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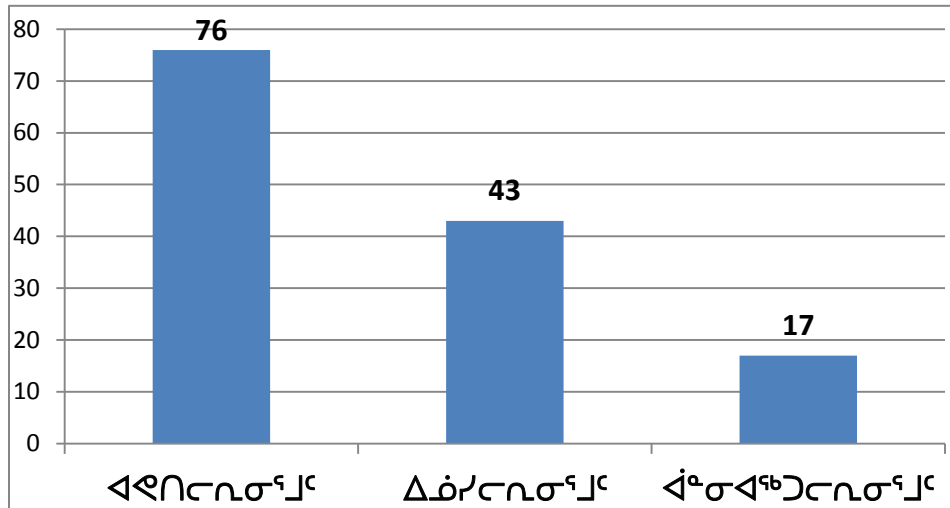
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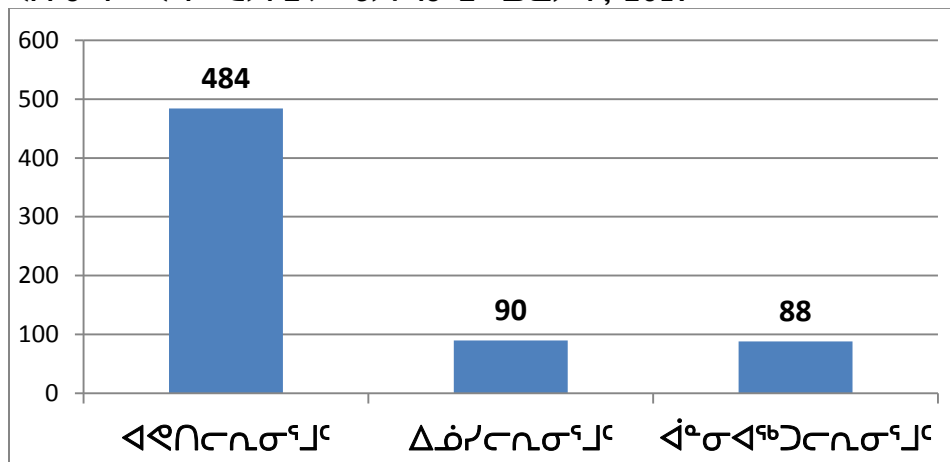
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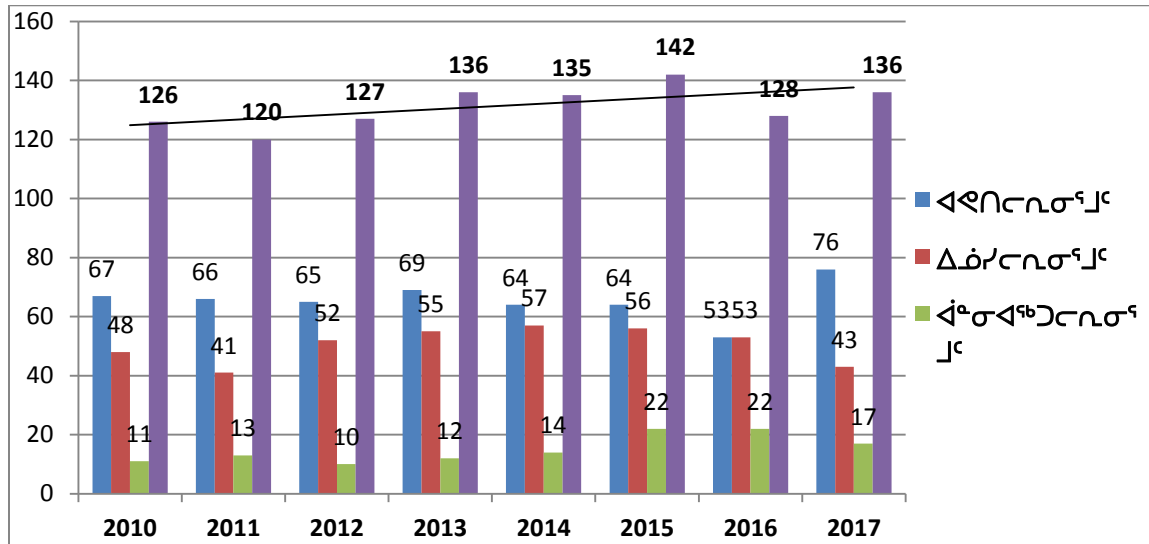
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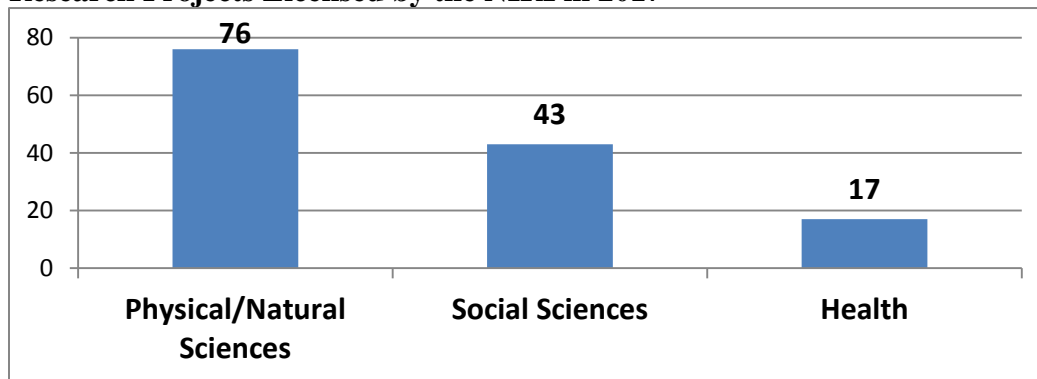


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A Message from the Director, Innovation and Research

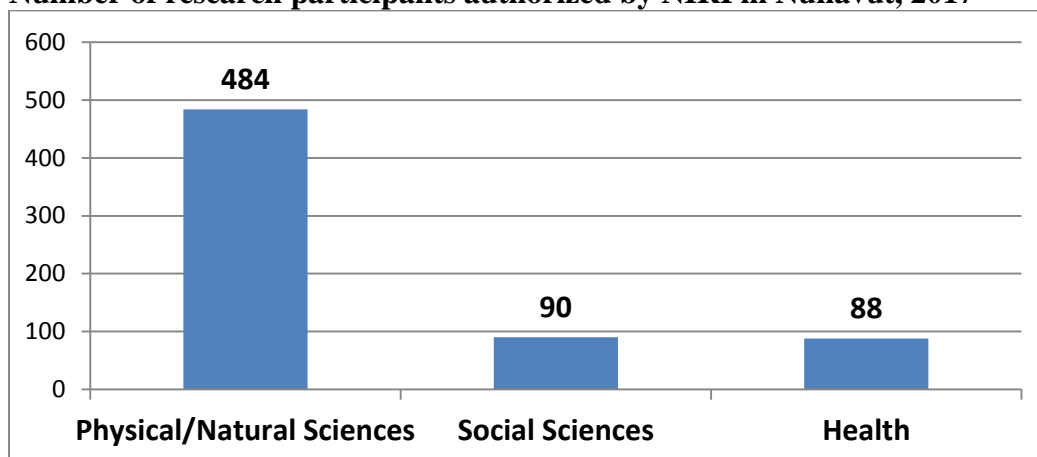
The Nunavut Innovation and Research Institute (NIRI) is responsible for licensing research in Nunavut in accordance with Nunavut's *Scientists Act*. I am pleased to present our compendium of Nunavut research that provides information for 136 research projects licensed by the NIRI in 2017. Our compendium includes a broad range of research in the health, physical/natural, and social research disciplines but does not include research on wildlife or archeology, which is licensed by other agencies.

Research Projects Licensed by the NIRI in 2017



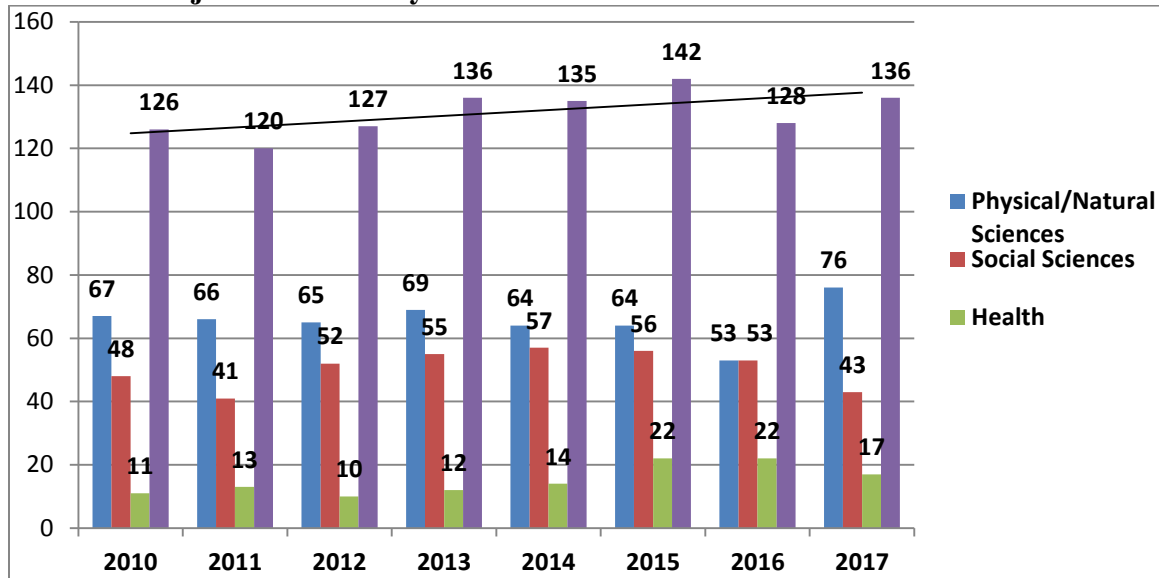
662 research participants (including license holders and their team members) were authorized by the NIRI to carry out research in 2017, and the majority of them (73%) conducted physical/natural sciences research.

Number of research participants authorized by NIRI in Nunavut, 2017

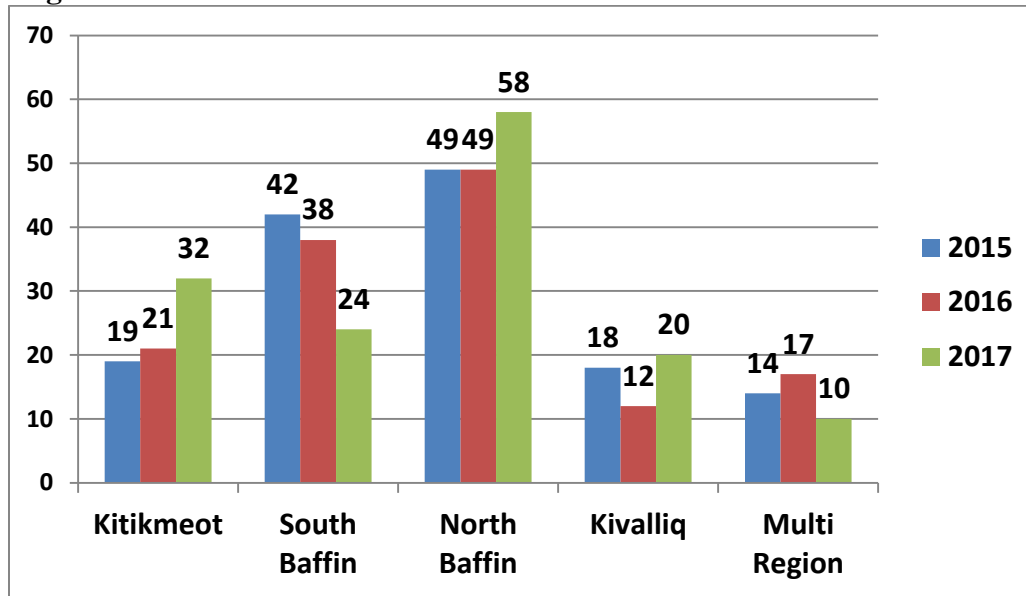


Most of the licenses issued by the NIRI in 2017 were for projects in the physical and natural sciences disciplines. This is much different from 2016 when the number of licensed projects in the social sciences was equal to the number of licensed projects in the physical/natural sciences. The apparent increase in physical/natural sciences research in 2017 may be explained in part by the opening of Canada's High Arctic Research Station (CHARS) in Cambridge Bay, which enhanced the amount of logistics support available for research activities in Western Nunavut. Reasons for the apparent decrease in the level of social sciences research activity in 2017 compared to previous years are not clear.

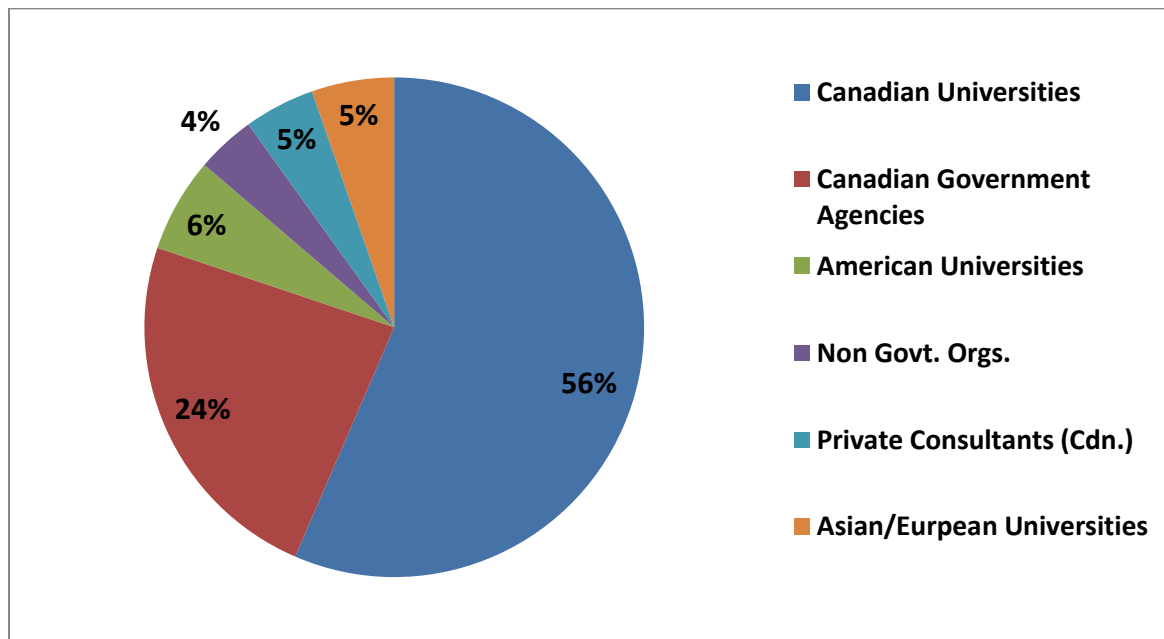
Research Projects Licensed by the NIRI: 2010 to 2017



The regional distribution of licensed research across Nunavut in 2017 (shown on the next page) was also different from previous years. Compared to 2015 and 2016, there was a significant increase in research activity in the Kitikmeot region in 2017 (likely the result of the opening of the CHARS facility in Cambridge Bay). Research also increased in the North Baffin and Kivalliq region but declined significantly in the South Baffin region (where the majority of social science research takes place) in 2017.

Regional Distribution of Licensed Research in Nunavut: 2015-2017

As in previous years, the majority (56%) of the NIRI licenses in 2017 were issued to investigators from Canadian Universities. A significant number of licenses were also issued to scientists employed with Canadian Government agencies.



Research conducted in Nunavut relies heavily on the active support and involvement of Nunavummiut; and I would like to thanks all those Nunavummiut who shared their valuable knowledge, time, and expertise to support research projects in 2017. Research is

an important source of employment and income for many Nunavummiut and can also provide valuable knowledge to help address the needs of our communities. I am pleased to note that 10 research licenses in 2017 were issued to principal investigators from Nunavut to conduct studies in the health, social, and natural sciences. As the science division of Nunavut Arctic College, the NRI is committed to fostering opportunities for all Nunavummiut, and especially Arctic College students and faculty, to participate in scientific research and training.

