Would you like to be a part of a project that positions Canada as a world leader in wildlife management?

We invite applications for grad students to become involved in BEARWATCH, a large-scale, multi-institutional collaborative project focused on polar bear conservation and management!

BEARWATCH combines genomics and other leading-edge methods with Indigenous traditional ecological knowledge to develop a non-invasive means of tracking polar bear response to a changing Arctic. The goal? To assess pan-Canadian polar bear population structure, demographics, and health in real time using a knowledge co-production approach that is inclusive and respectful of indigenous cultures. This ambitious project will provide the most extensive dataset on polar bear ever assembled, and can accommodate a diversity of student interests.

Exploring Knowledge Systems

A major outcome of the project will be a database that houses information from several knowledge systems, both pre-existing and collected through the present study: science; traditional ecological knowledge; and historical records from fur traders and explorers. Information from these varied sources will be analyzed, compared, and integrated to form the searchable, geo-referenced knowledge management system. GIS skills are desirable but training can be provided. **Opportunities through Graham Whitelaw, Stephen Lougheed (Queen's University), and Tristan Pearce (UNBC).**

Community-Based Monitoring

We will establish a community-based monitoring program to provide ongoing data for tracking changes in polar bear populations, as well as a tangible means for financially supporting members of Arctic Indigenous communities. The monitoring program will be designed in cooperation with communities through local workshops, starting in three focal communities in the Northwest Territories and Nunavut, with the intent of eventually including multiple communities across the Arctic. **Opportunities through Graham Whitelaw (Queen's University) and his collaborators.**

Genomics & Health

We will develop a flexible, verified scat-based molecular toolkit for polar bears. This toolkit will provide a powerful way to monitor polar bears in real-time with non-invasive methods, reflecting the desires of Indigenous communities. This work will address key knowledge gaps including the stability of subpopulation boundaries and sizes, sex-specific dispersal, and potential changes to diet and contaminant loads in a dramatically changing Arctic. **Opportunities for genomics research through Stephen Lougheed's lab (Queen's University) and his collaborators.**

From Knowledge to Action

The translation of polar bear knowledge into tangible policy and governance for adaptive management will be important for ensuring the conservation of this species for future generations. We will evaluate impacts of our research on Canadian polar bear management and policy, Environmental

Assessments by northern resource industries, and Inuit Impact Benefit Agreements. This will be rooted in social innovation and increase involvement of arctic communities in management.

Join our large team of Canadian universities, northern communities, Indigenous organizations, territorial governments, and international collaborators in this exciting project! Project could begin as early as January 2019 but spring or autumn 2019 starts are also possible.

Contact us to inquire about the opportunities, or to apply send us your research interests, CV, and unofficial transcript to one of Graham Whitelaw, Tristan Pearce, or Stephen Lougheed depending on your interests:

Graham Whitelaw, Queen's University, whitelaw@queensu.ca

Tristan Pearce, University of Northern British Columbia, tristanpearce@gmail.com

Stephen Lougheed, Queen's University, steve.lougheed@queensu.ca

Other collaborators:

- Peter van Coeverden de Groot, Queen's University
- Stephen Bocking, Trent University
- Guillaume Bourque, McGill University
- Marsha Branigan, Government of Northwest Territories
- George Colpitts, University of Calgary
- Markus Dyck, Government of Nunavut
- James Ford, University of Leeds
- David Guttman, University of Toronto
- Valérie Langlois, L'Institut National de la Recherche Scientifique
- Daniel Layton-Matthews, Queen's University
- Matthew Leybourne, Queen's University
- Daniel McCarthy, University of Waterloo
- Michael Russello, University of British Columbia
- Allison Rutter, Queen's University
- Lisette Waits, University of Idaho