca/~ccinst/polar.htm>

The website of the Canadian Circumpolar Institute has recently been revised and updated.

<http://www.ualberta.ca/~ccinst/CIDA/CIDA-Siberia-homepage.htm>

Website for a Canadian International Development Agency (CIDA) joint project on rural health reform in eastern Siberia.

<http://www.engr.uaa.alaska.edu/infrastructure/>

Proceedings and recommendations from a workshop on the effects of climate warming on infrastructure sponsored by the Alaska Science and Technology Foundation in January 2000.

[http://pingo.kb.dk:4505/ALEPH/SESSION\\_459439/start/DPC01](http://pingo.kb.dk:4505/ALEPH/SESSION_459439/start/DPC01)

Web address for the Danish Polar Center's Polar Database.

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