Clayton H. Riddell

Faculty of Environment, Earth, and Resources

ALUMNI NEWSLETTER | SPRING 2009

The Dean's Message

Dr. Norman Halden

This year's newsletter is the beginning of a new look for the Clayton H. Riddell Faculty of Environment, Earth, and Resources. Our "One Planet, Many Perspectives, One Faculty, Many Facets," captures the complexity of our Earth and our desire to understand how we interact with our Environment and Resources.

It has been an exciting year for many in the Faculty with prizes, awards and scholarships figuring large. Success with granting and other agencies - NSERC, CFI, SSHRC, CIDA – points to an engaged as well as productive faculty and staff and a stimulating and enriched environment for students. For those interested in fieldwork the once-in-a-lifetime opportunity to participate in International Polar Year studies on board the Amundsen has opened new horizons and new international relations. Associated outreach efforts in this area have been spectacular with the prize winning "Schools-on-Board" program receiving many honors and acting as an enticement to a future generation of students.

ONE planet
MANY
perspectives

For the "lab rats" new analytical instrumentation has been coming on stream at a steady pace creating a unique environment capable of characterizing virtually every aspect of Earth materials. Our Faculty has one of the most comprehensive suites of analytical instrumentation available including several mass spectrometers, microbeam sampling instruments, and X-ray diffractometers.

Popular Internet tools clearly show the spatial and geographical links between the human definition of, as well as use and abuse of, resources. Environment, Earth, and Resources is an idea whose time has come – clearly we are going to be very busy so we look forward to next year with a sense of both responsibility and enthusiasm.

One university.
Many futures.

UNIVERSITY OF MANITOBA

Learning & Research

The teaching in the Riddell Faculty is provided through the Department of Environment and Geography, the Department of Geological Sciences, and the Natural Resources Institute.

Earth: A User's Guide (EER 1000)

This new 1000 level course, will begin in the Fall term 2009. Development was supported by the Strategic Development Program Fund and aims to educate students to become well-educated and informed Earth citizens. It will be taught by Drs. Halden and Benbow and will be open to any undergraduate student.

Department of Environment and Geography

This department is in the process of hiring a Health Geographer and recently added an additional instructor as well as a new Head of Department, Dr. Ron Stewart. The department is currently preparing for a graduate program review and is envisioning an exciting period of undergraduate curriculum renewal. The graduate student population ranges between 85 and 95 over the last few years and is likely to remain strong through the department's interests in climate change, its impact on society and Arctic issues.

Department of Geological Sciences

This department recently renamed a number of its first year course offerings to become more attractive to students. Enrollment has increased significantly in years 2 through 4 resulting in doubling the laboratory timetable. The department also recently went through an informative and valuable graduate program review. State-of-the-art laboratory facilities benefit graduate and undergraduate students as well as researchers.

Natural Resources Institute

As an entirely graduate program-based unit, the Natural Resources Institute has a significant graduate student population approaching 100; around one quarter of these students are PhD students. The significant investment of faculty in the provision of research funds also assists in the support of graduate students.

SERF: An Example of Integrative Research in the Riddell Faculty

Dr. Feiyue Wang, along with his colleagues Drs. Tim Papakyriakou and David Barber, has recently received a Canada Foundation for Innovation (CFI) – Leaders Opportunities Fund to build the Sea-ice Environmental Research Facility (SERF) at the University of Manitoba. SERF will be the first experimental sea ice facility in Canada to grow sea ice in an outdoor pool under controlled conditions. This will allow them to study fundamental processes governing the transport and transformation of trace metal contaminants and other materials across the ocean-sea ice-atmosphere interface. These processes have major implications for Arctic ecosystems and Northern Indigenous people under a rapidly changing climate.

One of the major scientific puzzles Dr. Wang has been working on is the rapid and high accumulation of mercury, a neurotoxin, in marine mammals in the Beaufort Sea. Although there is no immediate industrial source of mercury in the nearby region, mercury concentrations in beluga whales and seals from the Beaufort Sea are among the highest in any biota found on this planet. This raises serious concerns over the health of marine mammals and Northern Indigenous People who consume the tissues of the mammals as part of their traditional diet. In collaboration with scientists from the Department of Fisheries and Oceans and Geological Survey of Canada, Dr. Wang has conducted extensive studies on the processes responsible for mercury pollution in Arctic marine mammals. In contrast to the generally held view that the external mercury transported from the south is the major driver, Dr. Wang and his colleagues' research suggests that climate change-induced alterations in the sea ice environment and in marine ecosystems are playing a key role. This calls for a revisit of pollution prevention strategies in the Arctic, as cutting the pollution source alone is not expected to result in immediate improvement in ecosystem health; climate change and mercury (and possibly many other contaminants) pollution have to be addressed at the same time.

Co-op Option

The Co-operative Education Option had a total of 62 placements in 2007/08 across the three degree programs. Employers over the past year include Manitoba Conservation, BOEING Canada, Department of Fisheries and Oceans Canada, Gerdeau Ameristeel, Nature Conservancy of Canada, Environment Canada, Manitoba Hydro, Manitoba Health, and the City of Winnipeg.

