



Arctic Institute of North America

ANNUAL REPORT 2010



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- Louis Fortier, Québec City, Québec
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- Henry Sykes, Calgary, Alberta (Chair as of June 2010)
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Staff

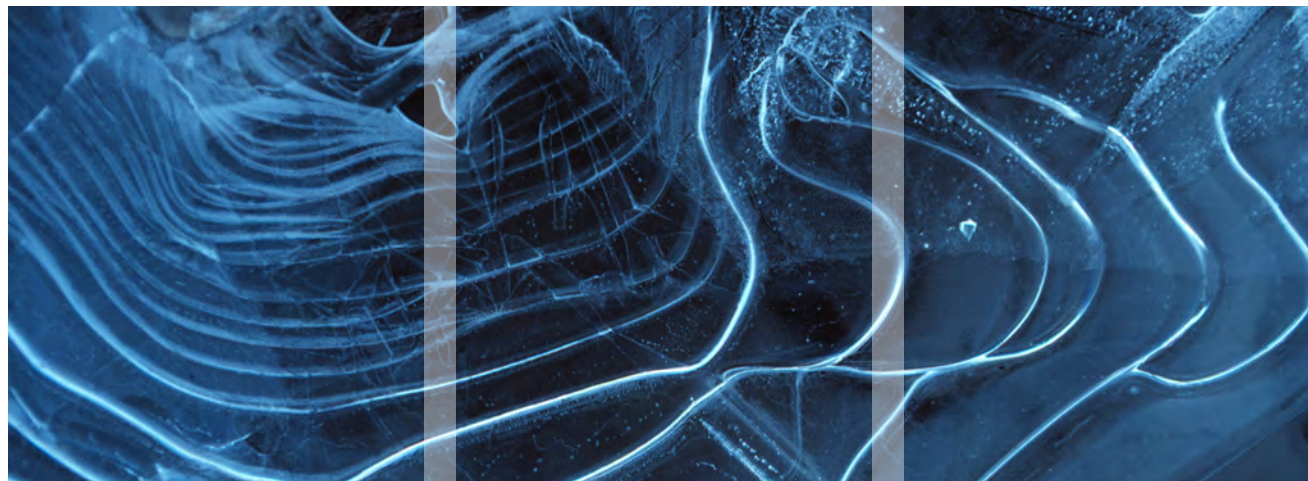
Executive Director:	Benoît Beauchamp
Institute Manager:	Mary Li
Director of Communications:	Ruth Klinkhammer (until June 2010)
Administrative Assistant:	Trisha Carleton (until October 2010); Deborah Hazell
Arctic Editor:	Karen McCullough
Book Review Editor:	Peter Schledermann
ASTIS Manager:	Ross Goodwin
ASTIS Information Analysts:	Lynda Howard, Lynne Howard, and Pam Scowen
ASTIS Volunteer:	Robert van Everdingen
University of Calgary Librarian, AINA Collection:	Claudette Cloutier
Kluane Lake Research Station Manager:	Andrew Williams



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Message from the Executive Director

THE YEAR 2010 WAS RICH IN ACTIVITY OF ALL KINDS at the Arctic Institute of North America (AINA). Thanks to a marvelous staff and highly dedicated colleagues, including research associates, fellows, and friends, 2010 will be remembered for many events of significance for the Institute. I would like to emphasize three in particular.

The first is the renovation of the Kluane Lake Research Station (KLRS) in the Yukon, which consumed much of my energy over the year. Funded under the Arctic Research Infrastructure Fund (ARIF), the project was nothing short of a managerial roller-coaster ride. But in the end, we pulled it off. As I am writing these lines, the project is completed, thanks to the superb effort of our base management team at Kluane Lake (Sian Williams, Andy Williams, and Lance Goodwin), as well as the chair of the KLRS users' committee, Dr. David Hik, and Dainius Zaldokas and Peter Densmore of Ketza Construction, the principal contractor for the project. Celebrations marking the 50th anniversary of the station will take place at Kluane Lake on 5–7 August 2011. In addition to inaugurating the new facilities, this event will celebrate 50 years of world-class research in one of Canada's most scenic spots. It will also be a time to look back on the remarkable career of Mr. Andy Williams, KLRS base manager for more than 40 years, who has recently announced his retirement. The August 2011 get-together will be a unique occasion to thank him for his role as host extraordinaire at KLRS, surpassed only by his celebrated life as a high-altitude fixed-wing pilot.

Second, the year 2010 was marked by the review of the Institute, mandated by the University of Calgary, by two of Canada's top researchers. Dr. Tom Hutchinson of Trent University and Dr. Warwick Vincent of Laval University visited AINA in October 2010. Their report, produced a few months later, was extremely favourable. A unique and positive response by Dr. Jon Meddings, the University of Calgary's interim vice-president (research), was made public in an open letter to the university community. There is much hope that the report and the response it generated will be beneficial to AINA for years to come, and the favourable review should result in broader recognition for AINA within the University of Calgary.

Third, I want to emphasize a truly remarkable event that took place in November 2010 under the auspices of the Arctic Institute. Dr. Jon Dudley, one of our newest research associates, managed to bring a dozen elders from Baffin Island communities to Calgary, along with their entourage, including translators, for a series of events. The highlight of their visit was a storytelling get-together on November 5, which attracted a standing-room-only audience. The event—called *Tusaqtuut*, 'the people's time for sharing,' in Inuktitut—created a memorable moment when two highly different cultures came face to face in the friendliest manner. I personally want to congratulate Jon and the many sponsors he assembled for this project on their truly remarkable achievement.

