

Foreword

The Nunavut Research Institute was created in 1995 when the Science Institute of the NWT was divided into eastern and western operations. In the Eastern Arctic, the re-named institute was amalgamated with Nunavut Arctic College.

The Nunavut Research Institute focuses on supporting scientific research and technology development across a broad spectrum of issues and concerns. The Institute's interpretation of research is broad – incorporating Inuit Qaujimanituqangit, social sciences, and natural sciences. The following mission statement guides the activities and services provided by the Institute:

The mission of the Nunavut research Institute is to provide leadership in developing, facilitating and promoting Inuit Qaujimanituqangit, science, research and technology as a resource for the well being of the people of Nunavut.

Institute services are guided by the core values of Nunavut Arctic College – strong communities, cultural appropriateness, partnerships, quality, access, responsiveness and long-term research, which is linked to community needs, and making greater use of the Inuit Qaujimanituqangit in research projects.

This compendium of Research has been produced as part of the Institute's effort to communicate information about research projects, which have recently taken place in Nunavut under the authority of the Nunavut Scientists Act.

FOR MORE INFORMATION

For more information about the research projects listed in this Compendium, please contact:

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Social Science Research

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Project Title: **Changing Sea Ice Conditions in the Northwest Passage and How it Affects Traveling On and Through Sea Ice**

Summary: The Canadian Ice Service is leading a three year study (2004-2006) that will look at how changing sea ice conditions over the next 50-100 years may affect traveling on and through sea ice. The project wants to speak to sea ice users in one Nunavut community and one Northwest Territories community to understand when, where and how they travel on sea ice. We would like to visit each community to understand their concerns and questions about changing sea ice conditions and work with them to develop a plan that may answer some of these questions over the next two years. We decided to start with the Hunters and Trappers Association since they use the sea ice the most. We would like to first visit each community in the winter of 2005 to:

- 1) Share with the community sea ice users our ideas about this new project.
- 2) Share with the community what sea ice conditions we have seen in the last 30 years at the Canadian Ice Service.
- 3) Find out from sea ice users if they have noticed any changes in ice conditions around their community.
- 4) Look at satellite pictures with sea ice users and learn about where the most important sea ice areas are.
- 5) Find out how a project like this might help the community.
- 6) Find people who would like to help us work on this project over the next two years.
- 7) Co-develop a project plan that would guide us in our work and future visits over the next two years.
- 8) Discuss with the community how often we should visit and how we should share the early and final results of the project.

Future visits will focus on presenting potential future community ice conditions based on climate models and asking sea ice users how their travel on ice may be affected.

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Country: Canada
Location/Region: Kitikmeot, South Baffin
Project Title: **The Implications of Co-management for Public Participation in Mineral Development Decision-making**

Summary: The purpose of this project is to investigate how communities in the Kitikmeot region, Nunavut, are able to participate effectively in mineral resource development decision-making. This project seeks to understand the institutional arrangements governing mineral development decisions, and the effect of these arrangements on the community's efficacy within the decision-making process. To elaborate on these ideas, the project has the following objectives;

- 1) To develop a framework with which to analyze the institutional and political factors influencing local participation in co-management in Nunavut;
- 2) To analyze the institutional and political factors influencing local participation in environmental decision-making; and
- 3) To determine how co-management arrangements may be adapted to more effectively include local participation in environmental decisions.

A case study focusing on the participation of the community of Cambridge Bay in the environmental assessment process of the Tahera Diamond Corporation's Jericho project, and Miramar Mining Corporation's Hope Bay project by the Nunavut Impact Review Board (NIRB) will form the foundation for qualitative research. Interviews with local, regional territorial, and federal governments and other stakeholders will be conducted during the fall of 2005. This study will contribute to an understanding of the impacts of institutional arrangements on communities in close proximity to resource extraction. An understanding of how institutional arrangements between actors and jurisdictions affects the nature of cooperation among federal, local, territorial, and Inuit governments which may benefit the relationships among the three parties. The community of Cambridge Bay may benefit from this research as investigations may lead to as yet unrecognized avenues toward community self-determination and capacity building.

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Location/Region: South Baffin
Project Title: **Educational Strength in One Nunavut Community, and Inuit Visions for the Future of Schooling**

Summary: The research will identify current educational practices that lead to the success and well-being of Inuit students, and that are valued by Inuit parents. It will also explore ideas expressed by Inuit community members about the purposes of schooling, and their hopes for schooling in the future. This knowledge will provide local and territorial policymakers with information that helps to improve Nunavut schools in ways that are congruent with Inuit wishes. It will provide an in-depth view that will help complement broader initiatives currently being undertaken by the Nunavut Department of Education. I will interview community members who volunteer in order to find out what they think are the most successful educational practices in Cape Dorset. These community members might include Elders, Inuit parents, Inuit teachers, Qallunaat parents, Qallunaat teachers, District Education Authority members, and others in the community. Only those who volunteer will be interviewed, and no one's name will be used in discussion the research. The interviews will also explore what Inuit think the purposes of schooling should be, and their hopes for schooling in Cape Dorset in the future. I will live in Cape Dorset during the research , from mid-January, 2006, to late May, 2006. I will be available at any time to speak to District Education Authority (DEA) members or to attend DEA meetings to describe the progress of the research. At the completion of the project, I will provide the DEA with an oral and written summary (in Inuktitut) of the results. If the DEA wishes I will, at my expense, present a summary of the results to the community at the Community Hall, in both Inuktitut and English.

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Location/Region: South Baffin, Kivalliq
Project Title: **Footsteps, Advancing or Receding? Policy Coherence and Compliance Within the Government of Nunavut With Respect to Municipal Finance and Finances**

Summary: Purpose: To critically assess the extent to which municipal funding and finance policy issues contained in strategic government vision documents and existing Nunavut legislation are supported and implemented within the Department of Community and Government and Services.
 Objectives: To identify weaknesses in and to recommend changes to the GN's municipal funding / finance policy with a view to improving its contribution to achieving the strategic goals, objective and vision established by the elected leadership of Nunavut.
 Methodology:
 Phase 1 (Initial Assessment) - This phase will involve examination of documents (including reports and publications), surveys (of all 25 Nunavut communities) and telephone interviews with non-governmental authorities to obtain their perspective on the various related issues. This phase will conclude with identification and definition of any identified anomalies.
 Phase 2: (Detailed Examination) - This phase, a detailed examination of any anomalies identified in the first phase, will involve the use of focus groups consisting of key departmental authorities. This phase will conclude with a number of recommendations on how those policy anomalies identified in Phase 1 might be addressed in order to increase their contribution to the strategic goals established by the elected Nunavut leadership.

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Location/Region: Kimmirut, Igloolik, Pond Inlet
Project Title: **Family and Wellness Project**

Summary: Changes to Inuit family life over the last 50 years are well known. Colonial processes from the south have brought massive changes to Inuit life. One of the biggest changes experienced on a personal level has occurred with the family. Life on the outpost camp has changed to life in

the community, with new influences from the south arriving every year. The Elders have had very different lives from their children, and their lives have been different from their children's lives, and so on. Family life has gone through much change. Recent projects in Nunavut have found that the Inuit say that the family is extremely important to wellness. The project called Unikkaaruit, which took place in Igloodik and Qikiqtarjuaq and which has an Inuit Steering Committee here in Iqaluit, found that the family was a main theme in the stories of the Inuit. When asked about happiness (quvianarivuiq?), wellness (inuksiksiavaliriniq?), healing (mamisharniq?), health (qanuinginik?), and even unhappiness (quviashungi?), the people indicated that the family and communication are at the centre of this. The stories in that project from Inuit of all ages, ranging from youth to Elders, all pointed to the importance of the family. A similar recent project in Pond Inlet had the same finding. The stories were about how much the family was changing over the last three generations, and there was much concern about this. We are proposing a project in partnership with the NSDC, several Inuit communities, and some researchers in the south who have already worked with Inuit on the other projects just mentioned. In this project we plan to collect stories about the family from different generations of Inuit to find out what family life was like for the Elders when they were young to what family life has been like for young people. We will ask Inuit of all ages what family life is like for them today, and what they see as the most important things about the family. We will be asking how the family is important in wellness, finding out the details about this. We know that the family is very important, and now we wish to find out in what ways it is important. We believe that it is extremely important to find out about the family from the Inuit themselves, not from what Qadlunaat say about the family in the south. We hope that the knowledge we learn from the Inuit about changes to the family, both good and bad, and in what ways the family is important to wellness, can be used by the NSDC and others to help in the future organization of wellness programs, Inuit cultural programs, and social services for and by the Inuit. We also hope to be able to document the changes experienced in family life, and to highlight those features of family life which the Inuit believe are most important.

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Project Title:	Reading and Writing the Inuit Language in Nunavut

Summary: This research aims at understanding the values associated with writing Inuktitut in the towns of Iqaluit and Igloolik. I would like to investigate the linguistic perceptions of Inuktitut speakers about this medium of communication. For example, what does literacy mean today when compared to the very rich oral tradition in Inuktitut? What do Inuktitut speakers think about the use of literacy in English in their town? These are the kind of questions that would be discussed. This project will be undertaken in conjunction with the research "Inuit Discourse and Identity in the Baffin Region After the Advent of Nunavut" (Louis-Jacques Dorais and Susan Sammons)

Name: Crockatt, Kim
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Number in party: 4
Location/Region: Nunavut Wide
Project Title: **Strengthening Communities**

Summary: Through this project we will examine Nunavut parents' beliefs and attitudes about the links between first language acquisition and literacy development. We will engage parents in a discussion about their hopes and goals for their children to determine if they identify Inuit language acquisition as an important priority. We will ask them questions about their language choices for activities at home and about the choices they make about the language of their children's schooling. We will stimulate general discussion about the links between oral Inuit language and literacy development through local radio phone-in shows in each community. We also plan to interview five individuals in each community who have been identified as language role models. A language role model has been defined as a parent of any age who works to strengthen their own Inuktitut language skills and also encourages and assists other people in their community to do the same. These might be people who have not been formally recognized in the past, but who are noticed and respected by people in their community. We would like to interview these people at home in their family setting.

Name: Dale-Harris, Hugh
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Province/State: ON
Country: Canada
Location/Region: South Baffin
Project Title: **Block Option - Video Production**

Summary: I am proposing to teach a two-week long 'block option' at Ataguttaaluk High School in Igloolik where students produce a video, in partnership with either IBC, Isuma, NITV or Arnait. A second task will be for me to write a reflective paper with input from myself, students, partners and community members. This could be useful to my own teaching practice, and for teachers looking for insights into running a program like this.

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Number in party: 1
Location/Region: Kitikmeot
Project Title: **Storying the North: Re-Telling the Bloody Falls Story**

Summary: Stories are central to how we come to know ourselves and our place in the world. But stories are not benign; among other things, they are central to the establishment and maintenance of colonial and racial power. In the case of the Bloody Falls massacre stories, the narrative has been used to symbolize Inuit-Dene relations, racialized notions of morality, law, and survival in the Arctic, and to suggest that the Copper Inuit were innocent and helpless victims of attacks from neighboring groups. In this project, I aim to challenge this persistent "Arctic" story, a story that has circulated well beyond its location for the past two centuries. Building on work by McGrath (1993) and MacLaren (1991), I aim to not only question the details of the story as narrated by Samuel Hearne, but also to situate the story in a broader critical geography of narrative.

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Country: Canada
Number in party: 6
Location/Region: Nunavut Wide
Project Title: **Gender and Decision-making and Co-Management of Arctic Fisheries and Wildlife**

Summary: The aim of the project is to document and analyze women's roles in Arctic fisheries in order to promote and support their participation in decision and policy-making processes. Further participation will contribute to the continued sustainability of Arctic fisheries. This is a circumpolar project initiated and supported by the Arctic Council and Pauktuutit Inuit Women's Association and involves a partnership between Canada, Greenland, Norway, Sweden and Iceland.

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Province/State: AB
Country: Canada
Location/Region: Kitikmeot
Project Title: **Community Responses to Tourism Development in Canada's North**

Summary: This project explores the critical questions of how to achieve tourism development in the Canadian Arctic. The goal is to make it both sustainably acceptable to local communities and to engage citizens effectively in the public planning process. Given the predictions that Arctic waters could be substantially free of ice by 2050 the research focuses on the effects of increasing tourism shipping activity on Arctic communities. The research aims to explore community responses to cruise tourism using a modified Public Participation Geographic Information Systems approach (PPGIS).

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Location/Region: Kitikmeot, South Baffin
Project Title: **Socio-Economic for High Lake**

Summary: The purpose of this program is to collect socio-economic information in relation to the potential impacts of the proposed High Lake mine. The information will be used to inform the environmental assessment of potential project impacts and of potential migration measures. Where applicable, the socio-economic information will be used to better understand how changes to the environment will affect residents of the Kitikmeot region; as well as , how the project will change the lives of Kitikmeot residents directly (e.g. employment). The socio-economic program will begin by collecting and reviewing existing socio-economic information (i.e., previous environmental assessment reports, Statistics Canada, community economic reports, etc). The seven Kitikmeot communities will be subject to this evaluation. Once the baseline data is collected, the researchers will meet with the community residents, leadership and Nunavut organizations to confirm, up-date findings and discuss potential impacts from the project. If required, there may be some one-on-one meetings. The researcher will have community meetings in order to collect information on potential socio-economic impacts. This information will ultimately be placed on the public registry for the environmental assessment completed by the Nunavut Impact Review Board. The data collected will be held in the offices of Gartner Lee. Environmental assessments are publicly open processes. It is not anticipated that there will be a need to maintain anonymity or confidentiality. The socio-economic information will be reported back to the communities through a series of workshops planned for October , January and March. It will also be reflected in the draft and final Environmental Impact Statement. The media for reporting will likely be written and video.

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Country: Canada
Number in party: 11
Location/Region: Qikiqtani (North and South)
Project Title: **Ice through Inuit Eyes**

Summary: The project objectives are to:
 1) Gain a better understanding of the meaning of sea ice to Inuit culture

- and identity;
- 2) Better comprehend the traditional and contemporary Inuit means of characterizing sea ice variability;
 - 3) Evaluate methods of collecting, analysing, and combining IQ and scientific knowledge; and,
 - 4) Establish future collaborative research/monitoring needs.

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Project Title: **Polar Bear Swim: An Examination of Aquatics in Three Nunavut Communities**

Summary: Since 1967, the Northwest Territories (and now Nunavut) Aquatics Program has been the most successful recreation program in Canada's North, yet has received little attention in academic literature. Nevertheless, the aquatics programs that exist tend to operate for only the summer months, and aquatic supervisors are often employed for only short periods of time, which may lead to a lack of continuity in northern aquatics. In this thesis research project, I will strive to examine the undocumented history of aquatics programs in three Nunavut communities: Taloyoak, Rankin Inlet, and Iqaluit, which together are representative of Nunavut's three regions. I am working with Dr. Audrey Giles of the University of Ottawa's School of Human Kinetics as part of an effort to conduct a comprehensive examination of northern aquatics. My summer employment as the aquatic director in the Hamlet of Taloyoak for 2004 and 2005 provided me with experiences that served as preparation for my upcoming fieldwork. Where I will focus on inter- and intra-community differences pertaining to aquatic programming. I will work with local community members to assess community needs regarding aquatics, and also to gain local perspectives on programming. Through participatory observation, archival research and semi-structured interviews, I will investigate the possibility of increasing inter-community communication. In order to promote connectivity and consistency in northern aquatics programming. Results will be distributed to community recreation committees, presented at the 2007 NWT Recreation and Parks Association Conference and submitted for publication.

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Number in party: 14
Location/Region: South Baffin
Project Title: **Ecotourism & Outdoor Leadership**

Summary: In groups of 3, students will be focusing on a research question for the seven days the field school is in Iqaluit and the 3 days we are in Pangnirtung. Students will be making research inquiries using first-hand methods such as interviews, questionnaires, and personal observations of their surroundings. The findings from these projects are for the academic growth of the students and to facilitate the concept of the "conscious traveler" in an environment that is unique to these students. As a result their findings will not be published in a formal sense. Here is a rough list of the projects to be conducted by the students:

- 1) Does increased tourism change the need to keep or discard traditional Inuit knowledge and skills?
- 2) What motivates tourists to visit the Canadian Arctic?
- 3) How does tourism effect the values of a northern community?
- 4) What preferences do tourists to the arctic have when choosing a guide/outfitter?
- 5) What perceptions do Iqaluit residences have regarding how the proposed navy icebreakers would effect tourism / way of life in the area?

Name: Cancel, Carole
City/Town: Cahors
Country: France
Number in party: 1
Location/Region: South Baffin
Project Title: **Authority, Identity and Power, Anthropological Approach to the Contemporary Inuit Discourse in the Canadian Arctic**

Summary: The research project is meant to analyse the roles of neologisms in the Inuit context and especially in the political discourse in order to understand matters of authority and identity. It involves a semantic analysis of Inuit formal and informal discourses with a focus on neologisms. The corpus that the project wants to develop is a glossary

with a semantic analysis of Inuktitut political terms (comparative analysis).

