

A Grand Opening.

A grand opening for the Nellie Cournoyea Arctic Research Facility was held on March 18th, 2013. Located on the newly constructed 5th floor of the Wallace Building, the \$15 million facility occupies 60,000 square feet. In attendance was Dr. Clayton H. Riddell who donated \$2.5 million toward the facility and Dr. Nellie Cournoyea for whom the facility is named. Dr. Cournoyea is an officer of the Order of Canada and was premier of the Northwest Territories from 1991 to 1995, the first female premier of a territory. In addition to a sizeable crowd of faculty, staff, students, and media also in attendance were President David Barnard, Dr. David Barber (Canada Research Chair of Arctic Systems Science), Dr. Søren Rysgaard (Canada Excellence Research Chair of Geomicrobiology and Climate Change), and the Honourable Erin Selby (Minister of Advanced

Education and Literacy). To quote Dr. Norman Halden, Dean of the Riddell Faculty: *"This critical investment in Arctic research comes at a time of unprecedented global change. As researchers we must rise to challenge the real problems that affect our home and our societies. This world-class platform will be the stage on which this work is done"*. Details about this extensive facility will be provided in the next issue of the newsletter which will be a special issue celebrating the Riddell Faculty's 10th anniversary.

Pictured (left to right) Dr. Søren Rysgaard, Dr. David Barnard, Dr. Clayton H. Riddell, Dr. Nellie Cournoyea, the Honourable Erin Selby and Dr. David Barber. Photo credit: Mike Latschislaw.



In the News.

Dr. Emdad Haque (Natural Resources Institute) was featured in the CBC series “*The Nature of Things*” in the episode “*Zapped: The Buzz about Mosquitoes*”. Dr. Haque’s work in Dhaka, Bangladesh on the relationship between development, environment, and the spread of disease associated with mosquitoes was showcased as part of the program.

The Sea Ice Experimental Research Facility (SERF) was featured in the NBC News Science blog. The author, Elizabeth Howell, covered the SERF facility and the experiments taking place. SERF is led by **Dr. Feiyue Wang**, **Dr. David Barber**, and **Dr. Tim Papakyriakou** (Department of Environment and Geography and the Centre for Earth Observation Science).

The opening of the Nellie Cournoyea Arctic Research Facility received great attention from news media including TV (CBC, CTV, and Global), newspapers (Globe and Mail, Winnipeg Free Press), and online media.

EXTERNAL MEDIA

Globe and Mail:
<http://bit.ly/spring13-18>

Winnipeg Free Press:
www.bit.ly/spring13-9

Metro:
www.bit.ly/spring13-10

Academica:
www.bit.ly/spring13-11

CTV:
www.bit.ly/spring13-12

Winnipeg Sun:
www.bit.ly/spring13-13

CJOB:
www.bit.ly/spring13-14

CBC in Iqaluit and Yellowknife:
www.bit.ly/spring13-15

Nunatsiaq News:
www.bit.ly/spring13-16

ChrisD.ca:
www.bit.ly/spring13-17

UMANITOBA MEDIA

The Manitoban:
www.bit.ly/spring13-1

Media advisory:
www.bit.ly/spring13-2

News release:
www.bit.ly/spring13-3

The Bulletin:
www.bit.ly/spring13-4

YouTube channel:
<http://bit.ly/spring13-5>

Social media & photo gallery:
www.bit.ly/spring13-6

Home Page news story:
www.bit.ly/spring13-7



Awards and Honours.

Stephanie Fulford, a recent NRI graduate in fall 2012, won the national award of best master thesis 2013 for her thesis called “*Youth Community Gardening Programming as Community Development: EcoAction Program*” from the Canadian Association for nonprofit research and the social economy (ANSER) L’Association de recherche sur les organismes sans but lucratif et l’économie sociale.

Lauren Eggie (B. Sc. Geological Sciences - Geology (Hons.)) received the Julie Payette Award as one of the top 24 candidates for the NSERC Post Graduate Scholarship/Canada Graduate Scholarship. Lauren will begin work on her Masters in the Department of Geological Sciences with **Dr. Nancy Chow**.

Matthew Hebert (B. Env. Sc. (Maj.)) won first place in the 2013 Global Colours Photo Contest organized by the International Centre for Students. His photograph, (inset right), taken in Burkino Faso, was captured on a train journey from the Capital of Ouagadougou to the western city of Bobo-Dioulasso. To quote Matthew “*local villagers in all their bright colours rushed towards the train during its many stops. Mangoes and bananas over flowed from the buckets atop their heads. They would then bargain for the sale of their fruits in hopes of making a few Central African Francs or what they referred to as “cefa”. This particular experience showed me that we all work in an effort to profit from the fruits of our labour, no matter where it is we live in this world*”.



