

# The Story of the Rocks.

A new exhibit at the Cretaceous Menagerie in the Wallace Building uniquely pairs Inuit carvings with the rock types from which they are made. **Dr. Alfredo Camacho** (Geological Sciences) has in the past collaborated with Inuit carvers to evaluate carving stone in Nunavut. Part of the Nunavut Carving Stone Project, sponsored by the Nunavut Department of Economic Development and Transportation in conjunction with the Canada-Nunavut Geoscience Office, and Natural Resources Canada Polar Continental Shelf Program, the research also evaluated potential hazards to carvers such as asbestos in order to remove them a potential stone sources.

The new exhibit will be located on the ground level of the Cretaceous Menagerie and will include carvings including one especially commissioned for the project. Paul Malliki has carved a polar bear head (shown) from lepidolite from the Tanco Mine, Manitoba. The collection at present focuses on rock carvings from Sanikiluaq by Jimmy Iqaluk and include a polar bear, loon and walrus. The exhibition is intended to increase Indigenous understanding by linking it to geological content.





# Coop Student of the Year.

The 2017 Co-operative Education Student Champion is **Tiffany Pastrick** (B. Env. St. Coop 2017). The Dean's Honour List student, Tiffany worked at the Wildlife Haven Rehabilitation Centre in Île-des-Chênes which is still under construction. Her tasks included the creation of educational programs and the design of a childrens' book. Each day she would arrive early to assist a co-worker to feed baby squirrels and she continues to volunteer at the Centre.

To quote Tiffany: *"I am in co-op because it gives you so much experience that you can put on your resume for future jobs. Leslie Goodman (Department of Environment and Geography and Co-op Coordinator) is also an incredible teacher. She helps you in every aspect of co-op from perfecting your resume to building a portfolio to make you shine".*

The University of Manitoba offers a range of co-operative education opportunities that enable students to combine paid work with their classroom-based education to further enhance their skills and prepare for their careers. This year the co-op programs in the Riddell Faculty (Physical Geography, Environmental Science, and Environmental Studies) has 50 students working in placements encompassing research, industry, government and ENGOS.

Pictured right: Tiffany Pastrick feeding a baby squirrel before her co-op work day begins. Photo credit: Tiffany Pastrick. Pictured below, left to right: Tiffany Pastrick and Leslie Goodman, Coordinator Cooperative Education Option. Photo credit: Matt Wiepjes.



# Thesis Award.

**Dr. Jean Lieppert Polfus** (Ph.D. Natural Resources and Environmental Management, 2016) is the 2017 recipient of the University of Manitoba Distinguished Dissertation Award and the Governor General's Gold Medal. She also received the Liber Ero Post-doctoral Fellowship in conservation science.

Dr. Polfus' research focused on understanding the distribution, spatial organization, and the degree of differentiation of caribou populations in the Sahtú region of the Northwest Territories. Her dissertation presents the spatial distribution and connectivity among groups of caribou in the Sahtú using a combination of advanced genetic analyses, traditional knowledge, and art. The community collaborative research process that Dr. Polfus employed acknowledges Dene biocultural diversity and built knowledge through a rigorous coproduction process. Indigenous languages were used to ground the research process, and to strengthen and build an appropriate and unifying dialogue with communities.

The External Examiner, Dr. Jonathan W. Moore, noted that he has *"never read a thesis that was more visionary, fearless, brilliant, and important. It charts a new way of science that can empower local people and generate knowledge for the stewardship of natural resources".*

Dr. Polfus used her artistic talents (an example shown here) to enhance communication. To quote Dr. Polfus: *"Refined visuals, such as drawings and clear diagrams, make a powerful difference in my ability to communicate with community members, managers, and fellow researchers. I am especially interested in finding innovative ways to use art in combination with a scientific framework to help support conservation efforts in my new Liber Ero Post-doc Fellowship".*

Many more of her drawings and photographs can be found at:  
<http://cari.cc.umanitoba.ca/jeanpolfus>