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Province/State: NS
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E-mail: dianne.looker@acadiu.ca
Number in party: 2
Location/Region: Nunavut Wide
Project Title: **Teaching and Learning Technology; Enhancing Equity for Canadian Youth**

Summary: The research attempts to document the "digital divide" between Inuit and non-Inuit youth; identify links between access to and facility with ICT and other aspects of youths' lives(educational and occupational plans self-image); identify resources and programs in the Department of Education, schools, the Arctic College, and youth oriented community organizations that encourage or inhibit equity in access to and facility with ICT.

Name: Tyrrell, Martina
Department: Department of Anthropology
Affiliation: Aberdeen University
City/Town: West Lothian
Country: United Kingdom
Location/Region: Kivalliq
Project Title: **Potential Threats to Inuit Beluga Whale Hunting: Quotas and Contaminants.**

Summary: The purpose of the study is to explore the issues facing contemporary Inuit beluga whale hunters. The project will compare whale hunting in two communities Arviat, Nunavut and Quaqtq, Nunavik. Research in Quaqtq will take place during spring 2006 and explore the impact that recent DFO beluga whale hunting restrictions have had on the community. Hunting, sharing and consumption of beluga whales are central to Inuit economic, social and cultural life. The objective of this research will compare Quaqtq, where quotas exist, to Arviat, where there are no whale quotas, but where concerns exist about the future of the whale hunt. The

research will also explore how knowledge of contaminants is informing the hunting, sharing and consumption of beluga whales in Arviat, where Inuit are involved in WWF and other contaminant research.

Name: Bordin, Guy
City/Town: Bruxelles
Country: Belgium
E-mail: guybordin@skynet.be
Location/Region: North Baffin
Project Title: **Inuit Practices and Representations of the Night: Linguistic and Anthropological Features**

Summary: This project, supervised by Michele Therrien (Department of Inuit languages and Culture from the Institute National des Langues et Civilisations Orientales, Paris, France), constitutes the subject of the PhD of Guy Bordin. The night is universally the period of the daily cycle that man devotes largely to sleep. However, if all societies are subjected to the alternation of day and night, the peoples living at high latitudes experience particular situations with, as first approximation, a (quasi) continuous daylight summer and a long dark winter.

This raises a number of questions among which are the following ones: for the Inuit, what does "the night" mean in the summer? When, where, how and with whom does one sleep when the sky (almost) never darkens? When people do not sleep, what do they do during this continuous clarity? Conversely, if it is roughly always dark in the winter, is it still always "the night"? How do the sleep practices change in relation to those of the summer? What about "other" night activities? From one season to another, do words always express the same concepts?

Obviously the latitude where people live will strongly contribute to the night perception. Research will be organised around the following items: a bibliographical survey on the mythical, scared and individual night experiences (presently being carried out here at home); an ethnography of the night practices, sleep habits and sleep-related phenomena (eg. Recording of the dream activity and its related manifestations such as aqtusiniq), other night activities; questioning the "night" environment in its variability: the polar day, the winter night, the daily night, the northern lights, etc; the investigation of the semantic fields of the night, of its practices and representations (what do we learn from the language?). To cover various situations, the work should be carried above and below the Polar circle and at different seasons. A first period was spent in Iqaluit and Mittimatalik from December 2002 to end March 2003. I wish now to stay at Mittimatalik during the summer.

Name: Lawrence, Margaret
Affiliation: Nuiyak School
City/Town: Sanikiluaq
Province/State: NU
Country: Canada
Number in party: 2
Location/Region: South Baffin
Project Title: **Narrative and Collaborative Inquiry into Literacy Development in Sanikiluaq, Nunavut**

Summary: This project proposes to document narrative and collaboration with two participants. They represent two generations; a traditionally educated elder, and an adult educated at residential school. They are both long time literacy educators and authors of some of the six illustrated books that have been published in Sanikiluarmitut. We would like to collaborate on a picture book about names of colours and the traditional environment and cultural knowledge that are the basis of Inuit colour names among Qikiqtamiut (Belcher Island).
 We worked together from 1989 to 1993, to develop the five books published through the Learning Center (former BDBE). This experience was not entirely satisfactory. Language and culture are different between Nunavut communities because of geographic distance, and traditions have evolved that reflect the local environment.
 Sanikiluarmit have a dialect and culture that are unique to adaptations to these islands. Our main purpose was to create Inuttit reading from the traditions of Sanikiluarmit; to increase literacy in youth; to provide positive, relevant and interesting materials; to transmit and preserve traditions through books that can be read and looked at, read aloud and shared.

Name: Tesar, Clive
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Number in party: 1
Location/Region: South Baffin
Project Title: **Understanding Communications on Contaminants: A Case Study Review of Lessons Learned in the Canadian North**

Summary: There is a need in northern communities to investigate how well people understand the information they are given about contaminants. Trying to communicate about research on this topic, and to weigh and balance the possible risks from contaminants against the great benefits people get from these foods is very difficult. Different regions have tried different ways of giving people information about this in the past. There is not a lot of understanding of what has made some communication events work "better" than others. That is the objective of this project...to see what has influenced the "success" of different communication activities on this topic in a number of different regions throughout the north.

Name: Stevenson, Blair
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Country: Canada
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Number in party: 2
Location/Region: South Baffin
Project Title: **Sharing our Success**

Summary: SAEE is documenting successful practices in Aboriginal education to share with Canadian educators and policymakers. The research will examine ten exemplary schools between May 2006 and January 2007, culminating in a published case studies report, Sharing our Success in spring 2007.

Name: Steenbeek, Audrey
Department: School of Nursing
Affiliation: Dalhousie University
City/Town: Halifax
Province/State: Nova Scotia
Country: Canada
Number in party: 4
Location/Region: South Baffin
Project Title: **An Innovative and Interactive Approach to Active Learning: Using a Multi-site, Web-CT Based Journal Club to Enhance Nursing Knowledge Acquisition, Appraisal and Application into Clinical Practice**

Summary: The main purpose of this study is to determine if it is possible to develop an internet based program for nursing students that live in Iqaluit, Yarmouth (Nova Scotia) and Halifax (Nova Scotia). The goals of this program are to help students learn to use scientific articles from scholarly journals, develop skills to critique current research and allow students the opportunity to hold discussions with students from other areas in the country.

Name: Matthijsse, Mathilde
City/Town: Kelloe
Province/State: Durham
Country: UK
Number in party: 4
Location/Region: South Baffin
Project Title: **Powerful Women, Dependent Women? An Enquiry Into The Social Strategies of Inuit Career Women.**

Summary: The main interest of the proposed research is the effects of women's entry into the labour market on intra-household relations. As relationships with kin and community have traditionally been very important, the wider concern of this research is to establish to what extent traditional forms of social relationships survive or are reproduced in the rapidly changing world of Inuit women in Nunavut. With women in the Arctic becoming more active in wage employment and more interested in further education unavailable in Nunavut, society will need to adapt its expectations of women, of families and of intra-household relations. The research is to be conducted over an approximately 12 month period in Iqaluit. Methods will include observations and open-ended interviewing. A small number of case studies will also be conducted in businesses and households. Through observations during visits, open-ended interviews with all individuals concerned and the collection of life histories I will be able to gain an insight in the ways in which social networks are put to use, and the perceptions of different individuals involved of the changing role of women.

Name: Trott, Christopher
Department: Native Studies
Affiliation: St. John's College, University of Manitoba
City/Town: Winnipeg
Province/State: MB

Country: Canada
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Number in party: 2
Location/Region: South Baffin
Project Title: **Nunaqatigijavut: Social Space and Family Networks in Cumberland Sound 1982 to 2007.**

Summary: The Inuit way of life continues to be attacked in the West on the grounds that, now that Inuit live in settlements and use modern technology to hunt. By doing this they no longer maintain their traditional way of life. This research project proposes to counter such attacks by closely examining the ongoing relationships of Inuit to their land in the contemporary period. There already exists a detailed body of literature that traces the past distribution of the peoples of Cumberland Sound over the land up to 1982. Recognizing that patterns of use over the land have changed since the settlement period, this project looks at the range of relationships that are undertaken today. While some Inuit continue to use the land extensively, others spend only part of their time actively engaged in land base activities. Despite this variation, Inuit continue to reaffirm their relationship to the land by returning to the camps and territories of their ancestors, where there are now cabins and other clearly demarcated campsites. Through both interviews and participation in on-the-land activities, this research will trace the relationship between particular family groups and their land based activities. In addition, this project will ask the question: how do the historical relationships between families become reflected in the spatial distribution of households within the contemporary community of Pangnirtung? We suggest that, despite the everyday practicalities of housing assignment, Inuit in Pangnirtung seek to maintain continuities with historical social relationships in the settlement.

Name: Boyle, Michelle
Department: Sustainable Development Research Initiative
Affiliation: University of British Columbia
City/Town: Vancouver
Province/State: BC
Country: Canada
Number in party: 1
Location/Region: Kitikmeot, North Baffin, Kivallik
Project Title: **Community Adaptation in a Changing Arctic Environment**

Summary: The ultimate aim of this project is to assist communities in devising adaptation strategies appropriate for more sustainable development. The main objectives are:

- 1) To study the nature and speed of expected changes (environmental, economic, social, institutional and technological) and their integrated effects on development in Arctic communities;
- 2) To determine the extent to which past experience of development and community response will be useful in the future; and
- 3) To offer the above results to two communities and assist them in developing their adaptive management plans.

The third objective will involve working with two communities in Nunavut as partners to assess expected local changes and potential adaptive responses. Community participation is critical in expressing their concerns and information needs, in conveying their knowledge of local impacts and in defining options and thresholds for future development. The intended outcome for the community is both a plan for the present and a process for future decision-making as new issues arise.

Name: Gurr, Vanessa
Department: Department of Anthropology
Affiliation: University of Calgary
City/Town: Calgary
Province/State: AB
Country: Canada
Number in party: 1
Location/Region: South Baffin
Project Title: **Reborn in the Holy Spirit: Narratives of Salvation in Iqaluit, Nunavut**

Summary: Through life-history interviews and observing charismatic (referred to as "messianic") activities in Iqaluit, NU. Data will be collected in order to gain a better idea of why people are involved and what they feel they are gaining through the participation. These activities will occur over approximately two months (62 days). The data will be compared to religious activities in the past. Particularly events that occurred between the years of 1931-32 at Leaf River (Shelagh D. Grant), and Pentecostal conversions in Baffin Island in 1981 (C. Trott). The data collected will be used to compose an ethnographic account of the lives of individuals focusing on their participation in spiritual activities and will document the social meaning of conversion in a culture that has known oppression of its own native spirituality by the dominant culture. This project is in partial fulfillment for a master's degree in anthropology.

Name: Maire, Aurelie
Department: History of Art
Affiliation: Laval University
City/Town: Quebec
Province/State: Quebec
Country: Canada
E-mail: angalahuk@hotmail.com
Location/Region: South Baffin
Project Title: **The Identity Configurations and Contemporary Inuit Drawings in Nunavut and Nunavik**

Summary: This request of social science research licence is linked to a doctoral project undertaken jointly in France to the program of Inuit Studies at the National Institute of Languages and Eastern Civilizations (Inalco -Institut National des Langues et Civilisations Orientales) in Paris and in Canada in History of Art at the Laval University in Quebec. My thesis is entitled "The Identity Configurations and Contemporary Inuit Drawings in Nunavut and Nunavik." This project invites contributions based on artistic, historic, ethnographic and ethnolinguistic research focusing on the Inuit graphic expression as well as on the discourse of the artists linked to their artistic practices. I would like to study the conditions and the process of creation of works. I am also interested in the signification of the drawings: what does the subject mean for the artist? Which image of Inuit culture do the graphic works show in the South? How do the Qallunaat understand the Inuit iconography? Then, I think it is important to wonder about the place of graphic creation within the community and the statute of the artist. Moreover, the semantic field of artistic creation in inuktitut could be defined with the artists. My research shall be carried out in inuktitut and english. I plan to develop a partnership with the artists of the community and those who will wish it. It will be my first experiment in Nunavut and it will be the occasion for me to learn with better speaking inuktitut, to meet the artists and their entourage and to make known them my research topics. This project should allow a better knowledge of Inuit art practices and discourses not only in the Canadian Arctic but also in the South.

Traditional Knowledge Research

Name: Keith, Darren
Department: Kitikmeot Heritage Society
City/Town: Cambridge Bay
Province/State: NU
Country: Canada
Number in party: 5
Location/Region: Kitikmeot
Project Title: **Huluraq Oral History and Archaeology Project Proposal**

Summary: The Kitikmeot Heritage Society (KHS) will conduct oral historical and archaeological investigations with Elders from Cambridge Bay at the old campsite of Huluraq on Tahirjuaq (Ferguson Lake). This project will add to the knowledge that was recorded during five years of oral historical and archaeological research at Iqaluktuuq. The project will involve:
 1) Recording the oral traditions of the Elders,
 2) Recording the archaeological features at the field site as interpreted by the Elders.

Name: Keith, Darren
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Country: Canada
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Number in party: 2
Location/Region: Gjoa Haven, Taloyoak, Kugaaruk
Project Title: **Formulating Response / Adaptation Options for Polar Bears in the Face of Climate Change**

Summary: The purpose of this project is to understand what Inuit perceive as changes to the habitat of polar bears, and what effects these changes are having on polar bears. Specifically, how are these changes to the environment and to the behaviour of polar bears impacting the communities and what are people doing, or what do people think should be done, in response to these changes. The proposed research project is planned for April 18th to 27th, 2006, and will involve travel by snow machine between Gjoa Haven, Taloyoak and Kugaaruk by myself and co-researcher Jerry Arqviq of Gjoa

Haven. During this research trip information and Inuit Qaujimajatuqangit will be collected through meeting with the Hunters and Trappers Organizations (HTOs), interviews with Elders in the communities, and interviews with Elders from Taloyoak and Kugaaruk out on the sea-ice.

Name: Cook, Richard
Department: Knight Piesold Ltd
Affiliation: Baffinland Iron Mines Corporation
City/Town: North Bay
Province/State: ON
Country: Canada
Location/Region: Pond Inlet, Arctic Bay, Igloolik, Hall Beach
Project Title: **Inuit Qaujimajatuqangit and Social Studies for the Mary River Project**

Summary: Baffinland Iron Mines Corporation (Baffinland) is carrying out advanced exploration of the Mary River Iron Ore Project. Environmental and engineering studies have also started and will continue over the next couple of years with the intention of completing a feasibility study to bring the Iron Ore Deposits into production. The environmental studies will document the existing condition of the land and wildlife in the region. The engineering studies will determine the economical environmental, socio-economic and technical factors that need to be identified and met to determine how iron ore at the Project site could be mined. If these studies determine that the iron ore deposit can be mined economically, Baffinland would require an environmental assessment to determine how to eventually construct and operate a mine that maximizes benefits, while minimizes impacts to both the environment and the local communities. Environmental studies are being carried out by Knight Piesold Ltd. With the assistance of the community, Knight Piesold is planning an Inuit Qaujimajatuqangit (IQ) study in Pond Inlet. A community working group (IQ organization) will provide overall direction to the study and to identify interviewers and holders of IQ. The IQ organization will also help decide what questions to ask on how people used the land in the past and how they use the land today, on the movements of fish and wildlife, and culturally significant areas. The community will also help determine priorities for what kinds of IQ they would like to collect.

Name: Klein, Heidi
Affiliation: Gartner Lee Limited
City/Town: Calgary
Province/State: AB
Country: Canada
Number in party: 10
Location/Region: Kitikmeot
Project Title: **IQ for High Lake and Ulu**

Summary: The purpose of this program is to collect Inuit Qaujimagatuqangit or Inuit traditional knowledge in the Kitikmeot regions, west of Bahurst Inlet, where the proposed High Lake and Ulu mines are located. The IQ will be used to inform the environmental assessment of potential project impacts and of potential mitigation measures, where applicable. The IQ will help "flesh-out" the picture of the biophysical environment by providing long-term data to the 2year scientific work being done. Wolfden is aware of the recently completed IQ undertaken in Kitikmeot and has been in discussions with the Kitikmeot Inuit Association. It is currently our understanding that access to that database is restricted before the IQ information is made available, hence the requirement for Wolfden to conduct a separate study. The IQ program will include the following:

- 1) Collection and review of IQ already done in the public domain,
- 2) A site visit to High Lake by Elders and Gartner Lee personnel in early August 2004,
- 3) An IQ workshop in Kugluktuk in late August 2004 with selected elders from Kugluktuk, Bathurst Inlet, and Cambridge Bay which are the communities nearest to the mining project, and
- 4) Integration of the results of this work with the biophysical and engineering programs providing baseline information for interpretation of results.

Wolfden Resources Inc. and Gartner Lee Limited have prepared an IQ approach that addresses matters of data storage, use, ownership, access, intellectual property rights and participant consent. The IQ and the use of IQ will be reported back to the communities through a series of workshops planned for October, January, and March. It will also be reflected in the draft and final Environmental Impact Statement. The media for reporting will likely be written, mapping and video.