United Nations Awards.

Alumna **Dr. Wachiraporn Kumnerdpet** (better known here as Wicky) (Ph.D. 2010, Natural Resources Institute) currently works as an environmental scientist at the office of Public Participatory Promotion in the Royal Irrigation Department of Thailand (RID). Her thesis “*Community learning and empowerment through participatory irrigation management in Thailand*” helped her develop award-winning approaches to policy-making decisions in water management.

The RID was recently recognized twice by the United Nations Public Service Awards for their work on drought prevention and mitigation and irrigation management. These are the most prestigious international awards of excellence in

public service recognizing initiatives that lead to more effective and responsive public administration in countries worldwide.

In 2011, the RID placed 2nd for the Asia and Pacific Region for a project on participatory irrigation management in the Kra Seaw reservoir area. The selection committee was particularly impressed with the documented learning outcomes of participation activities in the area, which were the subject of Dr. Kumnerdpet’s research.

In 2012 Wicky led another application for these awards on integrated drought prevention and mitigation in the Maw Yom Operation in Muang District for which the RID was awarded 1st place.

Pictured below: 2012 Awards Ceremony UN Headquarters, New York (pictured second from right). Photo Credit: Dr. Wachiraporn Kumnerdpet.



Freshwater Research Update.

A collaborative team of researchers from our faculty (**Dr. Mark Hanson**, Environment and Geography), University of Winnipeg (Dr. Charles Wong), and University of Strathclyde (Dr. Charles Knapp) recently published three papers describing the release and hazards associated with nutrients, pharmaceuticals, and the presence of antibiotic resistant gene-containing microbes from wastewater lagoons in Manitoba. Municipal lagoons are common on the prairies, yet little research has investigated their potential impacts on surface water quality. The province will be enforcing new, stricter wastewater release guidelines within the next few years, so many small communities will need to develop infrastructure to meet provincial objectives, specifically those for nutrients. The researchers observed many pharmaceuticals in the monitored

waterways, and nutrients often exceeded the new targets. Even use of a treatment wetland might not be sufficient to prevent the release of antibiotic resistant organisms into surface waters that flow into Lake Winnipeg. The team was recently awarded a follow-up NSERC-Engage grant to examine the efficacy of new treatment technology to mitigate the contaminant loadings from these lagoons; that work will begin in the spring. Their efforts directly contribute to our understanding of, and solutions to, the contaminant threats posed to Lake Winnipeg.

Pictured below: Dr. Jules Carlson (Postdoctoral Fellow) sampling in the Grand Marais treatment wetland. Photo credit: Jonathan Challis.



Flooding Hope: The Lake St. Martin Story.

The video, *Flooding Hope: The Lake St. Martin Story*, was created by **Dr. Myrle Ballard**, **Dr. Shirley Thompson** (Natural Resources Institute), and Ryan Klatt. It has been selected and shown at a number of film festivals. The video documents how an environmentally induced displacement transformed an entire First Nation's community into refugees. To protect private property in the province from the rising river waters, government officials decided to use the Fairford water control structure to lower water levels on Lake Manitoba. This diversion of water to Lake St. Martin resulted in the destruction of all infrastructure and housing at Lake St. Martin First Nation. In a state of emergency, a \$100 million dollar water channel was constructed adjacent to the community without any consultation or an environmental assessment.

High water levels forced all members of Lake St. Martin First Nation to undergo an emergency evacuation and then permanent displacement with the community in need of relocation. Years later, members of Lake St. Martin First Nation remain displaced with no new land base and no hope for return to their permanently flooded community as they continue to reside in urban hotels and temporary homes. The community members continue to struggle to have their basic needs met and to be heard in decision-making about their future "home" with minimal assets to draw from and many institutional and policy barriers stemming from jurisdictional issues.

Pictured below: Lake St. Martin First Nation. Photo credit: Ryan Klatt.



Curry Cook Off.

On March 28th in the Cross Common Room in St John's College the second annual "Curry Cook Off" took place. **Dr. Norman Halden**, Dean of the Riddell Faculty faced off against Dr. Chris Trott, Warden of St John's College. This friendly "battle of the curries" is a fundraiser towards the **Dr. William Norton Undergraduate Scholarship** that honours the career of Dr. Norton in the Department of Environment and Geography. The award will be given to a student member of St John's College who is enrolled in a geography program with preference for a student in human geography. It is envisaged that the first award will be made this fall.