To receive information on any of the research projects described in our compendium, or to learn more about the NRI's programs and services, please visit our website at www.NRI.nu.ca.



Mary Ellen Thomas
Director, Innovation and Research
Nunavut Research Institute
Nunavut Arctic College

PHYSICAL AND NATURAL SCIENCES RESEARCH

Back River Project Baseline Studies

License Number:	04 012 17R-M
Principal Investigator:	Pickard, Mathew
Affiliation:	Sabina Gold and Silver Corporation Vancouver, British Columbia, Canada mpickard@sabinagoldsilver.com
Number in Party:	8
Research Area:	Kitikmeot
Fieldwork Locations:	Back River Goose Camp: Latitude: 65° 32.701', Longitude: -106° 25.718' George Camp: Latitude: 65° 55.281', Longitude: -107° 27.547'

SUMMARY

Sabina Gold and Silver Corporation is in the process of permitting the proposed Back River Project, located in the West Kitikmeot region of Nunavut. The proposed ongoing baseline program would be conducted starting January 1, 2017 and could continue for a full year until December 31, 2017. However, the same baseline and scientific studies may continue in subsequent years and we are asking for a 3 year (multi-year) permit.

Land and Water Research at the Cape Bounty Arctic Watershed Observatory (CBAWO), Melville Island

License Number: 02 001 17R-M

Principal Investigator: Lamoureux, Scott

Affiliation: Department of Geography
Queen's University
Kingston, Ontario, Canada
scott.lamoureux@queensu.ca

Number in Party: 14

Research Area: North Baffin

Fieldwork Locations: Cape Bounty

SUMMARY

Our work is intended to determine how climate change affects the land and water quality. We plan to take sediment and water samples from the lakes and streams at Cape Bounty. We have chosen these lakes and rivers 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 more years.

Western Hudson Bay Geoscience for Infrastructure

License Number: 03 003 17R-M

Principal Investigator: Oldenborger, Greg

Affiliation: Natural Resources Canada
Ottawa, Ontario, Canada
greg.oldenborger@canada.ca

Number in Party: 4

Research Area: Kivalliq

Fieldwork Locations: Rankin Inlet

SUMMARY

The western coast of Hudson Bay, in the Kivalliq region of Nunavut, is undergoing significant infrastructure development associated with natural resources, shipping, and community sustainability. Permafrost and ground ice are important features of this landscape that can significantly affect land-based infrastructure through influence on ground stability and drainage patterns. Knowledge of permafrost conditions is required to characterize climate change impacts. However, there are only limited studies of permafrost and ground temperature data in the Kivalliq region. Our proposed research will provide valuable permafrost information along the western Hudson coast of Nunavut.

Mass Balance of Glaciers and Ice Caps in the Queen Elizabeth Islands, Canada

License Number: 02 003 17R-M

Principal Investigator: Burgess, David

Affiliation: Geological Survey of Canada
Ottawa, Ontario, Canada
David.burgess@nrcan.gc.ca

Number in Party: 2

Research Area: North Baffin

Fieldwork Locations: Queen Elizabeth Islands

SUMMARY

Knowledge of the mass balance of ice caps and glaciers in the Canadian high-Arctic provide important insight into understanding patterns of climate change, and validating current estimates of global sea-level contributions from this region. Through continuation of the long-term time series (~50 years) of annual surface mass balance measurements for the Northwest Devon ice cap, Meighen ice cap, Melville ice cap, and Agassiz ice fields, this project contributes towards the fulfillment of Natural Resources Canada's mandate and Earth Science Sector (ESS) strategic outcomes through activities in the ESS Climate Change Geoscience Programme (CCG) – Essential Climate Variables (ECV).

Overby-Duggan, NU Aeromagnetic Survey

License Number:	04 001 17R-M
Principal Investigator:	Coyle, Maurice
Affiliation:	Geological Survey of Canada Natural Resources Canada Ottawa, Ontario, Canada maurice.coyle@canada.ca
Number in Party:	2
Research Area:	Kitikmeot
Fieldwork Locations:	Duggan Lake, Overby Lake

SUMMARY

The purpose of this survey is to acquire high resolution aeromagnetic survey data to inform land management decisions by land owners, governments, and industry. Aeromagnetic surveys measure magnetic properties of bedrock and are an important tool in geological mapping. The bedrock may contain mineral deposits such as carving stone, gold, copper, lead, zinc, and diamonds. Understanding the geology will help geologists map the area, assist mineral exploration activities, and provide useful information necessary for communities, Inuit associations, and government to make land use decisions.

Pan-Arctic Measurements and Arctic Regional Climate Model Simulations

License Number: 02 005 17R-M

Principal Investigator: Platt, Andrew

Affiliation: Environment and Climate Change Canada
Toronto, Ontario, Canada
andrew.platt@canada.ca

Research Area: North Baffin

SUMMARY

Within the Polar Airborne Measurements and Arctic Regional Climate Model Simulation Project (PAMARCMiP), large-scale measurement of sea ice thickness in key Arctic areas will be performed in the framework of an international cooperation between German, Canadian, and United States institutes. The plan for spring 2017 is similar to the successful PAMARCMiP campaigns occurring since 2009. Sea ice thickness is the key property for predicting the summer minimum sea ice extent. Sea ice thinning and retreat are expected to continue as a result of climate change with a major uncertainty introduced by decadal and long-term natural climate variability. Accurate ice thickness information is still sparse over the Arctic Ocean.

Postglacial Climates of the Canadian Arctic

License Number: 02 007 17R-M

Principal Investigator: Gajewski, Konrad

Affiliation: Department of Geography
University of Ottawa
Ottawa, Ontario, Canada
gajewski@uottawa.ca

Research Area: Kitikmeot, Qikiqtaaluk

Fieldwork Locations: Prince of Wales and Bathurst Islands

SUMMARY

The purpose of this study is to understand how the climate has changed over the past 10,000 years in the central Canadian Arctic. The goal of this year's study is to collect lake sediment cores from the central region of the Canadian Arctic Archipelago, specifically Prince of Wales and Bathurst Islands. We wish to determine how warm the region was during the Medieval Warm Period (1200-600 years ago), and how warm periods in the past affected the regional vegetation and lakes.

Upper Air Building Laboratory, Resolute Bay

License Number: 02 010 17R-M

Principal Investigator: Shepherd, Marjorie

Affiliation: Climate Research Division
Environment and Climate Change Canada
Toronto, Ontario, Canada
marjorie.shepherd@ec.gc.ca

Number in Party: 5

Research Area: North Baffin

Fieldwork Locations: Resolute Bay

SUMMARY

The Canadian Aerosol Baseline Measurement (CABM) program under the Climate Chemistry Research Measurement and Air Quality Research sections are proposing to measure changes in the levels of absorption (black carbon), scattering of aerosols and gases that may accompany increased ship traffic, and increasing mining activities in the Canadian Arctic as well as from an increase in forest fires at more southern latitudes. In particular, black carbon – a strong light absorber that is released into the atmosphere from the incomplete combustion of fuels – is recognized as one of the ‘Short Lived Climate Forcers’ that may contribute to more rapid melting of Arctic ice.

CANDAC – Canadian Network for the Detection of Atmospheric Change

License Number:	020 013 17R-M
Principal Investigator:	Drummond, James
Affiliation:	Department of Physics and Atmospheric Science Dalhousie University Halifax, Nova Scotia, Canada james.drummond@dal.ca
Number in Party:	15
Research Area:	North Baffin
Fieldwork Locations:	Eureka

SUMMARY

Canadians have a special responsibility for their sovereign Arctic territory. The unique environmental conditions – extreme cold, low humidity and seasonal daylight variations – give rise to unusual climate and chemistry processes, many of which are poorly understood. Gaps in our scientific knowledge of the Arctic impair our ability to effectively steward Canada's North. This lack of knowledge has serious social, environmental and biodiversity implications. In 2002, a group of researchers joined together to form the Canadian Network for the Detection of Atmospheric Change (CANDAC) with the objective of improving the state of observational atmosphere research in Canada.

Lake Ice in the Canadian High Arctic

License Number: 02 014 17R-M

Principal Investigator: Brown, Laura

Affiliation: Department of Geography
University of Toronto Mississauga
Mississauga, Ontario, Canada
lc.brown@utoronto.ca

Number in Party: 2

Research Area: North Baffin

Fieldwork Locations: Resolute, Polar Bear Pass

SUMMARY

The purpose of this project is to monitor lake ice in Canada, as it is an important part of the cryosphere and recent projections suggest thinner and shorter duration of ice cover in the future. The objective of this research is to better understand the links between lake ice and climate, particularly in response to a changing cryosphere.

Climate Change Effects of a Changing Cryosphere on Northern Lakes

License Number:	02 015 17R-M
Principal Investigator:	Prowse, Terry
Affiliation:	Water and Climate Impacts Research Centre/Environment and Climate Change Canada University of Victoria Victoria, British Columbia, Canada terry.prowse@ec.gc.ca
Number in Party:	6
Research Area:	North Baffin, Kitikmeot
Fieldwork Locations:	Cornwallis Island, Axel Heiberg Island, Victoria Island, Ellesmere Island, Queen Maude Gulf, and Grenier Lake

SUMMARY

Climate change is projected to cause significant change to Arctic aquatic ecosystems. Changes in the thickness and composition of Arctic lake ice covers will produce second order impacts on lake biological productivity and ecology. The most important effects are likely to result from changes in temperature (ice growth) and precipitation (ice cover composition). While a number of models have been developed to represent these changes, their validation has been stalled by lack of relevant field data. Relevant field data has been gathered annually since 2009. In 2014, the objective is to repeat surveys at the noted lakes with the assistance of local contractors or agencies. The proposed completion dates for the surveys at the lakes are between May 1 and June 30, 2014. Specific dates will be determined based on contractor/agency availability.

Lithologic and Tectonic Controls on Paleoproterozoic Banded Iron Formation-Hosted/Associated Gold – A Study of the Amaruq Gold Zones

License Number: 03 007 17R-M

Principal Investigator: Mercier-Langevin, Patrick

Affiliation: Natural Resources Canada
Quebec City, Quebec, Canada
patrick.mercier-langevin@canada.ca

Research Area: Kivalliq

Fieldwork Locations: Amaruq Property

SUMMARY

The purpose of this project is to study gold mineralization associated with faults and iron formation-bearing volcano-sedimentary rock successions. The objectives of this research are to advance the understanding of the controlling factors on gold deposit formation and develop improved exploration models.

Ice Islands of the Eastern Canadian Arctic

License Number:	02 017 17R-M
Principal Investigator:	Mueller, Derek
Affiliation:	Department of Geography Carleton University Ottawa, Ontario, Canada derek_mueller@carleton.ca
Research Area:	North and South Baffin
Fieldwork Locations:	Canadian Arctic Archipelago, Arctic Ocean, and Baffin Bay

SUMMARY

This research program brings together an international team of researchers to continue a previous study on the drift, deterioration, and shape of ice islands (large tabular icebergs of Arctic ice shelf or floating glacial tongue origin) in the Eastern Canadian Arctic. Four ice islands were studied in July and October of 2011 and future research (2012 and beyond) will build on this work. Ice islands have extensive dimensions (1 km² - 250 km²) and are considered ice hazards for shipping, natural resource exploration, and development in the Canadian Arctic and Sub-Arctic. The objective of this work is to better understand the drift and deterioration of these ice islands. This will allow for accurate size and location prediction and proper risk assessment and management by stakeholders.

Winter to Summer Transitions in the Arctic-Ice Covered Ecosystems (Arctic-ICE) – A Multiyear Project

License Number:	04 002 17R-M
Principal Investigator:	Mundy, CJ
Affiliation:	Centre for Earth Observation Science University of Manitoba Winnipeg, Manitoba, Canada cj.mundy@umanitoba.ca
Number in Party:	22
Research Area:	Nunavut-Wide
Fieldwork Locations:	Dease Strait, Wellington Bay, Queen Maude Gulf, and Finlayson Islands

SUMMARY

Climate warming has induced rapid change in the ice-covered marine ecosystem of the high Arctic. In this project we will investigate: (1) physical and biological processes controlling the timing of marine primary production, which has been hypothesized as an indicator of potential change in the ecosystem, (2) the influence of rivers and sea ice melt on the freshwater budget and organic carbon cycle in coastal bays near Cambridge Bay, and (3) microbial diversity in sea ice, seawater and marine sediments as it relates to *in situ* biogeochemical cycling and the potential microbial response to increased industrial activity, e.g. oil spills.

Polar Knowledge Canada (POLAR) Camp on Greiner Lake, Cambridge Bay

License Number: 04 003 17R-M

Principal Investigator: McLennan, Donald

Affiliation: Polar Knowledge Canada
Ottawa, Ontario, Canada
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Number in Party: 2

Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay, Grenier Lake

SUMMARY

Polar Knowledge Canada (POLAR) and the Canadian High Arctic Research Station (CHARS) will be conducting a range of field research activities over the summer and early fall of 2017, and a number of visiting research scientists, their graduate students, and northern high school and college students will come to Cambridge Bay to conduct this research. A range of research projects will be carried out, including work on tundra ecosystem description and mapping, arthropod monitoring, freshwater lake surveys, small mammal trapping, and installation of research instruments such as a weather station, frost tubes and thermistor arrays, river gauging stations, and eddy covariance towers. Researchers will come and go over the summer; there will be no more than 10 people in camp at any one time. Normal occupancy will be 4-5 people.

Arctic Freshwater Biodiversity in Cambridge Bay

License Number: 04 004 17R-M

Principal Investigator: McLennan, Donald

Affiliation: Polar Knowledge Canada
Ottawa, Ontario, Canada
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Number in Party: 5

Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay, Grenier Lake

SUMMARY

There is currently a lack of conceptual frameworks that could integrate how changes to Arctic landscapes are likely to be linked to the biodiversity and productivity of these systems. As part of the initial step in addressing this knowledge shortfall, a sampling campaign of the Greiner Lake near Cambridge Bay was carried out in the summer of 2015. Seasonal sampling from June to September was carried out to provide a baseline description of the ecological variability of water quality, microbial diversity, phyto- and zooplankton community composition, and indices of carbon fluxes as proxies for ecosystem health. In addition, three ~50 cm long sediment cores were taken from the deepest point of the lake. They were sliced in 1 cm resolution and have been analysed for pigments and different carbon indices, as well as for the subfossil remains of diatoms and chironomids as proxies of past aquatic communities and production in the lake.

Hope Bay Belt Project Scientific Research

License Number: 04 005 17R-M

Principal Investigator: Curran, Oliver

Affiliation: TMAC Resources
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Research Area: Kitikmeot

Fieldwork Locations: Hope Bay Belt

SUMMARY

The research objectives of this program remain the same as those previously licensed; to conduct monitoring and baseline information collection in support of the Hope Bay Belt Project. The Hope Bay Belt is a north-south oriented mineralized zone approximately 100 km long and 20 km wide located near Hope Bay, Melville Sound, Nunavut. This project encompasses studying/monitoring various disciplines including air quality, meteorology, noise, hydrology, bathymetry, aquatics (marine and freshwater), soils and vegetation, and wildlife.

NEIGE (Northern Ellesmere Island in the Global Environment)

License Number:	02 019 17R-M
Principal Investigator:	Vincent, Warwick
Affiliation:	Department of Biology Université Laval Quebec City, Quebec, Canada warwick.vincent@bio.ulaval.ca
Number in Party:	12
Research Area:	North Baffin
Fieldwork Locations:	Quttinirpaaq National Park, Resolute Bay Lakes, and Markham Ice Shelf

SUMMARY

This is a follow-up of our work in the program NEIGE; to continue monitoring environmental measurements in Quttinirpaaq National Park's lakes, fiords, and vicinity. We will determine the diversity of microbial life in shallow water communities using state-of-the-art molecular techniques, characterize the physical characteristics and processes within northern Ellesmere Island's meromictic lakes, and define the structure and function of microbial food webs within Lake A, C1, Ward Hunt, Disraeli Fjord, and Milne Fjord using high-performance liquid chromatography (HPLC) and flow cytometry analyses at Laval University. Our climate stations will continue to provide long-term air and soil monitoring data for this globally important site.

Cambridge Bay Ocean Observatory

License Number:	04 007 17R-M
Principal Investigator:	Moran, Kate
Affiliation:	Ocean Networks Canada University of Victoria Victoria, British Columbia, Canada kmoran@uvic.ca
Research Area:	Kitikmeot
Fieldwork Locations:	Cambridge Bay

SUMMARY

Ocean Networks Canada (ONC) has been operating an underwater observatory in Cambridge Bay since September 2012. Underwater sensors and a camera provide continuous information on seawater properties, ice thickness, and marine organism activity. Data from our underwater instruments and weather station are transmitted by a WiFi link to a server in the Kitikmeot Regional Government building, where data are transmitted via satellite to our ONC data centre at the University of Victoria and made available to all. We also plan to collect seawater and mud samples in the vicinity of the platform, to calibrate our instruments. We would also need to collect specimens of seafloor life (invertebrates) around the platform, so that experts may identify the species we are observing.