Name: Flaherty, Jamie
Department: Qulliq Energy Corporation
City/Town: Iqaluit
Province/State: NU
Country: Canada

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Number in party: 32
Location/Region: South Baffin
Project Title: **Inuit Qaujimajatuqangit and Land Use Studies for the Iqaluit Hydroelectric Project**

Summary: Qulliq Energy Corporation (QEC) is currently evaluating the potential to provide hydroelectric power to the City of Iqaluit. A study carried out by Knight Piesold Ltd. in late 2005 identified 5 watercourses within 50-100 km of Iqaluit where the development of hydroelectric power may be feasible. Additional environmental information is required at the four locations before decisions can be made with respect to advancing any of the projects to a detailed feasibility study. This includes collection of land use information to understand the present and historic use of the candidate sites, as well as the collection of Inuit Qaujimajatuqangit (IQ) on fish and wildlife ecology and movements. A land use and IQ study is proposed that includes two main components:

- 1) A review and summary of existing land use information and IQ; and
- 2) Collection of information on contemporary land use and IQ from knowledgeable Elders and land users (IQ Consultants, or Qaujimajitaq).

The review of existing information will evaluate and summarize land use and IQ information contained in both the Inuit Land Use and Occupancy Project (Milton Freeman Research Ltd, 1976) and the Nunavut Wildlife Harvest Study (Nunavut Wildlife Management Board, 2004). The Inuit Heritage Trust Incorporated and the Department of Culture, Language, Elders and Youth (CLEY) will also be contacted to obtain any relevant historical or archaeological information that may be of relevance.

Name: Duffy Davis, Jonathan
Department: Department of Biological Science (MH-282)
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Country: Canada
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Number in party: 1
Location/Region: Kitikmeot
Project Title: **Ethnobotany of the Copper Inuit Culture**

Summary: Ethnobotany is the study of how different cultures use the plants that are available to them. The primary objective of my research is to document the traditional and modern use of plants for food, medicine, and building materials by the Copper Inuit. I first became interested in Copper Inuit

culture while leading a canoe expedition down the Coppermine River from Lac de Gras to Kugluktuk in 2005. I found overland travel in the arctic challenging and wanted to understand how the Inuit have managed to thrive in this area for over 4,000 years. The welcome reception that I received during my visit in 2005 has convinced me that Kugluktuk would be an ideal location to conduct my research. While in Kugluktuk I wish to conduct interviews with community members. Through these interviews I hope to learn which plants are important to the Copper Inuit and the purposes these plants serve. In addition to these interviews I would like to collect 3-4 specimens of each plant species mentioned during the interview process. These specimens will be pressed and dried for later reference. Ethnobotanical research is frequently conducted in tropical environments, but is rare in the Arctic. My study will serve to document the traditional knowledge of plants present in the Copper Inuit culture. Through publication of my findings, I hope to increase understanding of how plants are used by the Inuit and provide a new perspective on how plants are used by indigenous cultures.

Name: Nweeia, Martin
City/Town: Sharon
Province/State: CT
Country: USA
Number in party: 2
Location/Region: South Baffin
Project Title: **Elders Observations of Narwhal Anatomy**

Summary: Elder observations of narwhal anatomy and behavior are valuable for my research on the tusk of the narwhal and complement the scientific studies. I would like to continue my work asking questions of elders about the narwhal as I have a deep respect for their insights and find that many of their observations are more accurate than published scientific accounts. Rather than merely take this information for publication, I would like to write an article that demonstrates the value of taking the time to ask community elders about their experiences and observations to illustrate how these have proven invaluable to the body of knowledge known about the narwhal. I will talk with elders, acknowledged by the community for their experience about the narwhal over a one week period in Pond Inlet during the summer of 2005; timing may be altered if an elder's health becomes an issue or additional information is needed. This community was selected for its elder's extensive experience and hunting of the narwhal. Questions have been prepared and answers will be transcribed from audio recordings. Results from the work will only be used with permission from the elders and under conditions prescribed by them. The

intellectual property rights will always be maintained by the elders with me having permission to use gathered information for a combined social and scientific study. Any publications or use of information in another format will be accessible to the communities through copies made available directly to them. Copies of the recorded information will be given to the Nunavut Research Institute and the Rebecca P. Idlout Library at Pond Inlet after completion of this study for additional use or access by any interested individual. At all times during the course of this work, respect and attention to accuracy will be maintained as I value their knowledge and trust in my ability to use it wisely.

Name: Gearheard, Shari
City/Town: Clyde River
Province/State: NU
Country: Canada
Number in party: 12
Location/Region: North Baffin
Project Title: **The Dynamics of Human-Sea Ice Relationships: Comparing Changing Environments in Alaska, Nunavut, and Greenland**

Summary: The purpose of this project is to create a collaborative research project where Inuit from Baffin, Inupiat from Alaska, and Inuit from Greenland can share observations, knowledge, experiences with each other and with scientists related to sea ice, sea ice use, and sea ice change.

Name: Dowsley, Martha
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Number in party: 2
Location/Region: Nunavut Wide
Project Title: **"Polar Bears and Inuit" A Multiple-Use Resource and It's socio-Economic Implications in Nunavut**

Summary: The purpose of this research is to understand how Inuit have changed their views and management of polar bears since the introduction of sport hunting and conservation concerns. The first question in this research is

whether polar bears were once viewed by Inuit as subsistence-cultural resources available to all local people with few rules governing their use. The introduction of sport hunting and the increasing interest in conservation of polar bears by outsiders has led to more strict management of polar bears. The type of management can be and can exclude outsiders from using the resource. The main goal of this research is to learn how Inuit have changed their view of polar bears based on the new use of sport hunting and how Inuit management of polar bears has evolved. The second question is to understand how Inuit and government balance these outsider interests in polar bears. The two main interest groups are sport hunters and conservationists. If either of these groups gains too much influence, the current management of polar bears could be threatened. This project will explore how Inuit and government rules reflect the interests of these two outside groups while trying to maximize Inuit use and benefit from polar bears. The main objective is to create a framework to understand the evolution of polar bears management. Other researchers have studied common property management in other situations and have developed a framework to explain why some forms of management work better than others. I used their framework to study Native people's resource management in the Amazon Basin as part of my Master's work. I would like to test and possibly modify the framework to explore the multiple uses of polar bears by the Inuit. It is hoped that this project will be useful in several ways. First, this project will record the history of changes in polar bear use since the introduction of the sport hunting. Second, it will provide information to Inuit about potential benefits and costs related to changing the current management situation. Native peoples around the world are struggling to maintain control over their traditional resources and to use these resources in new ways to support their livelihoods. This research will provide a framework for studying natural resource management that is focused on Native people. I hope that other groups will be able to learn from the experiences of the Inuit and that this will help them to manage their resources in a way that is culturally acceptable and sustainable.

Name: Piercy, Mary
Affiliation: Memorial University
City/Town: St. John's
Province/State: NFLD
Country: Canada
Location/Region: Kivalliq
Project Title: **Inuit Music: The Historical Relationships and Cultural Traditions Shaping the Song Repertoire of Three Bands of Caribou Inuit Living in Arviat, Nunavut.**

Summary:

Few studies of indigenous music have yet explored the way musical practices articulate the diversity and complex social networks within a single community. I will conduct a comparative study of the historical relationships and cultural traditions shaping the song repertoire of the Ahiarmiut (Inland Inuit), Arviamiut (Sea Inuit), Padlirmiut (Nomadic Inuit) living in Arviat (previously Eskimo Point), Nunavut. These three bands of Caribou Inuit, each with their own traditions, language, and history, were brought together in Arviat as a result of a Federal Government relocation program in the 1950's (Tester and Kulchyski 1994). Musical production has been influenced by the amalgamation of the three groups of Inuit as well as by non-Inuit media and live performance. I will examine the extent and type of change, as well as the ways music functions to distinguish each group or create relationships between them, since the relocation of Inuit to Arviat in the late 1950's. My study will take into consideration earlier moments of dramatic change, such as the histories of missionization, beginning in the 1920s, that led to different denominational affiliations for the three groups, and more recent sociopolitical events such as the establishment of Nunavut as the newest territory of Canada in 1999.

Medical and Health Related Research

Name: Ellis, Jacqueline
Department: School of Nursing
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Number in party: 2
Location/Region: South Baffin
Project Title: **Establishing the Reliability and Validity of Northern Pain Scale for Use with Inuit Children and Adolescents**

Summary: Inuit children from the Baffin region receive care at the Children's Hospital of Eastern Ontario (CHEO). Pain assessment and management is an essential component of this care. Currently, it is very difficult for CHEO nursing staff to provide adequate pain management to Inuit children because there are no pain assessment scales in Inuktitut. This is problematic because a child that had surgery or a child with a burn injury would have their pain assessed at least every two hours. This happens around-the-clock and it is not practical to have a translator present at all times. It is essential that health care providers have the proper tools to assess pain in Inuit children in order to provide optimal pain management. The Wong-Baker FACES Scale is the pain scale currently used at CHEO and the scale has been adapted by Abigail Ootoova, an artist in Pangnirtung. We would like to see if Inuit children can use the Northern version of the FACES scale to describe pain intensity. We would also like to see which version of the scale they prefer. Once we know that the FACES or the Northern scale can be used reliably and accurately to assess pain intensity we would like to develop a video describing how to use the scale and why it is important to tell your nurse about your pain. For this part of the study we will conduct interviews with adults and children to see if the Northern Pain Scale measures pain accurately and reliably. The interviews will be conducted by Abigail Ootoova. 32 children from ages 4-17 and 72 adults from 18 and older will take part in the study. A consent form signed by the participant or parent/ legal guardian will be collected prior to the interview. The interview will consist of the following tasks;

- 1) Children will be given a page with 6 blank circles and asked to draw faces that represent no pain, a little pain, a little more pain, even more pain, a whole lot of pain and as much pain as you can imagine;
- 2) Children will then be asked to look at a series of cartoon pictures of a young child engaged in activities associated with varying degrees of pain, they will use the pain scales to rate the pain depicted in the drawing;
- 3) The child will then choose the scale that is preferred. The same

interview will be conducted two weeks later but the children will only look at the drawings and not draw the pain faces. Adult participants will do the same procedures as the children but they will not draw the pain faces.

Name: Egeland, Grace
Department: Centre for Indigenous Peoples' Nutrition and Environment
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City/Town: Ste-Anne-de-Bellevue
Province/State: Quebec
Country: Canada
Number in party: 2
Location/Region: South Baffin
Project Title: **Country Good and Healthy Market Food Health Promotion in Pangiirtung**

Summary: Strategies are needed to develop interventions to combat the emergence of chronic disease associated with acculturation in Inuit communities. The current proposal was designed by and with the community of Pangiirtung and respects principles of Inuit Qaujimaqatigiit (IQ) as a framework for the proposed intervention. IQ is Inuit Traditional Knowledge. The specific activities are:

- 1) to document traditional knowledge of country food and its spiritual and health giving attributes and to use this knowledge to promote country food use and healthy market food choices in the community;
- 2) radio drama and story telling in Inuktitut to provide entertainment and information regarding the health giving attributes of country food and healthy market food choices;
- 3) grocery store interventions linked with radio programs to increase healthy food choices (best nutrition buy for the dollar stickers, and healthy food stickers associated with entries into raffles for prizes);
- 4) assessment of diet, activity, and height and weight for youth (10-17) and blood hemoglobin for teen girls prior to and after a community and school intervention, and;
- 5) reassessment adults that participated in a May 2005 health screening.

The Pangiirtung Health Screening Committee requires that the interventions be fun, involve the community radio, schools, and grocery stores. The activities are designed to develop and evaluate an intervention that can provide a cost-effective health promotion strategy that could be implemented across all Inuit regions. Radio programs will be taped and those that are successful (as evidence by grocery store sales data) will be utilized in other communities. Radio is a common means of

communication in Northern communities and may prove to be an effective public health intervention tool for marketing social change/ behaviour.

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Country: Canada
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Location/Region: Kivalliq
Project Title: **Examining the Nutrition School Environment in Repulse Bay, Nunavut**

Summary: This research will provide important information about the overall nutrition knowledge of children and parent's/ gardian's attitudes regarding nutrition projects in Repulse Bay. Objectives are to:

- 1) Develop and deliver four culturally appropriate healthy eating modules to children in grades six and seven. Modules will be held over the course of two weeks.
- 2) Evaluate children't knowledge regarding the Nunavut Food Guide and the ability to read nutrition food labels using a written quiz prior to the first module and after the last module.
- 3) Determine parent's / guardian's attitudes towards school nutrition initiatives using individual interviews.

Name: Meadows, Lynn
Department: Department of Family Medicine and Community Health Sciences
Affiliation: University of Calgary
City/Town: Calgary
Province/State: AB
Country: Canada
Number in party: 8
Location/Region: Nunavut Wide
Project Title: **Developing Linkages to Increase Capacity for Inuit Women's Health**

Summary: There is little published research about Inuit health, and even less about Inuit women's health. However, Inuit women face multiple challenges that impact their health including geographic environment, remote location, and social and cultural differences that may impact their health and well-being.
 We are a multidisciplinary team of researchers who have worked with

diverse groups of women (such as immigrant women, women with disabilities, rural women and First Nations women) on a variety of women's health projects. Through development of strong connections to the Nunavut community of Iqaluit, we will work with northern stakeholders who are interested in participating in women's health research in Nunavut and provide training on qualitative health research interview techniques. We have been working with community organizations and health professionals in Nunavut for the development of this project and will continue to involve these groups for the duration of the project. In the short term we will develop linkages between university researchers and the Nunavut community, provide research skills to local research assistants, and an Iqaluit born graduate student, and gain information from which other health research proposals can be developed. We will also provide education on bone health to community members through a number of meetings and in-service opportunities. In the long term, this project has the potential to begin the work of raising awareness of northern and Inuit women's health issues. It will provide information that is community-based, culturally sensitive and responsive to locally identified women's health needs that can be used by decision makers and program planners.

Name: Chan, Laurie
Department: Community Health Program
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Number in party: 5
Location/Region: South Baffin
Project Title: **Effectiveness of a Community Intervention Program on Food Security and Dietary Quality.**

Summary: Food insecurity, or the unavailability or inaccessibility of nutrient-dense and high-quality foods, is in crisis for Inuit in Nunavut. The current proposal was designed by and with the community of Kinngait, where the goal is to support the implementation and evaluate a community nutrition program to be developed in Kinngait. The purpose of the nutrition program is to increase the overall dietary quality and wellness of this community by increasing their availability and accesibility to traditional foods. We will investigate whether community food security improves as a result of increased support for the traditional lifestyle. Recommendations made

from our descriptive study, Food Security in Nunavut (2005, submitted), will be incorporated into the nutrition program such as the introduction of a community freezer or monetary support for community hunting. We will assess the effectiveness of the program and results generated will be used to develop similar programs in other communities in Nunavut.

Name: Kovesi, Thomas
Department: Children's Hospital of Eastern Ontario
City/Town: Ottawa
Province/State: ON
Country: Canada
Number in party: 8
Location/Region: Cape Dorset, Pond Inlet, Igloolik, Clyde River, Hall Beach, Arctic Bay
Project Title: **Double-Blind, Placebo Controlled Trial of Heat Recovery Ventilators for the Reduction of Severe Lower Respiratory Tract Infection in Inuit Infants in Baffin Region, Nunavut**

Summary: Bronchiolitis is a severe, viral infection of the small air passages, or bronchioles, in infants. Inuit infants have the highest incidence of severe bronchiolitis requiring hospitalization in the world, and the reason(s) for this is unknown.

The first part of this study has already shown that at least 60% of the houses of Inuit infants in Baffin Region, Nunavut, are very tightly-sealed and have the reduced ventilation. These houses are also very small, and are overcrowded. These conditions might assist respiratory viruses to stay in the air for longer periods, making it easier for infants to catch bronchiolitis.

We would now like to examine whether using a Heat Recovery Ventilator (HRV) in the homes of Inuit infants in Baffin Region, by improving home ventilation, will reduce the number of hospitalizations for bronchiolitis. We propose to install 150 HRV units in 4-5 communities. Half of the units will be disabled, and act as "placebos." The placebo units will still run and appear to be functional to the home's occupants, but will not draw air from the outside and will therefore not improve the home's ventilation. We will monitor each infant for respiratory infections, particularly admission to hospital for bronchiolitis, for 1 year, after the HRV is installed. We will also monitor indoor carbon dioxide, temperature, and humidity during the study. After the study, all of the placebo HRV units will be activated, so that each household will get a free, functioning HRV. The action of the HRV results in the movement of slightly cooler air compared to room temperature and could cause indoor dryness, and this will be prevented by careful monitoring and adjustment of the HRV air

flow. We hope that we can show that HRV's can be used to prevent severe bronchiolitis in Inuit infants

Name: Kumar, Alexander
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Location/Region: Iqaluit
Project Title: **Assessing HIV/ Sexually Transmitted Infection (STI) Prevention Strategies in Nunavut: Are Current HIV / STI Prevention Strategies in Nunavut Effective?**

Summary: I aim to evaluate local HIV (Human Immunodeficiency Virus) & general STI (Sexually Transmitted Infection) prevention strategies, assessing local understanding of such methods -with the overall aim of improving education, awareness, applicability and suitability for these strategies. I will look at current methods and speak adhering to confidentiality to professionals involved in their design/ distribution and locals who may be able to suggest improvements to such strategies. The complete results will be distributed to all those appropriate and relevant.