Each of the over 70 diners also voted to award the trophy that has become known as the "Chef-y". Dr. Halden made lamb curry and cauliflower, and potato and pea curry while Dr. Trott made dahl-curried lentils, curried okra, and lamb korma with mint. Once all the votes were counted the "Chef-y" was awarded to Dr. Halden by 36 to 24 votes.

A silent auction raised additional funds with prizes donated by the Riddell Faculty, St John's College, University of Manitoba Press, and Oxford University Press who publish Dr. Norton's book "Human Geography" (now in its eighth edition) and "Cultural Geography" (now in its third edition). Ian Park, Manager of the "Daily Bread Café" generously donated rice, naan bread, and drinks to accompany the meals.

Pictured (Left to Right): Dr. Norman Halden being congratulated by Dr. Trott. (Inset) "Chef-y". Photo Credits: Jason Jorgenson.



Student Volunteering.

A shared passion for environmental justice, creative expression, and working with youth has catalyzed three students from the Riddell Faculty to collaborate on projects that address environmental issues through the arts. **Natalie Baird, Jonathan Ventura,** and **Karina Cardona Claros** are environmental "artists" whose research and networking is encouraging a cultural shift in how youth learn about and confront pressing environmental concerns. Natalie is a third-year student in Environmental Science and has facilitated the Environmental Art Mentorship through the Manitoba Environmental Youth Network (MEYN) since September 2012. Through weekly gatherings, the mentorship project brings together a small group of talented young artists with environmental practitioners and artists. Karina is an MA candidate in the Department of Environment and Geography who helped to establish MEYN in 2007. Karina is a

community artist who curated an exhibit of youth art addressing environmental health (in)equity for the Knowledge Leaders in Children's Environmental Health Project in Vancouver last summer. Natalie called on Karina to support her participants in learning creative collaborative decision-making skills. The group recently completed a series of posters that promote positive environmental behaviours under the slogan "It's not just romantic, it's sustainable!" Jonathan is a 4th year

Environmental Studies student who has been Coordinator of MEYN since 2011. With Jonathan's help, the group received a grant from Eco-Action (Environment Canada) that is allowing them to publish and distribute over 100 copies of the posters to schools, businesses, and organizations in the coming months.

LINKS

Environmental Art Mentorship:

<http://environmental-art-mentorship.tumblr.com>

Manitoba Environmental Youth Network:

<http://www.facebook.com/mbecoyouth>

Community Voices, Creative Expressions in Children's Environmental Health:

<http://cehe.ca/creativeexpressions>



3M National Student Fellowship Award.

Ameena Bajer-Koulack, a third-year environmental science student in the Riddell Faculty, is one of only ten students in Canada to be named a 3M National Student Fellow. It is the first time that a University of Manitoba student has won the award.

The 3M National Student Fellowship Award was introduced in 2012 to honour undergraduate students in Canada who have demonstrated qualities of outstanding leadership and who embrace a vision where the quality of their educational experience can be enhanced in academia and beyond. Each year, just ten Canadian students are awarded the \$5,000 scholarship. Ameena will officially receive this honour at a ceremony on June 21 at the Society for Teaching and Learning in High Education conference, which is being held this year in Nova Scotia.

Ameena is a natural leader whose belief in education as a catalyst for social change and environmental action has inspired many of her leadership roles. Following a transformative experience working alongside Arctic researchers through the Schools On Board program, she co-chaired the 2010 Arctic Climate Change Youth Forum to empower students to take action on climate change, and has been dedicated to Arctic outreach and environmental education ever since. She was also recently a key organizer of the UArctic Student Forum, a five-day event that brought together students from all over the world to discuss communication and mobility issues in the North.

Ameena is an exemplary student receiving numerous awards including the President's Scholarship and a Clayton H. Riddell Faculty of Environment, Earth, and Resources Undergraduate Admission Scholarship, as well as being on the Dean's Honour List. Ameena also volunteers in teaching music and plays piano, violin and even the five string banjo. To quote Susan Gottheil, Vice-Provost (Students) *"Ameena is an exceptional student leader who has already made a difference, and is poised to make significant contributions to her community, Manitoba, Canada and the world."*

Photo Credit: Ameena Bajer-Koulack.



CLEAR Skies.