In closing, 2010 will be remembered as the end of an era for AINA as our chairman of seven years, Michel Scott, stepped down. Michel led AINA's board during hard times and good times. Among many achievements, Michel was incidental in establishing a first-class relationship with the University of Calgary's administration, which AINA will be able to build



on in future years. Michel was replaced in June 2010 by Mr. Henry Sykes, whose contagious energy and dynamism are sure to benefit AINA. I wrote a lengthy commentary about Michel's departure and Henry's welcome in the September 2010 issue of *Arctic*. On a sadder note, our good friend Dr. Erich Follmann passed away in 2010. Erich will be sorely missed. He was the driving force behind the Grant-in-Aid Program, which is run from the University of Alaska Fairbanks under the umbrella of AINA (USA). I take this opportunity to thank to Drs. Carl Benson and Matthew Sturm, who continue to carry the torch of AINA in Fairbanks.

Finally, as announced last year, I myself am stepping down from the position of executive director of the Arctic Institute. By the time I go back to the bench as a professor of Geoscience in July 2011, it will have been six years and three months since I was offered the chance to lead this truly remarkable organization. I have come to think of AINA as "the little engine that could" for the unlimited resourcefulness of all the people who gravitate around the organization, from a handful of salaried staff to a legion of members and volunteers, whether on the board of directors or as research associates, or as new or life members of the Institute. To each of you, thanks for your unwavering support over the past six years. I am confident that with a new chairman of the board, and soon a new executive director, AINA will keep growing along exciting lines, as the North and the Arctic are increasingly in the crosshairs of multiple interests. Research and scholarship about the North and the Arctic are needed now more than ever. Long life to the Arctic Institute of North America!

Benoît Beauchamp, PhD, Executive Director



Message from the Chair

THE PAST YEAR WAS AN EVENTFUL ONE FOR THE ARCTIC INSTITUTE. You will have read about many of our activities in the report of our executive director, but I will mention some of those as well.

Perhaps most importantly, 2010 was the year of the Arctic Institute's "external review." These reviews, mandated at (relatively lengthy) intervals by the University of Calgary's policy regarding institutes, are conducted by eminent independent external reviewers. In preparation for this important process, our executive director completed an Institute "self-assessment," which the reviewers found to be one of the best of its kind they had seen (a "masterpiece of information and understanding"). After reviewing this self-assessment and spending some days on campus reviewing our work and interviewing a range of individuals, the reviewers provided a report that was not only extremely complimentary to the Institute, but also very insightful in pointing out our challenges. The Arctic Institute will use this report as a roadmap, as we strive to "continue to harness and develop [the Arctic Institute's] enormous potential for the University, Alberta and Canada," to quote the reviewers.

Our research station on the shores of Kluane Lake in the Yukon is celebrating its 50th anniversary of hosting students, professors, and others this year, and it was beginning to show its age. We were able to obtain Government of Canada funding to upgrade the facility in 2010, replacing worn-out infrastructure and increasing the energy efficiency and sustainability of the station. In addition, we were able to use this work as an opportunity to improve our relations with the local First Nations people, and we look forward to a mutually rewarding relationship with them. Thanks are due both to our executive director and to David Hik, an Institute board member and professor at the University of Alberta, for their efforts in this very successful operation.

The year 2010 will also be seen as a one of transitions. Michel Scott, who has served on the board of the Arctic Institute for nine years and as chair for the last seven, retired in 2010. Michel was also an officer of a major Canadian energy producer during these years, yet he never stinted on the time necessary to ensure that the affairs of the Arctic Institute were conducted to the highest standards. We will miss Michel's wise counsel and sense of humour. We wish him well in his retirement.

This year Benoît Beauchamp, our executive director, also notified the board that he would step down in 2011. As well as having been our executive director for the past six years, Benoît, who is a full professor at the University of Calgary, has continued to carry a course load, conduct research, and supervise graduate students. Those who know Benoît will agree that he possesses a prodigious intellect and supernatural energy, both of which he placed in the service of the Arctic Institute. I could say much about Benoît and his many accomplishments, but it would all amount to this: he has managed the affairs of the Institute with integrity and honour. He leaves the Arctic Institute a better place than it was when he arrived, and we are grateful. Benoît wanted to return to full-time teaching and research, but I have no doubt he will continue to be available to the Arctic Institute.

No institution founded on volunteers can survive, let alone thrive, without the efforts of many people. While it is impossible to name every person who has contributed to the success of the Arctic Institute in the past year, I would be remiss if I did not mention a few individuals who stand out. Firstly, I would like to thank Patrick Borbey, who retired from the board in 2010. Patrick represented the Government of Canada on our board, and we thank him for his service to the Institute. I would also like to thank Andy Williams, who is stepping down after many years as manager of the Kluane Lake Research Station. Operating a research station in the Canadian North is not an easy task, but Andy was up to whatever the occasion required, and we thank him for his efforts. I would like to congratulate Ross Goodwin on becoming a fellow of the Arctic Institute. Ross has run our ASTIS database for many years and does an exemplary job of raising the funds needed to continue that important work, as well as ensuring that the work itself is carried out in a manner that brings credit to the Institute. It was a pleasure to recognize Ross for his service.

Lastly, I would like to thank our board of directors, who give freely of their time, energy, and talent. We are grateful for their support and guidance.

Transitions give rise to risk, but they also create opportunities. I believe our board is well structured to manage the risks of the transitions we are undergoing and well attuned to the opportunities presented. Benoît Beauchamp and Michel Scott have set a high standard. Our job will be to continue to meet and exceed the expectations they have created.

Henry W. Sykes, QC, Chair, Board of Directors



AINA US Corporation Report



THE ARCTIC INSTITUTE OF NORTH AMERICA (AINA) was founded jointly in Canada and the United States in 1945 because both countries recognized the cost of their “Arctic ignorance” during World War II.

