

# Of Ice, Water, and Rock.

The vivid, stark architecture that emerges from Greenland's landscape is almost cathedral-like in character produced by the clashing elemental forces of ice, water, and rock. Travelling there it is easy to see the changes being wrought by climate change. While ice sheets are in retreat, it is also clear that the people of Greenland are on the move as is their economy. One vision for the future includes financial security based on oil, gas, rare metals, tourism, and a marine fishery and as can be imagined, this brings with it the double edged dilemma of balancing

economic and cultural security into the future for a population made up of Danes and Inuit. If history is anything to go by this is no small challenge.

To meet these challenges research and scholarship in the Riddell Faculty is being brought to bear in a new memorandum of understanding between the University of Manitoba, Aarhus University, Denmark, and the Greenland Institute for Natural Resources. This group has formed an Arctic Science Partnership bringing together a number of the world's leading scientists in climate

research in the Arctic to create an integrated and coordinated program in education and research to meet the needs of Arctic societies as political, economic, and social development gathers momentum.

Photo Credit: Norman Halden. View of Qupik ved Qooqqu, Greenland; Inset

Photo credit: Peter Bondo Christensen. Pictured right to left are Dr. David T. Barnard (President and Vice-Chancellor, University of Manitoba), Dr. Klaus Nygaard (Director, Greenland Institute of Natural Resources) and Dr. Lauritz B. Holm Nielsen (Rector, Aarhus University, Denmark).



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## Awards.

**Dr. Dan Layton-Matthews**, currently associate professor in the Department of Geological Sciences and Geological Engineering at Queen's University received the William Harvey Gross Award. The award is "*bestowed to a geoscientist less than 40 years of age who has made a significant contribution to the field of Economic Geology in a Canadian context*". Dr. Layton-Matthews graduated with a B.Sc. Honours from the Department of Geological Sciences, University of Manitoba in 1998.

### 2012 Students' Teacher Recognition Award.

This award gives outstanding graduating students the opportunity to honour those teachers who have made important contributions to their education. Recognizing that academic growth and development occurs over many years, the outstanding student is asked to recognize two teachers, one from Kindergarten to Grade 12 years and one from their years at The University of Manitoba.

The nominated student, **Trinette Konge** (B. Env. St. (Hons.) Coop) nominated **Leslie Goodman** who is also coordinator the Cooperative Education Option in the Riddell Faculty.

## In the News.

**Kristina Hunter** (Department of Environment and Geography) was quoted in the Winnipeg Free Press (July 23, 2012) in an article about the environmental impacts of lawn pesticides. A group of her students summarized a large number of peer-reviewed studies suggesting links of some of these chemicals to illnesses ranging from leukemia to Parkinson's disease.

**Dr. Vaclav Smil** (Distinguished Professor Emeritus, Department of Environment and Geography) had an article in the Financial Post titled "*Our future is gas*" (May 3, 2012). In the article he asserts that "*modern (that is, overwhelmingly fossil-fuelled) civilization needs highly concentrated sources of energy that can be conveniently delivered to the megacities where most of humanity will soon live. No other fuel can fit this need as efficiently and with such a relatively low environmental impact as natural gas*".