This year, the University of Manitoba Weather Club, based out of the Riddell Faculty, organized and hosted the Collective Learning on Emerging Atmospheric Research (CLEAR) Workshop. CLEAR brought together individuals from a number of atmospheric backgrounds, from both the University of Winnipeg and University of Manitoba, professionals, and even a few members of the public. CLEAR was unique in that it was a student initiative from the ground up, and organized by a passionate group of students from

the Weather Club including **Juris Almonte, Barbara Marzoff, Chris Stammers, Stephen Berg, Kyle Ziolkowski, and Michelle Curry**. Undergraduates, graduates, professors, and forecasters presented a broad range of recent research, from mountain and mesoscale process meteorology to climate and modelling studies. The workshop featured a plenary session with Greg Johnson, a renowned storm chaser from Saskatchewan. A climate change panel session featured **Dr. Ron Stewart**

and **Dr. John Iacozza** (Department of Environment and Geography) and Dr. Danny Blair (University of Winnipeg) and was chaired by weather specialist for Global TV, Kate Gadjosik. The event was sponsored by the Riddell Faculty, the Department of Environment and Geography, the Department of Geography at University of Winnipeg, and the Canadian Meteorological and

Oceanographic Society. If you have any questions or want to get involved with the weather club, you can email them at umweatherclub@gmail.com

Pictured (clockwise) Barbara Marzoff & Michelle Curry. Photo Credit: Juris Almonte. Kate Gadjosik, Dr. John Iacozza, Dr. Danny Blair and Dr. Ron Stewart. Photo Credit: Kyle Ziolkowski.

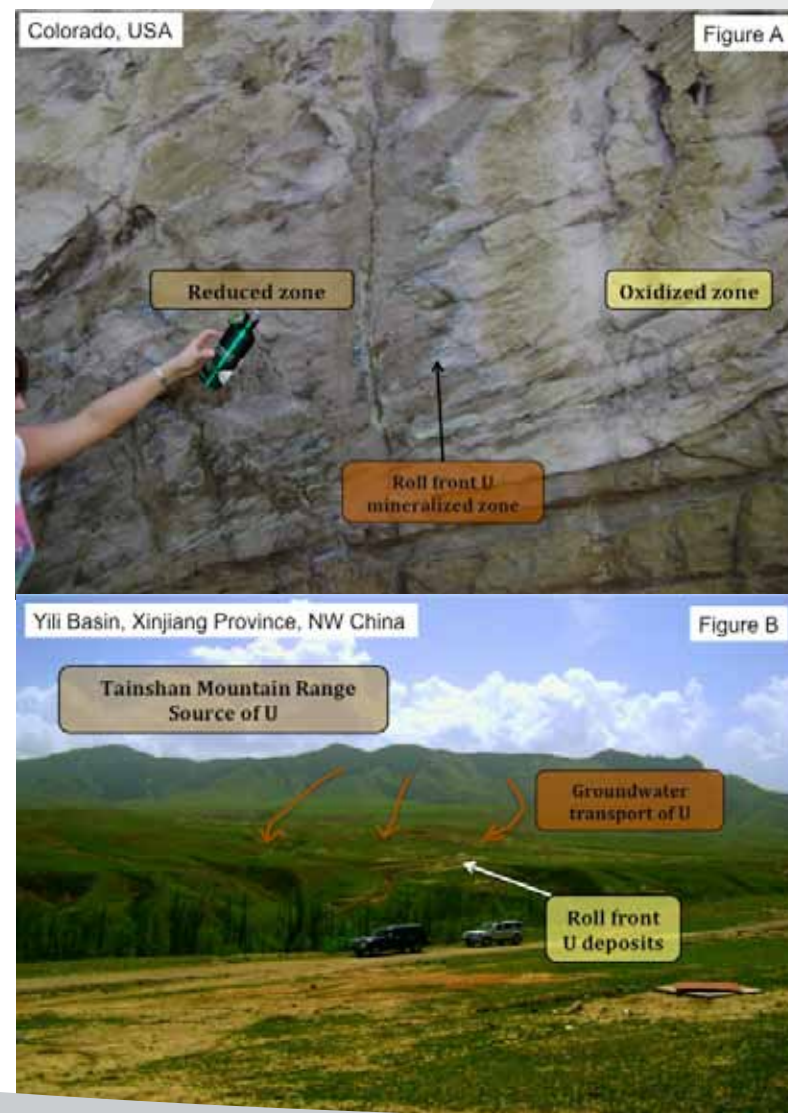


M. Fayek – International Atomic Energy Authority.

Dr. Mostafa Fayek (Department of Geological Sciences and Canada Research Chair in Environmental and Isotope Geochemistry) is a technical advisor to the International Atomic Energy Authority (IAEA). As a uranium specialist, his expertise is being applied to a new uranium deposit classification system. He will publish the new classification in a chapter in the forthcoming volume *"Uranium: Cradle to Grave"* (to be published in May by the Mineralogical Association of Canada). Dr. Fayek is also a technical advisor to the Chinese government in the IAEA's work to advise emerging economies about their uranium deposits. He traveled to China in October 2012 to provide expertise regarding China's uranium and beryllium deposits, Xinjiang Province, NW China. Two distinct deposits, one volcanic hosted and one situated in sandstone deposits, provide significant challenges in terms of their exploration and extraction. Dr. Fayek will be participating in a short course as part of the upcoming Geological Association of Canada/Mineralogical Association of Canada (GAC-MAC) conference, which will take place in Winnipeg, May 22-24.