The history of early days at AINA includes an effort to encourage people to get involved in Arctic research. The Arctic, considered remote at that time, was known to the world primarily through fiction and reports of special expeditions. The past half-century has seen profound changes in everything: changes in transportation, communication, and climate have almost eliminated the very concept of “remote.” At present, our collective ignorance of rapid changes on a global scale demands, and is receiving, attention. These changes in climate and socio-political activity are especially pronounced in the Arctic. In particular, problems in the western Arctic present new challenges to Canada and Alaska, which again, as during the war, emphasize the need for joint, international cooperative activity because so many Arctic problems cross national boundaries. Some action was taken in 2000 when the University of Alaska and the University of Calgary jointly signed an academic co-operation agreement and a supplemental letter of agreement (for staff and student exchange). Terrence H. White, president and vice chancellor of the University of Calgary, and Marshall Lind, chancellor of the University of Alaska Fairbanks (UAF), signed both documents. Marshall Lind signed for and on behalf of the University of Alaska, which includes three campuses, located at Fairbanks, Anchorage, and Juneau. These documents were well written and contain a fine set of objectives; however, the section on implementation was not acted upon.

The subject of cooperative activities was revisited in 2009. As discussed in the 2009 annual report, Alaskans and Canadians representing their universities met at the Kluane Lake Research Station on 6 August to discuss renewal and updating of the 2000 agreement. We recognize that in addition to formal agreements, we must have a mechanism for implementation, and it is especially important to initiate and maintain joint activities between the University of Alaska and the University of Calgary. The meeting encouraged discussion during 2010, but no formal agreement with provisions for implementation has appeared.

One successful international joint project, underway for the past 16 years, is the AINA Grant-in-Aid Program, administered by a binational committee and funded entirely from member donations. Dr. Erich Follmann of UAF chaired the program for 15 years. AINA suffered a major blow with the death of Dr. Follmann in July 2010 (see obituary in the December 2010 issue of *Arctic* (Vol. 63, No. 4:485–486). Erich was especially interested in the Grant-in-Aid Program because it was international and provided support for students. The project may be unique in that there is no overhead involved, volunteers run it, and ALL of the funds received go to recipients of the grants-in-aid. Annual reports on the program are published in *Arctic*.

Our public outreach programs include the Arctic Roundtable. We also collaborate with the University of Alaska Museum of the North in presenting a series of lectures for the general public. At the Kluane Lake meeting, we discussed ways to broaden these programs and make them international.

Carl S. Benson, PhD, Chairman, Board of Governors



The new operations and storage building (left).

Kluane Lake Research Station

THIS PAST YEAR WILL BE REMEMBERED AS A BENCHMARK in the history of the Kluane Lake Research Station (KLRS). The venerable research station was completely refurbished in 2010, thanks to a generous grant from the Arctic Research Infrastructure Fund (ARIF) administered by Indian and Northern Affairs Canada (INAC). The funds were used wisely to bring the station up to modern environmental and building code standards, as well as to improve existing facilities and, in some cases, to replace old ones that were no longer adequate. Some of the renovations and new structures, such as the new mess hall, will be obvious to those familiar with the station. Other renovations, though not visually obvious, are equally important, such as the new, environmentally sound Cartesian water well and the new septic system. The principal elements of the renovation project are listed below. When this report was written in the spring of 2011, the project was completed as planned, on time and on budget.

- New water well
- New gravel pads
- New septic field
- New water system, including pump and holding tank
- New toilets
- New power centre building
- New variable demand generator
- Civil work (mostly transmission line)
- Site clean-up
- Complete renovation of the existing wet/dry lab building
- New mess hall
- Expanded ablution building
- New operations and storage building

In addition, some of the ARIF funds were used for:

- Room and board for construction crew
- Building relocation

The new mess hall at KLRS.



- Design
- Temporary facility so that the station could operate in the summer of 2010
- General contractor expenses and profit
- Travel associated with project management, including site visits

Research did take place at KLRS in the summer of 2010, but fewer teams visited the station as some of its key elements had been relocated along the runway and the operation was supported by temporary facilities. The smaller number of research teams using the station helped with the logistics and management of the renovation project, which was then well under way. Some of the key elements of the project are illustrated courtesy of Ketza Construction.



The interior of the new mess hall.



Outreach

2010 Arctic Speakers Series

DURING THE FIRST THREE MONTHS OF 2010, three more speakers participated in the Institute's ongoing "Arctic Change" series, which began in September 2009 and focused on the theme of climate change impacts in the North. In January, AINA Research Associate Shawn Marshall, Canada Research Chair in Climate Change and geography professor at the University of Calgary, discussed glacier response to climate warming and its implications for future sea level. Our February speaker was AINA Research Associate John Yackel, a sea-ice expert and geography professor at the University of Calgary. Professor Yackel spoke about the critical role of Arctic sea ice in moderating the earth's climate and how the steady shrinking of the Arctic Ocean's ice cover has jeopardized the Arctic's role as a giant air conditioner. The Arctic Change speaker series wrapped up in March with a talk by AINA Executive Director Benoît Beauchamp, who spoke about past and current increases in levels of carbon dioxide in the Arctic Ocean and how examining past climate-change events may provide cautionary lessons for the future.

In September 2010, the 2010–11 "Arctic Life" speaker series got underway with a talk by AINA board member David Hik, Canada Research Chair in Northern Ecology and a professor in Biological Sciences at the University of Alberta. Dr. Hik's talk examined the impact of seasonal snow cover on mammalian herbivores and plant communities in northern alpine environments. Our October speaker was AINA Research Associate Peter Dawson, a professor in Archaeology at the University of Calgary, who related how 3D technology is being used in Arctic archaeological research. Our final speaker for 2010 was Rob Huebert, an AINA research associate and associate director of the University of Calgary's Centre for Military and Strategic Studies, who cogently defined the importance of Canadian Arctic sovereignty and security on both national and international scales.

Events

In addition to our Arctic Life speaker series, in early March the Institute sponsored a talk by Warrant Officer Dave Dunn, commanding officer of the Rangers, entitled “Arctic Patrol: Canadian Rangers in Northern Canada.” Officer Dunn spoke about his experiences with the Canadian Rangers and provided examples of how the Rangers are contributing to Canada’s sovereignty.

