Clayton H. Riddell Faculty of Environment, Earth, and Resources | University of Manitoba

ALUMNI NEWSLETTER Spring 2012

The Dean's Message

Dr. Norman Halden

For as long as the Clayton H. Riddell Faculty of Environment, Earth, and Resources has existed, the notion that we now live in a new age, the '***Anthropocene***' has gained popularity and explanatory power. Suggested initially by the Nobel Prize winning scientist Paul Crutzen, this new epoch characterized by increasing human influence on geological, biological and chemical processes on the Earth is, with increasing clarity, unquestionably an important part of our everyday lives. Humans have emerged as a dominant force, perhaps the dominant force in some cases, of change to Earth systems, landscapes and environments; our use of the land and extraction of water, forests and minerals effects the planet today, and will for centuries to come.

A clear example of this is the demand for resources for a growing global population (10 billion+ within the 21st century), clamoring for a standard of living equivalent to that which the citizens of Western nations have come to enjoy and expect. Urban mega-regions have developed to accommodate multitudes; landscapes characterized by overuse and degradation become burdened with waste, altered by chemicals and shifted from equilibrium. We speak of natural resource management, but are there really any unperturbed '***natural***' ecosystems left to be managed? Arguably, we have created human systems with natural systems embedded within, breaking down the once firmly held barriers between nature and culture.

To address this change in our relationship to the natural world and the threats implied, we must change how we perceive ourselves, and our role in the world, to one that forefronts responsibility as caring stewards. Through research, teaching and outreach, this Faculty is uniquely positioned to effectively increase our society's understanding and respect for the Earth and its changing environments, landscapes and resources and the effects of, and on, human populations. Human existence requires the use of resources, whether food, water, minerals or energy, and it is the diversity of human perspectives, experiences and knowledge which give us the tools to work to balance this with reasoned and informed decisions about the Earth's future, from the local to the global scale of analysis. We know a great deal about how the Earth has responded to change in the past, and now we are being challenged to make predictions about how the Earth is going to respond in the future. Integrating knowledge allows for the determination of new and innovative ways for human groups to not merely survive, but to thrive. The human footprint is all too often viewed as negative; ways to mitigate or even reverse such effects, as well as resolve inequities, support human rights and improve and secure environmental and human sustainability are vital to our collective futures. We are called upon to explore, to be visionary and to be innovators that understand, manage and restore our environments, adapting our culture to one that sustains the '***world organism***', a phrase first coined by the 19th century geographer and scientist Alexander von Humboldt. His message is just as important today as it was some 200 years ago; ***that we see and understand how interlinked human lives are with the diversity of nature's resources and manage our affairs accordingly***. This is what it means to be living in the Anthropocene.

(Photo Credit: NASA, 'Earth at Night')

Studying the politics of land use planning in the Ontario boreal region.

Catie Burlando (recent Ph.D. graduate) is working with Dr. Davidson-Hunt at the Natural Resources Institute. As part of her research, she has worked with the Anishinaabe community of Pikangikum First Nation, in northwestern Ontario, documenting the process by which international environmental organizations have shifted the terms for the community-based land-use planning process completed by Pikangikum, towards a more centralized approach. Her research shows that this shift has provided more power to large environmental organizations and scientific panels, while sidelining attempts by northern communities to have a greater say in decisions over their lands, be it through conservation or land-based enterprises.

Raised and educated in Italy, Catie first came to Canada to study Geography at McGill University. She returned to Europe to complete a Masters in Natural Resource Management at Stockholm University. Her international research in the political ecology of conservation and a desire to return to Canada paved the way for her Ph.D. research work. The Natural Resources Institute offered a well-grounded interdisciplinary curriculum, as well as a faculty team well vested in international and national research. As part of Dr. Davidson-Hunt's research program, Catie was introduced to Aboriginal issues in northern Ontario, participated in the Pimachiowin Aki World Heritage Site nomination process, and has become a regular co-author to the newsletter of the Commission on Environmental, Economic and Social Policy of the International Union for the Conservation of Nature. During her time at the University of Manitoba, she has also been involved with the organization and development of the Clayton H. Riddell Faculty of Environment, Earth, and Resources' "***Cultural Landscape Field School***" in northeastern Italy.

(Photo Credit: Nathan Deutsch)

(Photo Credit: Jennie Masuda)

Seeking Environmental Health Equity in the City.