## Remembering Dr. Donald Hall.

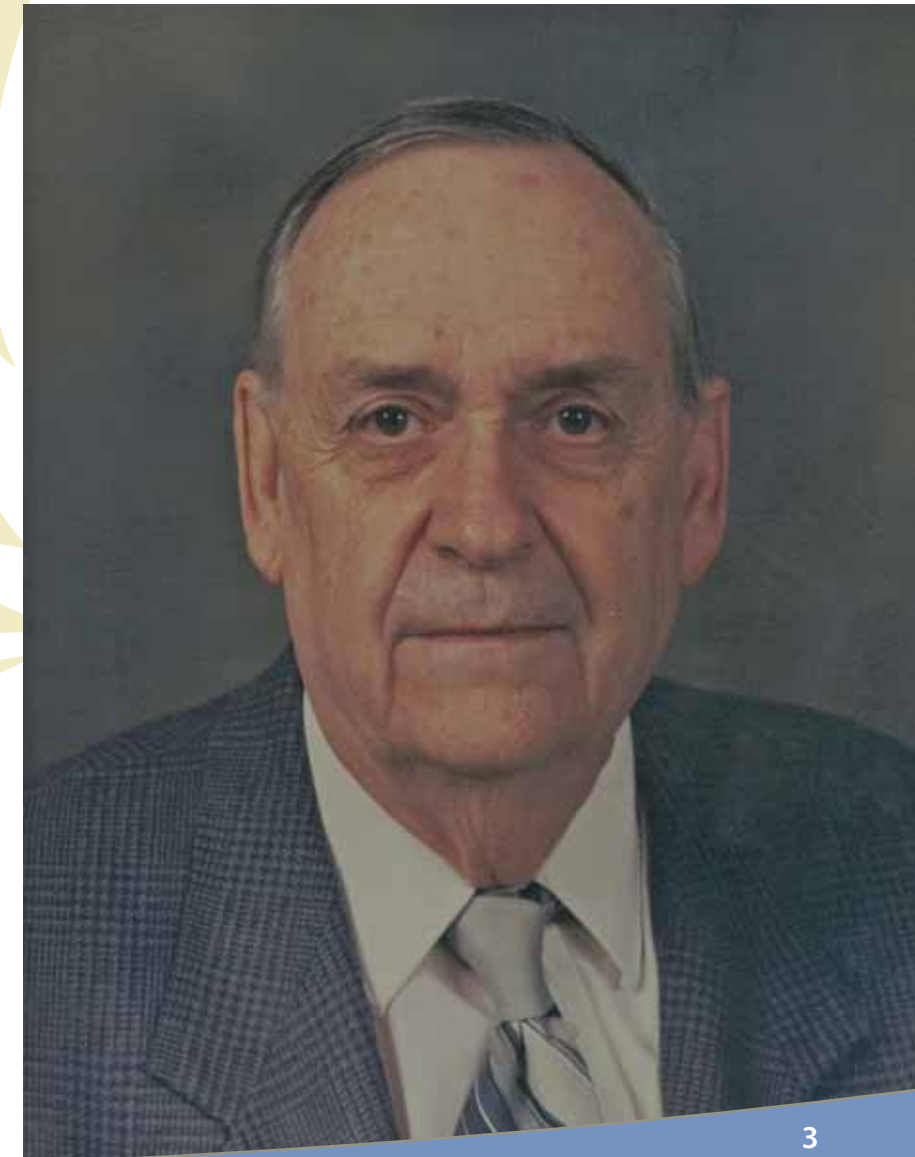
It is with great sadness that we must announce the passing of **Dr. Donald Hall** on June 6, 2012. He served as Head of the Department of Geological Sciences from 1978 to 1987, the period that spanned the department's move from the "old" geology building to the Wallace Building. One of Dr. Hall's major accomplishments for the department was his relentless, and ultimately successful, lobbying for a new building. Many of our graduates from this period will recall that, prior to the move in 1986, the department's faculty and research labs were dispersed among five buildings, and graduate students were located in a trailer park on the green between the Buller and Administration Buildings.

Dr. Hall (B.Sc. University of Alberta 1948, M.Sc. University of Toronto 1950, Ph.D. University of British Columbia 1959) retired in December 1995 after over 30 years at the University of Manitoba becoming Professor Emeritus. In 1959 he was appointed as assistant professor at the University of Saskatchewan and then came to the University of Manitoba in 1962. Dr. Hall's main responsibility was to establish programs in geophysics – the first of their kind in Manitoba.

His principal area of research was Earth magnetism including paleomagnetic studies in the Precambrian shield. Dr. Hall published around 100 papers in scientific journals and books. He was a dedicated teacher and in 1972 received the prestigious Stanton

Award for Excellence in Teaching. Recalling Dr. Hall, Dean of the Riddell Faculty, **Dr. Norman Halden** notes "*Don was a gentle, sincere, and decent individual who worked to build the Department of Geological Sciences both literally and figuratively*".

Photo Credit: Ron Pryhitko.



## Prairie Division Canadian Association of Geographers Conference.

The Department of Environment and Geography will be hosting the 2012 Prairie Division Canadian Association of Geographers (PCAG) Conference. It will be held in **Winkler September 28-30** and will include conference presentations and posters by faculty, graduate students, and undergraduate students from across the Prairie region of both Canada and the United States as well as field trips. Further information and contact details can be found at <http://pcag.uwinnipeg.ca>.