Name: Arbour, Laura
Department: Department of Medical Genetics
City/Town: Vancouver
Province/State: BC
Country: Canada
Number in party: 2
Location/Region: Nunavut Wide
Project Title: **The Study of Congenital Heart Defects in a Northern Population**

Summary: Congenital heart malformations is a common congenital malformation, diagnosed around the world in about 1% of live births. This is also true in the Canadian Arctic, where in Nunavik, the rate of infant mortality is 5 times that of non-aboriginal Quebec and 2/3 of the neonatal deaths are due to birth defects. In Nunavut and Nunavik, a 5 year cohort of more than 2,500 Inuit births occurring between 1989-1994 evaluating the rates of birth defects, confirms that congenital heart defects, specifically ventricle septal defects (VSD's) and atrial septal defects (ASD's) were nearly 5 times more frequent than in other Canadian populations. Children and their mothers will be invited to participate in the study which

will compare vitamin levels of the mothers, genetic factors of mothers and children with controls (the mothers's sisters). As well, dietary histories of the cases, controls and other women of childbearing years will be assessed for intake of nutrients important in fetal development .Histories of pregnancy exposures will be compared between cases and controls.

Name: Sholter, Dalton
Department: FRCPC
City/Town: Edmonton
Province/State: AB
Country: Canada
Number in party: 2
Location/Region: Nunavut Wide
Project Title: **Understanding Near-term Care Of Very Early Rheumatoid Arthritis (UNCOVER)**

Summary: There are two goals for this study:
 1) To describe how arthritis specialists are treating patients who were first told they had RA between May 31, 2001 and May 31, 2003 (this will allow us to look at the first two years of treatment);
 2) To spread the information from this study to the arthritis community in Canada. Twenty patient records will be reviewed from each of 20 doctor's offices from across Canada. In total, 400 doctor's records of RA patients will be reviewed. No patient indentifying information will be collected. Patients will not be contacted. The information to be collected includes: when patients first had symptoms of arthritis; when they first saw the specialist; the tests and questionnaires used to find out the patient had the disease; how the health of the patient was measured; and, information about the drugs used to treat the disease, including the name, time it was started, time it was stopped, and the reason for stopping the drug.

Name: Hoeltzel, Lisette
City/Town: Montreal
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Country: Canada
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Location/Region: South Baffin
Project Title: **Exploring Governments' Roles in Inuit Healthcare and Implications for Suicide Prevention Efforts in Nunavut**

Summary:

A series of participatory interviews will be given to any and all obliging members of the Government of Nunavut, members of the Embrace Life Council and those people a part of any such organization associated with local and territorial initiatives for suicide prevention in Nunavut. This research is apart of a larger historical analysis project entitled, "Exploring Governments' Roles in Inuit Healthcare and Implications for Suicide Prevention Efforts in Nunavut." The primary researcher of this project is Lisette Hoeltzel, a visiting scholar at McGill University. Overseeing this project is Dr. Laurence Kirmayer at Sir Mortimer B. Davis Jewish General Hospital. Additional assistance and review will also be directly provided by Jack Hicks of the International Network for Circumpolar Health Research.

Physical and Natural Sciences Research

Name: Jackson, Ruth
Department: Geological Survey of Canada-Atlantic
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Country: Canada
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Number in party: 33
Location/Region: North Baffin
Project Title: **LORITA Lomonosov Ridge Test of Appurtenance**

Summary: Canadian's have a one-time opportunity to acquire the offshore from Ellesmere Island, Nunavut, towards the North Pole for present and future generations. To assert sovereignty we must demonstrate that an underwater sea mountain range called the Lomonosov Ridge is attached to Nunavut. The ice north of Ellesmere Island is the thickest in the Arctic Ocean averaging 5-6 meters (15-20ft). This makes collecting the information required to make the claim to the United Nations difficult. This pack ice also creates an unfavourable habitat for marine mammals. If the claim is allowed, ownership of the seafloor and sub-seafloor are acquired, as well as environmental stewardship and the right to control research. The area is international water now and no nation needs to acquire permission to be in the area. To prove that the ridge is attached to Nunavut, well-documented scientific arguments must be presented to the United Nations Commission on the Limits of the Continental Shelf. Other Arctic nations have done or are planning experiments that require seismic blasting to document scientific arguments. Canada has environmental regulations that must be met before this can happen while other nations do not. In addition, specific regulations, stipulated by the United Nations Commission on the Limits of the Continental Shelf, on how seismic experiments are undertaken must be followed. The environmental assessment present here is the proponent's response to the Canadian regulations.

Due to severe climate and pack ice conditions in the study area, a very short window of research opportunity is available (about 40 days maximum). The severe pack ice conditions prevent marine mammals from frequenting the LORITA study area due to the inability to find or establish breathing holes. In the spring, when research is to take place, the nearest open water is in the order of 600-800 km away.

In brief, biodegradable explosive charges of 220 and 440 kg will be detonated at about 100m depth below the thick pack ice in the Lincoln Sea. Single, point source detonation of explosives last for only milliseconds and produce low frequency noise levels in the order of 6 to 7 Hertz. Background ambient sound levels are high reaching about 180 dB.

Safe distance calculations for related pressure wave potential impact on marine mammals are in the order of less than 1 km and 2 to 3 km for fish and invertebrates.

Irregularities in both the pack ice under-surface and the seabed topography offer refugia for marine fish and invertebrates by reducing the pressure pulse intensity and consequently the zone of pressure pulse influence.

There are no alternatives to this project or are there any alternative methods to conduct the research because of the severe climatic and pack ice sea conditions in the Lincoln Sea.

The LORITA program is a one-time event and will not be repeated.

Explosive detonations are conducted over several days, in the order of milliseconds, that generate low frequencies that are spaced about 30 km apart. In addition, no marine mammals can frequent the research study area due to the severe pack ice conditions.

Fish and invertebrates inhabit pressure related refugia and are subject to high ambient background noise levels reaching 180db. These features among others contribute to the overall finding that the LORITA field program in the remote area of the Lincoln Sea will not produce any residual environmental impacts.

Name: Larocque, Isabelle
Department: INRS -ETE
City/Town: Quebec City
Province/State: QC
Country: Canada
Number in party: 2
Location/Region: South Baffin, Kivaliq
Project Title: **Climate Reconstruction Using Chironomids (non-biting midges) Preserved in Lake Sediments**

Summary: To predict future climate change and its effects on Nordic ecosystems, regional models are needed. These models should be based on at least 30 years of meteorological data. These data are not available for most of the arctic regions. One way to obtain this data is to use quantitative indicators preserved in lake sediments. We propose to retrieve sediment cores from 10 lakes on Southampton Island and 10 lakes in the Igloolik region to create a statistical model using chironomids (non-biting midges) to quantitatively reconstruct temperature. We will fly from Quebec on July 29th. We will arrive on Southampton Island and sample 10 lakes (1-8 August). We will then take a flight to reach Igloolik and sample 10 lakes (9-16 August). We plan to move from one lake to the other using a helicopter. We will stay at the hotel in Coral Harbour and at the research station in Igloolik. The results from these 20

lakes will be used to create a model to reconstruct temperature using chironomids.

At each site, 2 lakes will be chosen to reconstruct the temperature through time. Other researchers were on Southampton Island in the middle of July and some lakes were still partially covered with Ice. Alternative dates for our sampling should be later in August. We would like to create some contacts with members of the community that could help us sampling two lakes every summer in the following years.

Very little is known about the variations of the chironomids through the growing season, the sampling design would help us better understand the ecology of chironomids. They are important for climate reconstructions, but also serve as food for fish. If climate affect the chironomids, it will have an effect on fish population.

Name: Snyder, David
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Country: Canada
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Number in party: 6
Location/Region: Kivaliq
Project Title: **Mapping Mantle Diamond Potential / Churchill Diamonds**

Summary: The objective of this study, begin in the NWT in the late 1990's is to investigate the structure and composition of the Earth's crust and mantle to depths of 0-300 km with a view to characterizing diamond reservoirs to make diamond exploration more efficient and low impact. The research will lead to improved mineral exploration strategies, improved estimates of damaging large earthquakes, and a superior framework for handling Canada's natural resource potential over the next decade. Recordings of the arrival of earthquake waves provide the highest resolution and lowest impact way of imaging structures deep in the Earth. Seismic stations will be installed via helicopter or chartered plane at various sites in the survey area - a corridor along the western coast of Hudson Bay between Churchill and Pond Inlet. Many stations will be located near existing mines or exploration camps such as those near Rankin Inlet, and Igloolik. The stations, each of which will be deployed for between three and five years, consist of geophysical sensor, satellite dish, solar panels and battery/electronics boxes deployed on sand or flat bedrock. Seismic waves from earthquakes around the globe will be recorded by the sensor and transmitted to the University of Western Ontario using the satellite telemetry link (same as television signals). From there, the data will be

distributed to researchers by way of the internet at the site
www.polarnet.com.

Name: Sharp, Martin
Department: Department of Earth and Atmospheric Sciences
Affiliation: University of Alberta
City/Town: Edmonton
Province/State: Alberta
Country: Canada
Number in party: 2
Location/Region: North Baffin
Project Title: **A Study of Glacial Surface Velocity Patterns Using a Wireless GPS Network in the Canadian Arctic**

Summary: The aim of this project is to investigate the role of changes in the rate of flow of large ice cap outlet glaciers in the response of Arctic ice caps to changing climate. The results will allow us to better quantify and explain rates of thickness change on Canada's Arctic ice caps and estimate their contribution to global sea level rise. Recent predictions of sea level rise have likely underestimated the contribution of glaciers and ice caps, because increased iceberg calving rates due to changing flow dynamics have not been accounted for. The potential impacts of rising sea level on coastal ecosystems and infrastructure provides strong motivation to better constrain the estimates of these contributions. The Belcher Glacier on the Devon Island ice cap is the focus of this study. This glacier is the fastest flowing outlet from the ice cap and its major iceberg calving source. There is evidence that this glacier may have accelerated in the recent past, leading to an increased rate of ice discharge and thinning in its lower reaches. A network of 15 autonomous wireless GPS sensors will be installed along the 47 km length of the Belcher Glacier during the 2006 spring field season. The GPS sensors will continuously collect position measurements year round. Using results from the GPS network we will investigate velocity variations along the length of the glacier over a period of at least 5 years in an effort to determine the causes of long term acceleration of the glacier's flow. The first experimental dataset will be collected in the fall of 2006, and subsequent annual datasets will be collected between 2007 and 2011. No permanent structures will be constructed on the glacier. Each GPS sensor station consists of a box to house instrumentation, and a pole for mounting antennae -all of which will be removed upon completion of the project. A temporary camp at the summit of the ice cap will be used in May 2006 during the equipment installation phase, which will last approximately 2 weeks. Helicopters and snowmobiles will be used for travel on the glacier for both equipment

installation and data retrieval.

Name: Gajewski, Konrad
Department: Department of Geography
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Country: Canada
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Number in party: 4
Location/Region: North Baffin
Project Title: **Postglacial Paleoclimatology of the Central Arctic**

Summary: Our study is the analysis of climate and environmental change during the past 10000 years from sites across the Canadian Arctic. To do this we analyse the sediments collected from the bottom of lakes. Material from the land, as well as from the lake itself constantly falls to the bottom of a lake, where it accumulates. Thus, by going deeper in the sediment, you are going back through time. We take a small core from the lake bottom, and study the pollen in the cores to determine how the vegetation in the region surrounding the lake has changed. This research tells us how climate changes of the past affected the lake and the vegetation, and in this way, we can infer how sensitive the arctic ecosystems are to future climate changes.

Name: Zentilli, Marcos
Department: Department of Earth Sciences
Affiliation: Dalhousie University
City/Town: Halifax
Province/State: NS
Country: Canada
Number in party: 7
Location/Region: North Baffin
Project Title: **Heat Effects and Energy Potential of Salt Domes in Axel Heiberg Island, Nunavut**

Summary: In Axel Heiberg Island, Nunavut, there are many columnar rock structures called "salt domes", which are composed mainly of minerals gypsum, anhydrite and rock salt, and some include volcanic rocks. These materials are better conductors of heat than surrounding rocks and therefore salt domes bring heat from deep in the Earth and in some areas have melted

the permafrost, generating year-round springs where salty water comes out at about 5 degrees celcius, summer and winter. Because these springs are warm, they contain live bacteria and other life forms, therefore they are considered possible analogs to places where life could have flourished in the now frozen planet Mars. We study the long-term effects that this heating from the salt domes, such as changing the potential for petroleum, and possible links with intense volcanic activity that took place there 100 million years ago. We also study the possible application of heat-exchanging technology to utilize the localized Earth heat for heating homes or research stations, such as the McGill Arctic Research Station at Expedition Fiord. We study the possibility that some salt domes may be actively growing by several centimetres a year, and also their capacity to provide an inexhaustible source of gypsum and anhydrite alabaster, which would be mined as an alternative carving stone for Nunavut. The work in the field in July 2006 will consist of making better maps so that the salt domes appear in more detail; collecting hand-size samples or rocks within and around salt domes to be studied by various methods in the laboratory; and taking measurements that enable us to estimate the movement of salt domes along faults that also cut volcanic rocks. Surveying and satellite technology, combined with our field results, will allow us to estimate the rate of growth of the salt structures with better precision.

Name: Sharp, Martin
Department: Department of Earth and Atmospheric Sciences
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Number in party: 6
Location/Region: North Baffin
Project Title: **Shallow Ice Cores from the Arctic Ocean Fringe of the Queen Elizabeth Islands**

Summary: The mean annual air temperature at Eureka, Ellesmere Island, has risen by 3-4 degrees Celcius since 1970. Further warming of even greater magnitude may occur in the next century. Such changes would have a negative impact on glaciers and ice caps in Canada's Arctic. Only 3 climate stations provide records more than 50 years long for the Queen Elizabeth Islands (QEI) and all are located near sea level. These records tell us little about changes in higher elevation regions, particularly along the Arctic Ocean fringe of the QEI. To understand climate changes in these regions, it is necessary to develop proxy climate records. Ice cores

can provide high resolution records of past temperatures, snow accumulation, and summer melting, and information about variations in sea ice extent and the deposition of atmospheric pollutants. All existing ice core records from the QEI were derived from the region adjacent to Baffin Bay. Since the western regions of the QEI are much drier than the eastern regions and are more strongly influenced by climate conditions over the ice-covered Arctic Ocean, there is a need for ice core records from this region. We will recover three or four shallow (20-m) ice cores from high elevation regions (>1800m) of the Mueller the Steacie ice caps on Axel Heiberg Island and the unnamed ice cap that lies to the south of Phillips Inlet in the western part of northern Ellesmere Island. Records derived from these ice cores should extend back 60-80 years. We will analyze the cores at 2cm resolution to identify annual layers and date the cores.

Name: Sharp, Martin
Department: Dept Earth and Atmospheric Sciences
Affiliation: University of Alberta
City/Town: Edmonton
Province/State: Alberta
Country: Canada
Number in party: 5
Location/Region: North Baffin
Project Title: **Calibration and Validation of the Cryosat Radar Altimeter: Field Studies on Devon Ice Cap, Nunavut**

Summary: The two main objectives are
 1) to differentiate seasonal elevation changes and long term changes in ice cap thickness and
 2) to determine the relationship between surface elevation and changes in ice mass. Long term ice cap thickness will be calculated as the difference between stake movement and average accumulation rates . The rate of the transformation of ice to snow at each site will be estimates by measuring changes in the length of the cable attaches to the bottom of a 20 m borehole and to the ice surface. The change in the length between 2004 and 2006 will indicate the magnitude of elevation change that is caused by firm compaction and not related to changes in ice mass.

Name: Zentilli, Marcos
Department: Department of Earth Sciences
Affiliation: Dalhousie University

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Country: Canada
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Number in party: 7
Location/Region: North Baffin
Project Title: **Heat effects and Energy Potential of Salt Domes in Axel Heiberg Island, Nunavut**

Summary: In Axel Heiberg Island, Nunavut, there are many columnar rock structures called "salt domes", which are composed mainly of the minerals gypsum, anhydrite and rock salt, and some include volcanic rocks. These materials are better conductors of heat than surrounding rocks, and therefore salt domes bring heat from deep in the Earth and in some areas have melted the permafrost, generating year-round springs where salty water comes out at about 5 degrees Celcius summer and winter. Because these springs are warm, they contain live bacteria and other life forms, therefore they are considered possible analogs to places where life could have flourished in the now frozen planet Mars. We study the long-term effects that this heating from the salt somes, such as changing the potential for petroleum, and possible links with intense volcanic activity that took place there 100 million years ago. We also study the possible application of heat-exchanging technology to utilize the localized Earth heat for heating homes or research stations, such as the McGill Arctic Research Station at Expedition Fiord. We study the possibility that some salt domes may be actively growing by several centimetres a year, and also their capacity to provide an inexhaustible source of gypsum and anhydrite alabaster, which would be mined as an alternative carving stone for Nunavut. The work in the field in July 2006 will consist of making better maps so that the salt domes appear in more detail; collecting hand-size samples of rocks within and around salt domes to be studied by various methods in the laboratory; and taking measurements that enable us to estimate the movement of salt domes along faults that also cut volcanic rocks. Surveying and satellite technology, combined with our field results, will allow us to estimate the rate of growth of the salt structures with better precision.