In early November, AINA hosted a group of Inuit Elders from South Baffin Island, who are part of the project, *Tusaqtuut*, which seeks to document the traditional core knowledge of the few remaining Elders born on the land before the Inuit relocation to Arctic settlements. A highlight of the visit was a four-hour knowledge-sharing seminar attended by an audience of 150. AINA Research Associate Jon Dudley was instrumental in bringing this visit to successful fruition.

In December, the Arctic Institute was represented at ArcticNet’s 2010 Annual Scientific Meeting by Ross Goodwin and Karen McCullough, who manned the AINA booth and sold books and memberships.

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Arctic Journal in 2010

THE FOUR ISSUES OF *ARCTIC* PUBLISHED IN 2010 included 37 research articles or notes, 24 book reviews, 7 obituaries, 2 letters to the editor, and 5 InfoNorth essays. Like last year’s Volume 62, Volume 63 had a page count of just over 500 pages. Of the 37 research papers published in 2010, papers from the biological sciences increased slightly to account for 57%, those from the social sciences stayed at the same level as last year at 24%, and those from the physical sciences dropped slightly to 19%.

Arctic Online

With the help of Colton Daigle, a part-time assistant who worked at AINA from September 2010 to early January 2011, we now have all of the back issues of *Arctic* imported to our Open Journal Systems site: <http://arctic.synergiesprairies.ca/arctic/index.php/arctic>. Book reviews and letters have been added to each issue, and extensive work was done to standardize the format of titles, authors’ names, and abstracts to match the printed journal format. Checking of the online issues is ongoing, as is the cleanup and addition of French abstracts for the scanned issues (Volumes 1 to 47), since many of the diacritical marks were incorrectly interpreted by the optical character recognition software.





Arctic Science and Technology Information System

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THE ARCTIC SCIENCE AND TECHNOLOGY INFORMATION SYSTEM (ASTIS) is Canada's national northern database. ASTIS contains 73,000 records describing publications and research projects about northern Canada. It includes all subjects and covers the Yukon, the Northwest Territories, Nunavut, the northern parts of seven provinces, and Canada's Arctic waters. ASTIS has been in operation since 1978 and is funded through contract work and donations.

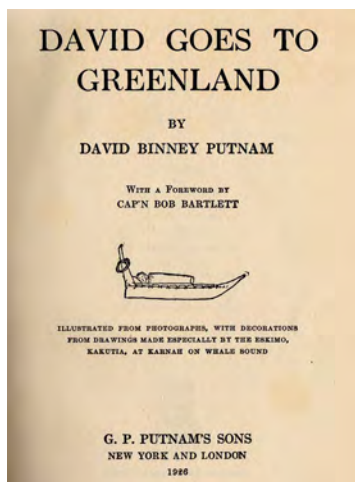
The ASTIS database is available from a free bilingual website and is searchable from Simple and Advanced Search pages or by clicking on hyperlinks in database records. ASTIS records contain abstracts and detailed subject and geographic indexing terms. The publications cited in the database include both peer-reviewed and grey literature. More than 17,500 records contain links to PDF files of publications that are available online.

The ASTIS database contains 16,000 records describing research projects conducted in Canada's three northern territories since 1974. These records are based on information provided by the organizations that license all territorial research: the Aurora Research Institute, the Central and Arctic Region of Fisheries and Oceans Canada, the Northwest Territories Department of Environment and Natural Resources, the Nunavut Department of Culture, Language, Elders and Youth, the Nunavut Department of Environment, the Nunavut Research Institute, the Prince of Wales Northern Heritage Centre, and the Yukon Heritage Resources Unit.

ASTIS specializes in the preparation of bibliographic databases about northern Canada and can easily make those databases available from customized websites for clients. The ASTIS page of the Institute's website provides access to fourteen such databases. ASTIS is also available with the world's other major polar databases in EBSCO Publishing's international Arctic & Antarctic Regions database, which describes more than one million polar publications.

Two new ASTIS projects were undertaken in 2010: work for the Inuit Relations Secretariat, Indian and Northern Affairs Canada (INAC), to add all publications identified by their Knowledge Project to ASTIS, and work with the Geological Survey of Canada, funded by the Environmental Studies Research Funds, to catalogue legacy publications and data about Beaufort seabed geohazards.

A number of ongoing ASTIS projects continued during 2010. The Canadian IPY Publications Database, funded by the Government of Canada Program for International Polar Year (IPY) and EnCana Corporation, included work with the American Geological Institute, the Scott Polar Research Institute, the University of Colorado, and National Information Services Corporation on the international IPY Publications Database. Work also continued on the Circumpolar Health



Bibliographic Database, funded by the Canadian Institutes of Health Research Team in Circumpolar Health Research; the Hydrocarbon Impacts database, funded by the INAC Northern Oil and Gas Branch; the NCP Publications Database, funded by the INAC Northern Contaminants Program; and the Northern Granular Resources Bibliographic Database, funded by the INAC Land and Water Management Directorate. ASTIS also worked with Makivik Corporation to train Inuit students to organize the Nunavik Research Centre Library, using funding provided by the Government of Canada Program for IPY; with the Inuvialuit Joint Secretariat on the Inuvialuit Settlement Region Database, funded by Shell Canada, MGM Energy, ConocoPhillips Canada, and Chevron Canada; with the Yukon Biodiversity Working Group on the Yukon Biodiversity Database, funded by Foothills Pipe Lines and the Yukon River Panel; and with the McGill University Library to index the serial publications of Makivik Corporation as part of the Université du Québec à Montréal project Hearing and Sharing the Voices of Nunavik, funded by the Government of Canada Program for IPY.

ASTIS also worked on several internal Arctic Institute projects in 2010, including the Kluane Lake Research Station Bibliography; the *Arctic* Contents and *Arctic* Search pages of the Institute website; and maintenance of the Institute's publications server, which makes 4000 publications available on the Web as PDF files.