## Exchange Student Experience.

Undergraduate students in the Riddell Faculty have the opportunity to participate in an exchange program with the University of Plymouth in the UK. Students can take courses for credit in their programs and take part in associated activities.

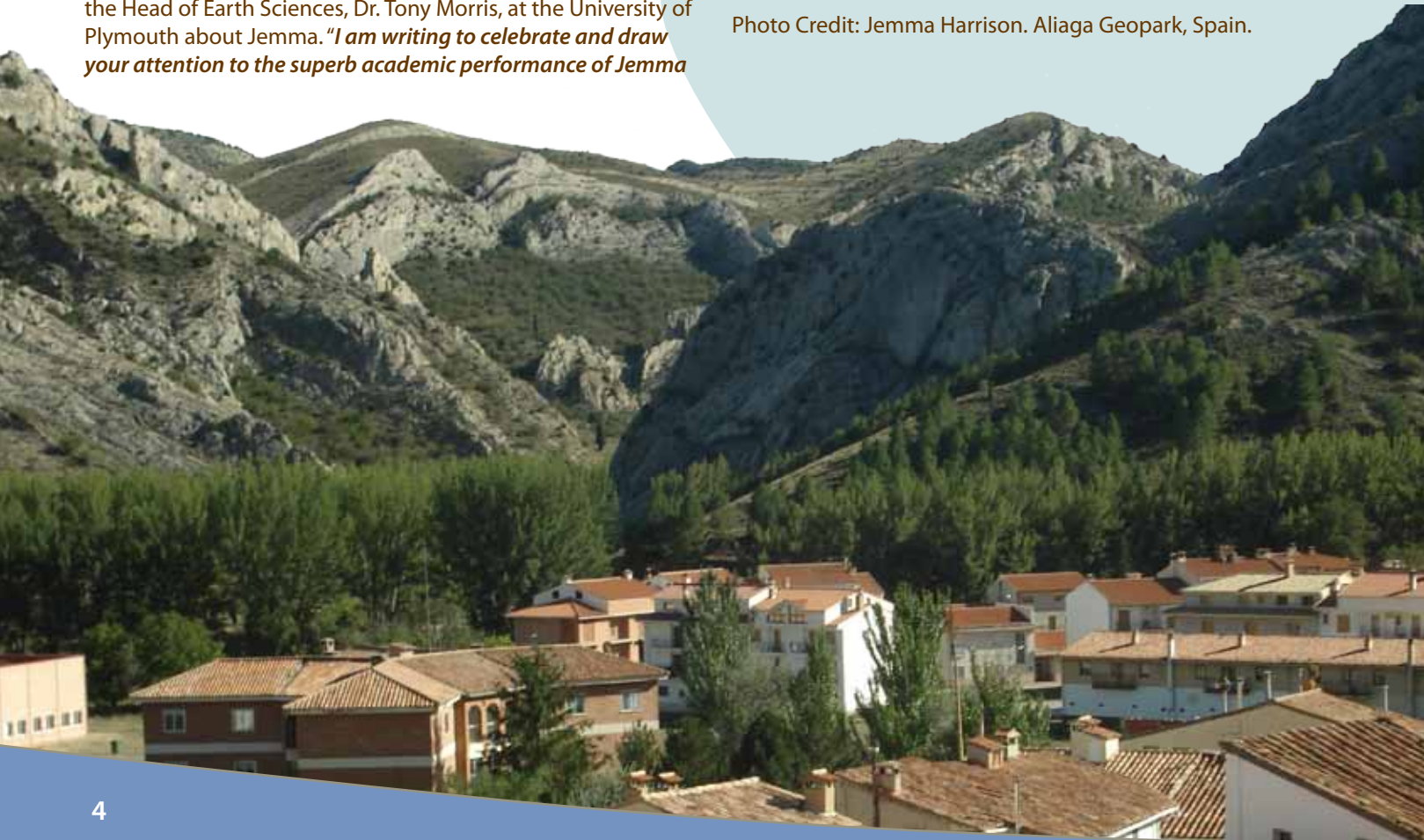
**Jemma Harrison**, who is about to enter her third year in Geological Sciences, spent ten months at the University of Plymouth. As well as taking courses, she also attended a number of field schools. Of her field school to Aliaga Geopark in Spain, Jemma remarks that it features *"beautiful exposures of folded Cretaceous limestones and searing heat"*. She also took part in a two-week field course in south-west England and a number of day trips including a structural geology trip that typified the best of British weather; to quote Jemma *"we were trapped in pouring rain and biting wind on an English beach in February"*. However she also remarks: *"I'll have the skills I've learned, the friends I've met, and the memories I've made for the rest of my life"*.