Canadian Ranger Ocean Watch

License Number:	04 009 17R-M
Principal Investigator:	Eert, Jane
Affiliation:	Institute of Ocean Sciences Fisheries and Oceans Canada Sidney, British Columbia, Canada jane.eert@dfo-mpo.gc.ca
Number in Party:	3
Research Area:	Kitikmeot
Fieldwork Locations:	On Waters and Ice near Cambridge Bay, Kugluktuk, Taloyoak, and Gjoa Haven

SUMMARY

Canadian Ranger Ocean Watch (CROW) is a project carried out mainly by Canadian Rangers as part of their regular activities for the Department of National Defence (DND). Initially, simple but key observational parameters will be measured: snow and ice thickness, snow/ice interface temperature, as well as temperature, salinity, chlorophyll content, and dissolved oxygen in the sea water. These quantities will be measured at flexibly determined locations by Canadian Rangers on snowmobiles near the communities of Kugluktuk, Cambridge Bay, Gjoa Haven, and Taloyoak on patrols during the ice-covered period. Water properties will be profiled using an internally recording instrument. Profiles will help in understanding circulation and changes in the ocean. At a subset of the noted science stations, an ice buoy will be deployed and left frozen in the ice to measure ice and water temperatures at hourly intervals, and transmit this data in real-time via an Iridium link. This data will be used to help predict ice break up in the area.

Geology Research in Baffin Bay

License Number:	02 020 17R-M
Principal Investigator:	Bennett, Robbie
Affiliation:	Natural Resources Canada Dartmouth, Nova Scotia, Canada robbie.bennett@canada.ca
Number in Party:	2
Research Area:	North and South Baffin
Fieldwork Locations:	Baffin Bay, Davis Strait, and Southwing Fiord

SUMMARY

Since 2012, Natural Resources Canada has been conducting research on the marine geology of Baffin Bay. The purpose of this research is to understand the geological history, processes, and geological hazards offshore of Baffin Island. This research is used to provide advice to stakeholders for the management of this large offshore area. As of December 2016, the proposed plan is for two research expeditions to take place in 2017. The first would occur between July 22 and August 28 on RV Maria S. Merian and the second would occur between August 11 and September 13 onboard CCGS Hudson. The majority of the research proposed for 2017 would take place outside of the NLCA boundary.

Arctic Coastal and Drifting Ice Processes and Dynamics

License Number: 02 021 17R-M

Principal Investigator: Mueller, Derek

Affiliation: Department of Geography and Environmental Studies
Carleton University
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Number in Party: 9

Research Area: North Baffin

Fieldwork Locations: Queen Elizabeth Islands, Ellesmere, Island, Devon Island, and Baffin Island

SUMMARY

Changes in Arctic climate have profound implications for the break-up of coastal ice. In the recent past, there have been large calving events of ice shelves and glaciers that have produced many vast ice islands and icebergs that drift through Nunavut waters. Our research is focused on understanding how various types of coastal ice interact with the atmosphere above, the ocean below, as well as meltwater and glacier ice from the adjacent land. In particular, we are interested in how both thick ice (ice tongues and ice shelves) and thin ice (landfast sea ice and lake ice) are melting and breaking-up in a changing climate. In addition, we study how large ice masses (icebergs and ice islands), that break away from the coast, drift and deteriorate.

Airborne and Ground-Based Electromagnetic Measurements of the Sea Ice Mass Balance

License Number:	02 023 17R-M
Principal Investigator:	Haas, Christian
Affiliation:	Department of Earth and Space Science and Engineering York University Toronto, Ontario, Canada haasc@yorku.ca
Number in Party:	5
Research Area:	North Baffin
Fieldwork Locations:	Lincoln Sea

SUMMARY

This planned work will study changes in the sea ice mass balance as a result of variations of the thermodynamic and dynamic boundary conditions for ice growth, melt, and deformation, including the role of snow cover. The focus of this research is the establishment of long-term, systematic ice mass balance observations of thick multi-year ice in the Arctic Ocean between the coast of Canada and the North Pole. These observations will include biennial airborne electromagnetic measurements of the seasonal and interannual ice thickness variability, as well as observations of ice deformation and snow properties. *In situ* measurements will be complemented by satellite remote sensing and modeling work, and will contribute to the validation of new satellite products and model results. This research is significant as the areal coverage of Arctic sea ice is rapidly decreasing at a pace much faster than predicted by any climate model, thus demonstrating our limited understanding of climate processes and feedbacks in the Arctic. The disagreement can partially be explained by a misrepresentation of the sea ice mass balance in existing climate models, which is largely due to a general lack of systematic ice thickness observations in the Arctic Ocean.

CASE 19 Pearya

License Number:	02 022 17R-M
Principal Investigator:	Piepjohn, Karsten
Affiliation:	Federal Institute for Geosciences and Natural Resources Germany (BGR) Hannover, Germany karsten.piepjohn@bgr.de
Research Area:	North Baffin
Fieldwork Locations:	Ellesmere Island, Devon Island, and Cornwallis Island

SUMMARY

The Federal Institute for Geosciences and Natural Resources Germany (BGR) is planning a geoscientific expedition to the north coast of Ellesmere Island in summer 2017, in cooperation with the Geological Survey of Canada and a number of other international geological surveys, universities, and museums. The field work will be helicopter supported, from a base camp that will be established at either Taconite Inlet or the south end of Kulutingwak Fiord. The fuel required for this has to be shipped as far north as possible in 2016. Therefore, this initial application is for permission to establish a fuel depot at Eureka or, hopefully, at Tanquary Fiord.

Dynamics and Change of the Devon Ice Cap, Nunavut

License Number: 02 034 17R-M

Principal Investigator: Sharp, Martin

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Number in Party: 2

Research Area: North Baffin

Fieldwork Locations: Devon Island

SUMMARY

The main goal of this research is to document and explain the dynamics and recent changes of ice caps in the Canadian Arctic, and evaluate their impact on global sea level. To achieve this goal, we plan to: (1) understand how Arctic ice caps are responding to climate warming, and quantify the contribution of glacier melt in Arctic Canada to sea level change; (2) service and recover data from five GPS sensors installed on bedrock around the Devon Ice cap that record vertical motion of the Earth's crust in response to changes in the ice cap's mass; and (3) conduct ground-based radar surveys and collect shallow ice cores from the upper 5-10 meters of the ice cap to describe the extent/thickness of ice bodies formed by refreezing of meltwater in the snow and firn. The presence of such ice bodies may increase the fraction of meltwater that runs off to the ocean because they prevent meltwater from draining into the snow and firn where it can refreeze and instead promote horizontal drainage.

Synthesis of Glacial History and Dynamics in the Rae Geological Province

License Number: 03 009 17N-A

Principal Investigator: McMartin, Isabelle

Affiliation: Earth Sciences Sector
Geological Survey of Canada
Ottawa, Ontario, Canada
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Number in Party: 4

Research Area: Kivalliq

Fieldwork Locations: Baker Lake Area and Arviat Area

SUMMARY

This research is a three-year (2017-2020) collaborative effort between geoscientists of the Geological Survey of Canada, Canada-Nunavut Geoscience Office, Northwest Territories Geological Survey, and academia that will contribute to an improved understanding of the paleoglaciological evolution of the Laurentide Ice sheet in the Rae Geological Province. This work will consist of a map and data compilation of glacial flow surficial features and associated glacial transport patterns formed during the last glaciation in mainland Nunavut and Northwest Territories. The main outcome of this project will be to provide new knowledge for mineral exploration essential for the implementation of successful geochemical and heavy mineral surveys in drift-covered regions.

Geotechnical and Environmental Baseline Studies – Iqaluit Port Development

License Number: 01 003 17R-M

Principal Investigator: Burdett-Coutts, Victoria

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Research Area: South Baffin

Fieldwork Locations: Iqaluit

SUMMARY

This research will be performed for the Government of Nunavut in two locations. One is near the municipal wharf, and the other is in the proposed deep water port area and quarry. Geotechnical and environmental baseline studies are required to support the design of upgrades proposed for the municipal wharf, and a new deep water port.

Geotechnical and Environmental Baseline Studies – Pond Inlet Small Craft Harbour Development

License Number: 02 026 17R-M

Principal Investigator: Burdett-Coutts, Victoria

Affiliation: Advisian
Burnaby, British Columbia, Canada
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Research Area: North Baffin

Fieldwork Locations: Pond Inlet

SUMMARY

This research will be used to gather data to support the design of the proposed small craft harbour, quarry, and breakwater, preparation of an Environmental Assessment (EA), as per the Nunavut Land Claims Agreement, and post-EA permitting. The Pond Inlet Offset Plan consists of two components: the Monitoring Program and the Research Program. The goal of the Monitoring Program is to assess the habitat characteristics within the footprint of the proposed project. In future years, after construction of the facility, this will be compared to the habitat provided by the boulders/rocks that are a component of project design for shoreline protection. Rocks provide multi-dimensional habitat where marine organisms can find refuge in the spaces between them. The goal of the Research Program is to investigate the primary prey species of Arctic char in Eclipse Sound in the waters surrounding the proposed small craft harbour.

Using Lake Sediments to Track Human Impacts on Arctic Freshwater Ecosystems

License Number:	02 025 17N-A
Principal Investigator:	Blais, Jules
Affiliation:	Department of Biology University of Ottawa Ottawa, Ontario, Canada jules.blais@uottawa.ca
Number in Party:	6
Research Area:	Kivalliq and North Baffin
Fieldwork Locations:	Resolute, Bathurst Island, Little Cornwallis Island, and Somerset Island

SUMMARY

We are using dated lake sediment cores to identify long-term impacts from human activities and climate change on aquatic ecosystems. In addition, we will use the sediment cores to pinpoint the presence and timing of settlements by early Arctic peoples as well as recent impacts. We will analyze lake sediments for a series of chemical and biological indicators, including isotopes of nitrogen, the presence of sterols, and algal remains that reveal the presence and timing of human occupation and impacts, and the complicating effects of recent climate change.

Evaluation of Simulated Snow Properties Across the Arctic

License Number: 04 010 17R-M

Principal Investigator: Langlois, Alexandre

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Number in Party: 2

Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay

SUMMARY

This project is motivated by the increase in extreme weather events in the Arctic such as rain-on-snow (ROS) events. ROS are known to be the consequence of global warming, and – given the anticipated increase in Arctic temperatures – more events are likely to occur. These events lead to the formation of ice layers that affect transportation and travel on the land, and have direct consequences on permafrost melt. ROS events also affect caribou grazing conditions, and several previous events killed many animals in Canada and other parts of the Arctic.

Barrow Strait Real Time Observatory

License Number:	02 027 17R-M
Principal Investigator:	Richards, Clark
Affiliation:	Fisheries and Oceans Canada Bedford Institute of Oceanography Dartmouth, Nova Scotia, Canada clark.richards@dfo-mpo.gc.ca
Number in Party:	4
Research Area:	Qikiqtani
Fieldwork Locations:	Barrow Strait

SUMMARY

The goal of this project is to provide a real-time ice and ocean data delivery system that includes an ice onset and break-up prediction capability in Barrow Strait at the eastern end of the Northwest Passage. This data delivery system will: (1) provide the ability to monitor and predict the evolution of ice cover for the improved safety and efficiency of Arctic marine operations, (2) make ice cover data and ocean measurements available to hunters and other interested parties, (3) provide data for ice/ocean forecast models, and (4) provide a technology that is applicable to other strategic Arctic locations.

Tehery-Wager Geoscience Project

License Number:	03 012 17R-M
Principal Investigator:	Wodicka, Natasha
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Number in Party:	5
Research Area:	Kivalliq
Fieldwork Locations:	Tehery-Wager Area

SUMMARY

The Tehery-Wager Geoscience Project, part of the Federal Government's Geo-Mapping for Energy and Minerals Program, is a collaborative effort between the Geological Survey of Canada, the Canada-Nunavut Geoscience Office, and universities. The primary objective is to increase the geological knowledge of the area and identify locations with elevated economic potential. This project will provide modern geologic interpretations required to reduce exploration risk and make appropriate land use decisions. Support from local communities is vital, as goods and service contracts for fuel caching, expediting, wildlife monitors, and groceries will be needed.

Old Rocks in a New Light: Integrating the ca. 1.1 Ga Bylot Supergroup's Tectonic History and Records of Environmental Change in the Context of New Age Constraints

License Number:	02 028 17R-M
Principal Investigator:	Halverson, Galen
Affiliation:	Department of Earth and Planetary Sciences McGill University Montreal, Quebec, Canada galen.halverson@mcgill.ca
Number in Party:	4
Research Area:	North Baffin
Fieldwork Locations:	Borden Basin

SUMMARY

Approximately one billion years ago, Earth's surface environment underwent a slow but inexorable shift from high CO₂ and low O₂ concentrations with minimal biological diversity, to an oxygenated world capable of hosting a thriving and diverse biosphere. The late Mesoproterozoic Bylot Supergroup in the Borden Basin preserves one of the best sedimentary records archiving this great transition and provides an ideal natural laboratory to calibrate latest Mesoproterozoic global change and to test models for the Meso-Neoproterozoic transition. Recent black shale Re-Os geochronology from the lower and middle Bylot Supergroup indicate that many of these changes occurred ca. 200 Ma years later than previously thought (i.e. 1050 Ma rather than 1250 Ma), meaning they coincided with the amalgamation of supercontinent Rodinia and the Grenville orogeny. This new geochronological context suggests possible links between these tectonic, biological, and geochemical phenomena through changes in continental weathering that brought about a first order shift in the nature of global carbon cycling.

Permafrost Atmospheric Science in Cambridge Bay, Canada

License Number: 04 013 17R-M

Principal Investigator: Jung, Ji Young

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Incheon, Yeongsu-gu, Republic of Korea
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Number in Party: 7

Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay

SUMMARY

This research will focus on interactions that drive critical climate feedbacks within Arctic environments through greenhouse gas fluxes and changes in surface energy balance associated with permafrost degradation. Subsurface microbial, geochemical, and hydrologic processes that determine the fate of organic carbon will need to be characterized to better predict CO₂, CH₄ and N₂O fluxes from Arctic landscapes. An improved understanding of organic matter vulnerability in thawing permafrost – incorporating the nitrogen cycle – will greatly improve modeling of greenhouse gas flux from subsurface environments and the atmosphere.

Iqaluit MET Mast

License Number:	01 008 17N-M
Principal Investigator:	Nimchuk, Sheldon
Affiliation:	Qikiqtaaluk Business Development Corporation Iqaluit, Nunavut, Canada snimchuk@qcorp.ca
Number in Party:	5
Research Area:	Qikiqtani
Fieldwork Locations:	Iqaluit

SUMMARY

The Iqaluit meteorological (MET) tower mast project includes installation of a meteorological mast, collecting wind data for a minimum of one year and a maximum of two years, periodic site visits for maintenance, and dismantling and removing of the mast and all materials/equipment from the site at the end of the project duration. Erection of the meteorological mast is necessary to support wind monitoring instruments. The purpose of collecting wind data is to assess and validate the wind resource in Iqaluit for potential wind energy generation. At this initial phase, there are no long-term developments planned. Depending on the outcome of this initial phase, any future developments will go through the Nunavut Planning Commission and Nunavut Impact Review Board proposed project application process, in addition to full community and stakeholder consultations.

Sanikiluaq MET Tower

License Number:	01 007 17N-M
Principal Investigator:	Nimchuk, Sheldon
Affiliation:	Qikiqtaaluk Business Development Corporation Iqaluit, Nunavut, Canada snimchuk@qcorp.ca
Research Area:	Qikiqtani
Fieldwork Locations:	Sanilkiluaq

SUMMARY

The Sanikiluaq MET Tower project includes installation of a meteorological tower (MET tower), collecting wind data for a period of one year, periodic site visits for tower maintenance, and dismantling and removing of mast and all materials/equipment from the site at the end of the project duration. Erection of the MET tower is necessary to support wind monitoring instruments.

GEM-2 North Baffin Bedrock Mapping Project

License Number:	02 029 17N-A
Principal Investigator:	Skipton, Diane
Affiliation:	Geological Survey of Canada Ottawa, Ontario, Canada diane.skipton@canada.ca
Number in Party:	10
Research Area:	North Baffin
Fieldwork Locations:	Pond Inlet Area

SUMMARY

This proposed project will cover all of National Topographic System map sheet (scale 1:250 000) 37G and the southern (on-land) portion of map sheet 38B in the Pond Inlet – Mary River area of northern Baffin Island, Nunavut. Mapping would be conducted out of Pond Inlet from July 2nd to August 20th 2017, and followed by analytical and map production work in Ottawa in 2017-2018. Geological maps and reports for this area are outdated or have never been published. New maps from this project would document the rocks, minerals, and history of the land, and help identify potential mineral resources and carving stone. This project would be undertaken by 11-12 scientists and students based out of rented accommodation in Pond Inlet, supported by one helicopter. Fieldwork would involve foot traverses by teams of two, causing minimal disturbance. Fist-size rock samples will be collected using a rock hammer. Other observations include GPS locations, hand-held compass measurements, and digital photographs.