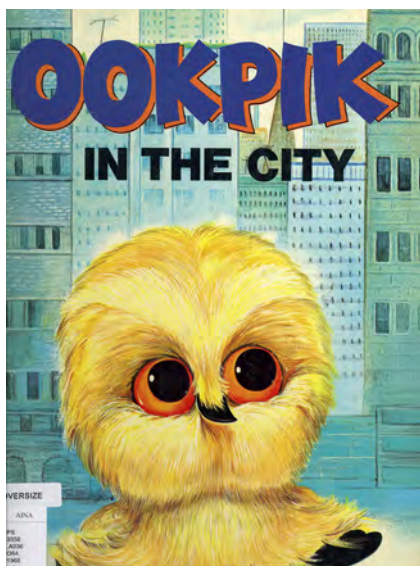
All of these projects are moving ASTIS closer to its goal of providing comprehensive coverage of publications and research projects on northern Canada.

AINA Library

THE ARCTIC INSTITUTE OF NORTH AMERICA COLLECTION, housed in the Gallagher Library at the University of Calgary, continues as a strong collection for the university's Libraries and Cultural Resources department, especially given the increased interest in northern and Arctic research. The collection's multidisciplinary focus attracts students, researchers, and an interested public from across campus and indeed from around the world.

Work is ongoing to make northern material housed within the AINA collection more accessible. As part of these projects, the collection acquired 1536 additional items, ranging from children's fiction (*Ookpik in the City*), to personal accounts of northern exploration (*David Goes to Baffin Island*), to scientific reports and theses. The AINA collection is amazingly broad; it contains works in a number of languages, including French, German, Finnish, Swedish, Russian, and of course English. An additional 26 new titles were ordered in 2010 using the Library's Northern Studies fund. The collection is further enhanced by the addition of titles that deal with northern subject matter ordered through other library funds.

Claudette Cloutier, the Liaison Librarian for Northern Studies, provides research assistance to students, faculty, staff, and visiting researchers looking for northern and polar-related information. Please contact her at ccloutie@ucalgary.ca for research assistance.





Northern Lights Series

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THE NORTHERN LIGHTS SERIES OF BOOKS IS JOINTLY PUBLISHED by the Arctic Institute of North America and the University of Calgary Press. It publishes works of a non-technical nature from all areas of northern scholarship: the natural, social, and earth sciences and the humanities.

While no books were published in the series in 2010, three manuscripts were received and underwent preliminary assessment. One of these is likely to be published in the near future.

2010 Scholarship Winners

Jennifer Robinson Scholarship – \$5,000

Carissa Brown, a PhD student in plant ecology with the Department of Biology, University of Saskatchewan, was the winner of the 2010 Jennifer Robinson Memorial Scholarship. Carissa works in the forest-tundra transition zone of the northern Yukon, where her research focuses on how fire and climate interactions can drive vegetation change.

Lorraine Allison Scholarship – \$3,000

The recipient of the 2010 Lorraine Allison Scholarship was Jennie Knopp, a PhD student in Environmental Life Sciences at Trent University. For her doctoral research, Jennie is studying the impacts of environmental change on fish in the Inuvialuit Settlement Region of the Northwest Territories (NT). By combining scientific sampling and data analysis with traditional knowledge, Jennie is working with residents of Sachs Harbour, Banks Island, NT, to assess the current status of their arctic char resource and create a community-based char monitoring program.

Jim Bourque Scholarship – \$1,000

Tyrell Callioux from Mayerthorpe, Alberta, was the recipient of the 2010 Jim Bourque Scholarship. Tyrell is studying environmental science at the Southern Alberta Institute of Technology in Calgary and aiming for a career in environmental management.

Grant-in-Aid Program

THE GRANT-IN-AID PROGRAM IS A JOINT CANADA-U.S. endeavour that provides funds to young investigators starting their careers in northern research. A binational committee administers the program, and funding comes entirely from member donations. Committee members for 2010 were Erich Follmann (Chair), Stephen Braund, Matthew Sturm, and Peter Johnson.

Thirty-nine students applied for a Grant-in-Aid Award in 2010, of whom 18 received awards of \$1000 to assist with the costs of conducting northern research. Our congratulations to the following recipients:

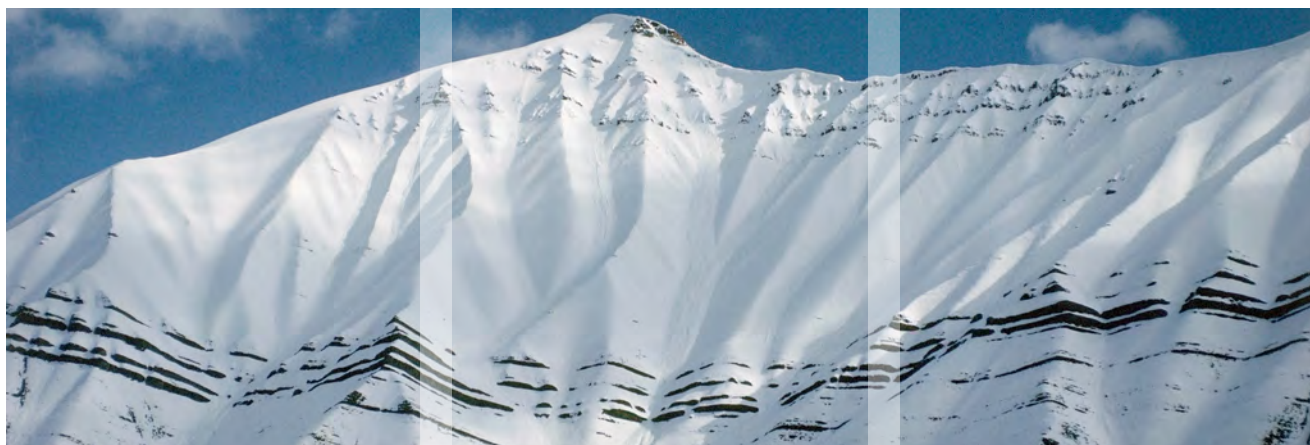
- **Kaylee Anderson**, University of Calgary, is studying the origin, ecology, and reef-building contribution of late Paleozoic *Palaeoaplysina* in Arctic Canada;
- **Pat Curry**, University of Calgary, is exploring a blood-on-filter-paper technique for northern communities to monitor caribou health;
- **Bonita Dainowski**, University of Alaska Fairbanks, is studying Arctic marine and terrestrial vertebrate fossil remains to reconstruct the diet, nutrition, and health of past Alaska Eskimo populations and examining the implications of these reconstructions for present Native Alaska Eskimo populations;
- **Ben Dantzer**, Michigan State University, is studying how North American red squirrel (*Tamiasciurus hudsonicus*) mothers are adaptively modifying offspring phenotype via hormone-mediated maternal effects;
- **Mara Dougherty**, University of Maryland – College Park, is investigating the radiocarbon signature of sulfate-reducing bacteria associated with methane-rich sediments in the Arctic;
- **Justin Fulkerson**, University of Alaska, Anchorage, is looking at the effects of pollinator- and herbivore-mediated selection on floral pigmentation in the Arctic mustard (*Parrya nudicaulis*) to discover why Arctic flowers are so colourful;
- **Anna Gaby-Trotz**, University of Alberta, is studying the Nahanni River;
- **Katherine Gavrilchuk**, Université Laval, is using stable isotope analysis to investigate diet in four species of baleen whales in the Gulf of St. Lawrence, Québec;
- **Rebecca Hewitt**, University of Alaska, Fairbanks, is researching how post-fire plant-mycorrhizal interactions shape landscape-level biome shifts;
- **Samuel Hirt**, Auburn University, Alabama, is using stable-isotope and trace-element analyses in baleen to determine the calving interval and pregnancy rate of bowhead whales;
- **Amanda May Koltz**, Duke University, North Carolina, is studying the effects of climate-induced vegetation changes on Arctic food web dynamics;
- **Nathan Libal**, Mississippi State University, is investigating den-site and seasonal habitat selection by grizzly bears in Canada's Yukon Territory;