As a Canadian Institutes of Health Research (CIHR) New Investigator in knowledge translation, Dr. Jeff Masuda (Environment and Geography) maintains an expansive program of research in which he works within socio-economically marginalized communities across Canada to harness powerful local knowledge of social and environmental determinants of health. Over the past four years, Dr. Masuda and his students have been working alongside teams of community researchers – inner-city residents who know first hand the challenges of living in under-resourced neighbourhoods – to investigate the consequences of inequitable urban social and environmental investment. Their research, which involved a unique combination of GIS (Geographic Information Systems) and photography-based neighbourhood assessments, speaks to the contrasts between more affluent areas of Vancouver, Winnipeg, and Toronto and the inner-city neighbourhoods in each community. What they found might be surprising to some. It turns out that signs of urban inequality are actually to be found in all neighbourhoods. Just as the inner city suffers from stigma and underinvestment, inner-city researchers observed that wealthier neighbourhoods suffer from a culture of individualism that has eroded a sense of community. Photographs included fenced yards separating atomized homes, ample but under-used green spaces devoid of community gardens and other forms of collective life, and pedestrians-enter-at-your-own-peril automobile strip malls. The findings tell us something about how urban problems - environmental health inequities - are really everyone's problem, not just for those in the inner city and that citizens and politicians need to find ways to cut across socioeconomic and racial divisions if we are to build a city where all residents benefit from sustainable, crime-free, fun and family-friendly communities. Dr. Masuda's research website, called the Centre for Environmental Health Equity, can be found at ***www.cehe.ca***.

Awards & Distinctions

2011 Convocation Ceremonies

Each year the University of Manitoba and the Riddell Faculty recognize student excellence through medals. For the first time, in addition to the May reception the Riddell Faculty also hosted a reception in October to celebrate the accomplishments of our Fall graduands. In this way we celebrate not only the students' accomplishments, but also the valuable role of friends and family in supporting students to achieve and excel. The following students received such recognition over the past year:

Gold Medal:

Annika Putt (B. Env. Sc. (Honours) (Coop))

Program Medals:

Honours Program - **Jolene Rutter** (B. Env. Sc. (Honours) (Coop))
Major or Advanced Program - **Lea Grzenda** (B. Env. Sc. (Major))
3 Year General program - **Leigh Bryant** (B.A. Geography)

Riddell Teaching Awards

Award of Excellence for Undergraduate Teaching - **Dr. John Iacozza**
Award of Excellence for Graduate Teaching - **Dr. Jeffrey Masuda**
Graduate Student Teaching Award - **Dr. John Iacozza**

Thesis Prizes

Laura Pisiak (B. Sc. G. Sc. (Honours)) - **Undergraduate**
Maggi Sliwinski (M.N.R.M.) - **Masters**
Monika Pucko (Ph.D. Geography) - **Ph.D.**

Graduate Initiative Prize

Emily Skinner (M.A. Geography)

Entrance Scholarships

Six Riddell Faculty undergraduate entrance scholarships were awarded in 2011.
The recipients were:

Ameena Bajer-Koulack **Kimberly-Ann Commodore** **Emily Czaplinski**
Jemma Harrison **Rosina Hiebert** **Krista Renwick**

Ten Riddell Faculty graduate entrance scholarships were awarded in 2011.
The recipients were:

Alexey Bryksin **Karina Cardona Claros** **Chia Hao (John) Hu**
Gabrielle Leo **Inna Miretski** **Kelsey Molloy**
Débora Peterson **Jean Polfus** **Ryus St. Pierre**
Christopher Stammers

(Photo Credits: Marie Jivan & Jason Jorgenson.)

The Dr. William Norton Award

This award honours the career of Dr. William Norton: teacher, author, scholar, administrator, St. John's College Fellow, and mentor of innumerable students and faculty members; he would probably prefer however to be called simply '***Geographer***'. Dr. Norton is most celebrated for the excellence of his textbooks, in particular, ***Human Geography*** (in its 7th edition) is widely considered the introductory text in the discipline, consistently rated highly for the quality of its scholarship and for infusing, students with a love of the study of '***what's where, why there, and why care***'. The purpose of this scholarship is to support the study of human geography and of the environments and landscapes humans create.

