

**Name:** Bruce Erickson**Contact Information:** Bruce.Erickson@umanitoba.ca

**Description of Research:** My research focuses on the history and politics of tourism. I have two projects that students could join me on. The first is a history of polar bear tourism in Churchill, Manitoba, looking at the relationship between Churchill and Southern Manitoba during the transition to a tourist-focused economy in Churchill. This project might also be able to include the production of a podcast on Tourism in Churchill. The second project would look at the history of tourism in the context of European expansion. Both of these projects would involve working with archival and historical documents.

**Name:** Jonathan Peyton**Contact Information:** Jonathan.Peyton@umanitoba.ca

**Description of Research:** My research is focused on the early years of oil and gas extraction in Arctic. Students could work on a host of research projects in one of three geographic regions where dreams of Arctic oil and gas first emerged: the Beaufort Sea, the Arctic Archipelago or the Eastern Arctic (Lancaster Sound/Baffin Bay/Davis Strait). This work will be focused on the social, economic and ecological effects of the early attempts to locate and develop Arctic hydrocarbon resources through the 1970s and 1980s. Students could work on a range of topics including but not limited to: oil spill research and the BIOS project, the relationship between seismic testing and marine life, oil and gas exploration and the management of conservation spaces, energy geographies and the politics of scientific knowledge, energy development and community relationships, moving Arctic research and the development of "sci-fi" technologies, or relations of extractive economies to the lives of Arctic animals (caribou, Muskox, bowhead whales, belugas, etc.). Most of the research will be with archival and community documents, though there may be an opportunity to engage in interview techniques.

**Name:** Dr. Iain Davidson-Hunt**Contact:** Iain.Davidson-Hunt@umanitoba.ca

**Project Description:** Over the past few years I have led a Social Sciences and Humanities Research Council research project on innovation in small-scale food systems. This work has considered the supply chains of craft breweries in Manitoba, the role of commercial community kitchens as a space of innovation for small-scale food processors along with wild rice harvest camps and recipe development in northwestern Ontario with Anishinaabe communities. In this project, I would like a student to work with Phil Veldhuis of DirectFarm Manitoba and myself to better understand the participation of Indigenous Peoples (Métis / First Nation) in small-scale food enterprises in Manitoba. The student will undertake a review of literature, websites and farmer markets in Manitoba to identify Indigenous small-scale food enterprises. Ideally, the student will be studying in the fields of agriculture, business, cultural anthropology or cultural geography but we are also open to students with other backgrounds who share our interest in, and passion for, small-scale food enterprises.

**Stress Ecology Laboratory****Name:** Mark Hanson**Contact Information:** Mark.Hanson@umanitoba.ca

**Description of Research:** Interested in helping us to better understand the fate and effects of contaminants in the environment? We are looking to hire a motivated individual who has a strong science background in biology, ecology, chemistry, or toxicology to be a member of our team in 2020. There are a number of projects you could be involved with, including regional monitoring efforts, wetland mesocosm studies, water quality assessment in Arctic communities, new methods of laboratory aquatic toxicity testing, industrial site remediation, and work at the Experimental Lakes Area. You will learn to be part of a science-focused team and all the skills that go with being a competent and engaged researcher. We will find a research question that appeals to you from amongst our various initiatives to be a project of your own. Past URAs and undergraduates have characterized the health risks associated with metals in community garden soils, determined the effects on neonicotinoids on zooplankton and insects under field conditions, examined the role of invertebrates as vectors of antimicrobial resistance, and quantified the extent of microplastic contamination on Lake Winnipeg. What interests you?

**Name:** Rick Baydack**Contact Information:** Rick.Baydack@umanitoba.ca

**Description of Research:** Research includes applied ecosystem management, conservation of biological diversity, wildlife conservation, and human dimensions of wildlife management.

**Name:** Feiye Wang**Contact Information:** Feiyue.Wang@umanitoba.ca

**Description of Research:** My recent research has centered on mercury as a global contaminant, and on geochemistry of the rapidly changing Arctic sea ice environment. My major scientific contributions include modeling metal adsorption on aquatic sediments, metal speciation in sulfidic, polysulfidic, and thiolic environments, mercury biogeochemistry in the Arctic Ocean, and sea ice geochemistry.

**Name:** John Hanesiak**Contact Information:** john.hanesiak@umanitoba.ca

**Description of Research:** The successful candidate will be part of the Northern Tornadoes Project (NTP) that aims to improve our current tornado climatology (occurrence and strength) as well as better understanding severe storm processes and prediction capabilities in Canada. The student will participate in tornado event and damage surveys across the Prairies, deploy atmospheric remote sensing equipment on the UM campus for data analysis following local storm events, and launch local weather balloons prior to and during severe convective storm events.

Requirements:

- valid drivers license
- enrolled in the Environment and Geography B.Sc. atmospheric science stream (should be a second year student or beyond)
- Willing to travel, drive to various Prairie locations and work outdoors
- proficient with MS word/excel
- works well in a team environment

**CONSERVATION AND ECOLOGY OF GRASSLAND SONGBIRDS****Name:** Nicola Koper**Contact Information:** nicola.koper@umanitoba.ca

**Description of Research:** Field work on grassland bird conservation in southern Alberta (based in Brooks), and would work closely with graduate students who are studying the impacts of oil and gas development on grassland birds. The student would learn to do one or more of the following: large and small mammal surveys, snake surveys, bird surveys, sampling vegetation, finding and monitoring grassland songbird nests, putting nest cameras out to observe parent's behaviour near nests, other behavioural observations, and monitoring and maintaining video cameras. Students must be willing to work long hours, in all sorts of weather, and be passionate about conservation. Students will gain outstanding experience in applied ecology, conservation, management, field work, data collection and study design, and natural history research.