- **Jen E. McCormack**, University of Arizona and Native Nations Institute, is looking at the cross-border governance of the Gwich'in people in Alaska, Yukon, and Northwest Territories, and specifically how this nation asserts spatial sovereignty through Porcupine caribou and salmon habitat protection, language preservation, and other shared priorities;
- **Charlotte Norris**, University of Alberta, is investigating the recycling of organic carbon and nitrogen in boreal forest soils;
- **Amanda Robertson**, University of Alaska, Fairbanks, is exploring the role of epigenetics in DNA methylation variation in balsam poplars;
- **Eric Vaillancourt**, University of Ottawa, is researching metabolic fuel selection and the lipid mobilization capacity of a long-distance migrant, the greater Canada goose (*Chen caerulescens atlantica*);
- **Victoria M. Walker**, University of Calgary, is exploring the stratigraphy, diagenesis, and reservoir potential of Pennsylvania-Permian sandstone-limestone cycles in the Sverdrup Basin, Arctic Canada; and
- **Nichole Wilson**, Cornell University, is researching vulnerability to changes in water resources in the Yukon River Basin through a consideration of indigenous knowledge, water institutions, and climate change.

The Arctic Institute was greatly saddened to learn of the death of Erich Follmann, our Grant-in-Aid Program chair, on July 26, 2010. A wildlife biologist with the Institute of Arctic Biology and the Department of Biology and Wildlife at the University of Alaska Fairbanks (UAF) since 1989, Erich was instrumental in the revival of the Arctic Institute's Grant-in-Aid Program in the early 1990s. For the past 15 years, Erich served as chair of the binational Grant-in-Aid Committee.





Research Associates

ARCTIC RESEARCH INVOLVES AREAS OF EXPERTISE not encompassed by any one discipline or department. This is reflected in the Institute's Research Associates—a diverse group of individuals whose work is advancing the study of the North and the mission of the Arctic Institute. Their interests cover a wide range of disciplines in the natural, physical, and social sciences as well as the humanities and fine arts.

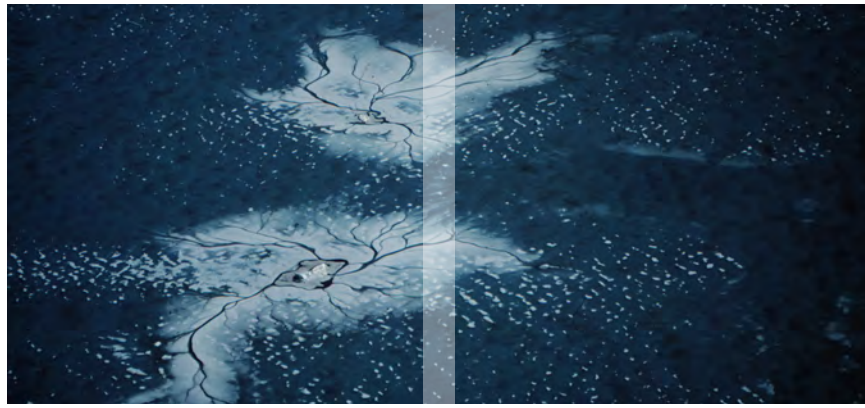
- **Don Albright**, Biology
- **Cindy Allen**, Dene Musicology
- **Charles Arnold**, Archaeology and Museology
- **William Barr**, Geography and History
- **Margaret Bertulli**, Archaeology
- **Ellen Bielawski**, Anthropology
- **Lloyd Binder**, Economic Development
- **Jean Blodgett**, Art
- **Alexander Braun**, Geodesy
- **Rai Brown McCutcheon**, Gender Studies
- **Dave Button**, Education
- **Garry Clarke**, Glaciology
- **Helen Corbett**, Film and Journalism
- **Peter Dawson**, Archaeology
- **Ken de la Barre**, Human Geography
- **Mark Dickerson**, Political Science
- **Jon Dudley**, Earth Science Outreach, Geology, Canadian Arctic Culture
- **Elmer Ghostkeeper**, Aboriginal Studies
- **Jeff Gilmour**, Law
- **John Graham**, Social Work
- **Norman Hallendy**, Ethnohistory
- **Alexander Hill**, History
- **Gerald Holdsworth**, Glaciology
- **Gunhild Hoogensen**, Political Science
- **Robert Huebert**, Political Science
- **Martha Johnson**, Anthropology