Figure A is one of the few known roll-front uranium deposits exposed in outcrop at Turkey Creek, near Denver Colorado, USA. Roll-front deposits generally consist of oxidized and reduced zones. Uranium mineralization (e.g., uraninite) forms at the boundary between these two zones.

Figure B is a photo of the Tainshan Mountain Range, China and the Yili basin below, which is host to numerous roll-front U deposits that are not exposed on surface. The Tainshan Mountains are considered to be the source of uranium. Oxidizing groundwaters leach and transport U from these mountains into the Yili Basin where the uranium is trapped by organic-rich sediments to form roll-front U deposits. The main exploration strategy in this region is to follow the drainage patterns down the mountains and into the basin.



A snap shot of the last 10 years.

As we celebrate 10 years of the Riddell Faculty in July, 2013, we reflect on our accomplishments that were achieved in that time:

- Over 800 undergraduate and over 200 graduate students earned their degrees from the Riddell Faculty since 2004.
- Two graduates were the recipients of Governor Generals' Medals:
 - **Prateep Kumar Nayak** - Governor General's Gold Medal - 2012 Ph.D. in Natural Resources and Environmental Management
 - **Alison Murata** - Governor General's Silver Medal - 2010 B. Env. Sc. (Hons.) Co-op
- There has been a 29% increase in enrolment in 1st year courses offered by the Riddell Faculty since its creation.
- The Faculty has introduced Earth: A User's Guide, a first-year course that gives students the information that they need to make balanced decisions when contemplating the split between wanting resources or caring about the environment. We have to understand where our resources come from, and the consequences of getting them. To date, more than 680 students have enrolled in the course.
- Two Riddell co-operative education students were recipients of the University of Manitoba Cooperative Education Student Champion Award:
 - 2012 - **Michelle Curry**
 - 2013 - **Marissa Borgford**
- In this past year, the cooperative education program in the Riddell Faculty has grown to provide over 75 work placements with more than 50 employers.
- In 2008 **Dr. Clayton H. Riddell** was made an Officer of the Order of Canada
- **Dr. Frank Hawthorne** (Pictured right. Photo credit: Shaun Gallagher.) was awarded the 2008 Killam Prize in Natural Sciences, 2009 Carnegie Mineralogical Award & the IMA Medal of the International Mineralogical Association, 2010 the Bancroft Medal of the Royal Society of Canada, 2012 the Queen's Diamond Jubilee Medal, and in 2013 the Roebling Medal of the Mineralogical Society of America.
- In 2010 **Dr. Søren Rysgaard** (Pictured below right. Photo credit: Thomas Fricke.) was announced as the University of Manitoba's Canada Excellence Research Chair in Arctic Geomicrobiology and Climate Change.
- The Riddell Endowment fund has awarded \$27,000.00 in undergraduate admission scholarships and over \$165,000.00 in graduate entrance scholarships to date.

ONE planet
MANY perspectives



Picturing the Planet.

As a regular feature "Picturing the Planet" brings inspiring and informative images taken by our students, staff, and faculty. Building on the success of the Schools on Board ship-based field program, Schools on Tundra was piloted in February 2013. This program created an opportunity for high school students and teachers from across Canada to travel to and experience Churchill, Manitoba. The program was based out of the Churchill Northern Studies Centre where students and teachers worked with scientists collecting data for a variety of research projects, engaged with community leaders and elders, and participated in a variety of learning activities focused on the history and culture of Churchill and the surrounding area.

High school students and teachers from Quebec City, Montreal, Iqaluit, and Winnipeg made the 45-hour trek by train from Winnipeg to Churchill. In Churchill, the group met up with students from Baker Lake, NU and Churchill.

Acknowledgements: ArcticNet, Churchill Northern Studies Centre, Parks Canada, NSERC PromoScience.

Photo Credit: Max Hegel, Daniel McIntyre Collegiate, Schools on Board (ArcticNet, CEOS).