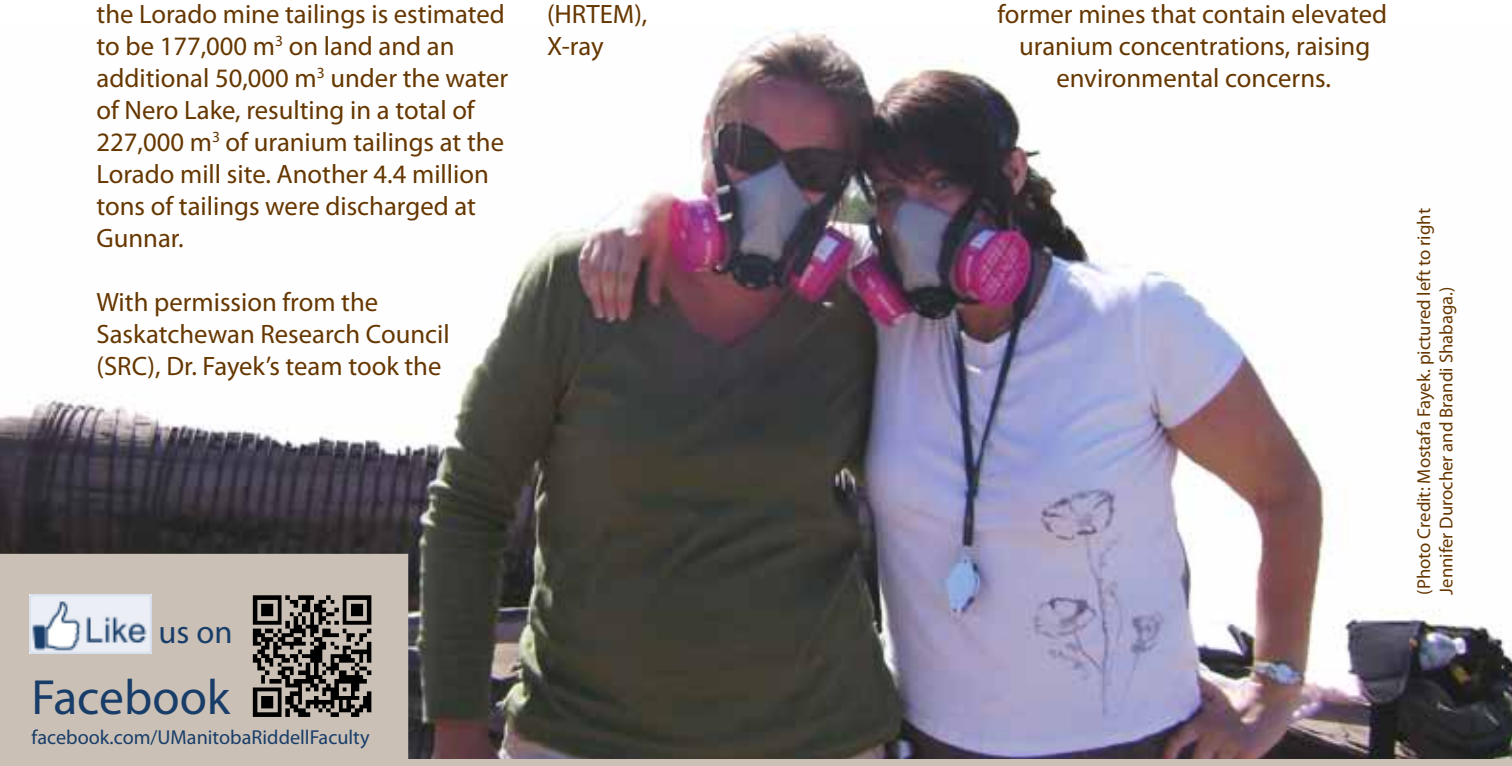
Hot Science in the Cold North.

Studies of uranium sequestration processes in mine tailings are used to develop a better understanding of uranium transport in the environment and prevent uranium from contaminating the ecosystem. The main objective of Dr. Mostafa Fayek's (Geological Sciences) research is to characterize the uranium mineralogy and speciation in samples obtained from the Lorado and Gunnar historical tailings sites found near Uranium City, Saskatchewan. Although numerous studies have focused on uranium mine waste in Canada, the USA and elsewhere in the world very few studies have focused on the tailings from Uranium City.

The Lorado and Gunnar mills operated from 1957-1960 and 1953-1964, respectively. The volume of the Lorado mine tailings is estimated to be 177,000 m^3 on land and an additional 50,000 m^3 under the water of Nero Lake, resulting in a total of 227,000 m^3 of uranium tailings at the Lorado mill site. Another 4.4 million tons of tailings were discharged at Gunnar.

With permission from the Saskatchewan Research Council (SRC), Dr. Fayek's team took the opportunity to obtain preliminary samples from the Lorado and Gunnar tailings masses. Under Dr. Fayek's supervision and consultation with Prof. Barbara Sherriff (Geological Sciences), Ph.D. student Guillaume Othmane (UPMC Sorbonne Universités and Université Paris Diderot), M.Sc. students Laura Bergen (Geological Sciences) and Jennifer Durocher (Laurentian University), and undergraduate student Brandi Shabaga (Geological Sciences) sampled the tailings to determine if the uranium mineralogy or adsorption processes change with depth. Study of these samples will form the basis of the graduate students' theses. The students will be trained to analyse their samples using a variety of novel techniques including high-resolution transmission electron microscopy (HRTEM), X-ray diffraction (XRD), inductively coupled mass spectrometry (ICP-MS) and synchrotron techniques.

This research is highly significant with respect to the environmental and economic well being of Canada. The uranium economy is strategically important as Canada is one of the largest producers and exporters of uranium. With the projected rapid increase in demand for uranium as an energy source, understanding containment and remediation from mine tailings is timely and crucial for the development of the industry, the protection of the environment, and for improving public confidence in the entire fuel cycle. The results from the research can be applied to potential high-level nuclear waste (HLNW) geological repositories and other old mine tailing sites and former mines that contain elevated uranium concentrations, raising environmental concerns.



(Photo Credit: Mostafa Fayek, pictured left to right Jennifer Durocher and Brandi Shabaga.)

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