GEM-2 Boothia-Somerset: Integrated Geoscience Along the Northwest Passage

License Number: 04 015 17N-M

Principal Investigator: Barrie, Mary Sanbourn

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Research Area: Kitikmeot

Fieldwork Locations: Boothia Peninsula

SUMMARY

This research project involves primarily undertaking bedrock mapping by foot traverse of a 17,500 km² region, for which knowledge stems from 1963 and 1986 mapping without benefit of aeromagnetic constraints or age constraints. This research will significantly upgrade the outdated geoscience framework of this area, expand the impact of new geo-constraints on the mainland, and provide relevant data and knowledge to this remote region of Nunavut that – because of global warming and the resulting increased shipping – will increasingly be exposed to matters related to resource assessment and economic development. The overarching intent of this project is to make available modern knowledge for a region between Taloyoak and Resolute, so that stakeholders can understand and assess its geological history and mineral resource potential using up-to-date, relevant data.

An Investigation of the Sensitivity of High Arctic Permafrost to Climate Change

License Number: 02 030 17R-M

Principal Investigator: Pollard, Wayne

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Number in Party: 10

Research Area: North Baffin

Fieldwork Locations: Ellesmere Island and Axel Heiberg Island

SUMMARY

This is the last year of a long-term project that examines how global warming, in particular warmer summer temperatures, is affecting the stability of high Arctic permafrost conditions, landscapes and infrastructure. This research aims to: (1) identify and measure changes in different landscapes (e.g. tundra, polar desert, wet lands, shorelines); (2) assess local climate variability; (3) evaluate the nature and extent of ground ice in permafrost and its vulnerability to climate change; and (4) determine the amount and rate of landscape change caused by warming and melting permafrost (thermokarst).

Planetary Analog Studies at the Flashline Mars Arctic Research Station

License Number: 02 031 17R-M

Principal Investigator: Rupert, Shannon

Affiliation: Mars Society
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Research Area: North Baffin

Fieldwork Locations: Devon Island

SUMMARY

A research team on a simulated mission to Mars will compare soil ecology, microbial ecosystems, lichen diversity, and hypolithic cyanobacteria in two extreme environments: the deserts of southeastern Utah and the area near Haughton Crater on Devon Island, Nunavut. Comparing the microbial communities of these Martian-analog sites should yield insights into the success of microbial communities in these environments as well as ecological and genetic factors contributing to their local abundance and fitness. Comparing these two environments, using the same team and the same analytical methods, will test the biological similarity of far-separated Martian analogues.

Periglacial and Paleoglacial Investigation of the Houghton Impact Structure and Surrounding Terrains, Devon Island, Nunavut

License Number: 02 032 17R-M

Principal Investigator: Godin, Etienne

Affiliation: Department of Earth Sciences
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Research Area: North Baffin

Fieldwork Locations: Devon Island

SUMMARY

The objective of this project is to carry out comparative planetary geology aimed at refining our understanding of the origin and dynamics of gullies and subglacial channels. These linear landforms, quite visible on high-resolution imagery both in the Arctic and on Mars, have great implications regarding the role of water in arid and cold environments.

The Analytical Quandary of Chert Quarries: A Multi-Scalar Approach to Understanding Palaeo-Inuit Technological Organization and Novice Skill on Southern Baffin Island

License Number: 01 010 17R-M

Principal Investigator: Milne, Brooke

Affiliation: Department of Anthropology
University of Manitoba
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Number in Party: 4

Research Area: South Baffin

Fieldwork Locations: Amadjuak Lake and Mingo Lake

SUMMARY

Using a combined methodological approach that draws together GIS modelling, archaeological field survey, remote sensing, and lithic technological and provenance analyses, this project will further explore Palaeo-Inuit quarry use to understand how stone procurement influenced seasonal mobility and settlement patterns on southern Baffin Island.

SuperDARN Radar Sites

License Number:	02 035 17R-M
Principal Investigator:	McWilliams, Kathryn
Affiliation:	Department of Physics and Engineering Physics University of Saskatchewan Saskatoon, Saskatchewan, Canada rls757@mail.usask.ca
Number in Party:	3
Research Area:	North Baffin and Kivalliq
Fieldwork Locations:	Clyde River and Rankin Inlet

SUMMARY

Super Dual Auroral Radar Network (SuperDARN) Canada is a network of high-frequency (HF) radars located throughout the northern hemisphere. The purpose of the SuperDARN is to study plasma in the near-Earth space system, its interaction with the Earth's atmosphere and geospace environment, its effects on the terrestrial "hard" infrastructure (e.g. communications, energy, transportation, etc.), and its role in the Sun-Earth system. SuperDARN convection/voltage maps are essential for studies of the impact of space weather at Earth. Space weather researchers rely on SuperDARN data for putting their localized observations in context. SuperDARN radars are extremely reliable, being easily accessible for repairs and upgrades. This reputation has made SuperDARN a favourite tool for space weather scientists.

Onshore Stratigraphy, Northern Baffin Bay Region

License Number: 02 033 17N-M

Principal Investigator: Haggart, Jim

Affiliation: Natural Resources Canada
Geological Survey of Canada
Vancouver, British Columbia, Canada
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Number in Party: 4

Research Area: North Baffin

Fieldwork Locations: Pond Inlet and Bylot Island

SUMMARY

Cretaceous-Cenozoic rock outcrops on Bylot Island and Baffin Island in the vicinity of Pond Inlet (2017-18) and Scott Inlet (2018) will be studied to determine details of their stratigraphic succession and ages. Previously collected, as well as new, samples will be precisely located in measured stratigraphic sections, providing information on age, sedimentology and depositional environments, chemical composition and physical properties of the strata, and organic geochemistry, to better constrain the extent of organic material preserved in the rocks. Consideration will be given to developing models of sedimentary facies relationships, and geological mapping will establish the structural regime. Detailed understanding of age and outcrop sedimentology will allow identification of regional and local unconformities, and provide a sequence stratigraphic framework for the onshore succession. Fieldwork will be undertaken over two seasons with logistical support coordinated with the Polar Continental Shelf Program (PCSP).

LiDAR Cambridge Bay

License Number:	04 017 17N-A
Principal Investigator:	McLennan, Donald
Affiliation:	Polar Knowledge Canada Ottawa, Ontario, Canada donald.mclennan@polar.gc.ca
Number in Party:	2
Research Area:	Kitikmeot
Fieldwork Locations:	Cambridge Bay and Ovayok Territorial Park

SUMMARY

Polar Knowledge Canada (POLAR), in collaboration with the British Antarctic Survey (BAS), is proposing to direct approximately eight hours of Twin Otter flight time over approximately three days, for line-surveys in the Cambridge Bay area over land and over sea ice. The Twin Otter aircraft is owned and operated by the BAS. The aerial surveys proposed here are to occur while the aircraft is in transit from Calgary to Alert. From here, the aircraft will continue over Greenland, Iceland, and Svalbard as part of a larger international scientific field campaign (not involving POLAR). Airborne LiDAR is able to measure the geometry of ice and land surfaces, and is a useful calibration and validation tool for satellite measurements in combination with Ka-band radar. Ka-band radar from satellites is used to estimate ice thickness and snow thickness, however, Ka-band radar from aircraft, in conjunction with ground validation, is needed to better understand and improve accuracy of satellite-based information for snow and sea ice.

Coppermine River Transect

License Number:	04 018 17N-A
Principal Investigator:	Rainbird, Robert
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Number in Party:	10
Research Area:	Kitikmeot
Fieldwork Locations:	Kugluktuk, Coppermine River

SUMMARY

The Coppermine River Transect activity will examine the geology of an approximately 3 km thick sedimentary and volcanic rock succession superbly exposed between Dismal Lakes and Kugluktuk along the Kendall and Coppermine rivers. A field-based study is proposed from July 10 until August 12, 2017 to acquire field-based geological observations and collecting rock specimens/samples from key localities for follow-up laboratory analysis (chemical analysis and microfossil description). It is uncertain if microfossils – less than 6 microns in size and well below the human visual range – will be found, but fist-sized samples of rocks will be processed to extract any microfossils that may exist in the samples for further analysis.

Northern Contaminants Air Monitoring: Passive Air Sampling for Organic Pollutants and Mercury

License Number: 01 011 17R-M

Principal Investigator: Hung, Hayley

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Research Area: Kitikmeot and South Baffin

Fieldwork Locations: Cambridge Bay and Iqaluit

SUMMARY

Under the Northern Contaminants Program (NCP), our team is deploying passive air samplers to measure contaminants in seven locations in the Arctic, and two of the sites in Nunavut are Cambridge Bay and Iqaluit. The atmosphere is the main pathway for organic contaminants – e.g. polychlorinated biphenyls (PCBs), pesticides, combustion by-products, and mercury from industrial sources – to enter Arctic ecosystems. Many contaminants are toxic and can accumulate in foodwebs, affecting the health of wildlife and humans. They can be carried by wind and water from sources to the Arctic. Our proposed passive sampling regime will allow for low-cost, low-maintenance monitoring of these contaminants.

Airborne Geophysics Survey

License Number:	02 036 17R-M
Principal Investigator:	Steenkamp, Holly
Affiliation:	Canada-Nunavut Geoscience Office Natural Resources Canada Iqaluit, Nunavut, Canada holly.steenkamp@canada.ca
Number in Party:	3
Research Area:	North Baffin
Fieldwork Locations:	Northern Baffin Island

SUMMARY

The Fury and Hecla Airborne Geophysical Survey will fill a gap in geophysical survey coverage on Baffin Island. The survey will be led by the Canada-Nunavut Geoscience Office (C-NGO), and its results will be directly applied to new regional geology mapping planned for 2018-2019. The survey is proposed as a two-year plan to be contracted to a Canadian-based geophysical survey company. The work will be based from Igloolik, and use up to three small fixed-wing aircraft. The first part of the survey should start around August 1st and end October 31st, 2017. The second part of the survey will follow a similar timeline in 2018. The full survey will be completed by December 2018.

Arctic-Boreal Vulnerability Experiment (ABoVE) Airborne Campaign

License Number:	04 016 17N-M
Principal Investigator:	Miller, Charles
Affiliation:	Jet Propulsion Laboratory, NASA Pasadena, California, United States of America charles.e.miller@jpl.nasa.gov
Research Area:	Kitikmeot
Fieldwork Locations:	Cambridge Bay

SUMMARY

The Arctic-Boreal Vulnerability Experiment (ABoVE) is a NASA field campaign being conducted in Alaska and western Canada over the next decade. It is a diverse large-scale study of the impacts of environmental change on terrestrial and freshwater ecosystems in Arctic and boreal regions. The airborne component of this research seeks to link studies conducted on the ground with data collected via satellite remote sensing, enabling a deeper understanding of the vulnerability and resilience of these ecosystems and how people within and beyond this region are responding to change. The ABoVE airborne campaigns can provide remote sensing data with higher spatial and temporal resolution than available from satellite sensors, as well as measurements that are not currently available from space. The ABoVE airborne campaigns offer unique opportunities to validate satellite data for northern high latitude ecosystems, develop and advance fundamental remote sensing science, and explore and exploit new scientific insights from innovative sensor combinations.

Mary River Project

License Number:	02 039 17R-M
Principal Investigator:	McPhee, Wayne
Affiliation:	Baffinland Iron Mines Corporation Oakville, Ontario, Canada wayne.mcphee@baffinland.com
Research Area:	North Baffin
Fieldwork Locations:	Steensby Port, Mary River, and Milne Port/Road

SUMMARY

The goal of this research is to conduct data collection and analysis for environmental monitoring and management of the Mary River Project to assess Project impacts in relation to the approved environmental impact assessment; Compliance to NIRB Certificate No. 005, Amended Type "A" Water License 2AM-MRY1325 and further baseline and operating conditions analysis for future permitting. Monitoring falls under three main categories: (1) aquatic, (2) marine, and (3) terrestrial.

Deployment of Environmental Instrumentation in Grenier Lake, Cambridge Bay

License Number: 04 021 17R-M

Principal Investigator: McLennan, Donald

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Number in Party: 5

Research Area: Kitikmeot

Fieldwork Locations: Grenier Lake Watershed, Cambridge Bay

SUMMARY

This project is a continuation of the scientific field instrumentation installation and operation from 2015 and 2016 (NIRI Licence #: 04 010 16R-M; NIRB File #: 15YN032; NPC File #: 148164). The activities proposed for 2017 are: (1) replacement of the damaged sensor and power cables, the armouring of all cables of the POLAR weather station, as well as bringing the station online again, to be performed as early as possible in the season (probably June); and (2) redeployment of the sensor of the east watershed station, and bringing this station online shortly after ice melt.

WESTBAFF- MSM66

License Number: 02 041 17N-A

Principal Investigator: Campbell, Calvin

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Research Area: North Baffin

Fieldwork Locations: Baffin Bay

SUMMARY

The goals of this proposed research during expedition MSM66 are to: (1) reconstruct ice sheet dynamics by investigating the drainage of the northeast Laurentide ice sheet through Lancaster Sound during the last glacial period and deglaciation. This will be done by multibeam and sediment echosounder surveys providing information on the spatial and temporal development of the Laurentide Ice Sheet; (2) reconstruct the pathway of Arctic waters through Baffin Bay. Study of past oceanography will be based on gravity and box cores collected from the shelf, continental slope, and basin areas. If time permits, a limited number of gravity and box cores will be collected from fiords; and (3) carry out experiments on foraminifera (micro-organisms) under controlled temperature, salinity, and carbonate ion concentration conditions.

Geoscience Tools for Supporting Environmental Risk Assessment of Metal Mining

License Number: 04 019 17N-M

Principal Investigator: Galloway, Jennifer

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Research Area: Kitikmeot

Fieldwork Locations: Kent Peninsula, Elu Inlet

SUMMARY

The goal of this research is to conduct and integrate western science research with cultural knowledge to better understand how changing northern climate has, and will, affect chemical loading of northern environments. This project focuses on the mineral-rich greenstone bedrock of the Slave Geological Province in central Northwest Territories and southern Nunavut. This bedrock hosts gold mineralization and other elements, such as arsenic, that can be mobile and toxic.

The Beginning of an Era: Characterizing the Depositional Environment of Earth's Earliest Eukaryotic Life

License Number: 01 013 17R-M

Principal Investigator: Hodgskiss, Malcolm

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Number in Party: 2

Research Area: South Baffin

Fieldwork Locations: Belcher Islands

SUMMARY

We are proposing to do geological fieldwork for scientific purposes between July 26 – August 23, 2017 on the Belcher Islands, as a continuation of work conducted there in 2016. The geologic time captured in the spectacularly preserved stratigraphy of the Belcher Islands is an interval of unique global change from 2.0-1.8 billion years ago. This record serves as a strong platform for collaborative research projects led by Stanford University and McGill University graduate students. The specific project aims are to characterize ocean and atmospheric chemistry across this approximately 200 million year interval. This will be achieved through geological mapping, and surface sampling of rocks for chemical analyses. Samples are typically 50-500 grams, and will be catalogued at Stanford University to be shared with other researchers upon request.

A Weather Station Network to Support Safe Travel and Build Nunavummiut Environmental Monitoring Capacity

License Number: 04 022 17R-M

Principal Investigator: Else, Brent

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Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay Surrounding Area

SUMMARY

Over the past two years, our team at the University of Calgary has set up three weather stations near Cambridge Bay, Nunavut. The weather stations have scientific objectives to study sea ice melt and air-sea CO₂ exchange. But they also have practical objectives to provide real-time weather information along important travel routes for residents of Cambridge Bay. The stations have been set up in collaboration with the Ekaluktutiak (Cambridge Bay) Hunters and Trappers Organization (HTO), and two of the stations have been placed at the HTO's request at important hunting and fishing locations. The weather stations are permitted under an existing NIRI multi-year license that covers a wide range of natural science activities.

Microbial Investigations of Perennial Springs, Permafrost and Ground Ice in the High Arctic

License Number: 02 043 17R-M

Principal Investigator: Whyte, Lyle

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Number in Party: 2

Research Area: North Baffin

Fieldwork Locations: Axel Heiberg

SUMMARY

The microbial biodiversity in unique habitats including cold perennial salt springs and permafrost environments have not been fully explored, and molecular traits that enable microorganisms to survive and thrive in the Canadian High Arctic are unknown. This research program examines microbial biodiversity and ecology in unique polar habitats and aims to expand our knowledge of polar microbial communities.

Metal Loading and Retention in Arctic Tundra Lakes During Spring Runoff

License Number: 01 014 17R-M

Principal Investigator: Richardson, Murray

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Number in Party: 5

Research Area: South Baffin

Fieldwork Locations: Iqaluit

SUMMARY

Spring snow melt is the most important hydrologic event of the year in Arctic landscapes. During this relatively short period in spring, inputs of water and waterborne contaminants – such as mercury (Hg) and other trace metals – to surface waters can exceed those occurring during the remainder of the year. Nevertheless, there is little research on the transport of metal to lakes during snow melt periods in Arctic Canada. The main objective of this project will be to quantify, using hydrological and water chemistry measurements, the relative contributions of mercury and other trace metals in snowmelt runoff to the water column and sediment of lakes in the vicinity of Iqaluit, Nunavut.