- **Peter Johnson**, Geography
- **Kenneth Jones**, Geology, Geography, Archaeology, History
- **Karim-Aly Kassam**, Arctic Social Science
- **Barbara Kingscote**, Veterinary Medicine
- **Heidi Klein**, Environmental Planning
- **Susan Kutz**, Veterinary Medicine
- **P. Whitney Lackenbauer**, History
- **Nic Larter**, Zoology
- **Allice Legat**, Anthropology
- **David Lertzman**, Aboriginal Studies
- **Robert MacDonald**, History
- **Sean Maher**, Anthropology
- **Constance Martin**, Art History and Curator
- **Arthur Mason**, History, Politics and Culture
- **Virginia McGowan**, Health Sciences
- **Robert McPherson**, Geology and History
- **Frank Miller**, Wildlife Biology
- **Magdalena Muir**, Law, Environment and Resource Management
- **Dave Norton**, Ecology
- **Marc Poulin**, Medicine and Kinesiology
- **Martin Raillard**, Arctic Ecology
- **William Semple**, Northern Housing
- **Alan Smart**, Anthropology
- **Jane Sproull Thomson**, Inuit Art and Culture, Heritage Planning
- **Mary Stapleton**, History and Planning
- **Emma J. Stewart**, Geography
- **Wayne Strong**, Forest Ecology
- **Susanne Swibold**, Film and Journalism
- **Darielle Talarico**, Ecotourism
- **Callum Thomson**, Archaeology and Expedition Cruise Tourism
- **Jack van Camp**, Environmental Science
- **Robert van Everdingen**, Hydroecology
- **Wanda Wuttunee**, Native Studies, Law and Management
- **John James Yackel**, Geography
- **Jose Zorrilla**, Interdisciplinary





Selected Research Publications

20

ONE MEASURE BY WHICH RESEARCH INSTITUTES AND THEIR ASSOCIATES are judged is scholarly research. Many of our research associates, members, and fellows have active research programs and are renowned in their fields. What distinguishes our group of scientists is the multidisciplinary nature of their work. A few of the areas in which Arctic Institute associates work are political science, social work, geology, geography, glaciology, veterinary medicine, and archaeology.

- Barr, W.** 2010. The Arctic voyages of Louis-Philippe-Robert, Duc d'Orléans. *Polar Record* 46(236):21–43.
- Eskes, G.A., Longman, S., Brown, A.D., McMorris, C.A., Langdon, K.D., Hogan, D.B., and Poulin, M.J.** 2010. Contribution of physical fitness, cerebrovascular reserve and cognitive stimulation to cognitive function in postmenopausal women. *Frontiers in Aging Neuroscience* 2:137, doi:10.3389/fnagi.2010.00137.
- Foster, G.E., Hanly, P.J., Ahmed, S.B., Beaudin, A.E., Pialoux, V., and Poulin, M.J.** 2010. Intermittent hypoxia increases arterial blood pressure in humans through a renin-angiotensin system-dependent mechanism. *Hypertension* 56:369–377.
- Geldsetzer, T., and Yackel, J.J.** 2010. Sea ice type and open water discrimination using dual co-polarized C-band SAR. *Canadian Journal of Remote Sensing* 35(1):73–84.
- Gilmour, J.G.** 2010. The 2010 budget deficit and our Navy's operational capability in the Arctic Ocean. *Starshell* 7(50):3–6. <http://www.noac-national.ca/StarshellSpring2010.pdf>.
- . 2010. Is Canada prepared for increased shipping in our Arctic waters? *Starshell* 7(53): 8–9. <http://www.noac-national.ca/noac/members/StarshellWinter2010-11.pdf>.
- Gogan, P.J.P., Larter, N.C., Shaw, J.H., and Gross, J.E.** 2010. Chapter 6: General biology, ecology and demographics. In: Gates, C.C., Freese, C.H., Gogan, P.J.P., and Kotzman, M., eds. and comps. *American bison: Status survey and conservation guidelines 2010*. Gland, Switzerland: IUCN. 39–54.
- Huebert, R.N.** 2010. Cooperation or conflict in the Arctic. In: Nordquist, M.H., Moore, J.N., and Heidar, T.H., eds. *Changes in the Arctic environment and the Law of the Sea*. Leiden: Martinus Nijhoff. 27–60.
- . 2010. The newly emerging Arctic security environment. Calgary, Alberta: Canadian Defence and Foreign Affairs Institute. 25 p.
- . 2010. The Arctic energy treasury house. In: Kirton, J., and Koch, M., eds. *G8 & G20: The 2010 Canadian Summits*. London: Newsdesk Publications. 210–211.
- . 2010. Polar frontiers. *Armed Forces Journal* March 2010. <http://www.armedforcesjournal.com/2010/03/4500480/>.



———. 2010. The coming Arctic storm. *On Track* 15(1):49–50.

Johnson, D., Harms, N.J., **Larter, N.C.**, Elkin, B.T., Tabel, H., and Wei, G. 2010. Serum biochemistry, serology, and parasitology of boreal caribou (*Rangifer tarandus caribou*) in the Northwest Territories, Canada. *Journal of Wildlife Diseases* 46:1096–1107.

Larter, N.C., and Kandola K.A. 2010. Levels of arsenic, cadmium, lead, mercury, selenium, and zinc in various tissues of moose harvested in the Dehcho, Northwest Territories. In: Chatwood, S., Orr, P., and Ikäheimo, T., eds. *Proceedings of the 14th International Congress on Circumpolar Health*, 11–16 July 2009, Yellowknife, Northwest Territories. *Circumpolar Health Supplements* 2010; 7: 351–355. Oulu, Finland: International Association of Circumpolar Health Publishers.