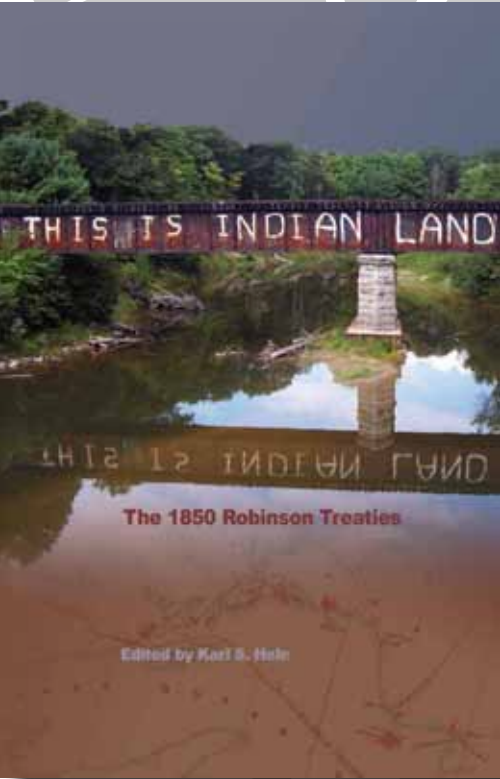
# AIP Book Launch.

In January, a new Aboriginal Issues Press (AIP) book launched in Sault St. Marie. The author, Dr. Karl Hele, wrote and edited *“This is Indian Land”*, a collection of eleven essays, focusing on the 1850 Robinson treaties and their impact on all Canadians. The 1850 Robinson treaties encompass the Robinson-Huron and Robinson-Superior Treaties applied to lands north of Lake Superior and Lake Huron, and impacted natural resource exploration and exploitation. In addition to Dr. Hele, the authors are Victor Lytwyn, Stephanie Pyne, Rhonda Telford, David McNabb, Peter Krats, David Calverley, Karen Traver, and Margot Francis. To quote Dr. Hele: *“This collection of articles .. seeks to remind and engage people in a conversation about the lands and waters they share”*. The essays in the book cover a wide variety of topics including harvesting and water rights, and includes case studies such as Teme-Augama Anishnabai land rights.

Dr. Karl Hele is a Garden River First Nation member who grew up north of Sault St. Marie. He holds a Ph.D. from McGill University and writes on Indigenous issues, both past and present. The book launch was also covered by the Sault Star (January 17, 2017) and correspondent Jeffrey Ougler.

