Microorganisms (including bacteria, archaea, algae, protists, fungi, and viruses) drive the ecosystem and provide services that sustain life. The project focuses on understanding the role of Arctic microbes in ecosystem services, particularly those related to the Arctic Marine. The student will work with data collected from various sources such as ice meteorological towers, ice mass balance, and ice Beacon data. This project aims to characterize the greenhouse gas emissions from the Arctic area and contribute to the understanding of Arctic ecosystems.

**Job Description:**
- Experience with data collection and recording
- Knowledge of Matlab, R or other statistical analysis software
- Experience working with GIS software
- Experience working with Microsoft office software – MS Word and MS Excel or equivalent software
- Enrolled in Post-secondary program in environmental sciences or related discipline
- Perform quality control/quality assurance procedures on datasets

**Contact Information:**
David.Barber@umanitoba.ca

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**Assets Qualification:**
- A strong background in hydrology, aquatic chemistry and/or aquatic ecology;
- Ability to handle field conditions, examined the role of invertebrates as vectors of antimicrobial resistance, and quantified the extent of soil layering using the multichannel analysis of surface waves (MASW) technique;
- Awareness of possible sources of noise, including road traffic and the Red River. The use of these noise sources to measure directionality will be tested.
- 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.

**Available Undergrad Research Award (URA) Supervisors 2020**
- Paul Durkin
- Andrew Frederiksen

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**Description of Research:**
- Students could work on a range of topics including but not limited to the early years of oil and gas extraction in Arctic.
- My research is focused on the history and politics of tourism. I have two projects that explore tourism's role in the development of the Arctic region. One project examines the history of tourism in the Arctic and the other looks at the contemporary tourism industry in the region. The student will have the opportunity to work on one of these projects, gaining valuable research experience.

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

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**Description of Research:**
- My research focuses on the history and politics of tourism. I have two projects that explore tourism's role in the development of the Arctic region. One project examines the history of tourism in the Arctic and the other looks at the contemporary tourism industry in the region. The student will have the opportunity to work on one of these projects, gaining valuable research experience.