Name: Yackel, John
Department: Department of Geography
Affiliation: University of Calgary
City/Town: Calgary
Province/State: AB
Country: Canada

Number in party: 7
Location/Region: North Baffin
Project Title: **Multi-Polarization SAR for Operational Sea Ice Monitoring**

Summary: This research project involves the use of a surface-based microwave electromagnetic (EM) instruments to measure the microwave backscatter response from a variety of snow covered sea ice types from winter and summer sea ice decay seasons. Information derived from this instrument will assist us in predicting the timing of sea ice break-up as a function of ice type and improve on our ability to classify various sea ice types during the summer melt season over large geographical regions in near real time from the new Canadian RADARSAT- 2 satellite due for launch in early 2007. The results of the research have direct application in assisting local Inuit hunters with sea ice edge and strength information during the transition period from spring to ponded ice in summer. To acquire this information we are required to sample these various ice types at nearly the same time for temperature, density, thickness and salinity. Sea ice charts from the Canadian Ice Service (January, 2006) show a large region of old ice located between Cornwallis and Bathurst Islands. There are a number of small bodies of open water (polynyas) that regularly open in mid-May. This open water which prematurely appears compared the surrounding sea ice region offers a unique opportunity to acquire new and/ or young microwave signatures from occasional cold overnight freezing events. This particular region is uniquely suited to meet our sampling requirements.

Name: Francus, Pierre
Department: Institut National de la Recherche Scientifique
Affiliation: Centre Eau, Terre et Environnement
City/Town: Quebec City
Province/State: QC
Country: Canada
Number in party: 7
Location/Region: North Baffin
Project Title: **Quantify Paleoclimate from High Resolution Lacustrine Sequences in the Canadian Arctic**

Summary: The project is a study of river flow and sediment transport into South Sawtooth lake, located 80 km South of Eureka in the Sawtooth Range, Fosheim Peninsula, Ellesmere Island. The goal of this research is to understand how weather and climate have varied over long period of time, long before humans were influencing the climate. This program should contribute to understand how much the recent global warming is

influencing the arctic environments.

This work will involve measuring the streams and lakes through the summer, collecting water and sediment samples, and measuring weather on the land. Additionally, we plan to collect sediment cores from the lakes to determine how weather and climate has changed in this area during the last thousand years.

We will operate a small, clean camp if necessary. The maximum number of people present simultaneously at the camp will be 3 persons. We will install instruments in the water column at the beginning of the season and will collect them at the end of the season. A Zodiac boat will be used as transportation for placing/collecting these instruments. At that time, we will measure precisely and extensively the depth of the lake with an echosounder. When the project is completed all of the equipment will be removed. Data and sample collected will mainly be used for the theses of PhD students.

Name: Lamoureux, Scott
Department: Department of Geography
Affiliation: Queen's University
City/Town: Kingston
Province/State: ON
Country: Canada
Number in party: 10
Location/Region: North Baffin
Project Title: **Landscape Processes at Cape Bounty, Melville Island and North Lake, Cornwallis Island**

Summary: Our work is intended to develop a long record of past weather and river conditions using lake sediments. Other observations taken include determining the amount of carbon stored and released from the watershed by plants and erosion. Our work will involve obtaining sediment and water samples from the lakes and streams at Cape Bounty. We have chosen these lakes because the rivers appear to supply abundant sediment and deep lakes are needed to preserve the sediments for our research. We have been doing this work since 2003 and hope to continue for several years.

Name: Chutko, Krystopher
Department: Department of Geography
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City/Town: Kingston

Province/State: ON
Country: Canada
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Number in party: 2
Location/Region: North Baffin
Project Title: **The Changing Glacial Landscape of Colin Archer Peninsula, Devon Island**

Summary: This work will investigate the dynamic and sensitive glacial environment of the Colin Archer Peninsula. This region has been identified as an area of exceptionally rapid glacial melt. This work will question whether this melt activity is characteristic of the region or if it is simply a result of climatic change. This involves measuring present and past sedimentation rates in several lakes in the area. Lake sediment coring will be carried out on five lakes in the area. This procedure involves drilling through the lake ice and placing a metal tube through the hole. The tube is then pushed into the lake bottom to capture a sample of sediment. A single core will be taken from each lake. Some small monitoring equipment will be installed in one of the lakes and a weather monitoring device will be established on or near one of the ice capes. This project will involve visiting the study site in years after 2004. This scope and scale of the project will remain the same.

Name: Levesque, Esther
Department: Departement de Chimie-biologie
Affiliation: Universite du Quebec a Trois-Rivieres,
City/Town: Trois Rivieres
Province/State: QC
Country: Canada
Number in party: 2
Location/Region: Kivaliq
Project Title: **Vegetation, Permafrost and Climate Change near Baker Lake, Nunavut**

Summary: In the context of global change, we are measuring if the tendency towards a warmer climate is detectable at Baker Lake and how the vegetation and the permafrost are responding to year to year climate fluctuations. The timing of flowering events (such as bud break and seed dispersal) for three vascular plant species: *Dryas integrifolia* (Mountain Aven) *Saxifraga tricuspidata* (Prickly Saxifrage) and *Cassiope tetragona* (Arctic Heather) has been monitored since 1992 near the community of Baker Lake, Nunavut. These activities contribute to the international research program ITEX (International Tundra Experiment) in which countries of the

circumpolar region unite efforts to understand climate change impact on the vegetation of the Arctic. Similarly, permafrost monitoring (active layer depth and temperature profiles) was established in 1997 and contributes to the Circumpolar Active Layer Monitoring Network (CALM) and the Global Terrestrial Network for Permafrost (GTN-P). In the summer season of 2005, a graduate student plans to spend two months at Baker Lake pursuing the original monitoring (measurement of flowering events and flower counts). In addition, we would like to compare plant reproduction and growth among warmed plots and control plots. We propose to use standard ITEX small greenhouses with no roof (Open-Top Chambers, 1.5m diameter), 10 for each species (total 30). We will measure temperature inside and outside the chambers with micro-environment data-loggers and collect a few plant specimens and soil samples for detailed analyses. The chambers could be removed at the end of the season but would preferentially be left in the field to evaluate their impact over a few seasons. We would like to know if the community is interested in such long term experiments. We would also like to get input of community members about their interest in the study of other plant species (e.g. berry plants) that may be affected by global change and that could be included in the experiment in 2005. Finally, we would like to know how we could best communicate our results to the community in the future, either by a bilingual poster, by a public presentation or by other means.

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Location/Region: Kitikmeot
Project Title: **High Lake Project**

Summary: Wolfden Resource Inc. through it's consultant Gartner Lee Limited, will develop and complete the environmental, social and economic conditions for the High Lake project. And, to meet environmental assessment and regulatory requirements for developing the High Lake Project into an operating gold and base metal mine that will have about a 15 year mine life. Information gathering is expected to take several field seasons to complete, with most of the site information being collected in the summer. Socio-economic information and traditional knowledge gathering will occur throughout the year, and the planned community meetings.

Wolfden's vision is to bring the High Lake property into mining production for the benefit of its shareholders and the residents of Nunavut in a manner that respects the environmental and socio-economic conditions in Nunavut. Wolfden will operate in a highly professional manner to generate trust and respect between the firm and residents of Nunavut. The High Lake Project consists of the High Lake and Ulu mineral properties: transportation corridors from Ulu to High Lake and north to the coast and a deepwater port facility at Grays Bay on the Coronation Gulf. The High Lake project is located in the Kitikmeot region of Nunavut. Field work will include studies to gather environmental and socio-economic information that will help in design and construction planning. For all field studies, access will be by helicopter, boat or on foot as appropriate; ATV's will also be used near the existing camps, located at High Lake and Ulu. These camps will be used as the base camps for the field work. Sampling methods will include the collection of water, soil, rock, vegetation, and fish samples for analysis. Information will also be gathered about wildlife, birds, vegetation, fish, and weather conditions. Information on marine mammals, ice and weather conditions in the Coronation Gulf will be collected for proposed shipping activities. Weather stations will be constructed at High Lake and Ulu to gather weather information. Archaeological studies of the area are also being done.

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Location/Region: North Baffin
Project Title: **Mars Deep Drill - Planned Science and Technology Field Research**

Summary: This is a new project that has only recently received funding under NASA's Astrobiology Science and Technology Instrument Development Program. The ultimate goal of this research is to develop and field test technologies that can collect micro-organisms present in the ancient Martian ground ice and to provide a science base for this investigation by the direct examination of analogue permafrost environments on Earth. Field testing will be carried out for 3 consecutive springs. This research will characterize the stratigraphic nature and distribution of massive ground ice, the age of the ice and characterize the abundance,

distribution and composition of the active bacterial communities in the active layer, sediments overlying massive ground ice, in the massive ground ice, and in the poorly consolidated tertiary bedrock that underlies the ground ice.

To ensure that drilling/coring systems are capable of operating successfully on the surface of Mars, we propose to characterize relevant physical properties of rocks and of drill bits in the laboratory under Mars-like conditions of temperature, pressure and atmospheric composition. We propose to develop sampling technologies for aseptic drilling in permafrost.

We plan to work in Eureka for 3 reasons, first because of the widespread occurrence of ground ice conditions; second because the area represents one of the coldest and driest ground ice environments in the Arctic; and thirdly because of the available logistical infrastructure.

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Location/Region: Kitikmeot
Project Title: **Biocomplexity of Frost-Boil Ecosystems**

Summary: We propose to visit Isachsen on Ellef Ringnes Island for 1-2 days in mid-May and early August. During the May trip, we will measure snow depth at vegetation plots and download climate data. During the August trip we will retrieve data recorders and download climate data. The overall goal of the project is to look at, measure and sample the soils and vegetation that characterise this area. We are interested in the interactions between the soils, climate, vegetation, and how these interactions control the patterns of bare soil/vegetation that are found in the Arctic. Often these patterns form circular features called "frost boils". Our group includes vegetation scientists who look at the plants growing in different areas; soil scientists who describe and sample the soils; and permafrost scientists who measure soil ice, and air and ground temperatures. In 2005 we analysed the soil, vegetation, climate and permafrost conditions at 3 sites in the vicinity of the Isachsen runway. At these sites we marked and sampled 10 x 10 grids in 2005. We erected an air and soil temperature monitoring station. We collected small quantities of soil and plant samples. This summer will be the final year of a five-year research project.

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Location/Region: North Baffin
Project Title: **Glacier Mass Balance and Pollution**

Summary: The program is an ongoing one started in the early 1960s to monitor glacier health and climatic change in the Eastern Arctic. Beginning in early April, 2003, we will re-measure the mass balance of Agassiz (N Ellesmere), Meighen, Melville South, northwest Devon Ice Caps, and a small Glacier near Grise Fiord. There are automatic weather stations on each ice cap and these will be downloaded and re-set. Campbell Scientific will again send a technician to check and download the 3 Agassiz automatic weather stations. If convenient, he will also check out and download the AWS on Meighen Ice Cap. At the same time, snow samples will be collected from each ice cap as part of a continuing program to monitor any changes in the amounts of pollution coming into the high Arctic. Campbell Scientific will send an employee to download three stations on Agassiz Ice Cap, and Jocelyn Bourgeois (GSC) will collect samples for snow biology there.

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Location/Region: Kitikmeot
Project Title: **Biophysical Remote Sensing of Arctic Tundra Ecosystems Along a Latitudinal Gradient**

Summary: Boreal and tundra environments account for a large proportion of Canada's land surface and are important systems within the context of global climate change research. These northern environments are thought to be particularly sensitive to changes in climate, yet it remains unclear as to

how these environments will respond. It is expected that any alterations in arctic tundra ecosystem function associated with increased temperatures will be expressed through shifts in vegetation growth patterns, species composition and abundance. Remote sensing provides a means for monitoring these shifts using satellite images collected at frequent time intervals. However, this potential requires detailed field studies for validating appropriate remote sensing methods and scales of observation.

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Location/Region: North Baffin
Project Title: **Physical and Biological Implications of Permafrost and Ground Water Dynamics in a High Arctic Polar Desert Ecosystem**

Summary: This research licence application is for the continuation of our investigations of high Arctic perennial springs. Our research is entering into a new phase that focuses on the biological and physical connections of these spring systems and their interaction with the surrounding polar desert ecosystem. We plan to continue our research on the hydrologic, geomorphic, and geological processes however by also looking at their microbial ecology (microscopic communities) and the various products of biological activity (biogenic mineralization, gases, biofilms) we hope to characterise a potentially unique microvial ecosystem. The 2003 field season we will continue to document and refine our understanding about hydrological and biological processes of spring systems at Expedition Fiord as well as spring sites occurring at Whitsunday Bay, Strand Fiord and investigate new sites including Middle and Bundle Fiords and Northern Ellesmere island. We will continue to look for other active and relic spring sites. We propose to;

- (a) examine the microbial communities found in association with the springs, including the composition and distribution of the microbiota along environmental gradients particularly with respect to changes in redox, PH, temperature, light and dissolved gases,
- (b) test our glacial lake-subglacial recharge hypothesis,
- (c) develop thermodynamic and flow models for the different spring systems, and
- (d) continue physical and chemical studies of brine icing formation.

Two periods of field work and planned, (1) 2 weeks in April and (2)

4weeks in June/July. The main field work are planned, (1) 2 weeks in April and Whitsunday Bay and Ward Hunt Island. Samples from springs, lakes, surface runoff and precipitation will be collected for geochemical analyses. To determine the origin of the spring water we will measure the total dissolved gases in the spring water and compare it with those water in local lakes and glacial meltwater. We will continue high resolution GPS mapping of spring outlets, flow paths and structures. These data will be used by N. Martineaux to test different hydrologic models for these springs. Andersen will characterize the abundance, distribution and composition of the active bacterial communities in the springs and the runoff areas. The effects of environmental gradients on the microbial community will be investigated. He will also focus on the processes controlling microbially induced biomineralization. Andersen will use these data to develop models of this permafrost spring system that can be extrapolated to Mars in order to aid in site selection and experiment development for future Mars missions.

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Location/Region: North Baffin
Project Title: **Hydrology of Extensive Low Gradient High Arctic Wetlands: An Examination of Sustainability**

Summary: Project Objectives:
 1) Examine the hydrology and sustainability of isolated, linked, dying and desiccated wetland types (e.g. ponds, wet meadows) within extensive low-gradient wetlands located in two diverse regional climate settings 1)Polar Oasis (Eastwind Lake, Ellesmere Island); and Polar Desert (Creswell Bay, Somerset Island);
 2) Assess the role and importance of geomorphological settings (i.e. glacial moraine ground, bedrock, coastal zones at Creswell Bay), marine ice rich sediments (i.e. Eastwind Lake) in the hydrologic functioning of these wetland types;
 3) Utilizing a water balance framework at the plot, catchment and landscape scale to assess the mechanisms for water inputs/losses and storage of these wetland systems over space and time; and
 4) Employing hydrologic information and understanding garnered at

Eastwind and Creswell, by examining the hydrology of a low-gradient wetland at the regional scale (i.e. Polar Bear Pass, Bathurst Island). Therefore its temporal and spatial response to water inputs (meltwater, rainfall) and losses (evaporation and drainage) can be determined. This will then permit an evaluation of the future sustainability of this critical ecological site in context of varying climatic conditions and perhaps future climatic changes.

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Location/Region: South Baffin
Project Title: **Iqaluit Hydroelectric Environmental Baseline Studies**

Summary: Qulliq Energy Corporation (QEC) is currently evaluating the potential to provide hydroelectric power to the City of Iqaluit. A study carried out by Knight Piesold Ltd. In late 2005 identified 5 watercourses within 50-100 km of Iqaluit where the development of hydroelectric power may be feasible.

Additional environmental information is required at the four locations before decisions can be made with respect to advancing any of the projects to a detailed feasibility study. Research activities include stream flow measurements, fisheries and aquatic surveys, and raptor surveys. Five candidate watercourses will be studied: Armshow River, Jaynes Inlet, Cantley Bay, Anna Maria Port, McKeand River.

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Location/Region: North Baffin

Project Title: **Mass Balance Measurements of White and Baby Glaciers, Axel Heiberg Island, NU**

Summary: Our research objective is to continue monitoring the mass balance of White and Baby Glaciers. Present computer models suggest that the Arctic regions will get warmer first and will provide the first definitive proof of global warming. Monitoring these glaciers and improving our measurement techniques may provide first hand evidence of any such warming. Essentially the mass balance of a glacier is determined by measuring the amount of snow that falls and accumulates on the upper parts of the glacier. Depending on which is bigger, accumulation or melt, the glacier gains or loses mass. We need a very long record of annual measurements of accumulation and melt to be able to distinguish whether the glacier is reacting to normal weather variations or because the climate is changing.