Lertzman, D. 2010. Best of two worlds: TEK and Western Science in ecosystem-based management. *BC Journal of Ecosystems and Management* 10(5):104–126.

Mason, A. 2010. New research on Russian Arctic gas development. *Northern Notes* 34:17–21.

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———. 2010. Whither the historicities of Alutiiq heritage work are drifting. In: Forte, M.C., ed. *Indigenous cosmopolitans: Transnational and transcultural indigeneity in the twenty-first century*. New York: Peter Lang. 77–96.

Scharien, R.K., Geldsetzer, T., Barber, D.G., **Yackel, J.J.**, and Langlois, A. 2010. Physical, dielectric, and C band microwave scattering properties of first-year sea ice during advanced melt. *Journal of Geophysical Research* 115, C12026, doi:10.1029/2010JC006257.

Strong, W.L. 2010. *Pinus contorta* var. *yukonensis* var. nov. (Pinaceae) from south-central Yukon, Canada. *Nordic Journal of Botany* 28:448–452.





Financial Report for the Fiscal Year Ended March 31, 2010 (Condensed)

THE INSTITUTE'S FINANCIAL YEAR ENDS ON MARCH 31, and the figures here reflect the latest complete year and comparatives. The information presented in this document is an extract of the financial statements. This summary financial information cannot be expected to provide as comprehensive an understanding of the performance of the Institute as the full financial statements. Financial statements can be obtained by contacting the Institute. The Institute is a wholly owned subsidiary of the University of Calgary. The results of operations and the financial position of the Institute are included in the consolidated financial statements of the University. To reflect the total amount of Institute activity, project grants of \$37,222 (2009 – \$27,000) and expenses in the amount of \$38,522 (2009 – \$23,500) were also administered. These grants were received by the University of Calgary and were administered by the Institute. Funding for general and administrative expenses is received from the Province of Alberta, Department of Advanced Education, through the University. The University has also provided substantial in-kind support.



Statement of Financial Position as of March 31, 2010

	2010	2009
ASSETS		
Current Assets:		
Due from University of Calgary	\$1,705,748	\$522,630
Accounts receivable	109,447	107,125
Inventory	22,067	23,055
Prepaid expenses	—	2,610
	<u>\$1,837,262</u>	<u>\$655,820</u>
Investments	1,075,374	901,514
Capital assets and collections	<u>1,165,468</u>	<u>680,252</u>
	<u>\$4,078,104</u>	<u>\$2,237,586</u>
LIABILITIES AND NET ASSETS		
Current Liabilities:		
Accounts payable and accrued charges	\$1,239,543	\$84,451
Deferred revenue	112,315	84,681
Deferred contributions	74,795	85,217
	<u>\$1,426,653</u>	<u>\$254,349</u>
Unamortized deferred capital contributions	619,045	124,910
Net Assets:		
Unrestricted net assets	\$1,021,658	\$894,769
Investment in capital assets and collections	546,423	555,341
Internally restricted net assets	41,936	49,385
Endowments	422,389	358,832
	<u>\$2,032,406</u>	<u>\$1,858,327</u>
	<u>\$4,078,104</u>	<u>\$2,237,586</u>

Statement of Revenue and Expense for Year Ended March 31, 2010

	2010	2009
Revenue:		
University of Calgary and Government grants	\$565,510	\$503,156
Sales of services and products	201,761	248,989
Donations and other grants	391,919	291,172
Investment (loss) income	130,622	(120,504)
Earned capital contributions	6,097	6,848
	<u>\$1,295,909</u>	<u>\$929,661</u>
Expense:		
Salaries	\$730,618	\$697,078
Benefits	110,541	102,326
Materials	291,413	313,219
Grants and scholarships	15,000	15,300
Amortization	15,015	15,853
Travel and meeting	22,800	27,663
	<u>\$1,185,387</u>	<u>\$1,171,439</u>
Excess (Deficiency) of revenue over expense	<u>\$110,522</u>	<u>(\$240,778)</u>

Statement of Cash Flows for the Year Ended March 31, 2010

	2010	2009
Cash provided from (used in):		
Operating Activities:		
(Deficiency)/Excess of revenue over expense	\$110,522	(\$241,778)
Items not affecting cash flow:		
Amortization of capital assets	15,015	15,853
Amortization of deferred capital contributions	(6,097)	(6,848)
(Gain) Loss on non-endowed investments	(104,384)	152,801
Net change in non-cash working capital	1,165,978	(40,842)
Cash applied to operating activities	\$1,181,034	(\$120,814)
Investing Activities:		
Purchase of capital assets, net	(500,232)	(15,313)
Proceeds from (purchase of) long-term investments, net	(2,950)	(100,725)
Endowment investment earnings earned	1,434	
Cash applied to investing activities	(\$501,748)	(\$116,038)
Financing Activities:		
Endowment contributions	3,600	2,059
Capital contributions	500,232	13,282
Cash generated through financing activities	\$503,832	\$15,341
Increase in cash and cash equivalents	1,183,118	(221,511)
Due from University of Calgary at beginning of year	522,630	744,141
Due from University of Calgary at end of year	\$1,705,748	\$522,630
Net change in non-cash working capital:		
Accounts Receivable (increase) / decrease	(2,323)	(51,571)
Inventory	989	(12,006)
Prepaid Expenses	2,610	(57)
Accounts Payable	1,155,092	6,767
Deferred Revenue	27,634	26,383
Deferred Contributions*	(18,023)	(10,358)
	\$1,165,978	(\$40,842)

* Adjusted for unrealized investment gains/losses



Financial Support

FINANCIAL SUPPORT FOR THE PROGRAMS OF THE ARCTIC INSTITUTE, Canadian Corporation, during 2010, was provided by the Government of Canada, the Government of Alberta, the University of Calgary, the University of Alaska, over 1200 members and subscribers, and the following corporate associates and sponsors:

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