It is of course important to remember that when our students participate in these exchanges they are also acting as ambassadors for our Faculty and Departments. Recently, the Department of Geological Sciences received an email from the Head of Earth Sciences, Dr. Tony Morris, at the University of Plymouth about Jemma. *"I am writing to celebrate and draw your attention to the superb academic performance of Jemma"*

*Harrison. Jemma's profile of coursework and examination marks places her at the very top of this year's Stage 2 cohort (including all students), with an overall aggregate mark that is the best in the year. This is a particularly impressive performance, especially given the additional pressures of being on exchange and studying in unfamiliar surroundings. In addition, I'm delighted to be able to tell you that Jemma has been awarded the UK Mineralogical Society Prize for the best performance in the module EAR214 "Igneous and Metamorphic Geology", where she achieved a near perfect overall mark of 89.75% (probably the best performance we have ever seen in this subject area). This achievement is even more remarkable because Jemma had never studied optical microscopy before, and indeed volunteered to undertake our first year module in petrology (without formal credit) alongside her second year modules in order to get up to speed with this challenging discipline. As you can tell from the above, it has been a pleasure to host Jemma during her exchange year. She has been both an asset to the student cohort and a fantastic ambassador for her home institution".*

It should also be noted that Jemma is the recipient of one of our Riddell Faculty undergraduate entrance scholarships.

Photo Credit: Jemma Harrison. Aliaga Geopark, Spain.



## GLOBE Conference.

**Trinette Konge** (B. Env. St. (Hons) Coop), who graduated in May, attended the GLOBE 2012 Conference in Vancouver from March 12 -16. GLOBE is a biennial conference and trade fair on business and the environment that provides opportunities for leaders from government, business, academia, and non-profits to come together to discuss environmental challenges and opportunities. The GLOBE fair and conference has been held in Vancouver every two years since 1990.

The trade fair showcases leading-edge solutions and technologies for a vast array of environmental problems while the conference explores ideas and issues. Trinette also attended the pre-GLOBE workshop for emerging environmental practitioners *"Leading Change Forum for Young Sustainability Leaders"* which offered a staging ground for discussion among peers. She also took part in a tour of the LEED Certified Vancouver Convention Centre. Overall GLOBE provides a unique opportunity to network with over 150 people from diverse backgrounds and interests.

To quote Trinette: *"The broad format of GLOBE to include multiple stake holders, interest groups, and industries with one overarching theme of business and the environment is beneficial because it gives people a chance to come out of their silos of work to collaborate and learn from others. Although at the networking events one meets many people involved in non-over-lapping areas, common themes often emerge such as carbon sequestration or corporate sustainability"*.

Photo Credits: Trinette Konge. Pictured inset Trinette Konge.





# Spring Convocation 2012.

On Tuesday May 29, the Riddell Faculty celebrated the graduation of over 100 students with their families and friends. The Faculty also hosted a reception to honour and celebrate the achievements of our graduating students and faculty and student award recipients.

## University and Program Medals

University Gold Medal for the highest standing in the Clayton H. Riddell Faculty of Environment, Earth, and Resources –

**Meredith Pind** (B.Sc. Physical Geography (Hons.) Coop)

Three Year General Program Medal – **Marvic Abarra** (B.A. (Geography))

Major or Advanced Program Medal – **Andrew Osipa** (B.Sc. Physical Geography (Maj.))

Honours Program Medal – **Cheryl Sobie** (B. Env. St. (Hons.))