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Number in party: 2
Location/Region: North Baffin
Project Title: **Contaminants in Snow from High Arctic Icecaps**

Summary: Contaminants have been measured in the liver and fat of Arctic species, including seals and polar bears. Amounts of some chemicals such as PCBs and DDT are declining because their use has now been banned. However, others such as fluorinated stain repellents, which are used on carpets and clothing, have been recently found to be increasing. It is not known how these chemicals are reaching the Arctic. By collecting snow samples from ice caps in the High Arctic, we hope to find out how much of these new chemicals are entering the environment of Nunavut, and where they may be coming from. All the work will be done on the ice caps. In spring 2005, 2 people will go to the Devon ice cap by Twin Otter plane (PCSP) from Resolute. A single camp (2 tents) will be established on the ice caps. Travel to the collection site will be via snowmobile with 1 sledge, returning to camp daily. Field work will take approximately 3 days. We plan to do our sample collection during the first half of May. We will maintain regular radio contact with Resolute. Results will be

communicated to the communities of Resolute and Grise Fiord.

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Number in party: 5
Location/Region: North Baffin
Project Title: **A Holocene Context for Current Arctic Warming Derived from the Vanishing Plateau Ice Caps of North-central Baffin Island and Lake Sediments on Coastal Northeastern Baffin Island**

Summary: The overall goal of our current research program is to investigate climate change over the recent past. We will do this in two ways. First, we will study the recent history of disappearing glaciers in the northern interior of Baffin Island. Second, we will study indicators of climate change archived in lake sediments near the hamlet of Clyde River. These projects will help us place current global warming into the context of the recent climate history of Nunavut.

For these projects, we will need to collect rock and vegetation samples that are used to underlie the now-melting glaciers, and mud from the bottom of lakes. We will conduct most of our field studies via skidoo in the spring. We also hope to team up with a Geological Survey of Canada field station. If this happens, then we could use some of their supplies and transportation. No permanent structures or stations will be built, and this research has minimal impact on the landscape.

In our work on Clyde foreland, we will stay in Clyde River and we will camp using tents while working in the northern interior. We have worked from Clyde River in recent years, and have involved many people from the community in our past research. This new project is an important step towards understanding how global warming will manifest itself in arctic environments like Nunavut.

Name: Wayland, Mark
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Province/State: SK
Country: Canada

Number in party: 5
Location/Region: North Baffin
Project Title: Contaminant Effects on Nestling Glaucous Gulls in the Arctic

Summary: The purpose of this study is to determine whether contaminants are affecting the health and fitness of glaucous gulls in the Canadian arctic. The glaucous gull has been selected as a representative sentinel species because of the elevated levels of many contaminants known to occur in this species, relative to other species of wildlife in the arctic. Over a three-year period, a maximum of 70 glaucous gull chicks, approximately 20-25 days old will be collected for contaminants analysis and assessment of health. The study will be conducted at two locations: 1) Devil's Island near Cape Vera in Cardigan Strait (2005-2006) and 2) Near Karrak Lake in the Queen Maud Gulf Bird Sanctuary (2007). Karrak Lake is the site of an existing Canadian Wildlife Services (CWS) field camp. The Devil's Island site is about a 20 minute flight from the existing Cape Vera CWS camp. A temporary tent camp will be set up at Devil's Island for 3-4 weeks each summer. The work at Karrak Lake, which will be done between early July and early August, will benefit from the infrastructure and logistics already in existence there. Transport into the study sites will be by aircraft (3-4 flights per year at Devil's Island, 2 flights at Karrak Lake). Annual progress reports and a final report to one of the study's major funders, the Northern Ecosystem Initiative, will be one way in which the study results are disseminated. In addition, the project will provide an annual newsletter to communities located near the study sites. At the end of the study, the study leader will be available for community visits to discuss the study's results if people from the community wish to have such discussions.

Name: Swanson, Heidi
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Country: Canada
Number in party: 2
Location/Region: Kitikmeot
Project Title: Transport of Organic Contaminants via Migrations of Sea-run Arctic Char

Summary: Scientists have shown that migrating sockeye salmon contribute high levels of some pollutants (eg DDT, PCBs) to Alaskan lakes. They have also shown that Arctic grayling living in lakes with migrating salmon have higher pollutant levels than those living in lakes without migrating

salmon. This is because migrating fish can transport pollutants from the ocean into lakes.

This project will investigate whether sea-run Arctic char transport pollutants from the ocean into lakes through their annual migrations. In summers 2006, 2007, and 2008, six lakes (three with sea-run charr, three without) located near Hope Bay (2006 and 2007) and Nayauk Lake (2008) will be sampled for fish and insects that represent whole food webs. Pollutants in fish will be compared between systems that do and do not support sea-run char.

The results will help us understand how levels of pollutants vary among fishing locations and be useful for predicting how pollutant levels respond to climate change (because migration will also be affected by climate change).

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Number in party: 5
Location/Region: North Baffin
Project Title: Coastal Vulnerability in a Warming Arctic

Summary: Our research has two specific goals:
 1) to document physical impacts of landscape change on infrastructure and lands of Arctic Bay; and
 2) to gain an understanding of past sea ice intensity through analysis of ancient beaches in the Arctic Archipelago.
 This research forms part of Memorial University's contribution to the CCIAP -funded project Climate-change impacts, infrastructure risks, and adaptive capacity of Arctic coastal communities and the ArcticNet research network.

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Province/State: ON

Country: Canada
Number in party: 7
Location/Region: Ellesmere Island
Project Title: **Water Quality and Environmental Change at Cape Herschel, Ellesmere Island**

Summary: Lakes and ponds are sensitive repositories of environmental information. We (J.P. Smol and M.S.V. Douglas) have been monitoring 45 lakes and ponds at Cape Herschel, Ellesmere Island, approximately every 3 years since 1983. This area has become a critical reference site for limnological data.

In 2006, we propose to continue our long-term monitoring of these sites at Cape Herschel. Our ongoing work confirms that these sites are extremely sensitive monitors of environmental change; however, it is vital that we continue to sample at 3 year intervals to determine if in fact these regions are changing and responding to possible environmental stresses.

We will collect present-day water quality data and algal samples during approximately 14 days in July from lakes and ponds within walking distance of Cape Herschel. We will remove a small sample of water from each pond, as well as a small amount of mud for analysis of indicators of environmental change. We do not sample or disturb any wildlife or fish.

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Location/Region: North Baffin
Project Title: **Borden Basin Project**

Summary: Its primary goals are:

- 1) Investigating the properties of the rocks in the region, and what they can tell us about the geologic history of the area; and
- 2) Understanding how zinc/lead were transported and deposited there
- 3) Understanding what factors control where they are found in the region.

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Number in party: 2
Location/Region: North Baffin
Project Title: **Microbiology of Northern Sites: Impacts of Petroleum Hydrocarbon Contamination and Remediation**

Summary: The objective of this project is to monitor the effectiveness of a bioremediation system in decontaminating a petroleum hydrocarbon spill in an Arctic environment, adjacent to the Eureka High Arctic Weather Station. The biotreatment system included the addition of nutrients and tilling of the polluted soil to stimulate the indigenous hydrocarbon degrading bacterial community. Soil samples taken will be analyzed in the lab to determine the rate of petroleum hydrocarbon removal, the activity of the indigenous bacterial community and the presence of specific genes important in the degradation of petroleum hydrocarbons. The project is straight forward in that no structures will be erected, only one set of samples is required which will only take one day to procure and consist of digging holes in the contaminated area. These samples will provide valuable information regarding the conditions necessary for effective clean up of petroleum hydrocarbon polluted sites in the Canadian Arctic.

Name: Amyot, Marc
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Country: Canada
Number in party: 2
Location/Region: North Baffin
Project Title: **Mercury Levels in Arctic Lakes**

Summary: The objective of our research is to examine mercury accumulation in arctic lakes and coastal areas. Mercury, in its gas form, is effeciently transported around the globe, and even remote areas show evidence of mercury pollution originating from industrial sources. Mercury is a pollutant that accumulates in organisms and increases in concentration as it moves up the food chain. As a result, organisms that are higher up the

food chain, such as predatory fish, can have mercury levels that may pose risk to humans as well as to wildlife.

Our research will focus on investigating mercury levels in algae and invertebrates of freshwater and marine habitats. There is currently little information on mercury levels in these organisms, even though they are an important source of food, and potentially of mercury, to larger organisms including fish and marine mammals. Our goal is to investigate the spatial variability of mercury concentrations of marine shrimps, lake zooplankton, and lake benthic invertebrates (eg. fly larvae) collected from different sites between Cornwallis and Ellesmere island.

In addition, algae will be collected from small freshwater streams.

Samples of algae and invertebrates will be collected from two main areas: Cornwallis Island and Ellesmere Island. Algae will be collected by scraping them off rocks and invertebrates will be collected using hand nets made of fine mesh.

Researchers will stay at existing bases or camps (Resolute, Eureka, Lake Hazen) and therefore, no new camps will be erected. Sampling sites near Resolute (eg Small, Resolute, Char, and North lakes) will be accessed by all-terrain vehicle (ATV) along existing trails while remote sites will be accessed by helicopter. No significant perturbations are expected at either the lake or marine sites because only small amounts of invertebrates and algae will be collected from each site.

Name: Siciliano, Steven
Department: Dept. of Soil Science
Affiliation: U of S
City/Town: Saskatoon
Province/State: SK
Country: Canada
Number in party: 5
Location/Region: North Baffin
Project Title: **Trace Contaminant Transformations in the Northern Terrestrial Ecosystems**

Summary: Metal contaminants and other pollutants from anthropogenic and natural sources have been found in Arctic ecosystems. As of yet, little is known about how these contaminants move through the soil ecosystems present in the Arctic. This project is investigating how the unique biology and chemistry of the Arctic contribute to the unusual behavior of pollutants in the Far North. We are hoping to use this information to develop management strategies that could mitigate contaminant impact on northern Canada as well as provide new biotechnologies that may be useful for dealing with contaminants in other settings. The field component of this

project will involve an extended stay of up to 8 weeks in the Truelove Lowland on Devon Island, Nunavut. This site was chosen based on previous studies indicating its suitability for studying metal contaminant transformation, ecosystem diversity and the existence of a wealth of information including soil maps, vegetation analyses and landform classification. At least two students will be working in the field for the duration, with intermittent visits of supervisors Dr. Steven Siciliano and Dr. Derek Peak, as well as the possibility of other students doing research for their B.Sc and M.Sc theses. There is a base camp in the Truelove Lowland where personnel will be lodged although as of yet this has not been guaranteed. If this is not possible, personnel will sleep in tents and every precaution will be taken to have minimal impact on the site. Equipment and food will be transported by helicopter to and from the site. Much of the laboratory analysis will be done with portable equipment that will be used on-site. Samples of soil and water will also be taken back to Saskatoon for further experiments and analysis.

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Number in party: 4
Location/Region: North Baffin
Project Title: **High Resolution Studies of High Arctic Paleoclimate from Varved Lake**

Summary: A group of 3-4 people plan to go to Murray Lake in Quttinirpaaq Park in late July or early August 2004. We will travel by helicopter to the lake and set up a small tent camp for 5-6 days with no permanent structures. We will use a rubber boat on the lake, if ice conditions are favorable. If the ice cover is extensive, we will cancel the trip this year. We will tow behind the boat an instrument that sends out sound waves into the water. These bounce back from the bottom of the lake and indicate the depth of the lake and the thickness of the sediment at the bottom of the lake. We want to find out the best place to take a core of sediments from the lake in future years. We plan to take 4-5 small sediment sample cores from the bottom of the lake this year, and to suspend in the lake 2 sediment traps. These will be removed in the future years. The work will help us to understand how the climate in the Park has changed over time, and to investigate if the temperatures were higher when early hunters moved through the region several thousand years ago. In our previous

research in Murray Lake, the sediments we recovered enabled us to look at temperatures over the last 1000 years; now we would like to extend this record back 4000 years or more if possible. The research will have no impact on the fish or environment of the lake.

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Number in party: 10
Location/Region: North Baffin
Project Title: **Baseline Environmental Field Study for the Mary River Project**
Project Description

Summary: Baffinland Iron Mines Corporation is currently conducting an advanced exploration program at the Mary River Project, located approximately 160 kilometres south of Pond Inlet. Current exploration activities in the area commenced in 2004 and are on-going seasonally. Baseline environmental data collection will commence in the spring of 2005, and will continue until 2007. This will provide good information to contribute to the development of an Environmental Impact Assessment for the project area. There will be three field visits this season between May and October. We expect to continue the baseline studies for three years until October 2007. Areas of study are the anticipated mine site location, Nuluujaak Mtn. and the potential transportation corridors northeast to Milne Inlet (1 option) or southerly to Steensby Inlet (2 options). Activities that will take place to conduct baseline monitoring are:

- 1) Set up a meteorological station for monitoring temperature, rainfall, wind direction and speed.
- 2) Establish water quality and flow sampling locations (ground water and surface water).
- 3) Fly two potential transportation corridors (the abandoned road from Nuluujaak Mtn to Milne Inlet) and a second potential route south to Steensby Inlet.
- 4) Sound monitoring.
- 5) Wildlife survey (observations only).
- 6) Bethnic and fish sampling.
- 7) Soil and sediment sampling.
- 8) Marine survey (observations only).
- 9) Archaeology (observations only)

Name: Ash, Gary
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Country: Canada
Number in party: 10
Location/Region: Kitikmeot
Project Title: Doris North Project

Summary: Miramar Hope Bay Ltd. Plan to carry out additional baseline aquatic investigations during the 2004 field program. The program for 2004 is considered an extension of the work done in 2003 and the data information collected is required to fill in some information gaps as we continue our advanced exploration activities in the Hope Bay Belt.

A considerable amount of aquatic surveys have been completed on the belt since 1992 under a previous owner. The program in 2004 will focus on Roberts bay, Little Roberts Lake and Roberts Lake areas, located in the northern portion of the Hope Bay Belt with the closest community being Umingmaktok. Community visits to Bathurst Inlet and Umingmaktok during the summer of 2000 summarized the program anticipated in 2000 and what we might expect to do in 2004.

As mentioned, the study program for 2004 is designed to compliment existing information and fill in data gaps on aquatic habitat and fish populations in the study area. The work will include both spring and fall field surveys, focusing on Arctic char spawning locations and migration patterns in and out of Roberts Lake.

Tissue samples will be collected from approximately 100 fish (sculpin and stickleback) and analyzed for metal concentrations. Where possible, fish tagging will be undertaken to enable longer term monitoring. In addition, sediment samples will be collected in Roberts Bay and Roberts Lake to determine the present concentrations of metals and organic contaminants.

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Number in party: 32

Location/Region: South Baffin
Project Title: **South-West Baffin Integrated Geosciences (SWBIG) Project**

Summary: In 2006, the Canada-Nunavut Geoscience Office and the Geological Survey of Canada propose to conduct an integrated geoscience project on southwestern Baffin Island. The study area will comprise parts of NTS map sheets 35P, 36A, B, C, D, F, G, and H. The objective of the project is to increase the level of mineral exploration activity in a relatively populated portion of Nunavut by improving the publicly available geosciences knowledge of the area, hence reducing the exploration risk to industry. The project area is proximal to the three larger communities of southern Baffin Island, namely Iqaluit, Kimmirut and Cape Dorset, which would all directly benefit economically from exploration. This is a joint Canada-Nunavut Geoscience Office (C-NGO) / Geological Survey of Canada (GSC mapping initiative, to be co-lead by Marc St-Onge in Ottawa) and Dan Utting (C-NGO). The proposed project was presented to, and received unanimous approval from, the Cape Dorset Municipal Council in January of 2006.

Name: Hamilton, Jim
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Province/State: Nova Scotia
Country: Canada
Number in party: 4
Location/Region: North Baffin
Project Title: **Arctic Ocean Climate Change Project**

Summary: An oceanographic study in the eastern end of Barrow Strait has provided continuous measurements of water current, temperature and salinity from August 1998 to present, under research licence 0204802N-M. The objective of the work is to develop an understanding of the the circulation in the area also to quantify the heat and fresh water movement between the Arctic Ocean and the Northwest Atlantic so that the coupling between these two oceans is better understood. Measurements, combined with modeling studies, are being used to determine how this coupling affects the local, regional and global climate systems. The data collected also provides a baseline for further studies. A continuation of this program has been funded to provide an extended continuous time series of data that can be examined for trends that may be linked to climate change. Quantified change in the fresh water outflow

through Barrow Strait would be a useful global warming indicator. The principal method of data collection is 10 moorings that support current meters for measuring the speed and direction of the water flow, and "CTDs" for measuring salinity and temperature. The tops of all of the moorings are well below the surface (deeper than 25m). They are deployed by a Canadian Coast Guard ship in August, left on site for one year, and then recovered the following August. The ship also conducts a "CTD" survey, which involves lowering an instrument over the side of the ship to measure salinity, temperature and depth, at specific locations. Plans are to continue the program for 3 more years, replacing the mooring array and completing the CTD survey in August of each year, until the final recovery in 2006.