Seabed Mapping of Frobisher Bay to Support Infrastructure Development and Natural Hazard Assessment

License Number:	01 016 17R-M
Principal Investigator:	Ham, Linda
Affiliation:	Canada Nunavut Geoscience Office Natural Resources Canada Iqaluit, Nunavut, Canada linda.ham@canada.ca
Number in Party:	14
Research Area:	South Baffin
Fieldwork Locations:	Frobisher Bay

SUMMARY

Frobisher Bay is a large inlet with extremely high tides and complex bathymetry, with Iqaluit, Nunavut's capital city, located near its innermost end. Therefore, Frobisher Bay is an extremely important waterway for Nunavut, involving transportation and infrastructure development both on land and under water. Resource development, both on land and under water, has the potential to affect the natural system of the bay. New marine geoscience information is required to guide sustainable development by understanding marine geohazards such as submarine landslides, natural petroleum seeps, iceberg scour, nearshore ice scour, tidal currents, and wave exposure. Furthermore, knowledge and mapping of the marine habitats found in Frobisher Bay is essential to ensure that sensitive habitats are not damaged or destroyed by development activities. A seabed-mapping project, begun in 2014, has been addressing these and related issues by mapping the seafloor in Frobisher Bay, and by sampling the seafloor for geology and biology.

Defence Research and Development Canada (DRDC) Gascoyne Inlet

License Number:	02 044 17R-M
Principal Investigator:	MacNeil, Erin
Affiliation:	Defense Research and Development Canada Dartmouth, Nova Scotia, Canada Erin.MacNeil@drdc-rddc.gc.ca
Research Area:	North Baffin
Fieldwork Locations:	Gascoyne Inlet, Devon Island

SUMMARY

The Defence Research and Development Canada (DRDC) Northern Watch Technology Demonstration Project will demonstrate an Arctic maritime surveillance capability to the Department of National Defence and other concerned federal departments. This is a multi-year undertaking and is based at Gascoyne Inlet. The surveillance demonstration system will be unmanned, semi-autonomous, and remotely controlled through a satellite system connection to one of the DRDC centres. In preparation for the technology demonstration, annual trips to the Gascoyne Inlet camp will be required. Once the team has arrived at the camp, their main tasks will involve conducting routine camp maintenance and testing on equipment. The on-site team for the 2017 field season is expected to range from 10 to 20 persons, with the normal load being approximately 15 people. The duration of their time on site is expected to be 31 July, 2017 – 1 September, 2017.

ArcticNet 2017 Expedition: Integrated Regional Impact Study of the Canadian High Arctic

License Number:	05 007 17R-M-Amended
Principal Investigator:	Merzouk, Anissa
Affiliation:	Université Laval Quebec City, Quebec, Canada anissa.merzouk@arcticnet.ulaval.ca
Research Area:	North and South Baffin, and Kitikmeot
Fieldwork Locations:	Baffin Bay, Nares Strait, Northwest Passage, Queen Maud Gulf, Maxwell Bay, and rivers in the Kitikmeot and Qikiqtaaluk Regions

SUMMARY

The main objective of this proposed research program is to assess the changes occurring in Canadian Arctic 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, sampling operations in Nunavut waters in 2017 are scheduled to take place between June 10 – October 6. The ArcticNet marine-based research program is a long-term program scheduled to run every year until 2018. Shipboard sampling will be carried out along the ship track and at designated sampling stations in Hudson Strait, Baffin Bay, Lancaster Sound and the Northwest Passage. Shipboard operations will include mapping the ocean floor with sounding technologies. We will be conducting beach surveys on foot and collecting a small number of empty beach shells (5-10, no excavations required) for radiocarbon dating, as well as collection of river water samples for chemical analysis, including measurement of greenhouse gases.

The Sources and Fate of Glacially-Derived Nutrients, Microbes, and Vegetation

License Number: 02 045 17R-M

Principal Investigator: Dubnick, Ashley

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Number in Party: 2

Research Area: North Baffin

Fieldwork Locations: Sverdrup Pass, Ellesmere Island

SUMMARY

Glaciers in the Canadian Arctic Archipelago (CAA) have experienced significant increases in mass loss, and rates of glacial retreat and the quantity of melt in these regions are predicted to continue to increase while exposing large regions of freshly deglaciated forefields. Traditional models of forefield succession suggest they are largely colonized by microbes and plants from outside the glacier system. However, recent research suggests that glacier systems may provide important sources of nutrients, microbes, and plant material that have important roles in forefield succession, soil development, and productivity. Although research over the past decade has advanced our understanding of biogeochemistry, microbiology, and vegetation contained in polar glaciers and their forefields, it has yet to provide an integrated approach that investigates links between glacier meltwater chemistry, microbiology, and the success of relict vegetation in colonizing glacial forefields. The objective of this research is therefore to investigate how glacially-derived nutrients, microbes, and vegetation affect forefield productivity.

A Multidisciplinary Investigation of Salt Diapirs on Axel Heiberg Island, Nunavut

License Number: 02 046 17N-A

Principal Investigator: Osinski, Gordon

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Number in Party: 3

Research Area: North Baffin

Fieldwork Locations: Axel Heiberg Island

SUMMARY

We propose a multidisciplinary investigation of salt diapirs on Axel Heiberg Island, Nunavut. Axel Heiberg Island is situated within the Sverdrup Basin, Nunavut, which is an intercratonic sedimentary trough containing at least 13 km of folded and faulted sedimentary rocks of the Innuitian Tectonic Province. At least 50 diapirs have been reported on Axel Heiberg Island. An understanding of the emplacement and evolution of salt diapirs is important for several reasons. First, salt diapirs elsewhere in the world represent prime traps for oil and gas and are also associated with lead and zinc mineral deposits, and there is the potential for such deposits on Axel Heiberg Island. Second, several of the salt diapirs on Axel Heiberg Island are host to perennial springs - the highest latitude of such perennial springs on Earth. The Lost Hammer spring is the only documented methane seep in a cryoenvironment on Earth. Such springs offer important analogues for understanding how life may have evolved on Mars.

Hydrological Processes and Change, Apex River, Iqaluit Area

License Number: 01 017 17R-M

Principal Investigator: Lamoureux, Scott

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Number in Party: 7

Research Area: South Baffin

Fieldwork Locations: Iqaluit and Apex

SUMMARY

We plan to develop a long term watershed monitoring program in a river that has important uses for community members and the City of Iqaluit. This information will help manage the river and inform users of changes that are occurring.

Kathleen Lake Geoscience Project

License Number:	04 023 17N-M
Principal Investigator:	Ielpi, Alessandro
Affiliation:	Harquail School of Earth Sciences Laurentian University Sudbury, Ontario, Canada aielpi@laurentian.ca
Number in Party:	3
Research Area:	Kitikmeot
Fieldwork Locations:	Kathleen Lake and Starvin Lake

SUMMARY

The Kathleen Lake Geoscience project proposes to increase the general knowledge of an area of the Kitikmeot (Nunavut) that has not received much geological mapping in the past. The area of interest is located between Kathleen and Starvin lakes, 30 km southeast of Kingaok (Bathurst Inlet Lodge), 100 km south of Umingmaktok, and 290 km southwest of Ikaluktutiak (Cambridge Bay). The study area is part of Crown Land. The area was last mapped in the 1980s and, to our best knowledge, does not contain any archeological or historical site. The proposed fieldwork will be conducted by four geologists out of a temporary, tent-based camp, and will take place from July 8 - 18, 2017. No semi-permanent structure will be erected. The study area extends over exposures of bedrock located within walking distance from Kathleen Lake, and will be accessed via foot traversing.

Permafrost-Active Layer Dynamics and Feedbacks with Climate Forcing in Ice-Rich Sediments, Fosheim Peninsula, Ellesmere Island, Nunavut

License Number: 02 047 17N-A

Principal Investigator: Ward, Melissa

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Research Area: North Baffin

Fieldwork Locations: Ellesmere Island

SUMMARY

The purpose of this research is to quantify and explain permafrost and landscape-scale responses in a high Arctic Polar desert system within the context of a changing climate. The objectives for this research are to: (1) measure and characterize energy, water, and mass fluxes at specific sites to determine their role in landscape-scale dynamics; (2) determine feedback systems and how the active layer is changing in response to climate forcing; and (3) determine thresholds of change (tipping points) for thaw-related geomorphic processes (thermokarst).

Preservation of Organic Matter in Early Diagenetic Chert

License Number: 02 048 17N-A

Principal Investigator: Berg, Ashley

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Number in Party: 3

Research Area: North Baffin

Fieldwork Locations: Northern Baffin Island

SUMMARY

Ancient microbial mats preserved in chert provide the most effective mechanism for understanding Earth's early biosphere, yet visual analyses of microbial morphologies are rarely accompanied with *in situ* chemical data. More insight about which microbial processes, such as metabolic processes or decomposition, were active during preservation can be gained from such chemical data. The carbonate rocks and sedimentary chert of the Angmaat Formation near White Bay, Baffin Island, contain the most exquisitely preserved 1.2 billion-year-old microbial mats. This project aims to correlate the well-preserved mat morphologies to the preserved geochemical signatures in the mats. Samples collected during a 1993-1994 field season for a separate, earlier project focused on the geochemistry preserved in the carbonate rocks. Black chert was targeted at the time because it was known to contain preserved microbial morphologies. With recent advancements in geochemical tools, we can now investigate the preserved chemistry in greater detail. Select samples from the previous field season have been used to begin this research project, however, larger sample volumes are required to perform the chemical analyses.

Hydrographic Survey in the Foxe Channel and Hudson Strait

License Number:	02 050 17N-A
Principal Investigator:	Lavoie, Denis
Affiliation:	Geological Survey of Canada Natural Resources Canada Quebec City, Quebec, Canada denis.lavoie@canada.ca
Research Area:	North and South Baffin
Fieldwork Locations:	Hudson Strait and Foxe Basin

SUMMARY

There is circumstantial evidence, largely from satellite radar images, that petroleum is possibly seeping from the seafloor of Foxe Channel (north of Southampton Island) and Hudson Strait (north of Akpatok Island). Information collected during this project will help support community and government decisions on the presence and nature of the suspected natural oil seeps on the seafloor. The data will be collected using a high resolution sonar system, the frequency of which does not conflict with marine mammal communication. The major goals of this proposed research for 2017 would be to: (1) investigate natural leakage of buried oil and gas deposits at the seabed. Oil and gas can leak out from natural processes. Our research will help to determine how much oil and gas is leaking and where it is coming from; and (2) learn more about what types of bedrock are exposed at the seabed. Knowledge of the bedrock in Hudson Strait and Foxe Channel would provide important information about how they formed and aid in accurate assessment of resources.

Acoustic Study of Marine Mammals and Ambient Noise in Barrow Strait

License Number: 02 051 17R-M

Principal Investigator: Hildebrand, John

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Research Area: North Baffin

Fieldwork Locations: Barrow Strait

SUMMARY

The purpose of this project is to investigate marine mammal acoustic behaviour, seasonal presence, and relationships with sea ice in Barrow Strait south of Resolute Bay, Nunavut. This study will also measure underwater noise from vessels transiting the region.

Bathurst-Kiluhitquq Paleomagnetic Research Project

License Number: 04 024 17N-A

Principal Investigator: Gong, Zheng

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Number in Party: 1

Research Area: Kitikmeot

Fieldwork Locations: Bathurst Inlet

SUMMARY

This project is focused on the paleomagnetic study of bedrocks exposed along shorelines of southern Kiluhitquq (Bathurst Inlet), as part of a Yale Ph.D. program, to understand how rocks of the Canadian Shield originally came together 1900 million years ago. We plan to measure the magnetism of rocks to determine where they were on the globe when they formed. All activities will be conducted from July 14 - 26, 2017 by two Yale geologists and a field guide provided by Kingaok (Bathurst Inlet Lodge). Study sites will be accessed via motorboat provided by Kingaok. Finger-sized samples will be collected by a portable rock drill (modified chainsaw), so that we can measure their magnetism at our Yale laboratory. Drilling will be used with caution to minimize any impact on surroundings.

Ancient DNA in Lake Sediment

License Number: 01 022 17R-M

Principal Investigator: Miller, Gifford

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Number in Party: 3

Research Area: South Baffin

Fieldwork Locations: Surrounding Areas of Clyde River and Iqaluit

SUMMARY

This fieldwork builds on a project initiated last year, also titled ‘Ancient DNA in Lake Sediment’. The primary goal of this research is to analyze ancient DNA contained in lake sediment in order to reconstruct past vegetation changes on Baffin Island over the last ~10,000 years and assess how plant communities responded to past climate change. Analyzing ancient DNA in lake sediment is a powerful new tool in paleoecology that seems to work particularly well in the Canadian Arctic because of the cold temperatures that provide favorable conditions for preservation, and because DNA provides a comprehensive picture of flora growing within a lake catchment. Our goal this year is to collect an additional sample from a lake we began working on last year and to add two more lakes that should provide important comparison records from a colder, more northerly site.

Satellite Derived Bathymetry for Marine Shipping Corridors

License Number:	04 025 17N-M
Principal Investigator:	Knudby, Anders
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Number in Party:	1
Research Area:	Kitikmeot
Fieldwork Locations:	Cambridge Bay Area

SUMMARY

Knowledge of shallow water bathymetry is crucial for safe marine shipping and infrastructure development, but most of Nunavut's shallow waters remain poorly surveyed. Satellite derived bathymetry (SDB) is a potentially cost effective technology for surveying these areas. To assess the large scale potential for SDB in Nunavut, the proposed research will test existing SDB methods for shallow waters surrounding the seven largest coastal communities in Nunavut. It will also produce up-to-date maps of water depth for the optically shallow sections of those areas. It will identify areas where existing nautical charts and SDB do not agree. Field measurements of sea floor colour and water depth will be collected in shallow water areas around Cambridge Bay. In combination with satellite imagery, these data will be used to test SDB methods over the following year. SDB methods will be developed and tested in Cambridge Bay, which has clear water and large shallow areas and therefore provides an ideal test environment.

Evolution of Postglacial Landscapes and Hydrological Gateways in the Foxe Basin – Nettilling Lake Region

License Number: 02 054 17N-A

Principal Investigator: Pienitz, Reinhard

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Number in Party: 2

Research Area: North Baffin

Fieldwork Locations: Melville Peninsula

SUMMARY

This proposed research program is the logical continuation of studies completed in Nunavut over the past 23 years. It aims to place instrumental records into a longer-term perspective and fill long-standing knowledge gaps on climate and environmental change in one of the most inaccessible regions of Nunavut. Using many different indicators (microfossils) for the reconstructions of past temperature and other environmental variables, my research team will study the sediment records of lakes in areas surrounding the northern part of Foxe Basin. We will analyse these sediment core data to allow for regional comparisons with ice core data from Baffin Island and Greenland. Surficial landforms will be mapped and dated to determine the position and timing of past glacier retreat and sea- and lake-levels. The insights gained from this research will improve our ability to forecast future changes and impacts due to climate warming and help Inuit communities to adapt to rapidly changing landscapes and environments.

Coupled Terrestrial-Aquatic Climate Impacts on High Arctic Watersheds: Using Lake Hazen as a Sentinel for Change

License Number: 02 056 17N-M

Principal Investigator: Schiff, Sherry

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Number in Party: 5

Research Area: North Baffin

Fieldwork Locations: Axel Heiberg Island

SUMMARY

Our research involves collection of water from ponds, wetlands, creeks, snow, subsurface, and from Lake Hazen. Collecting water from these sites will provide information on the amount and type of dissolved organic carbon (DOC) within high-Arctic environments. We plan to collect water during hydrologically important periods: spring melt and summer conditions. Analysis of water samples will be conducted at the University of Waterloo, Ontario, where geochemical and isotopic techniques will be used to determine DOC concentrations, ages, and sources, as well as nutrient concentrations. These measures will provide an indication to the quality of water from different areas around Lake Hazen. In addition, we will be conducting in-field degradation experiments to see how DOC changes from sunlight and microbes. We will also be measuring river and creek discharge (flow) in order to calculate the amount of DOC and nutrients flowing into Lake Hazen from the landscape.

Impacts of Air Pollution on Terrestrial and Aquatic Ecosystems on Baffin Island

License Number: 02 055 17R-M

Principal Investigator: Aherne, Julian

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Research Area: North and South Baffin

Fieldwork Locations: Iqaluit, Kimmirut, and Pond Inlet

SUMMARY

The purpose of this project is to assess the impacts of air pollution on aquatic and terrestrial systems in the regions of Iqaluit, Kimmirut, and Pond Inlet. Lakes will be sampled for water chemistry to: (1) determine critical loads of acidity for surface waters, and (2) determine the risk of exceedance (impacts) under modelled deposition. In addition, moss and soil samples will be collected at a subset of the study lakes in the Pond Inlet region to assess the spatial variability in atmospheric pollution concentrations using established moss biomonitoring species (*Hylocomium splendens*).