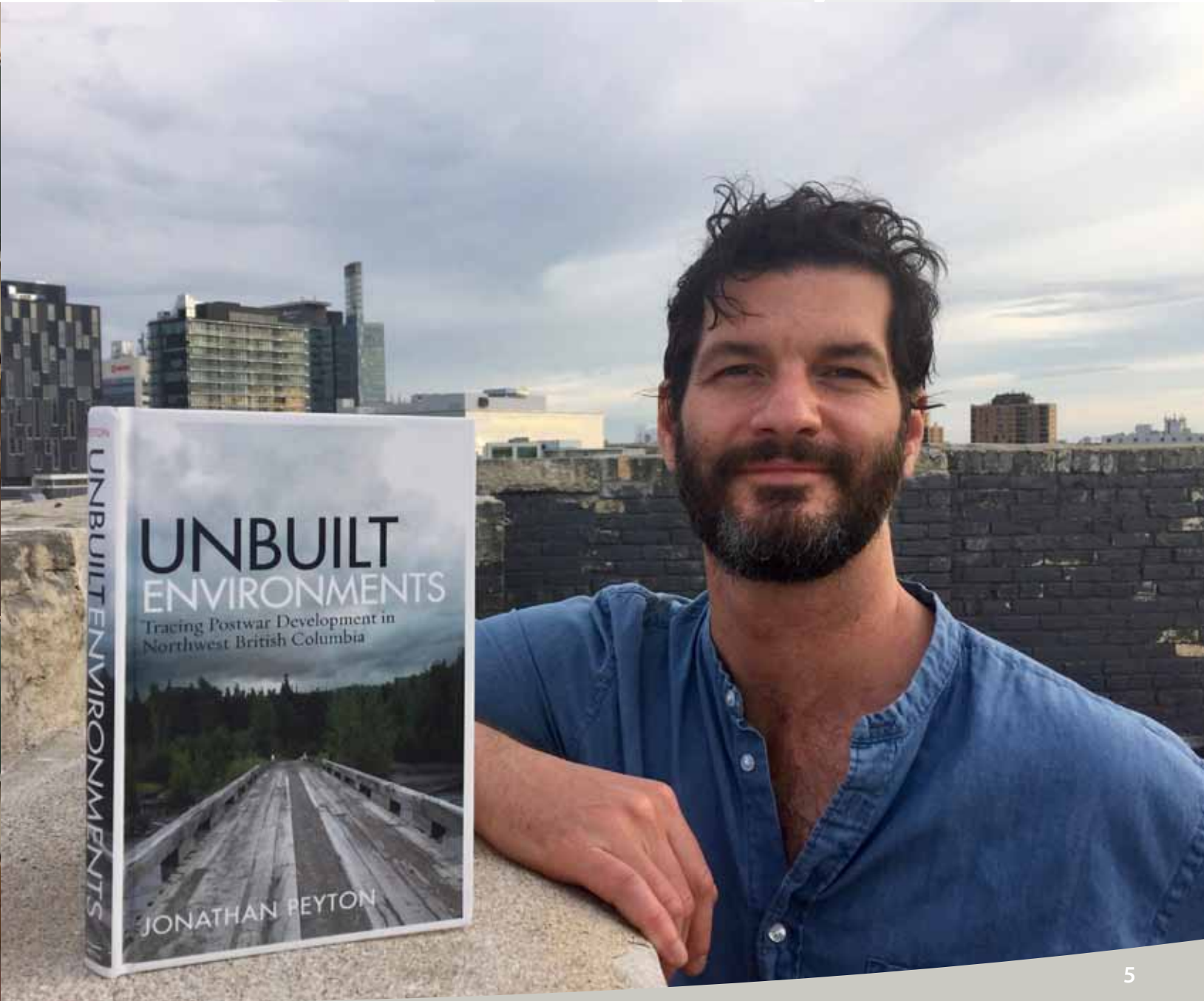
The mission of the Aboriginal Issues Press (AIP) is to promote Aboriginal studies by disseminating refereed and juried work from Aboriginal and non-Aboriginal authors examining Aboriginal issues from all disciplines. The AIP is administered by the Clayton H. Riddell Faculty of Environment, Earth, and Resources, and profits from the book sales are transferred to the Aboriginal Issues Press Endowment Fund. Each year the Clayton H. Riddell Endowment Fund matches these profits to create the Aboriginal Issues Press scholarships.

Pictured top right, left to right: Karl Hele and Judy Syrette. Pictured bottom right, left to right: Adrienne Beaupre, Monique Gravel and Theresa Binda. Photo Credits: Grace Nagy.



# Unbuilt Environments.

**Dr. Jonathan Peyton** (Department of Environment and Geography) is the author of a recently published book *Unbuilt Environments: Tracing Postwar Development in Northwest British Columbia*. Published by University of British Columbia Press, as part of the Nature/History/Society series, the book argues that resource development projects, even those left abandoned, half-built or never developed, have lasting impacts on both natural and human environments. The volume develops five cases studies to analyse the ‘side effects’ of resource development projects: an asbestos mine and adjacent townsite, an LNG export facility, and abandoned railway grade, a suite of discarded hydroelectric schemes and a transmission line constructed to mobilize northern extractive economies. The case studies develop a ‘history of the present’ approach to the question of resources in Canada’s North – each chapter builds upon a historical narrative to comment directly on the contemporary debates around the environment, energy and mining economies in northern regions. The book, and the analytical concept of ‘unbuilt environments’ at its core, makes a unique contribution to scholarship at the intersection of environmental historical geography, political ecology, resource management and development studies. To quote environmental historian Liza Piper (University of Alberta): *“Unbuilt Environments is an exciting and critical work of scholarship that explores the diverse environmental and social legacies of northern resource development.”*