## Undergraduate Thesis Prizes

**Michelle Curry** – B.Sc. Physical Geography (Hons.) Coop for her thesis *“Lake Effects in Southern Manitoba”* (supervised by Dr. John Hanesiak)

**Lauren Eggie** – B.Sc. Geological Sciences Geology (Hons.) for her thesis *“Sedimentology and Petroleum Reservoir Potential of the Middle Unit of the Wymark Member in the Upper Devonian Duperow Formation, Southwestern Manitoba”* (co-supervised by Dr. Nancy Chow and Michelle P. B. Nicolas)

## Masters Thesis Prize

**Ryan Kressall** (Geological Sciences) for his thesis *“The Petrology, Mineralogy and Geochemistry of the Cinder Lake Alkaline Intrusive Complex, Eastern Manitoba”* (supervised by Dr. Anton Chakhmouradian)

## Ph.D. Thesis Prize

**Aaron Lussier** (Geological Sciences) for his thesis *“Zonation in Tourmaline from Granitic Pegmatites and the Occurrence of Tetrahedrally Coordinated Aluminum and Boron in Tourmaline”* (supervised by Dr. Frank Hawthorne)

## Undergraduate Initiative Prize

This prize recognizes an undergraduate student who has developed, built upon and/or contributed to a local, regional, national, or international initiative that serves the greater good. This year the prize was awarded to **Michelle Curry** (B.Sc. Physical Geography (Hons.) Coop) for her outstanding contributions to both the Coop Program and atmospheric sciences in the Faculty. She planned the MEIA Career Fair and assisted Coop in expanding its connections to professionals in industry, the non-profit sector, and research agencies. Michelle has organized workshops on atmospheric sciences, allowing students to network with each other and professional forecasters.

## Graduate Initiative Prize

This prize recognizes a graduate student who has developed, built upon and/or contributed to a local, regional, national, or international initiative that serves the greater good. This year the prize was awarded to **Olivier Gagne** (Department of Geological Sciences) for his outstanding commitment to the Geological Graduate Student Association and the representation of graduate students in general. As a member of Senate and serving on several committee, Olivier is, to quote one of his nominators *“a natural organizer and an ideal graduate student around the department”*.

## 2012 Teaching Awards

The Riddell Faculty recognizes its outstanding teachers and this year presented two awards.

The Award of Excellence for First Year Undergraduate Teaching was awarded to **Dr. Robert Elias** (Department of Geological Sciences). A nominator stated that in the course *“Time-Trekkers Travelog: Our Evolving Earth”* (GEOL 1400) *“he brought a passion for the subject of geology right from the first class until the final exam”* and that he was *“very committed to helping students who needed advising. He greeted students with a positive attitude and whenever I had a question, the answer he gave was always helpful”*.

The Award of Excellence for Undergraduate Teaching was awarded to **Lisa Christmas** (Department of Environment and Geography). A nominator commented that Lisa *“is one of the most fundamentally sound professors I have had throughout my five-year academic career. She grounds all of her lectures in theory, and delivers it in a seamless, accessible manner, allowing all students to grasp the material”*.

## Dr. and Mrs. H. H. Saunderson Award for Excellence in Teaching

This year **Dr. Robert Elias** (Department of Geological Sciences) received the Dr. and Mrs. H. H. Saunderson Award for Excellence in Teaching. This University of Manitoba award is presented annually at May convocation to an outstanding teacher. Members of the graduating class, academic staff, and graduates of the three previous years can submit nominations for the award.

Dr. Elias was described as *“an exceptional teacher, award-winning researcher, and holder of a world record, he is dedicated to his students and to furthering knowledge in geology”*. In 2000, Guinness World Records recognized him for discovering with co-workers the world’s largest trilobite. Dr. Elias has worked in the Department of Geological Sciences since 1978. In 2004, he and some colleagues received the University of Manitoba’s Outreach Award for their work on creating the Ed Leith Cretaceous Menagerie. In 2005 he received the Paleontological Research Institution’s Gilbert Harris Award for excellence in systematic paleontology. Known for his humour, slide shows and difficult tests, Dr. Elias has won numerous teaching awards over the course of his career.

Photo Credits: Kaela Dickieson & Jason Jorgenson. Pictured Left to Right Meredith Pind with Dean, Norman Halden, Cheryl Sobie, Marvic Abarra, Dr. Robert Elias and Lisa Christmas.