Co-op Experiences

Daniel Routhier (B.Env.Sc. Honours Co-op) had interests in waterfowl conservation that began early with his studies at Lethbridge Community College. Within a year of joining the Faculty he was enrolled in the Co-operative Education Option, working with Canadian Wildlife Service and laying his foundation for graduate studies in waterfowl management and conservation. Daniel's Co-op placements have taken him across the prairie provinces, conducting waterfowl surveys and collecting habitat usage data and also contributing to the knowledge of the Species at Risk Act related to migratory birds in prairie Canada. Daniel looks forward to moving into his graduate program where his work is likely to continue in the areas of waterfowl ecology and management.

Amanda Huculak (B. Env. St. Honours Co-op) and Jessica Braun (B.Env.St. Honours Co-op) participated in an international multi-university research project in the summer of 2008 that traveled to Northern Honduras to explore issues related to coastal ecotourism development. The program was coordinated through Operation Wallacea (www.opwall.org), where students are able to gain invaluable field experience and academic credit toward their Honduras theses. Students were excited to experience the cultural uniqueness of the Garifuna peoples while assisting them in the development of ecotourism possibilities.

Students Involved in Research

Shannon Moodie (B.Sc Physical Geography; Honours Co-op) used her NSERC Undergraduate Student Research Award in Summer 2008 to work with University of Manitoba atmospheric scientists John Hanesiak and Jay Anderson in the Understanding Severe Thunderstorms and Alberta Boundary Layers Experiment (UNSTABLE). As well as C.H.R. Faculty of Environment, Earth, and Resources, the project team also included scientists from Environment Canada, University of Alberta and the University of Calgary. Through this joint team, it is hoped that we can understand more fully the dynamics of summer convection initiation that are associated with the Alberta foothills.

Awards & Distinctions

Many of our faculty, staff, students, and alumni receive awards for their outstanding research, teaching and service to the community. We celebrate their successes here and recognize their hard work, talent and generosity.

Award recipients include:

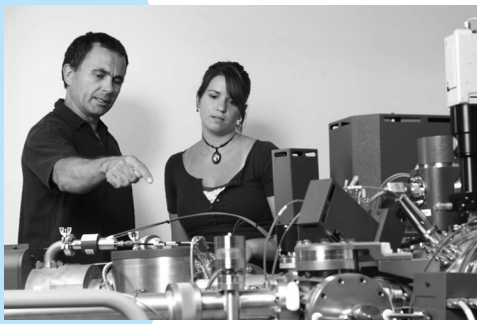
Dr. Clayton H. Riddell - Order of Canada

Dr. Frank Hawthorne - Killam Prize

Dr. Emdad Haque - Fulbright Visiting Chair

Dr. Fikret Berkes and Dr. Iain Davidson-Hunt - Literati Network Award

Laura Bergen fourth year student in Geological Sciences (pictured here with Dr. Alfredo Camacho) was recently named the recipient of a Scotiabank Scotia Capital Markets Scholarship. Laura also kindly agreed to be part of our new promotion and branding strategy and is featured prominently on our display and brochure.



Looking Ahead

Tell Our Story

We will continue to promote the Faculty and its work within and beyond the University of Manitoba. The Faculty will host a number of informative and interesting events to describe our work and the faculty web site will get a new look. We also intend to connect with schools and communities across the Province to better address their needs and concerns.

Address Arctic Change

We will also continue to assess Arctic climate change and environments, and evaluate the impacts and implications for communities, economic and resource developments, and geopolitical issues such as sovereignty. Laboratory facilities and instrumentation will be developed to address the compelling questions and challenges that arise from this unique region.

Value Humanity

One of the qualities that differentiates the Riddell Faculty from similar initiatives across Canadian universities is the integration of multiple disciplines and methodologies. We have already begun to see interdisciplinary research teams develop and flourish in a number of fields. The integration of the human element with the Faculty's many scientific approaches also offers many opportunities for research and educational initiatives. Of particular interest is understanding the notion of communities, the way in which they are established through identity, and the implications for issues such as cohesiveness, wellness, and sustainability. In addition, a graduate program in mineral and natural resource management will also utilize cross-disciplinary approaches in Geological Sciences and the Natural Resources Institute.

Watch Over Our Water

The Faculty also aims to actively participate in the University of Manitoba's initiative to develop a Regional Watershed Institute. This important development will focus on the management, analysis, and distribution of water and will require the integrative and multi-disciplinary approaches inherent in the Riddell Faculty.

Celebrate Our Successes

The coming year will bring much to celebrate including additional research support, new teaching and learning opportunities, and expanding networks of communication and collaboration. This year will also see preparations for the 100th anniversary of the Department of Geological Sciences in 2010 that will, among other initiatives, see the development of a thematic rock park representative of the natural lithology and resources of Manitoba .

UNIVERSITY OF MANITOBA

CLAYTON H. RIDDELL
Faculty of Environment, Earth, and Resources

Phone: (204) 474-7252
Fax: (204) 275-3147
www.umanitoba.ca/environment