2017/18 Research Program for the Grays Bay Road and Port Project

License Number:	04 031 17N-M
Principal Investigator:	Lawson, Nick
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Research Area:	Kitikmeot
Fieldwork Locations:	Kugluktuk and Cambridge Bay Surrounding Area

SUMMARY

The Grays Bay Road and Port (GBRP) Project is a proposed transportation corridor that will permanently connect a deep-water port at Grays Bay on the Coronation Gulf to the northern terminus of the Tibbitt-Contwoyto Winter Road at the former Jericho Mine, Nunavut. The project is being jointly proposed by the Kitikmeot Inuit Association (KIA) and the Government of Nunavut (GN). In support of advancing the design of the project and of assessing effects of the project on the biophysical and socio-economic environment, additional studies are required. The KIA and GN have contracted Nunami Stantec Limited (Nunami Stantec) to complete additional studies. Nunami Stantec is therefore applying to undertake limited field-based data collection and Inuit Qaujimajatuqangit (IQ) studies in the Kitikmeot Region during 2017/18.

Kitikmeot Region Marine Science Study

License Number:	0402817N-M
Principal Investigator:	Williams, Bill
Affiliation:	Institute of Ocean Sciences Fisheries and Oceans Canada Sidney, British Columbia, Canada Bill.Williams@dfo-mpo.gc.ca
Number in Party:	11
Research Area:	Kikitmeot
Fieldwork Locations:	Coastal and marine areas around King William Island and Gjoa Haven

SUMMARY

This project is located within the Kitikmeot region between Dolphin and Union Strait in the west, and Larsen Sound in the north and east. The Proponent will utilize the research vessel Martin Bergmann (62 feet in length) to collect baseline oceanographic data and evaluate marine ecosystem structure in the study area. The program will take place from August to September 2017, and will involve seasonal research activities until 2021.

SOCIAL SCIENCES RESEARCH

Exploring Relationships between Inuit and Western Knowledge and Management Systems in Nunavut Fisheries Governance

License Number: 02 008 17N-M

Principal Investigator: Wirz-Held, Mirjam

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Number in Party: 2

Research Area: Qikiqtaaluk and Kivalliq

Fieldwork Locations: Igloolik, Iqaluit, Pond Inlet, and Nauyasat

SUMMARY

The purpose of this project is to provide insight into the institutions involved in fisheries decision-making in Nunavut and how and where they access information to guide their decision-making, specifically with regards to the walrus (food fishery), turbot (commercial) and narwhal (food/commercial) fisheries. Understanding how different ways of knowing influence the information gathering and decision-making processes among the various institutions will allow for identification of options to improve fisheries management that better accounts for Inuit Qaujimajatuqangit.

Learning the Tundra: An Intergenerational Study of Spatial Inuit Qaujimajatuqangit

License Number: 03 002 17R-M

Principal Investigator: Greene, Ezra

Affiliation: Department of Anthropology
University of British Columbia
Vancouver, British Columbia, Canada

Number in Party: 1

Research Area: Kivalliq

Fieldwork Locations: Rankin Inlet and Chesterfield Inlet

SUMMARY

The purpose of this project is to gain information and knowledge on the topic of Inuit spatial and ecological knowledge, or Inuit Qaujimajatuqangit, across several generations. This study is relevant to understanding how Inuit spatial and ecological knowledge is currently taught and learned.

Pronouns and Reflexives in Inuktitut

License Number: 01 001 17R-M

Principal Investigator: Yuan, Michelle

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Number in Party: 1

Research Area: South Baffin

Fieldwork Locations: Iqaluit

SUMMARY

This project researches the sentence-level structure of Inuktitut, with special focus on pronouns and reflexives. I will carefully and thoroughly document the linguistic distributions of these elements, and look for patterns and generalizations in the data. The results will primarily be used to inform general linguistic research on pronouns and reflexives, but will also be potentially useful for language pedagogy and language maintenance.

Ukkusiksalik National Park Marine Baseline Data Collection

License Number:	03 004 17R-M
Principal Investigator:	Mahy, Maryse
Affiliation:	Parks Canada Iqaluit, Nunavut, Canada maryse.mahy@pc.gc.ca
Research Area:	Kivalliq
Fieldwork Locations:	Naujaat, Chesterfield Inlet, Rankin Inlet, Coral Harbour, Baker Lake, Arviat, and Igloolik

SUMMARY

The primary goal of this project is to reflect Inuit knowledge in three sub-projects. The results of this pilot project will contribute to best practices for the Nunavut Field Unit of Parks Canada to be able to best engage Inuit Knowledge in its monitoring program for Ukkusiksalik National Park in the future. It will also assist in continuing to protect and present the park to the public.

Engagement in the Canadian Red Cross: Supporting Nunavut Youth to Create Change in Their Community

License Number:	05 002 17R-M
Principal Investigator:	Ulrich, Rebecca
Affiliation:	Royal Roads University Winnipeg, Manitoba, Canada rebecca.ulrich@redcross.ca
Number in Party:	2
Research Area:	Kivalliq and Qikiqtani
Fieldwork Locations:	Rankin Inlet, Pond Inlet, Iqaluit, and Hall Beach

SUMMARY

The objective of this research is to find ways of engaging Nunavut youth in the development of Respect Education programs with the Canadian Red Cross, to ensure the program meets their needs. The Respect Education program is currently delivered in schools across Nunavut as part of the Suicide Prevention Action Plan.

Work/Journey/Home: Exploring the Impacts of Fly-In-Fly-Out Work Practices in the Kivalliq Region, Nunavut on Employees and Families

License Number: 03 005 17R-M

Principal Investigator: Cater, Tara

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Number in Party: 3

Research Area: Kivalliq

Fieldwork Locations: Rankin Inlet

SUMMARY

Mining operations in Nunavut require a Fly-in-Fly-out (FIFO) workforce, which involves workers living at a remote mine site for two week shifts away from their families and communities. Drawing on contemporary experiences from the Meadowbank mine and the Meliadine Gold project, the objective of this research is to determine how FIFO work practices are organized in the Kivalliq Region, and to understand how participation in FIFO work practices affects workers and their families, particularly as understood by Inuit workers and their families in Rankin Inlet. We aim to produce knowledge that will help in the development of relevant mining family support network materials and tools for employees and families in Rankin Inlet participating in FIFO work practices at Agnico Eagle mine sites.

Oral Histories of Auyuittuq National Park

License Number:	02 011 17R-M
Principal Investigator:	Routledge, Karen
Affiliation:	Parks Canada Calgary, Alberta, Canada karen.routledge@pc.gc.ca
Number in Party:	4
Research Area:	Qikiqtani
Fieldwork Locations:	Pangnirtung and Qikiqtarjuaq

SUMMARY

Parks Canada is collecting oral histories about the area that is now Auyuittuq National Park. These stories will mainly be used to help Parks Canada staff, residents of Pangnirtung and Qikiqtarjuaq, and visitors understand the history of Auyuittuq National Park.

Auyuittuq National Park Place Names Project

License Number:	02 012 17R-M
Principal Investigator:	Routledge, Karen
Affiliation:	Parks Canada Calgary, Alberta, Canada karen.routledge@pc.gc.ca
Number in Party:	3
Research Area:	Qikiqtani
Fieldwork Locations:	Qikiqtarjuaq and Pangnirtung

SUMMARY

The primary goal of this project is to create a map of Inuktitut place names within Auyuittuq National Park. The main participants in this project are the Parks Canada Inuit Knowledge Working Groups (IKWGs) in Pangnirtung and Qikiqtarjuaq. Since 2005, the IKWGs have worked with Parks Canada staff on projects pertaining to traditional knowledge. In March 2015, Parks Canada staff met with the IKWGs in Qikiqtarjuaq to discuss methodology for this project and to assess existing maps (including data provided by Inuit Heritage Trust and Parks Canada).

‘Safe and Sound:’ Exploring Inuit Mothers’ Experiences of Child Welfare in Relation to Inuit Qaujimajatuqangit (IQ) in Arviat, Nunavut

License Number: 03 002 17R-M-Amended

Principal Investigator: Johnston, Patricia

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Number in Party: 2

Research Area: Kivalliq

Fieldwork Locations: Arviat

SUMMARY

This research project responds to concerns expressed by Inuit about the child welfare system (social services). Inuit have stated that Qallunaat (non-Inuit) ways of doing things do not work in their communities – child welfare is no exception. Mining is seen as the economic future of Nunavut, yet it can also hold implications for child wellbeing. An increasing number of families are finding employment in the mining industry. Previous research concerning the social impacts of mining suggests that this form of employment can cause problems for families. It is important to explore the relationship between the effects of mine employment on households and communities and where that intersects with the child welfare system in Nunavut. This research attempts to do this from Inuit mothers’ perspectives. This will make it possible to identify the social supports families’ need. This research will have immediate implications for the community of Arviat, as well as contribute to what we know about mining employment and child welfare practices and services in Nunavut.

Structuring a Preparedness and Emergency Response

License Number: 02 016 17R-M

Principal Investigator: Rattue, Kevin

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Number in Party: 1

Research Area: North Baffin

Fieldwork Locations: Pond Inlet, Resolute, Arctic Bay, and Iqaluit

SUMMARY

As Arctic sea ice cover decreases, shipping lanes through the Northwest Passage (NWP) may become increasingly accessible to commercial traffic. The possibility of an oil or fuel spill exists and the remote location of Lancaster Sound would make emergency response to this channel difficult. The physical environment could be disastrously impaired and the lifestyles of coastal communities adversely impacted. Within this context, this research will examine the adequacy of existing contingency planning and emergency measures available to respond to an accident in Lancaster Sound, Nunavut.

Monitoring the Health of Simirlik National Park Through Inuit Knowledge: Pilot Project

License Number: 03 006 17R-M

Principal Investigator: Mahy, Maryse

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Research Area: North Baffin

Fieldwork Locations: Pond Inlet and Arctic Bay

SUMMARY

The overall goal of this project is to include Inuit Knowledge in Parks Canada's assessment of the health of the park's ecosystems. The immediate objective of this project is to test a method for monitoring/studying the health of the Park's ecosystems/environment through Inuit Knowledge in the long term.

COMPASS: Cohort Study Evaluating How Changes in School Programs, Policies, and Resources Impact Youth Health Behaviours

License Number:	01 004 17N-M
Principal Investigator:	Leatherdale, Scott
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Number in Party:	3
Research Area:	Qikiqtani and Kivalliq
Fieldwork Locations:	Cape Dorset, Coral Harbour, Iqaluit, and Pangnirtung

SUMMARY

COMPASS is a Canadian Institutes for Health Research and Health Canada-funded longitudinal study designed to follow a cohort of high school students attending a sample of secondary schools for up to five years to understand how changes in school environment characteristics (policies, programs, built environment) are associated with changes in youth health behaviours. COMPASS originated to provide school stakeholders with the evidence to guide and evaluate school-based interventions related to obesity, healthy eating, tobacco use, alcohol and marijuana use, physical activity, sedentary behaviour, school connectedness, bullying, and academic achievement. A mental health module will be introduced starting in the 2017-18 school year.

Mining Impacts and Sustainability in Qamanit'uaq (Baker Lake), Nunavut. Developing Strategies and Models for an Equitable Partnership and Pursuing an Inuit/Saami Youth Exchange Programme

License Number:	03 008 17R-M
Principal Investigator:	Blangy, Sylvie
Affiliation:	Evolutionary and Functional Ecology Centre French National Research Centre Montpellier, France sblangy@gmail.com
Research Area:	Kivalliq
Fieldwork Locations:	Baker Lake

SUMMARY

This is a four-year study with previous investigations demonstrating that mining extraction in Northern communities generates positive opportunities (jobs, skills-training, and salaries), but also negative impacts (environmental pollution, changes to caribou migration patterns, and changes to social cohesion). The project in 2017 will focus on strategic planning for future scenarios, a closer look on the effects mining has on caribou migration, and addressing community concerns relating to mining and the future of youth.

Foundations for Student Persistence & Success in Inuit Nunangat

License Number: 04 014 17N-M

Principal Investigator: Snow, Kathy

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Number in Party: 2

Research Area: Kitikmeot

Fieldwork Locations: Taloyoak

SUMMARY

Through a shared examination of Inuit student persistence and success, this project intends to provide evidence that can be used by policy makers, school administrators, teachers, parents, students, and District Education Authorities (DEAs) to examine current school policy and approaches. The potential benefit is school improvement and greater student persistence, achievement, and success.

Towards a Sustainable Fishery for Nunavummiut

License Number: 04 006 17R-M

Principal Investigator: Schott, Stephan

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Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay, Gjoa Haven, and Taloyoak

SUMMARY

The Traditional Ecological Knowledge (TEK) Sharing and Mapping Workshop is a component of the larger four-year research project, "Towards a Sustainable Fishery for Nunavummiut", led by a diverse research team of government, university, non-profit, and local collaborators. The larger project will deliver essential genomics and microbiome data; stock management tools; population genomics maps for Arctic char, cod and shrimp; and guidelines for a community based fisheries plan, which will serve as a model for other regions. The purpose of this project is to improve understanding of the use and status of Arctic char, cod, and shrimp in the Lower Northwest Passage in order to strengthen food security, create a baseline of the status and value of fish stocks, and to evaluate economic development opportunities.

Climate Communication and Adaptation: Engaging Maritime Publics in Resource Management

License Number: 04 008 17R-M

Principal Investigator: Tam, Chui-Ling

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Number in Party: 1

Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay and Kugluktuk

SUMMARY

The purpose of this research is to study climate change communication and compare maritime communities in diverse climate zones to identify differences and similarities in local perceptions of climate change and global climate action, and associated effects on local participation in resource management. This research will focus on whether climate change communication mobilizes or constrains local public engagement, and whether those effects vary depending on the particular spatial and socio-ecological attributes of places experiencing environmental change. The objectives are to understand how local resource environments and challenges are perceived and communicated in the context of climate change, how climate change is perceived as a societal and ecological phenomenon, and how different actors participate in climate change communication and resource management.

Rehabilitation and Criminal Justice: Learning What Inuit Think Should Happen if Young Inuit Men Break the Law

License Number:	03 011 17N-M
Principal Investigator:	Ferrazzi, Priscilla
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Number in Party:	3
Research Area:	Kivalliq and Qikiqtani
Fieldwork Locations:	Arviat and Iqaluit

SUMMARY

Aboriginal people are considered ten times more likely to be jailed than non-Aboriginal Canadians. Efforts to solve this problem – including Criminal Code changes and the Supreme Court of Canada decisions in Gladue (1999) and Ipeelee (2012) directing a different approach to Aboriginal sentencing – have had limited success. In the mainly Inuit-populated territory of Nunavut, stressors – including the presence of Western institutions and values – have been linked to crime rates 5.5 times higher than the rest of Canada and to disproportionate numbers of Inuit caught in the justice system. Young Inuit men, in particular, are vulnerable. While Nunavut criminal courts routinely apply Gladue principles and include Inuit elders' panels at sentencings and Inuktitut interpretation, the otherwise conventional Western approach to the administration of justice continues to raise concerns that it unintentionally marginalizes Inuit participation and values. The goal of this project is to create knowledge to help inform a rehabilitation-oriented court model for Nunavut.

Identifying Determinants of School Completion, Post-Secondary Education, and Education Success in Nunavut

License Number:	01 006 17Registry
Principal Investigator:	Healey, Gwen
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Number in Party:	2
Research Area:	Nunavut-Wide
Fieldwork Locations:	All Communities

SUMMARY

The purpose of this project is to explore determinants of secondary school completion, post-secondary education, and education success in Nunavut. This study will include both qualitative and quantitative data collection to triangulate findings and ensure the production of a detailed picture of the determinants of education success in Nunavut. There will be five parts to the data collection including: online surveys with post-secondary and Grade 12 students, drawing voice with Grade 12 students, narratives from key informants (parents, counsellors, and teachers), and narratives from high school dropouts.

Muskox Health and Resilience: Muskox Health Surveillance on Victoria Island to Support Food Security, Food Safety, Public Health, and Muskox Health

License Number: 04 011 17R-M

Principal Investigator: Tomaselli, Matilde

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Number in Party: 3

Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay

SUMMARY

This proposed research aims to develop a community-based muskox health surveillance system in the community of Cambridge Bay in order to monitor muskox health over time and be able to detect the emergence of disease. This surveillance system will be built through community involvement and will incorporate traditional and local knowledge about muskox health and diseases.

Patterns of Resilience Among Youth in Contexts of Climate Change in the Global North and Global South

License Number: 04 020 17N-M

Principal Investigator: Ungar, Michael

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Number in Party: 2

Research Area: Kitikmeot

Fieldwork Locations: Cambridge Bay and Kugluktuk

SUMMARY

The objective of this study is to discover, along with youth as co-researchers and citizen scientists, the sources of biopsychosocial resilience of young people over time and its relationship to the resilience of ecological systems affected by climate change. Four community case studies will provide us the opportunity to focus broadly on young people's stress levels, psychological well-being, social development, community processes, and the integrity of local physical environments. A series of research activities will be co-developed with youth and carried out over a period of five years.