Name: Sofko, George
Department: Department of Physics and Eng. Physics
Affiliation: University of Saskatchewan
City/Town: Saskatoon
Province/State: SK
Country: Canada
Number in party: 3
Location/Region: Kivalliq
Project Title: **The PolarDARN radar for Rankin Inlet (Kangiqliq)**

Summary: A large group of international scientists have joined to use radars to study high-altitude weather systems and their effects upon the low-altitude weather we experience at the ground. The SuperDARN (Super Dual Auroral Radar Network) community, with funding and/or participation from 12 countries (Canada, US Great Britain, France, Italy, Finland, Norway, Iceland, Japan, Australia, New Zealand and South Africa), has constructed 9 radars in the northern hemisphere and 7 in the southern hemisphere (including four in Antarctica) All of the 16 SuperDARN radars are located so as to examine the "auroral zone" (the zone of northern or southern lights) at high latitudes in the northern and southern regions of the earth. There is, however, a gap in the coverage over the polar regions. The north magnetic pole lies near Eureka, Nunavut. Only two radars, to be called the PolarDARN radars, are needed to view the entire "north polar cap" region centered around the magnetic pole. The first radar would be installed in Rankin Inlet, the second in Inuvik. We already take part in science projects at two sites in Rankin Inlet-at a small hut in which a camera and a radio insonde operate. The PolarDARN radars will be portable- easy to install and remove, with no environmental damage. The radars measure the high altitude "weather maps" (which are voltage maps, because high-altitude winds are motions of electrically

charged particles driven by electrical voltages). These maps are available on the internet with only a few minutes delay. Such information is important for all satellites, because satellites fly in this high altitude weather. These satellites are extremely important to the north because they transmit most communications signals (telephone, TV, internet etc.). Recently, scientists have found that the high-altitude weather is connected to the low-altitude weather, and the PolarDARN radar observations will help us to understand these connections. PolarDARN can measure part of the energy from the Sun to the Earth, namely the energy that comes from the "solar wind". This energy goes most directly to the polar regions, so these are very important regions to study. We are very fortunate that Nunavut and the NWT provide much easier access to the northern polar regions than Antarctica to the south polar regions.

Name: Rodrigue, Julie
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Province/State: Québec
Country: Canada
Number in party: 3
Location/Region: Kivilliq
Project Title: **The Role of Inuit Women in Religious Space in the Kivalliq**

Summary: My general research objective is to document the role of Inuit women in religious activities. I want to learn more about the various religious experiences of Inuit women and how they pass on their knowledge to the younger generations. This research is conducted within the SSHRC-CURA project titles "Memory and History in Nunavut" It is a partnership between the GETIC of Laval University, the Nunavut Arctic College and Iqaluit's Elders Society. I will attempt to reach my goal by interviewing and recording life histories mainly of Inuit women of different generations and observe, as much as I can, their activities in their families, in schools and at various religious celebrations and festivals. I want to focus on women experiences because after reviewing of the anthropological literature on this topic, I noticed that the men were more solicited in general than women. I thus thought it would be relevant and interesting to try and supplement their data with testimonies coming from Inuit women. The oral data will be kept in a locked drawer in the GETIC laboratory of Laval University as long as any potential use has been decided with the communities I will work with. The information obtained will be used for writing a PhD theses, and in the publication of articles in scientific journals and for presentations in conferences, At the end of my PHD, I

will send a copy of each audio and video tapes to the communities, at the Nunavut Arctic College and also to the participants who will have asked me a copy and I will erase the tapes of those who have asked to stay anonymous.

Name: Pienitz, Reinhard
Department: Peleolimnology-Paleoecology Laboratory Centre d'etudes Nordiques
Affiliation: Département de Géographie
Province/State: Québec
Country: Canada
Number in party: 4
Location/Region: Kivalliq
Project Title: **Paleoclimate and Post-glacial Evolution of the Southwestern Foxe Basin Region, Based on Different Paleolimnological Approaches.**

Summary: To explore the potential responses of northern freshwater ecosystems and their watersheds to climate change and to place instrumental temperature records into a longer-term perspective. We will use a multi-disciplinary paleolimnological approach to study the biostratigraphic (fossil microscopic algae and insects) and sedimentological changes preserved in the sediment records of several lakes distributed throughout the eastern Canadian Arctic and Subarctic. We will initiate studies on fossils preserved in lake sediment records from Southampton Island (lat. 62N to 65N), an area with serious paleoenvironmental and paleoclimatic data gaps. We will generate paleolimnological data both at high temporal resolution and at high geographic coverage, including sub-decadal records that span at least 2000 years and extend through the 20th Century. This research program involves the integrated study and comparison of present-day sedimentary and limnology processes in several lakes with observations of climatic and hydrologic conditions in their catchment basin. This is done in an attempt to determine how climatic and hydrological signals (e.g snow melt, temperature and summer thunder storms) are reflected in the lake sedimentary record. In the field, the project implies the installation of monitoring equipments (data loggers) in the water column of the study lakes, as well as the coring of lake sediments using light weight gravity and piston corers. Helicopter support from PCSP will provide transportation in the field. No campsite will be required. Overnight stays will be at the Esungark Inn in Sallit.

Name: Gantner, Nikolaus
Department: Department of Environmental Biology
Affiliation: University of Guelph
City/Town: Guelph
Province/State: ON
Country: Canada
Number in party: 5
Location/Region: North Baffin, Kitikmeot
Project Title: **Inputs of Mercury and Other Contaminants to Lakes Near Lake Hazen (Ellesmere Island), Nauyuk Lake (Kent Peninsula) and Resolute Bay (Cornwallis Island)**

Summary: The purpose of this project is to study changes in amounts of contaminants over time in lakes in the Canadian arctic. We have been working on Lake Hazen in Quttinirpaaq National Park on Ellesmere Island and in lakes in the Resolute Area on Cornwallis Island. In Lake Hazen, we have found that mercury concentrations have not changed significantly since 1990 in fish. This is good news and indicates that Lake Hazen, because of its large size, is responding more slowly than smaller arctic lakes to changes in mercury inputs to the arctic. We are planning to measure other contaminants such as chemicals containing bromine and fluorine that are used in our homes to prevent fires and on our clothing (to prevent stains) in fish collected from Lake Hazen but that work is not yet completed. For 2006 we would like to continue to collect 10-20 char from small lakes in the Resolute Bay area. We have been studying contaminants in fish and water quality in these lakes, including Char Lake and Resolute Lake, since 1997 with the help of the Community of Resolute Bay. Our purpose is also to explain how contaminants move through the food web and how they end up in fish. We are also interested in links to climate warming, because it may lead to more mercury in the lakes. In 2006, we also propose to study lakes in the Kitikmeot Region (Nauyuk Lake, Kent Peninsula). Fish in the lakes in this area have been studied previously by DFO scientists. Climatic variation and change has been reported to be more pronounced in this region than in the Lancaster Sound area. We would collect 10 to 20 fish per lake along with emerging insects and lake water. Samples of fish from earlier years are also available from DFO from small lakes around Nauyuk Lake and we will compare them with newly collected fish to see if amounts of mercury have changed over time.

Name: Catto, Norm
Department: Department of Geography
Affiliation: Memorial University
City/Town: St John's

Province/State: NFLD
Country: Canada
Number in party: 5
Location/Region: South Baffin
Project Title: **Marine Biological Survey of Near-shore Coastal Environments, Ursuqtuq, Nunavut**

Summary: Coastal exposures along the coast between Betzold Point, the community of Ursuqtuq, and westward as far as Petersen Bay will be described and measured using standard survey equipment, taking note of sediment types and indications of coastal erosion. Natural climate related hazards will be assessed in Ursuqtuq and the surrounding area. Potential hazards include features related to permafrost degradation, such as retrogressive thaw flows, tundra polygons, and resulting destruction of infrastructure. This work will be carried out through aerial photograph interpretation, geomorphic field mapping, and community consultation. Coastal profiles will be continued offshore to determine the bottom slopes and sediment types underwater. The land-based and offshore studies will allow us to assess possible climate change impacts on coastal and marine shellfish, fish, and other small bottom-dwelling marine organisms. Marine habitats will be described using underwater video, and a grab sampler will be used to collect samples of bottom sediments. Marine and invertebrate fauna will be sampled using plankton nets, a grab sampler, and video analysis. Coastal erosion and hazard assessment studies will be repeated in Iglulik and Sanirajak. Natural climate related hazards will be assessed in both communities. Potential hazards include features related to permafrost degradation, such as retrogressive thaw flows, tundra polygons, and resulting destruction of infrastructure. This work will be carried out through aerial photograph interpretation, geomorphic field mapping, and community consultation.

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Location/Region: North Baffin
Project Title: **Microbial Investigations of Perennial Springs, Permafrost and Ground Ice in the High Arctic**

Summary: Relatively few reports are found describing the ecology and biodiversity of microbial communities in the Canadian high Arctic. Where unique habitats exist including cold perennial salt springs, glacial ice and sub glacial soil, permafrost and ground ice, and cryptoendoliths (microbial communities within rocks). Little is known about the traits that enable such microorganisms to survive and thrive in these extreme habitats. Therefore, I am presently developing and expanding a research program focused on Arctic microbial biodiversity and ecology studies in these habitats to expand our basic knowledge of Arctic microbial communities. To determine the utility of these unique environments as analogs to those which may exist or existed on Mars, and, in the longer term, the potential biotechnological applications of cold adapted microorganisms (examples: antifreeze proteins, polyunsaturated fatty acids.) In 2003, small representative samples (~2 kg of soil/ permafrost or 2-4 L of water) of the microbial populations will be obtained from the Eureka and Axel Heiberg sites. Microbial biodiversity research will be conducted in my lab at McGill University on the collected samples. This data will provide information on the microbial populations associated with these sites, the physiological types that are involved in biogeochemical processes and hopefully establish which organisms become fossilized or preserved in the system.

Name: Kelly, John
Affiliation: SRI International
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Province/State: Canada
Country: USA
Number in party: 10
Location/Region: North Baffin
Project Title: **The Resolute Bay Observatory (RBO) - In Support of Science**

Summary: The Resolute Bay Observatory (RBO), previously known as the Early Polar Cap Observatory, is the most northern polar cap facility funded by the United States National Science Foundation (NSF). The RBO is of considerable importance to the upper atmospheric science community and provides the necessary infrastructure for housing instruments that collect data used by scientists world wide for continued research investigating the Sun's influence on our planet's atmosphere. SRI International (SRI) designed and built the facility in 1992 with a contract to a Canadian-based construction company. SRI has since operated, maintained and coordinated the science endeavors at the RBO for the NSF. The observatory is located on 11,640 m² of land that is leased for 20 years from the Resolute Bay Airport on Cornwallis Island. It

is approximately 5km North East of the Resolute Bay Airport and positioned approximately 40 m below a hilltop, providing excellent shielding for sensitive receivers systems and blockage of light from the airport community.

The facility is approximately 427 m² with half of it being used for housing scientific instruments and the other half used for visitors' quarters. There are three darkrooms for optical instruments, including roof hatches, with a total of four domes, and a support room adjacent for experiments and the associated data acquisition systems. The facility is powered alternately by two 50 kW diesel generators. The RBO is operated and maintained without a permanent site crew. The required on-site support, such as logistics, technical support, routine maintenance and daily site inspections, is provided by subcontracting to a local company in Resolute Bay. Ongoing scientific investigations at the RBO use optical instruments and both passive and active radio frequency instruments by scientists whose goals include a wide variety of investigations, using the following instruments, listed with their Principle Investigator.

Name: Quinlan, Roberto
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Number in party: 2
Location/Region: Kivalliq and South Baffin
Project Title: **Limnology and Benthic Ecology of Arctic Lakes and Ponds in Kivalliq Region**

Summary: It is anticipated that recent climate warming will strongly impact the ponds, lakes and rivers of Canada's Arctic. These anticipated impacts include changes in aquatic insect populations, which are important food sources for fish and migratory birds, and changes in the flow and chemistry of freshwater due to increased melting of permafrost. Relatively little research on aquatic insect changes, due to climate change, has been conducted in Kivalliq compared to the Northwest Territories, Kitikmeot, Qikiqtaaluk and High Arctic regions. In July 2006, we propose to sample ponds and small lakes inland of the community of Rankin Inlet in the Kivalliq region. We hope our research in the area will provide valuable new information on recent changes in water flow, pond chemistry and status of aquatic insect populations.

Name: Platzer, Edward
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Province/State: California
Country: USA
Location/Region: Kivalliq and South Baffin
Project Title: **Parasites and Biting Flies in Nunavut**

Summary: This is a continuing project on the distribution of biology of parasitic organisms in biting flies, especially mosquitoes. I will collect mosquito larvae from the local melt pools. Roundworm infections have been reported in 1954 and 1976. During the summer of 2002, I found roundworm in mosquitoes in one pool and ciliated protozoan in mosquitoes from a second pool. The parasites I collect will be preserved for future studies on the morphology and molecular relationship of the parasites. These studies will be valuable for the understanding of the distribution of these parasites in biting flies. I also hope to develop a better understanding of natural control mechanisms in populations of biting flies.

Name: Favero, Pauline
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Number in party: 2
Location/Region: North Baffin
Project Title: **Impact of Climate Change on Landsliding Over Permafrost, Fosheim Peninsula, Ellesmere Island**

Summary: Active-layer detachments are shallow landslides that develop on gentle to moderate slopes underlain by permafrost. Following warm weather in August, about 70 new detachment slides occurred on the Fosheim Peninsula, Ellesmere Island. Field observations showed that some developed almost instantaneously while others enlarged over several days.

Name: Beauchamp, Benoit
Department: Arctic Institute of North America
Affiliation: University of Calgary
City/Town: Calgary
Province/State: Alberta
Country: Canada
Number in party: 4
Location/Region: North Baffin
Project Title: **Geology and Geochemistry of Borup Fiord Pass and Surrounding Area**

Summary: Borup Fiord Pass, northern Ellesmere Island (the low-lying narrow valley linking the head of Esayoo Bay to the head of Hare Fiord) hosts unique sulfur-rich springs that emerge through and onto glacial ice. This site is thought to be the best terrestrial analogue for Jupiter's Ice moon Europa. Jupiter's moon Europa is a high priority for future space exploration, as its probable subsurface ocean represents a possible habitat for microbial life. To better understand geological features, which may be influencing the origin of the spring systems, local geologic mapping will be conducted. Mapping will include walking out stratigraphic sections, and mapping their spatial distribution within the region. A maximum of 40 hand samples, no more than 10 cm in diameter, will be collected to help in rock type identifications. The modern spring system will also be examined. After initial reconnaissance of the site, a sampling strategy will be developed to characterize the geochemistry of all sites with active discharge. In addition, other water bodies will be sampled including glacial discharge, meltwater streams, and nearby lakes. Sampling procedures for spring and glacial melt waters will follow standard protocols for inorganic and stable isotope analyses. For chemical analyses, water samples will be filtered and stored in the dark in bottles until analyzed, and samples will be kept in coolers until transferred to laboratory refrigerators.

Name: Henry, Greg
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Location/Region: North Baffin

Project Title: Responses to Climate Change in Polar Desert Ecosystems

Summary: This project began in 1998 and builds on a long-term study I established in 1992 to investigate the effects of climate warming on tundra ecosystems. My long-term experimental plots are established at Alexandra Fiord, Ellesmere Island where I have conducted ecological research since 1980. The plots are warmed by 2-3 degrees Celsius by placing small (1.5 m diameter), open top greenhouses over them. In some of the plots, snow is removed so plants start to grow earlier, and in others snow is added so they will start to grow later. In other plots, I add some fertilizer to stimulate plant growth. All of these experiments are meant to cause changes that may happen in the future as the climate gets warmer. We found that warming has changed the amounts of nutrients available to plants, and there are more nutrients available in the warmed soils of some sites, especially the wetter sites. There was not a large effect of the warming on the rate of nitrogen fixation in the soils, which is an important process that supplies new nitrogen to ecosystems. The numbers and kinds of plants (part of biodiversity) in the plots have changed in the warmed plots. We do not fully understand what these changes in biodiversity will mean for tundra ecosystems, but changes in numbers and types of plants will affect animals feeding on them. One of the most important ways we can determine the effects is to measure the changes in plots like these over many years, which is what we continue to do.

Name: Johnston, Michelle
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Number in party: 1
Location/Region: North Baffin
Project Title: **Measurements of Second-year and Multi-year Ice**

Summary: During the summers of 2000 to 2002, we measured the seasonal decrease in strength of first -year ice around Resolute. In 2003, using the Canadian Coast Guard ship Louis S. St-Laurent as a platform, we measured the properties of several multi-year ice floes and second-year ice around Cornwallis Island. Our measurements have been used by Canadian Ice Service, Transport Canada and by Industry. Using these measurements, we are gaining information about first-year, second-year and multi-year ice during one of the most important times of the year: summer, when

shipping is most active. Last year we did not require a licence from NRI because we conducted field work on first-year ice off the Labrador coast. We wanted to compare the strength of Arctic ice to that of the more temperate, sub-Arctic ice. Our work in Labrador will continue next year. This year, we will again examine second year and multi-year ice because it is of concern to both moving and stationary structures, such as ships and offshore platforms. Presently, we are able to give only an approximate area (the most-likely region) in which measurements will be conducted, since we do not yet know where the old ice will be most easily accessed, nor do we know the Coast Guard's plans. As a result, we are also submitting an application to the Aurora Research Institute. Since our work this year concerns resource exploration in Beaufort Sea, we hope that the Western Arctic will have the necessary amount of old ice. If old ice in the Beaufort Sea ice is not within our reach, we will shift our efforts to the central Arctic. Regardless of where the field program is conducted, it will consist of the same type of measurements as those made in past years (as discussed in the NRI application). The research will involve measuring the ice thickness with an auger, extracting several ice cores with a mechanical coring device and then measuring the ice strength with a borehole jack. Some of the ice cores will be transported to Ottawa for analysis whereas others will not be removed from the site (they will be place back into the holes from which they came). No structures will be erected during the testing. The test sites will be left as we found them, minus several 10 cm diameter ice cores. The work will require a total of two weeks, between 1 July and 30 August and will use the Coast Guard Helicopter to access the ice from our base operations in the ship.