# Service Learning in Bangladesh.

**Allison Birch**, who is in her final year in the BA Geography Honours Program, recently participated in the Bangladesh Service Learning Experience (BSLE) organized by Student Life at the University of Manitoba; Allison also received some support from the Clayton H. Riddell Endowment Fund. The BSLE exposes University of Manitoba students to the field of development and the culture of Bangladesh through a 5-week intensive program. The program gives students the opportunity to experience the culture of Bangladesh while working closely with a well-respected and multi-faceted non-governmental organization (NGO). Each student is based in different field offices and works within different projects of the host NGO's portfolio. Situated in northwest Bangladesh, Allison shadowed the Rangpur Dinajpur Rural Service (RDRS) that was established in 1972 to assist with relief and rehabilitation of the region immediately following the war of independence. Today, RDRS has evolved into an NGO that works with landless and marginal farmers – the rural poor.

Allison blogged about her experiences and interactions during the program and her blog can be found at

<http://alligoes2bangladesh.blogspot.ca>. During her stay, she travelled widely initially to Rangpur and then to numerous locations including Lalmonirhat, Thakurgaon, and Char. Allison also visited numerous institutions such as an eye care centre, hospital, maternity hospital, drop in centre, and a number of schools. She gained first-hand insight in not only issues of health and education but also agriculture, microfinance, livelihoods, and gender equality. Of her overall experience Allison says: *"The things that I will take back home are countless but I will always cherish the stories that I have heard, the passion and spirit of the people, the hospitality and dedication of the RDRS staff and the overwhelming hope and drive for change by the people of Bangladesh"*.

Photo Credit: Allison Birch. Children in the Chars Islands. RDRS has numerous projects including schools in these isolated islands that are prone to floods, earthquakes, and land degradation.



# The Tale of Green Dreams.

**Dr. Emdad Haque** (Natural Resources Institute (NRI)) and his student Mohammad Rony are jointly directing the video the *"Tale of Green Dreams"* (Putul Kotha in Bengali). It builds on experiential knowledge among students at the NRI about poor families in Bangladesh who attempt to turn around their lives by borrowing small amounts of capital from a non-governmental organization even though they have no collateral assets. With assistance from the Clayton H. Riddell Endowment Fund and the Canadian International Development Agency (CIDA) this is a story about how people at the grass-roots level can build their dreams with institutional support. The story and screenplay have been written by Mohammad Rony based on student research outcomes and his first hand observations in the field in Bangladesh. The director of photography of this video is Ryan Klatt who has previously been engaged in productions for the NRI; it is expected to be completed by the end of summer 2012.

The village communities of Hakaluki Haor and Magura-Narail have been engaged since 2007 in a project examining an environmentally-friendly micro-credit program, called Green Micro-Credit, for poor women in Bangladesh. The principles of CIDA's *"Building Environmental Governance Capacity in Bangladesh"* program are being reflected in the changed livelihood supports to many poor families as well as in their mental, financial, organizational, and decision-making capacities.

Documentary films and videos are powerful research communication tools to build local confidence and capacity by reflecting their circumstances, needs, failures and successes, and expressing their concerns to decision and policy makers. The green micro-credit model has the potential to simultaneously improve livelihood security and support environmental sustainability through conservation of common property resources.

Photo Credits: Emdad Haque. Below Left: Village women and actors discuss pre-shooting preparations. Below Right: Dr. Emdad Haque and Ryan Klatt working with the crew and actors during the shooting of the Tale of Green Dreams.





# Sustainable Futures.

The 3rd annual Sustainable Futures MEIA Environmental Career Fair was held on March 7<sup>th</sup> at the University of Manitoba. Each year, the fair brings together students with a diverse array of practitioners from a multitude of sectors and represents the key networking event for young emerging professionals across the province. This year, the Sustainable Futures Fair drew more than 400 students, 60 exhibitors representing more than 40 organizations, and an additional 30 professionals who participated in 16 breakout sessions throughout the afternoon.