Igunaq and Traditional Knowledge: Examining the Long-Term Development of Walrus Caching In and Around Igloolik

License Number: 02 040 17N-M

Principal Investigator: Desjardins, Sean

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Research Area: Qikiqtani

Fieldwork Locations: Igloolik

SUMMARY

Inuit Qaujimajatuqangit (IQ) tells us of the long-term economic importance of igunaq – a delicacy of walrus meat, blubber, and organs buried in distinctive beach gravel-caches in the summer, and consumed during the winter. Recent archaeological research conducted near Igloolik, Nunavut, indicates this caching practice and the production of igunaq may have been widespread during the thirteenth century, AD. During these times, igunaq had the potential to sustain larger winter populations than were possible elsewhere in the Canadian Arctic. For this proposed research, I will examine how Iglulingmiut from Igloolik continue to produce igunaq, from (1) the butchery of walruses on the moving ice of northern Foxe Basin, (2) the creation of igunaq caches on select beach ridge systems, and (3) the consumption and trade of the resource throughout the community and across the territory.

The Inuit and Their Dogs: Human-Animal Relations in Nunavik and Nunavut Today

License Number: 01 009 17R-M

Principal Investigator: Levesque, Francis

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Number in Party: 1

Research Area: South Baffin

Fieldwork Locations: Iqaluit

SUMMARY

Over the past 60 years, public authorities in Nunavut have tried to control what they believed to be the risks associated with dog populations – mainly the transmission of zoonoses (diseases transmitted from animals to humans; i.e. rabies, parasites) and attacks on people. The methods used to control these perceived risks include vaccination of dogs, the slaughter of others (officially, only roaming and sick ones), and the obligation of tying them up. The main objective of this project is to bridge the gap between public health and Inuit over the issues of risk-associated dogs in Iqaluit. Specifically, this project will: (1) make a description of dogs (loose, pets, sled dogs, etc.), the risks that are associated with them (accidents, transmission of zoonosis and diseases, etc.), dog sicknesses, and local regulations and resources (dog pound, vet services, etc.); and 2) describe local perceptions of dogs among various community members.

Introducing the Emotional and Affective Geographies of Law: Strengthening Community Through the Practice and Feeling(s) of Inuit Law

License Number: 04 015 17R-M

Principal Investigator: Robertson, Sean

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Number in Party: 1

Research Area: Kitikmeot

Fieldwork Locations: Kugaaruk

SUMMARY

The goal of this study is to better understand Inuit and legal social norms related to subsistence activities and other areas of hamlet life. Our Advisory Committee chose sealing and fishing as a focus for this research. Due to the fact that the Inuit way of knowing goes beyond rational thinking, this project also seeks to learn more about the role of the body, emotions and ‘the feeling’ in regards to enactment of norms. Examples of relevant norms include the management of resources, the settling of disputes, and interactions with non-Inuit normative orders (e.g. Canadian Law), etc. This project is focused on four main objectives: (1) to learn from Inuit about how social and legal norms involve not only rational thinking, but also emotions and other feelings; (2) to build knowledge about Inuit social and legal norms so that southern Canadians and the legal community are better informed; (3) with the provision of two, 10-day Elder-led land camps, to provide further opportunities for the community to share Inuit knowledge with youth and the middle generation; and (4) to document stories and related norms in relation to an existing place name map, which may lead to better-informed decisions regarding resource sector development.

Politics of Sustainable Development in the Arctic

License Number: 01 015 17N-M

Principal Investigator: Jacobsen, Marc

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Number in Party: 1

Research Area: Baffin

Fieldwork Locations: Iqaluit and Clyde River

SUMMARY

This project investigates the political consequences of the sustainable development discourses in connection with mining projects in Nunavut and Greenland. By focusing on these areas within Canada and the Kingdom of Denmark, the aim is to make visible whether environmental, social, or economic sustainability is given highest priority, and who is made responsible. In context of the Arctic, this project provides two valuable perspectives: (1) an insight into possible consequences of central discussions about sustainable development, which has become a buzzword in the Arctic and beyond, and (2) comparative aspects of internal power relations within two Arctic states that may change the future political landscape on the local, national, and regional scale.

Understanding Food Policy in Nunavut

License Number:	02 037 17N-M
Principal Investigator:	Stephenson, Eleanor
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Number in Party:	1
Research Area:	Baffin Region
Fieldwork Locations:	Clyde River and Iqaluit

SUMMARY

This research study is about food security and food policy in Nunavut. The purpose of this study is to better understand how government policy addresses food insecurity in Nunavut, and how food-related policy measures affect Nunavummiut. The research will begin in early summer 2017 and will be completed in summer 2018. The objectives of this research are to: (1) explore the history behind current food policies and programs like Nutrition North Canada; (2) explain how food-related policy decisions are informed and undertaken, from the Federal to Territorial level; and (3) describe how food-related policies and programs affect Nunavummiut households through a case study in Clyde River, Nunavut. These research objectives will be met through in-depth interviews and economic diaries documenting store-food purchases.

Green Edge

License Number: 02 034 17N-M

Principal Investigator: Babin, Marcel

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Number in Party: 4

Research Area: Baffin

Fieldwork Locations: Clyde River, Pangnirtung, and Qikiqtarjuaq

SUMMARY

This research aims to improve our knowledge about the dynamics of the phytoplankton spring bloom (PSB) and identify its role in the Arctic Ocean currently and in the future, including its impact on human populations. The culture, health and economic capacity of northern communities are closely linked to marine resources, and are supported by the PSB. This project aims to improve our understanding of the processes that control the Arctic PSB as it expands northward and to determine its fate in the foodweb.

Investigating Community Based Models/Approaches to Work Which Empower Women, Children, Families, and Communities to Create Positive Generational Change

License Number: 05 008 17N-A

Principal Investigator: Pedersen, Jane

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Number in Party: 2

Research Area: Qikiqtani and Kivalliq

Fieldwork Locations: Clyde River, Iqaluit, and Rankin Inlet

SUMMARY

This research project is supported with a grant by the Churchill Fellowship Trust and is designed to support the community development work of the Marninwarntikura Indigenous Women's Resource Centre. Marninwarntikura is interested in better understanding organizational and work practices that empower community members to be self-determined in all parts of their life. This project will highlight how community-based organizations have developed ways of working that respond successfully to community needs and long-term goals.

Social, Cultural, and Ecological Influences on Health in an Arctic Fishing Community

License Number: 03 017 17N-M

Principal Investigator: Newell, Sarah

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Number in Party: 1

Research Area: Kivalliq

Fieldwork Locations: Chesterfield Inlet

SUMMARY

The purpose of this research is to understand the connections between food, culture, and community health, and how climate change is affecting these connections. The objective of this research is to give voice to the concerns of Chesterfield Inlet community members and provide tools to help community members already doing important work to deal with changes.

Inuit Qaujimajatuqangit (IQ) about the Impact of Light Geese Abundance on Land, Wildlife, and People, and Recommendations for Light Geese Management in the Kivalliq Region, Nunavut

License Number: 03 015 17N-M

Principal Investigator: Carter, Natalie Ann

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Number in Party: 3

Research Area: Kivalliq

Fieldwork Locations: Arviat and Coral Harbour

SUMMARY

In the Canadian Arctic, populations of light geese (Lesser Snow and Ross') have increased dramatically in the last 50 years. Near Coral Harbour and Arviat, light geese have negatively affected vegetation over large areas. Scientists are conducting studies to understand the impact that geese are having on the land and other animals that share the same habitat. In Nunavut, light geese are harvested by Inuit for non-commercial use. Few studies have documented Inuit Knowledge of goose populations, or past and current interactions of geese with the land, water, other animals, and people. The main objectives of this research are to: (1) document Inuit knowledge about light goose populations on Southampton Island and in the Arviat region, particularly the impact of light geese on the land, water, other animals, and people; and (2) develop IQ-derived management recommendations.

Mobilizing Inuit Cultural Heritage: Women's Skin Sewing as Creative Arts Project

License Number: 02 042 17R-M

Principal Investigator: Wachowich, Nancy

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Number in Party: 1

Research Area: North Baffin

Fieldwork Locations: Pond Inlet

SUMMARY

This project is designed to promote access to advanced information and communication technologies, and to connect the voice of Inuit to objects of cultural heritage. This project is taking place in several communities in the Canadian Arctic and involves documenting and promoting creative practice and different forms of artistic tradition. The purpose of this project is to document first-hand information about skin processing and sewing skills and to provide photographs and footage of this skill for young apprentice seamstresses to access online.

Opportunities for Climate Change Adaptation: Comparative Research on Indigenous Fisher Communities in the Canadian Arctic and Eastern Sri Lanka

License Number: 02 049 17N-M

Principal Investigator: Galappaththi, Eranga

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Number in Party: 1

Research Area: North Baffin

Fieldwork Locations: Pangnirtung

SUMMARY

The purpose of this research is to identify, examine, and evaluate opportunities for resilience building and vulnerability reduction (i.e., adaptation) with respect to the impacts of climate change on remote Indigenous fisher populations. This research aims to: (1) develop a conceptual framework to understand the process of resilience and climate adaptation in small-scale Indigenous fisheries; (2) identify how households respond to specific climate shocks and stresses in order to build resilience in Indigenous fisher communities; (3) examine the innovative forms of collaborations among Indigenous fisher populations that build resilience and can be used to facilitate present and future climate adaptation; and (4) compare the selection of adaptation strategies in different governance regimes to better understand the effective range of policy options in different jurisdictions. To achieve these objectives, participant observation, semi-structured interviews, and focus group discussions will be used as data-collection methods.

Representation of Northern Women in the Media

License Number: 03 016 17R-M

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Number in Party: 1

Research Area: Kivalliq

Fieldwork Locations: Rankin Inlet

SUMMARY

For my honours undergraduate thesis I collaborated with local Indigenous organizations in Rankin Inlet, Nunavut to facilitate focus groups on how Inuit women view the portrayal of their culture in mainstream Western music videos. The results of the two focus groups revealed some of the ways entertainment media perpetuates harmful messages to the public. I am planning to further my previously-approved research project this summer and I am seeking approval for this new phase of the research. Upon approval, this summer I will facilitate the creation of videos (featuring narratives and images) to be made by Inuit girls and women in Rankin Inlet. This research would fill a gap in the limited knowledge about the impact of the absence of Inuit culture in media, and allow for sociological insights to be made regarding how a marginalized group would self-represent in media.

The Role of Cooperatives in Renewable Energy Adoption in Alaska and Possible Lessons for a Sustainable Energy Transition in Nunavut

License Number: 01 019 17N-M

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Number in Party: 1

Research Area: Qikiqtani

Fieldwork Locations: Iqaluit

SUMMARY

The Standing Senate Committee on Energy, and the Environment and Natural Resources' study of territorial energy systems spanned nearly two years and concluded that "Nunavut's unique and sizable energy challenges stood apart from its territorial counterparts" while the Pan-Canadian Framework on Clean Growth and Climate Change committed to "reducing reliance on diesel, working with Indigenous Peoples and northern and remote communities." Most recently, the 2017 federal budget included several measures to support the reduction of diesel dependence in Indigenous and northern communities, including a newly created \$400 million Arctic Energy Fund. The purpose of this study is to examine Alaska's experiences with renewable energy in order to inform energy policy in Nunavut. Specifically, I will focus on: (1) the contribution of cooperatives to the current state of renewable energy penetration in Alaska, and (2) the role of energy policy in the current state of renewable energy penetration in Alaska, specifically examining policy design and implementation. Nunavut's power generation infrastructure is in dire need of renewal as the majority of the territory's diesel power plants are past their intended life.

Africans in Nunavut: A Test of African Resiliency in the Arctic

License Number:	01 021 17N-M
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Number in Party:	1
Research Area:	Qikiqtani
Fieldwork Locations:	Iqaluit

SUMMARY

The Arctic and Africa are poles apart and geographically different with notable temperature differences that go up to 100 degrees Celsius. Despite the elements, it is noteworthy that Africans have found home in Nunavut and are raising their children ‘the Arctic way.’ If Africans happen to stay in the Arctic, they are deemed crazy; in fact, even some Canadians from other provinces are not convinced they can have a life in Nunavut. It is therefore worth exploring the lives of the Africans who have braved the Arctic chill and are living normal Arctic lives; raising children, working and participating in the economic, political, social and cultural spheres with Inuit and other Nunavummiut. This research seeks to document and publish stories of Africans in Nunavut and their origin. Surveys, interviews, and focus group discussions of African countries represented in Nunavut will be held. The reasons for choosing Nunavut as home will be explored as well as the impact Nunavut has had on Africans, culturally, socially, economically and physically.

On the Syntactic Status of Person and Number Markers in Inuktitut

License Number: 01 018 17R-M

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Number in Party: 3

Research Area: Qikiqtaaluk

Fieldwork Locations: Iqaluit

SUMMARY

The goal of this research is to better understand the structure of Inuktitut; how words and sentences are formed, which properties differentiate Inuktitut from other languages, and which properties it shares with other languages. Participants of this study will partake in language elicitation sessions in which they provide translations between English and Inuktitut, judge whether they find particular words and sentences in Inuktitut to be grammatically acceptable, and judge whether particular words and sentences are acceptable in particular contexts. The larger goal of linguistic research is to expand our knowledge of human language.

Inuit Knowledge of the Cumulative Impacts of Environmental Change in Eastern Hudson Bay

License Number: 01 023 17N-M

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Research Area: South Baffin

Fieldwork Locations: Sanikiluaq

SUMMARY

Southeastern Hudson Bay communities in Nunavik and Nunavut have observed many changes in the local environment since the development of hydroelectric projects began in the 1970s. Sea ice and coastal waters are central to Inuit livelihoods, and have been impacted by hydroelectric reservoir management and climate change. In response to requests from communities, this project proposes to conduct meetings and interviews in the communities of Kuujjuaraapik, Umiujaq, Inukjuak, and Sanikiluaq in order to: (1) document Inuit knowledge of the cumulative impacts of environmental change in eastern Hudson Bay since hydroelectric development began in the 1970s; (2) assess the cumulative impacts of environmental change on Inuit land use and livelihoods, and implications for decision-making; and (3) evaluate how different tools for documenting and mapping Inuit knowledge may support the sharing of Inuit knowledge with younger community members and with decision-makers. To achieve these goals, interviews with Inuit elders and hunters will be conducted in the summer of 2017 to document observations of environmental change.

Waste Management in Circumpolar Communities

License Number: 01 020 17N-A

Principal Investigator: Gates, Kristin

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Number in Party: 0

Research Area: South Baffin

Fieldwork Locations: Cape Dorset, Kimmirut, Iqaluit, and Pangnirtung

SUMMARY

I live in a small Arctic community in Alaska and – as in other isolated villages across the state – we struggle with waste management. This summer, I am joining the Explorers Club and Adventure Canada as a young explorer on their Heart of the Arctic Expedition. We will be traveling from July 17-30 and visiting Iqaluit, Kinngait, Kimmirut, Pangnirtung, as well as several villages in Greenland. My hope is to use this opportunity to learn about how other isolated communities are dealing with waste. The goal of this project will be to highlight the issue of waste management in the Arctic, raise awareness, and share knowledge across circumpolar communities. In addition to the communities we will be visiting along the Heart of the Arctic Expedition, I will also be incorporating information from my home community and surrounding communities. I am particularly interested in managing plastic waste because of the unique problems it presents; ocean currents are carrying even more plastic pollution from other areas of the world to the far north. This project will encompass waste management in general and also focus particularly on the challenge of plastics pollution.

Developing Best Practices for Community Engagement in, and Co-management of, Narwhal Health in Coastal Regions of Nunavut

License Number: 02 057 17N-M

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Number in Party: 2

Research Area: Qikiqtani

Fieldwork Locations: Pond Inlet

SUMMARY

The purpose of this study is to gather traditional and local knowledge from community residents to better understand narwhal population health and its drivers. Traditional and local knowledge from this study will be integrated with existing scientific knowledge gathered in the region. This project will also support the development of participatory tools that will allow the long term and real-time monitoring of narwhal health.

OceanCanada: Climate Change and Oceans in Canada

License Number: 02 053 17R-M

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Number in Party: 3

Research Area: Qikiqtaaluk

Fieldwork Locations: Pangnirtung

SUMMARY

The purpose of this project is to work collaboratively with the communities of Pangnirtung, Arviat, and Igloolik to collect, conserve, and communicate Inuit Qaujimajatuqangit regarding oceans, climate change, and industrial development impacts. This research will use video-based methodologies to collect this qualitative social science data.