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Number in party: 5
Location/Region: Davis Strait
Project Title: **Northern Shrimp Research Foundation, Shrimp Survey for NAFO 2G and 0B**

Summary: Tavel Limited (TAVEL) has been contracted by the Northern Shrimp Research Foundation (NSRF) to manage a five year shrimp scientific survey (2005-2009) in NAFO regions 2G and 0B. This science initiative will be completed in collaboration with Fisheries and Oceans (DFO) to

collect and analyze scientific data regarding the northern shrimp fishery. This science survey will be completed over a 45 day period each year, generally being executed from late July through August. The 45 days will be generally split between each area of 2G and 0B. All work conducted will be done aboard Fishery Products International's vessel 'Cape Ballard'. All crew and supplies will be provided previous to vessel departure, and there is no intent to land at any location in Nunavut and will not involve any Nunavut residents.

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Number in party: 2
Location/Region: Iqaluit, Hall Beach, Pond Inlet, Pangnirtung, Cape Dorset, Rankin Inlet
Project Title: **Determination of PBDEs in Canadian North Landfill Leachate and Soils**

Summary: The overall goal of this project is to obtain better understanding of how brominated flame-retardants, specifically Polybrominated Diphenyl Ethers (PBDEs) are entering the environment in the Canadian Arctic. We will look at their generation, use, consumption, transport and accumulation patterns in order to increase the understanding of global transport of these compounds among different environmental media. Given the threats of PBDEs and their widespread appearance, including alarming levels reported in marine mammals and in Canada's far northern communities, identifying the various PBDE congeners in air, water and soil are of utmost importance. Our approach consists of studying the leachability of PBDEs from electronic wastes and examining landfill sites to determine the fate and transport of PBDEs.

Name: Moore, G.W.K.
Department: Department of Physics
Affiliation: University of Toronto
City/Town: Toronto
Province/State: ON
Country: Canada

Number in party: 3
Location/Region: North Baffin
Project Title: **Winds in Nares Strait**

Summary: The Winds in Nares Strait study will instrument the Nares Strait region so as to provide much needed meteorological data on this climatologically and strategically important region of the Canadian Arctic. Through this study, we will significantly improve Canada's capability to forecast severe weather in the High Arctic as well as making a significant contribution to the upcoming International Polar Year. No other method is known that would allow this important climate data to be collected. We intend to deploy 2 automatic weather stations on Cape Baird, at the tip of Judge Daley Promontory, by helicopter from the CCGS Larsen during August 2006. One station will be sited near sea-level on Cape Baird, while the 2nd site will be installed approximately 250m inland. We anticipate that it will take approximately 6 hours to deploy and test the 2 stations. The automatic weather stations will record meteorological data on data loggers. Each automatic weather station will consist of a 3 meter tower with guy wires extending out to cover an area of approximately 3m by 3m. Each weather station will contain a wind vane, temperature sensor, humidity sensor, barometer and data logger. Power will be supplied by a solar panel with a rechargeable battery. They will be removed and the sites returned to their original condition during a subsequent visit of the Larsen to the region in 2008.

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Number in party: 82
Location/Region: Nunavut Wide
Project Title: **ArcticNet 2006 Expedition: Integrated Regional Impact Study of the Canadian High Arctic**

Summary: The main objective of the proposed research project is to assess the changes occurring in the Eastern Canadian Arctic's coastal marine ecosystem in response to climate warming. Using the Canadian research icebreaker CCGS Amundsen to access the vast expanses of the coastal Canadian Arctic, mooring and sampling operations in the Nunavut region are planned to take place from August 31st to October 30th. Mooring

operations will consist in servicing and redeploying the 4 moorings deployed in 2005 in northern Baffin Bay. Each mooring line includes instruments that gather continuous records of currents, temperature, conductivity, turbidity, dissolved oxygen and the vertical flux of carbon and contaminants. Some moorings are also equipped with autonomous hydrophones to record the acoustic background and the vocalizations of marine mammals. ArcticNet's goal is to redeploy these four moorings at the same location for at least 7 years (and possibly up to 14 years) to establish long term marine observatories of variability and change in various biological and physical parameters. In addition to work conducted at the mooring stations, shipboard sampling will be carried out along the ship track and at specific sampling sites located throughout northern Baffin Bay, the Northwest Passage, Foxe Basin and Hudson Strait (see Table 1 and Fig. 1). Shipboard sampling will include bottom mapping and sediment core extraction, water, plankton and juvenile fish sampling, sea ice sampling and meteorological measurements. A small launch vessel (< 10 m) will also be used to measure the physical characteristics of the water column such as turbulent mixing occurring in the surface mixed layer. The vessel will conduct short term day-time (under 4 hours) sampling operations and return to the Amundsen daily. Samples taken during the 2006 expedition will cover almost all natural science fields, including geology, chemistry (e.g., contaminants), biology, oceanography and meteorology.

Name: Jones, David
Department: Department of Earth & Planetary Science
Affiliation: Harvard University
City/Town: Cambridge
Province/State: MA
Country: USA
Number in party: 3
Location/Region: North Baffin
Project Title: **Geochemistry of the End-Ordovician Ice Age: Paleothermometry and Nutrient Cycling**

Summary: At the end of the Ordovician Period (440 million years ago), Earth entered an ice age that lasted for at least one million years. This glacial epoch is associated with the extinction of more than half of the biological diversity on the planet and also coincides with unusual chemical variability in the ancient oceans. We would like to know how quickly the climate changed, how the cycling of nutrients in the ocean changed, and how this may have led to mass extinctions. In order to answer these questions, we need to map out and chemically analyze sedimentary rocks that were deposited in

the end Ordovician. A well-preserved set of these rocks is exposed on Cornwallis, Somerset, and Griffith Island, Nunavut. I propose to examine and collect samples of these rocks for chemical analysis from July 1 - July 25, 2006.

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Number in party: 6
Location/Region: Kitikmeot
Project Title: **Muskox Project Baseline Aquatic Studies**

Summary: Initial environmental studies are being considered for the subject claim area. Studies envisaged will include; collection of water quality samples up to three times during the summer period (June through September), establishment of stream gauging stations and measurement of stream flows, spot vegetation surveys of the claim area to verify aerial vegetation mapping, and fisheries surveys in local lakes. Fisheries surveys would be by non-destructive methods (catch and release). Wildlife studies at Muskox are being conducted as part of the wildlife monitoring requirements for the Jericho Diamond Mine under separate permits.

Name: James, Christina
Affiliation: Rescan Environmental Services Ltd.
City/Town: Vancouver
Province/State: BC
Country: Canada
Location/Region: Kivalliq
Project Title: **2006 Water, Vegetation, Soil and Fisheries Baseline Sampling Program**

Summary: Starfield Resources Inc. is exploring a significant metals deposit located in an area of Inuit Owned Lands at Ferguson Lake in Nunavut. The proposed research includes conducting various field assessments of a proposed camp site, the existing camp site, areas of potential future development, and the new aerodrome location. The proposed work is to be completed over three sampling periods during the summer of 2006,

totaling approximately 15 days. Soil and vegetation surveys of the new camp will provide baseline data for this area. A fisheries assessment of the ponds and streams in this area and locations of potential future activity will also be conducted to develop a baseline fisheries dataset.

Name: Kuhry, Peter
Department: Department of Physical Geography and Quaternary Geology
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Country: Sweden
Number in party: 4
Location/Region: Kivaliq
Project Title: **Arctic Feedbacks to Global Change: A Circumpolar Perspective**

Summary: The pupose of this work is to better understand the response of the Arctic treeline and permafrost to past climatic changes and future global warming. Climate models suggest that global warming will be especially significant in Arctic regions. On the one hand, these temperature increases could have a significant impact on the environment and communities that depend on its renewable resources. On the other hand, changes in vegetation and permafrost due to global warming could have significant feedbacks to the climate system itself, possibly resulting in more warming. The aims of fieldwork are;

- 1) To study the present-day vegetation distribution from the boreal forest to the tundra by checking satellite images on the ground ,and
- 2) To collect peat profiles from already exposed peatbanks to investigate the history of vegetation and permafrost in the region.

Research objectives are twofold:

- 1) Are the present-day surface conditions in this region correctly represented in climate models?
- 2) What was the environmental impact of past changes in climate?

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Number in party: 35

Location/Region: North Baffin
Project Title: **Haughton-Mars Project**

Summary: The Haughton-Mars Project (HMP) is an international field research project centered on the scientific study of the Haughton meteorite impact crater and surrounding terrain on Devon Island, Nunavut, viewed as a site similar in many ways to Mars. The HMP is managed and operated by the Mars Institute and is currently supported by the Canadian Space Agency and by NASA. (Reminder: The HMP is separate from the more recent activity at the same site involving the Mars Society.)

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Number in party: 6
Location/Region: South Baffin
Project Title: **An Exploratory Field Campaign under ArcticNet Project 4.3: Vulnerabilities and Adaptation to Meteorological and Related Hazards**

Summary: Climatic conditions vary along the coast and throughout the interior of Southern Baffin Island. Such variations are an important concern to local communities and transportation industry. However, very few detailed case studies of winter storms have so far been conducted in that area. From 16 October to 17 November 2006 we are planning to conduct a small field project within the city limits of Iqaluit and Pangnirtung to investigate meteorological surface conditions associated with severe winter storms.

Name: Melling, Humfrey
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Country: Canada
Number in party: 9
Location/Region: North Baffin
Project Title: **Variation and Forcing of Fluxes Through Nares Strait and Jones Sound**

Summary: In August 2006, DFO's Institute of Ocean Sciences, working with US partners, plans to recover 23 oceanographic moorings from the waters of Nares Strait, between Ellesmere Island and Greenland. The region and locations of moorings are shown. The work will be conducted from the CCGS Henry Larsen. The moorings were installed in August 2003 from the US icebreaker Healy. We attempted their recovery from the ice surface in April 2005, but were compelled to cancel the operation when unexpectedly strong winds (over 110 km/h) destroyed our camp at Lafayette Bay.

Name: Rutter, Allison
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Province/State: ON
Country: Canada
Number in party: 9
Location/Region: South Baffin
Project Title: **Scientific Investigations Supporting the Resolution Island Cleanup Project**

Summary: The Analytical Services Unit, Queen's University will have a team on site at Resolution Island 2005-2008. Our work is to support the major cleanup being undertaken by the Qikiqtaaluk Corporation for Indian and Northern Affairs Canada. The majority of the work will involve sampling and analysis of soil, barrel contents and other miscellaneous items. Work will continue this year with the removal of PCB-contaminated soils from the S1/S4 beach area and valley where we will test soils to ensure cleanup is complete and map the locations. The permanent barriers, which were modified in 2004, will be monitored, repaired, tested and if necessary modified. An additional barrier will be build in the S1/S4 beach area once the excavation of PCB -contaminated soils is complete. Further work will be conducted with respect to hydrocarbon contamination remediation. The experimental landfarm established in 2003 and the large landfarm established in 2004 will be monitored and maintained. Other work we will be undertaking includes testing the lake and drinking water, testing background water and plant samples and air monitoring.

Name: Hoos, Richard
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Province/State: BC
Country: Canada
Number in party: 10
Location/Region: North Baffin
Project Title: **Roche Bay Magnetite Project - Environmental/Archaeological Baseline Studies**

Summary: Roche-Bay PLC has retained EBA Engineering Consultants Ltd. (EBA) to initiate baseline environmental and archaeological studies in 2006 at their proposed magnetite (iron ore) project, located approximately 60 km south of Hall Beach, Nunavut. The proposed baseline study program will involve the following key field studies: vegetation classification, surface water quality sampling, hydrology, aquatic resources study, terrestrial wildlife study, marine wildlife study, species of special concern and their habitats, and archaeological resources. A helicopter will be used to transport field personnel to remote sampling sites. A helicopter or small fixed-wing aircraft will be used for aerial transect surveys. A small boat will be used for marine wildlife surveys. The existing exploration camp and infrastructure at Roche Bay will be used for accommodation and services.

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Location/Region: Kivalliq
Project Title: **Testing Proterozoic Continental Reconstructions Through Paleomagnetism and Geochronology**

Summary: This project uses the record of Earth's magnetic field preserved in rocks near Kaminak Lake and Baker Lake to discover the ancient position of North America relative to other continents. The Baker Lake area has one of the best-preserved sequences of sedimentary rocks from the time interval 1.9-1.7 billion years ago. Work done under licence #0301103N-A indicates the presence multiple episodes of magnetism in these rocks. In 5 weeks of further study, our goal is to understand more clearly the ages and

order of these events and whether they may related to ancient fluid flow occurring in other parts of Canada. Two colleagues and I would collect ~500 finger sized rock samples and analyze their magnetic properties at the paleomagnetism laboratory at Yale University. We would also collect a small number of fist sized samples for various geochemical analyses including radiometric dating to provide age constraints. Our main base of operation will be Baker Lake Lodge. We will use helicopters and possibly twin otter aircraft along with an inflatable zodiac boat to travel to our sampling locations. We plan to set up small tent camps for ~1 week at a time, removing all traces when we leave. In the Kaminak Lake area geologists have identified volcanic rocks which have previously yielded some promising paleomagnetic results and some more problematic results too. Again the plan would be to take ~20 fist sized samples and 100 finger sized samples from these dikes during approximately a two week time period in order to understand which result to believe. All proposed camp sites are on Crown land, as indicated on the application form and the appended 1:250 000 scale maps. This academic study is funded by the USA National Science Foundation. Results will be published in international scientific journals with no direct commercial applications foreseen.

Name: Eaton, David
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Number in party: 2
Location/Region: South Baffin
Project Title: **Eastern Hudson Bay Earthquake Study**

Summary: The objectives of this project are to study earthquakes and geology beneath Hudson Bay. To accomplish this, earthquake stations are required around Hudson Bay. The stations will be constructed in four Inuit communities: Ivujivik, Akulivik, Inukjuak and Sanikiluaq. Each station will have a special device for recording the ground vibrations caused by earthquakes, including very small earthquakes. Continuous data from these devices will be sent to project researchers using the Internet. This application is only for the station in Sanikiluaq, since the other communities are not in Nunavut. The location for this station will be made in consultation with the Municipal Government in Sanikiluaq. A small (1m X 1m) steel shelter will be constructed near a house in the village. The shelter will be partly buried in a shallow hole. Local residents will be

hired to assist in constructing the station. The necessary materials and research equipment will be transported to Sanikiluaq by boat and aircraft. The project will operate for about 3 years commencing late August 2006. A web site for the project will allow the residents to see where nearby earthquakes are located. Researchers will visit the school to inform the students about the research. Annual reports about the results of this project will be submitted to the Municipal Government in Sanikiluaq in August of each year. This project is part of International Polar Year.

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Location/Region: Kitikmeot
Project Title: **Dundee Precious Metals Inc. Back River Project**

Summary: Dundee Precious Metals Inc. is conducting mineral exploration for the Back River Project, which includes the Goose Lake and George Lake deposits in Nunavut. This exploration area (65.55'N; 107.25'W) is located approximately 550 km north-east of Yellowknife and 400km south of Cambridge Bay. As part of the exploration, Dundee plans to collect baseline meteorological and hydrological data in the George and Goose lakes area, as well as collect water quality samples. One meteorological monitoring station will be setup at each of the two camps. Meteorological data will include: air temperature, winds, solar radiation, precipitation, and relative humidity. The results will be presented in an annual summary report. Hydrological stations will be set up at the outlets of Goose and George lakes. A snow course survey will also be conducted as part of the hydrology baseline data. Water quality sampling will be conducted in the Goose and George drainage areas.

Name: Pollard, Wayne
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Province/State: Quebec
Country: Canada

Number in party: 8
Location/Region: North Baffin
Project Title: **An Investigation of the Sensitivity of High Arctic Permafrost to Climate Change**

Summary: I am applying for a research licence to conduct studies on the impacts of climate change on high Arctic permafrost. The aims of this project are to detect and assess landscape changes associated with warming and melting permafrost, and to investigate changing weathering patterns of rock surfaces. The data collected in this study will improve our understanding of climate-permafrost interaction and help us predict how landscapes will respond for different climate warming scenarios. This study will also add much needed information on high Arctic permafrost and ground ice conditions, its sensitivity to climate change and baseline data upon which landscape changes can be documented. Since most soils are formed from weathered rock materials we will also provide new information on the rates and processes of rock weathering.