The fair travels between institutions annually, and is a collaboration of the Manitoba Environmental Industries Association (MEIA) Student Chapter, the University of Manitoba, the University of Winnipeg, and Red River College. The Clayton H. Riddell Faculty of Environment, Earth, and Resources has hosted the event in both 2010 and

2012. The success of the event relies heavily on the efforts and commitments of undergraduate students and we thank both **Rochelle Collette** (B. Env. St. Honours Coop, 2012) and **Cori Kulbaba** (B. Env. St. Coop) for delivering an exceptional fair in 2012. We also appreciate and recognize the dozens of students who assisted in everything from developing and managing breakout sessions, event promotion, and volunteering on the day of the event.

Exhibitors this year included ALS, AMEC Earth and Environmental, Bird Studies Canada, Canadian Institute of Forestry, Canadian Parks and Wilderness Society, Canadian Beverage Container Recycling Association, Centre for Earth Observation Science, Climate Change Connection, Department of National Defence, Ducks Unlimited, Environmental Careers Organization, Environment Canada, Fort Whyte Alive, Friends of the Living Prairie



Museum, Hazco Environmental Services, Health Canada, Hudson Bay Exploration and Development, International Institute for Sustainable Development, Invasive Species Council of Manitoba, Bristol Aerospace/Magellan Aerospace, Manitoba Conservation and Water Stewardship, MB Eco-Network, Manitoba Environmental Industries Association, Manitoba Forestry Association, Manitoba Hydro, Miller Environmental, MMM Group, O'Connor Associates, Oak Hammock Marsh, Pinchin Environmental Ltd., Prairie Wildlife Rehabilitation, Stantec Consulting, and SWM International, and The Wildlife Society. A special thank you to Geomatics Canada who travelled from Ontario to attend the event.

Photo Credit: Natalie Baird. Top: John Fjeldsted from MEIA address the crowd. Bottom: Students asking questions at the Career Fair.



# Storm Chasing.

Alumnus **Justin Hobson** (M.Sc., 2012) now working with Environment Canada in Edmonton and **Chris Stammers** (B.Sc. Ph.G. (Hons.) 2011) and currently a student in the Master of Science in Environment and Geography Program organized their own storm chasing expedition to Saskatchewan on Tuesday, July 24, 2012.

Aiming for Wolseley, Saskatchewan they estimated that by arriving around 4:30pm the storms would have begun to initiate. Although they had mixed expectations of what the day would hold storm-wise, they also knew that Saskatchewan has been the tornado hotspot of North America this summer. Justin and Chris know all too well how unpredictable storm chasing can be after the relatively uneventful severe weather season in Manitoba and a disappointing 5-day chase tour at the end of May which saw them travelling as far south as Texas in pursuit of storms.

However, they were to be rewarded on this particular day. After observing some great structure and "ground-scraping" wall clouds east of Regina, they observed their goal. To quote Chris "around 8:15 pm local time, we were paying close attention to a rotating storm about 2 miles to our west. A brief funnel cloud started spinning from the base of the storm that eventually reached towards the ground. The tornado touched down briefly in a field near Candiac (South of Wolseley) and then lifted back up". These images illustrate the drama of storm activity and Chris and Justin's persistence in the pursuit of storms.

Photo Credits: Chris Stammers. Top: Brief rope tornado near Candiac, Saskatchewan around 8:15pm local time. Justin Hobson Middle: Tornado-warned supercell with lowering wall cloud east of Regina Bottom: Approaching shelf cloud near Indian Head, Saskatchewan





# Picturing the Planet.

As a regular feature "*Picturing the Planet*" brings inspiring and informative images taken by our students, staff, and faculty. At 670 m above sea level, El Junco Lake is the only permanent freshwater lake on the Galápagos Islands, Ecuador. The water inside this caldera of an extinct volcano is accumulated from rainfall and mists (garúa) brought by low-lying stratocumulus clouds. The lake is surrounded by ferns, sedges, and the endemic miconia bushes, one of the iconic endemic plants

on the islands. Shown in this picture are also Magnificent Frigatebirds (*Fregata magnificens*) skimming the lake to preen their feathers. Scientists believe this essentially closed-basin freshwater lake in the remote Equatorial Pacific Ocean has kept valuable climatic and environmental records in its sediment. (Photo Credit: **Dr. Feiyue Wang** Department of Environment and Geography)



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