2017 Hope Bay Project: Socio-Economic and Land Use

License Number:	04 030 17R-M
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Number in Party:	9
Research Area:	Kitikmeot
Fieldwork Locations:	Cambridge Bay, Kugluktuk, Kugaaruk, Gjoa Haven, Taloyoak, and Kugaaruk

SUMMARY

This research relates to TMAC Resources Inc.'s (TMAC) Hope Bay Project and the further development of mining that is proposed along the Hope Bay Greenstone Belt. TMAC is continuing socio-economic and land use baseline studies to inform Socio-economic Impact Assessment and Analysis per Part 5 of Article 12 of the Nunavut Land Claims Agreement (NLCA). For the socio-economic study, the baseline research focuses on the communities of the Kitikmeot Region. The land- and resource-use study focuses on land uses in the areas surrounding the Hope Bay Project. The primary goal of this research is to gather and update data on the social, economic, cultural, education, governance, and land use characteristics at community, regional, and territorial levels. This includes current socio-economic profiles and description of the study communities, and the identification and description of land uses.

Paving the Way: An Evaluation of Small Business Support Programs in the Kivalliq Region of Nunavut

License Number:	03 018 17N-M
Principal Investigator:	Morrill, Gabrielle
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Number in Party:	1
Research Area:	Kivalliq and Qikiqtani
Fieldwork Locations:	Rankin Inlet, Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Nauyasat, Whale Cove, and Iqaluit

SUMMARY

The purpose of this study is to see if the products (funding) and services (business counselling, mentorship, workshops, etc.) available for businesses in the Kivalliq region fit the needs of entrepreneurs. This project will also determine if service/funding organizations' performance are evaluated by their funders in a way that supports the true needs of entrepreneurs.

Inuit Knowledge on the Health of Auyuittuq National Park's Ecosystems/Environment: Climate Change Vulnerability Assessment and Pilot Project for Ongoing Monitoring

License Number:	02 058 17R-M
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Research Area:	Qikiqtani
Fieldwork Locations:	Pangnirtung and Qikiqtarjuaq

SUMMARY

The overall goal of this project is to incorporate Inuit knowledge in Park's Canada's assessment of the health of the park's ecosystems. The immediate objectives of this project are to: 1) collect Inuit knowledge for a climate change vulnerability assessment project for the park, and 2) test a method for monitoring/studying the health of the park's ecosystems/environment through Inuit knowledge in the long term.

Illiniavugut Nunami: Inuit Student Learning Journeys

License Number: 03 019 17N-A

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Research Area: Kivalliq

Fieldwork Locations: Arviat

SUMMARY

The main rationale for this study is to provide rigorous research to the Inuit Tapiriit Kanatami (ITK) and Inuit communities meant to explain and transform the experiences of Inuit students by re-introducing Inuit-specific models of learning via generational knowledge transmission and traditional cultural practices that often take place on the land. We also aim to explore how Inuit cultural competencies (language, access to land-based activity, ceremony, and oral/living histories) may impact academic success and, where available, to assess any impact the integration of Inuit cultural and land-based education has had on educational achievement among Inuit youth.

Navigational Strategies in Young and Older Adult Inuit Trackers and Hunters

License Number:	02 009 17R-M
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Research Area:	North Baffin
Fieldwork Locations:	Igloolik

SUMMARY

This study will shed light on what navigation strategies Inuit trackers and hunters – experts in navigation – use to orient. As such, the results of this study will contribute to our understanding of strategies contributing to good orientation skills in Inuit trackers and hunters. In addition, this study will inform us as to whether using a GPS has an impact on the navigation strategies used by Inuit trackers and hunters and, if so, this research has the potential to help us understand what happens when Inuit rely too much on GPS technology. This study could bring awareness to the shortcomings of GPS use and the importance of traditional navigation in the Inuit culture.

HEALTH RESEARCH

A Qualitative Study of the Experience of Cancer, and Death from Cancer, Among Nunavut Residents

License Number: 06 007 17N-Mregistry-Amended

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Research Area: Nunavut Wide

Fieldwork Locations: TBD

SUMMARY

Following recent efforts by the Government of Nunavut to determine the scope of cancer in the territory, this research examines the experience of cancer diagnosis and treatment from the perspective of patients, families, and communities.

Adapting the Community Readiness Model (CRM) for HIV/AIDS Prevention, Education and Screening with Inuit Communities Developing Strategies for Human Immunodeficiency Virus (HIV) Prevention with Community Input and Collaboration

License Number:	02 006 17R-M
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Number in Party:	9
Research Area:	Qikiqtani, Kivalliq, and Kitikmeot
Fieldwork Locations:	Arviat, Kugluktuk, and Clyde River

SUMMARY

Human Immunodeficiency Virus (HIV) infections are a real threat for Inuit communities, and since every community is different, it is difficult to determine how prepared each community is to deal with HIV. The main purpose of this research is to help Inuit communities identify how prepared they are to deal with HIV infections using the Community Readiness Model (CRM). The CRM is a tool used to determine how prepared communities are for dealing with a specific issue. For this project, we are looking at initiatives that focus on HIV prevention, education, and screening. This research project aims to adapt, pre-test, and use the CRM to identify how prepared three Nunavut communities are to deal with HIV.

Understanding the Role of the Carnitine Palmitoyltransferase 1A (CPT1A) P479L Variant

License Number: 05 003 17R-M

Principal Investigator: Arbour, Laura

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Number in Party: 6

Research Area: Nunavut-Wide

SUMMARY

CPT1A (carnitine palmitoyltransferase 1A) is a liver protein that uses fat for energy when sugar is not available, such as during fasting or prolonged exercise. Classical CPT1A deficiency is caused by a genetic change (mutation) in the CPT1A gene causing the protein not to work properly. Although these mutations do not typically cause problems, as most energy comes from sugars, people with these mutations – and especially infants – may experience problems during illness or fasting, including low blood sugar levels, seizures, or even unexpected sudden infant death. This proposed research will involve a retrospective anonymized chart review of all infants born to Nunavut residents from 2010-2013 and cross-referenced with results of a test for the P479L variant. This study will address questions such as whether infants and young children with the P479L variant have an increased risk for poor health outcomes.

Imakkuutuq: Nunavut Emergency Response Capacity Evaluation and Development

License Number:	03 010 17N-M
Principal Investigator:	Clark, Dylan
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Number in Party:	3
Research Area:	Kivalliq and South Baffin
Fieldwork Locations:	Arviat and Iqaluit

SUMMARY

Traveling and hunting on the sea and ice are central to the health and wellness of Nunavummiut, with impacts ranging from cultural identity to food security. However, these activities – broadly termed ‘being on the land’ – can be hazardous. In 2015, there were 251 Search and Rescue (SAR) missions representing over 450 individuals requiring rescue across Nunavut, more than double the number of annual searches a decade ago. Previous studies, including our own, have demonstrated that the vulnerability of harvesters and travelers is shifting. Changes in Indigenous traditional knowledge (TK) among land users is thought to be affecting navigation and survival skills, particularly among youth. New snowmobiles and boats are more difficult to repair and take people farther away from hamlets at high speeds. High costs associated with subsistence activities have the potential to limit learning and experience. Given the shifting risk for Nunavummiut, it is not only important to promote prevention of marine emergencies, but also to improve response capacity.

Treatment Patterns and Outcomes of Palliative Radiotherapy Among Inuit Patients from Nunavut Referred for Treatment at The Ottawa Hospital

License Number: 01 005 17N-M

Principal Investigator: Dennis, Kristopher

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Number in Party: 9

Research Area: South Baffin and Ontario

Fieldwork Locations: Ottawa and Iqaluit

SUMMARY

Cancer rates among Canadian Inuit are high, with lower cancer survival rates than the rest of Canada. Inuit also face significant barriers in accessing specialized oncologic care. For example, the Ottawa Hospital (TOH) is the oncologic referral centre for Inuit from the Qikiqtaaluk Region of Nunavut, the most populated administrative region, which includes Iqaluit, the capital of Nunavut. Residents are required to travel a minimum of 2,000 km by air to Ottawa, resulting in a complex and logistically-challenging referral system, with extended stays away from families and communities. The purpose of this proposed project is to better understand the use of palliative radiotherapy and its outcomes among Canadian Inuit. Specifically, the objectives are two-fold: (1) to describe treatment patterns and outcomes of palliative radiotherapy among Canadian Inuit from Nunavut referred for treatment at TOH over a 10-year period; and (2) to describe the patient demographics, epidemiological pattern and time course for treatment of Inuit patients from Nunavut referred for palliative radiotherapy at TOH.

Establishment of a Project for Diarrhoeal Illness Surveillance at Sentinel Sites in Nunavut

License Number:	05 006 17R-M
Principal Investigator:	Goldfarb, David
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Number in Party:	12
Research Area:	Qikiqtani, Kivalliq, and Kitikmeot
Fieldwork Locations:	Iqaluit, Kimmirut, Rankin Inlet, Arviat, Cambridge Bay, and Gjoa Haven

SUMMARY

The purpose of this study is to understand the causes of diarrhea in Nunavut and to understand if a rotavirus vaccine or other interventions would lessen the burden of diarrhea within the territory. This study will take two years to complete, and is possible due to a partnership between the Government of Nunavut, McMaster University, and the Public Health Agency of Canada.

Building on Strengths in Naujaat – A Youth Initiative

License Number: 03 013 17N-M

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Number in Party: 5

Research Area: Kivalliq

Fieldwork Locations: Naujaat

SUMMARY

Youth in the Inuit community of Naujaat, Nunavut, will be consulted in the design and implementation of a mental health-promoting intervention. A Participatory Action Research (PAR) approach will be used to engage young people of Naujaat in formulating visions for their future. This approach emphasizes collaboration in inquiry and investigation within a specific community, with the goal of making systemic change in order to resolve specific problems. Outside researchers will engage community members and facilitate the translation of this engagement into a self-determined path to creating new opportunities. Acknowledging tensions created by past and present western post-colonial research encounters, we are drawing on Indigenous frameworks to create respectful relationships that support local agency.

Qanuinnngitsiarutiksait: Developing Population-Based Health and Well-Being Strategies for Inuit in Manitoba

License Number:	03 014 17N-M
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Research Area:	Kivalliq and South Baffin
Fieldwork Locations:	Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Rankin Inlet, Repulse Bay, Sanikiluaq, and Whale Cove

SUMMARY

We are a research team that is being led by the Manitoba Inuit Association (MIA) and the University of Manitoba. Our team includes members from the Government of Manitoba, Government of Nunavut, Iqaluit-based Qaujigiartiit Health Research Centre, University of British Columbia, Manitoba Metis Federation, Northern Medical Unit, Winnipeg Regional Health Authority, and Aboriginal and Northern Health Office. We are conducting research on Inuit who are from Nunavut and use the Manitoba healthcare system. We want to determine what happens to Inuit when they come to Manitoba for healthcare. Conducting this research will allow us to identify any problems Inuit have with healthcare and make suggestions for improvement.

The Prevalence of Anaphylaxis in Iqaluit

License Number: 01 012 17N-M

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Research Area: South Baffin

Fieldwork Locations: Iqaluit

SUMMARY

This research aims to obtain information on the prevalence of anaphylaxis in Iqaluit. This study will gather information on the date of encounter, age, gender and ethnicity of patients, whether the patient is a resident of Iqaluit versus another community, the suspected trigger of the anaphylaxis, whether an EpiPen, steroids or antihistamine were used before arrival to the emergency department, and what the outcome was (the rate of admissions and death in relation to anaphylaxis). This research will be conducted by secondary use of data, previously collected during visits to the emergency department, with no patient identifiers.

Canadian Domestic Homicide Prevention Initiative with Vulnerable Populations

License Number:	05 007 17N-M
Principal Investigator:	Jaffe, Peter
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Number in Party:	7
Research Area:	Nunavut-Wide
Fieldwork Locations:	Iqaluit

SUMMARY

The purpose of the Canadian Domestic Homicide Prevention Initiative with Vulnerable Populations (CDHPVIP) is to enhance domestic violence risk assessment, risk management, and safety planning strategies in order to decrease the risk of lethality for particular vulnerable populations (i.e., Indigenous people; rural, northern, and remote communities; immigrants/refugees; and children exposed to domestic violence).

Conserving and Understanding of our Microbial Heritage

License Number: 02 052 17N-M

Principal Investigator: Groussin, Mathieu

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Number in Party: 6

Research Area: Qikiqtani

Fieldwork Locations: Resolute Bay

SUMMARY

The gut microflora, a complex ecosystem of bacteria that populates the human colon, is an evolving unit that is generally divergent across human individuals and populations. These bacterial populations have positive impacts on human physiology, immunology, and overall health. However, much of the current research on the gut microbiome involves majority ethnic groups from a limited number of geographic regions. Furthermore, the window of opportunity to characterize human microbiome diversity is closing rapidly, as human gut microbial diversity is diminishing around the globe. This project aims to characterize the full diversity of global human gut bacteria, an integral facet of human health and history, and to preserve it for future generations in a living ‘library’ of microbial strains. We are motivated by three key goals: (1) to broaden our understanding of human microbial consortia to reflect all human diversity, and to illuminate the evolutionary history of human/microbiome associations through pivotal moments in human history (e.g. the migration from Africa, Neolithic revolution, etc.); (2) to leverage science to ensure that members of underrepresented groups, including Indigenous peoples, will derive equal benefit from future advances in microbiome-based medicine; and (3) to conserve human gut microbiome biodiversity before it is lost, both as a safeguard against possible extinctions as well as a repository of our collective microbial heritage.

Making SPARX Fly in Nunavut

License Number:	05 009 17R-M
Principal Investigator:	Bohr, Yvonne
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Number in Party:	18
Research Area:	North and South Baffin, and Kitikmeot
Fieldwork Locations:	All Baffin and Kitikmeot Communities

SUMMARY

Making I-SPARX Fly in Nunavut strives to enhance resilience and increase feelings of mattering by empowering youth with skills to foster their own mental health and positively contribute to the collective welfare of their communities. This project evaluates a graduated, holistic, multi-generational intervention that brings together cognitive behavior therapy (CBT) and emotion regulation support (ER) in a framework of cultural identity and community processes. An award-winning computer game, SPARX, is central to the intervention. SPARX teaches users CBT and ER skills to cope with stress and depression by challenging negative thoughts, feelings and behaviours.

Gathering Community Perspectives on Infant Sleeping Practices in Nunavut

License Number:	05 005 17R-M
Principal Investigator:	Arbour, Laura
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Number in Party:	5
Research Area:	South Baffin, Kivalliq, and Kitikmeot
Fieldwork Locations:	Arviat, Cambridge Bay, and Iqaluit

SUMMARY

Nunavut has the highest rate of infant deaths (death before one year of age) in Canada. One important cause of infant death in Nunavut is sudden infant death syndrome (SIDS), where an infant dies during sleep without an obvious cause. When this occurs, it is devastating for families. Safe sleeping practices with a newborn infant are very important and may reduce the occurrence of SIDS. The position the baby is put to sleep in, sleep surfaces, other people in the same bed as the baby, and more are sleeping practices that may significantly affect the chance of SIDS. In partnership with Nunavut Tunngavik Incorporated (NTI) and the Arctic Health Research Network (AHRN), this project will hold multigenerational focus groups to explore traditional and current sleep practices (positioning, co-sleeping, etc). Information from the focus groups and knowledge of Inuit cultural practices will help in development of a health promotion strategy encouraging safe sleep practices and culturally relevant maternal child health practices.

Should Newborn Screening Be Initiated in Nunavut for Mild Carnitine Palmitoyl Transferase-1 (CPT-1) Deficiency?

License Number: 05 004 17R-M

Principal Investigator: Arbour, Laura

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Number in Party: 4

Research Area: Nunavut-Wide

SUMMARY

Carnitine Palmitoyl Transferase-1 (CPT-1) deficiency is caused by a genetic change (mutation) in the Carnitine Palmitoyl Transferase-1 gene. The CPT-1 gene normally produces a protein that is involved in producing energy from the fats we eat. We all have two copies of this gene, and people who have a mutation in both copies of their CPT-1 gene produce a protein that does not work properly. These individuals have trouble producing energy from fats. The mutations do not usually affect people in day-to-day life, because we get most of the energy we need by breaking down sugars from our food rather than fats. However, when we get sick or are not eating enough food for other reasons, our bodies start to break down our fat stores for energy. Thus, individuals (particularly infants) who have CPT-1 mutations in both copies of the gene can run into health problems during periods of illness or fasting because they cannot produce enough energy from fats. The result may be low blood sugar (hypoglycemia) and seizures or, in the worst-case scenario, unexpected sudden infant death.

Attending to The Needs of Inuit Inmates: Listening to Forgotten Voices

License Number:

Principal Investigator: Barka, Kosta Hari

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Number in Party: 1

Research Area: South Baffin

Fieldwork Locations: Iqaluit

SUMMARY

My research seeks to explore Inuit inmates' perceptions of rehabilitation programs for the purpose of better understanding whether, how, and to what extent they feel the programs meet their needs. The goal of this research is to provide information that will assist Nunavut Corrections in its efforts to provide meaningful rehabilitative programming for Inuit offenders. Additionally, my research will provide insights that will be helpful in informing how culturally appropriate programming is developed and introduced with the opening of the Qikiqtani Correctional Healing Facility (QCHF) in 2021.

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