**Characterizing the seismic noise spectrum in Winnipeg for MASW analysis****Name:** Andrew Frederiksen**Contact Information:** Andrew.Frederiksen@umanitoba.ca

**Description of Research:** This project will involve recording ambient seismic noise at sites in Winnipeg using an array configuration, and using slant stacking and filtering to determine directionality. This will be applied to various possible sources of noise, including road traffic and the Red River. The use of these noise sources to measure soil layering using the multichannel analysis of surface waves (MASW) technique will also be tested.

**Clastic Sedimentology and Stratigraphy****Name:** Paul Durkin**Contact Information:** Paul.Durkin@umanitoba.ca

**Description of Research:** Please contact Paul contact directly to discuss project opportunities.

**Greenhouse Gas and Carbon Cycle Research on Lake Winnipeg****Name:** Tim Papakyriakou**Contact Information:** Tim.Papakyriakou@umanitoba.ca

**Description of Research:** Research aims to shore up our understanding of the carbon cycle in Lake Winnipeg, and along the aquatic corridor to Hudson Bay. Research is to understand the greenhouse gas footprint of the lake, and the downstream river system to the Bay. The research is team oriented. The students should have an interest in carbon cycle research. The student will assist with the deployment and maintenance of aquatic sensors, sampling of water for analysis in the laboratory, assist with the preparation of sampling gear, and help maintain the project data base. Duties will require the student to occasionally work in Manitoba's near north for short periods of time as part of a small dedicated research team, and participate on ship and/or boat-based sampling on Lake Winnipeg and/or the Nelson River.

Qualifications:

- A strong background in hydrology, aquatic chemistry and/or aquatic ecology;
- Valid drivers license;
- No aversion to fieldwork in remote areas, including from a ship or boat.

**Freshwater Environmental Science****Name:** David Barber**Contact Information:** David.Barber@umanitoba.ca**Job Description:**

- Assist Manitoba Great Lakes Project Masters student in collection and analysis of a variety of environmental parameters, including whole water samples
- Under the supervision of the CanWIN coordinator and the Senior Research Manager work with environmental datasets to standardize datasets for ingestion into the CanWIN data repository.
- Datasets may include arctic and freshwater datasets, e.g.: ice mass balance, ice meteorological tower and ice beacon data, Lake Winnipeg water quality data
- Perform quality control/quality assurance procedures on datasets
- Analyze an assigned subset of Manitoba Great Lakes data and present as a report (including figures)
- Load data into the Canadian Watershed Information Network series of databases -including spatial data
- Produce GIS base map layers for public consumption
- Produce map data for specific datasets
- Use a GIS system to produce bathymetric maps of Lake Manitoba and Lake Winnipegosis from non-spatial digital files

**Job Qualifications:**

- Enrolled in Post-secondary program in environmental sciences or related discipline
- Knowledge of arctic or freshwater research
- Experience working with Microsoft office software – MS Word and MS Excel or equivalent software packages
- Strong verbal communication skills and ability to work in a team project environment
- Effective written communication skills
- Ability to work independently and take initiative

**Asset Qualification:**

- Experience with data collection and recording
- Knowledge of Matlab, R or other statistical analysis software
- Experience working with GIS software

**Arctic Marine Science****Name:** David Barber**Contact Information:** David.Barber@umanitoba.ca**Job Description:**

- Assist with marine sample analysis from various Arctic field program
- Datasets may include arctic and freshwater datasets, e.g.: ice mass balance, ice meteorological tower and ice beacon data, Nelson estuary data.
- Perform quality control/quality assurance procedures on datasets
- Analyze an assigned subset of the Arctic marine system science data and present as a report (including figures)
- Load data into the Canadian Watershed Information Network series of databases -including spatial data
- Produce GIS base map layers for public consumption
- Produce map data for specific datasets
- Use a GIS and or remote sensing analysis system to produce sea ice, ocean surface temperature and sediment maps.

**Job Qualifications:**

- Enrolled in Post-secondary program in environmental sciences or related discipline
- Knowledge of Arctic and/or freshwater research
- Experience working with Microsoft office software – MS Word and MS Excel or equivalent software packages
- Strong verbal communication skills and ability to work in a team project environment
- Effective written communication skills
- Ability to work independently and take initiative

**Asset Qualification:**

- Experience with data collection and recording
- Knowledge of Matlab, R or other statistical analysis software
- Experience working with remote sensing and GIS datasets and software tools.

**Arctic Marine Microbial Ecosystem Services****Name:** Eric Collins**Contact Information:** eric.collins@umanitoba.ca

**Project Description:** Microorganisms (including bacteria, archaea, algae, protists, fungi, and viruses) drive the ecosystem in the ocean, and provide benefits to humans in the form of Ecosystem Services. This project will utilize metagenomic sequence analysis to explore the role of Arctic microbes in providing Ecosystem Services, and to understand how those services might change in a warmer future. Applicants should have some programming experience.