## Genice.

On January 16, Research Manitoba and Genome Canada announced \$4 million in funding for GENICE: a large-scale applied research project (LSARP). LSARP is one of Genome Canada's funding programs and is aimed at projects using genomic approaches to address challenges and opportunities of importance to Canada's natural resources, including interactions between natural resources and the environment, thereby contributing to Canada's bioeconomy and the well-being of Canadians. GENICE is a partnered project between the University of Manitoba researcher **Dr. Gary Stern** (Environment and Geography and Centre for Earth Observation Science (CEOS)) and the University of Calgary professor Casey Hubert. The duo will combine their expertise in the areas of genomics, petroleomics and sea-ice physics to investigate the potential for native microbial communities to mitigate oil spills, as warmer temperatures and melting sea ice usher in increasing shipping throughout Arctic waters. This research will be undertaken at the Churchill Marine Observatory, a unique research facility the University of Manitoba is building in Churchill, MB with support from many partners, and on board the Canadian Coast Guard Ship Amundsen.

Pictured right, left to right: Dr. Gary Stern and Terry Duguid, MP for Winnipeg South. Pictured below: Dr. Gary Stern. Photo credits: Mike Latschislaw.



## CEOS Outreach Highlights.

### Arctic Climate Change Youth Forum – ACCYF.

The biennial Arctic Climate Change Youth Forum held December 6, 2016 was co-hosted by Elmwood High School in conjunction with the ArcticNet Science Meeting. Over 150 students from 32 Manitoba schools met at Elmwood High School to learn about arctic science and hear first hand accounts of how climate change is affecting the environment and the people that live there. Keynote speakers include **Dr. David Barber** and Andrea Brazeau, an Inuk teen from Nunavik. Pictured top right: 19-year-old Andrea Brazeau grew up in Kangiqsualujuaq, Nunavik discusses how climate change is affecting Canada's Inuit. Photo credit: Schools on Board

### Campus Daycare Visit.

In addition to the University of Manitoba's open house CEOS invited two classrooms from the daycare on campus to visit. The little ones were treated to a fireworks display, titration, fish dissections, and other fun hands on activities!

### Arctic Science Day.

Approximately 150 students from both middle and high schools from Winnipeg and rural Manitoba made the trip to FortWhyte Alive to learn about the Arctic outdoors! Many teachers return every year to give this unique opportunity to learn about Arctic system science to their students. Research stations were set up on Cargill Lake and included water sampling, microbiology, ice coring, a meteorological station, and an area for sampling contaminants in water and snow. High school students were also introduced to remote sensing technologies and had the opportunity to examine marine mammal artifacts. While middle years students were introduced to Inuit cultural practices such as subsistence hunting, ice coring, and examined the contents of a seal's stomach - actually Jell-O.

Pictured middle right and bottom. Photo credit: FortWhyte Alive staff

### Science Rendezvous.

Arctic Ice Camp was on display at the annual Science Rendezvous held on campus on May 13, 2017. Each year the event get bigger and graduate students and CEOS research staff were kept extremely busy demonstrating marine mammal adaptations to cold environments though the popular blubber glove activity, changing water pH by making bubbles, filtering water samples, and a tour through a mock ice camp tent. A big thank you to CEOS graduate students and research staff for making all of these outreach events a success!





# Picturing the Planet.



As a regular feature “*Picturing the Planet*” brings inspiring and informative images taken by our students, staff, and faculty. This picture was taken by **Chris Stammers** (B.Sc. PhG.(Hons.) 2011, M.Sc. 2016) on a storm-chasing trip in Southwestern Manitoba. It shows a rotating wall cloud on tornado-warned supercell near Hartney, Manitoba on August 3, 2016. To quote Chris: *“The same low pressure system spawned tornadoes near Glenboro and Morden on this day and also gave flooding rains and damaging winds across a wide swath of Southern Manitoba in what was a very active storm season on the Canadian prairies”*.

On a related note, June 22, 2017 marks the 10<sup>th</sup> anniversary of the EF5 Elie tornado, the first EF5 in Canada. This summer our storm-chasing course, unique in Canada, will see 13 students and 4 instructors including **Dr. John Hanesiak** (Department of Environment and Geography) learn about, detect, and observe storms in Canada and the USA.