



Department Welcomes Nora Casson

Nora grew up in south-eastern Ontario, and from a young age spent a lot of time canoeing, hiking and exploring the outdoors. “I first realized I could turn these interests into a career as an honours thesis student at the University of Western Ontario where my first research project involved tramping around the forest, collecting soil and water samples and figuring out how ecosystems work”. That project sparked her interest, and since then she has been involved in research on water quality, specifically looking at how water and nutrients cycle through ecosystems, how these patterns vary across landscapes and how these cycles respond to different environmental pressures.

Nora completed a BSc and MSc at the University of Western Ontario, a PhD at Trent University and before arriving at the University of Winnipeg,



Nora collecting snow cores to measure snow-water equivalent amounts. (photo: Ina Koseva)

she worked as a post-doctoral fellow at the University of Wisconsin-Madison. One of the best parts about this type of environmental research, in Nora’s opinion, is that it gives you the opportunity to get out and experience the environment! “I’ve been fortunate enough to work at a variety of research sites ranging from the boreal forests of northern Ontario to lakes and streams across Wisconsin”. This work has addressed issues such as how warmer winters change nitrogen dynamics in forests, how hydrology influences greenhouse gas emissions from wetlands and what controls spatial patterns of chemistry in environmentally sensitive lakes.

Nora is excited to start looking at some of these questions having to do with water quality in areas near Winnipeg and across Manitoba, where many of our systems are under threat from a variety of pressures including climate change, air pollution and land use change. This type of research is by nature inter-disciplinary and collaborative; in order to understand how ecosystems work you need experts on water, soils, plants, microbes, climate, humans and more. The Geography Department at the University of Winnipeg has the expertise on many of these issues, and Nora is looking forward to lots of interesting discussions and productive collaborations here. Nora also said she is “also hoping to convince some of the students in the Geography Department that this kind of research on hydrology and nutrient cycling is interesting, important for understanding the consequences of human activity in the environment and most importantly lots of fun!”

In this issue of **GeoMatters** we welcome Dr. Nora Casson to the department, replacing the retired Dr. Bill Rannie. We also congratulate Matt Dyce on his PhD defense, great work Dr. Dyce! This issue profiles research by Susan Witherly and student perspectives on the Geography Field Course in Churchill and hydraulic fracturing. We also have a sneak preview of four students preparing their Honours theses for the upcoming Colloquium in March. GESA unveils their plans for the upcoming year and we recognize Geography student award winners.

Please feel free to pass this newsletter to anyone with an interest in geography. Individuals can also see **GeoMatters** at the Geography website, or keep up with us on Facebook (Department of Geography, University of Winnipeg) or on Twitter (@UWGeography).

If you have any suggestions for future newsletter articles, please feel free to contact us at: geography@uwinnipeg.ca

Editors: Joni Storie & Weldon Hiebert

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THE UNIVERSITY OF WINNIPEG
DEPARTMENT OF GEOGRAPHY

<http://geography.uwinnipeg.ca>

Graduate Research Profile

Longitudinal study of human-environment interactions to predict waterfowl breeding habitat in the Boreal Plains Ecozone

by Susan Witherly

The boreal forest is facing increased levels of change due to anthropogenic forces but little is understood on how this change relates to ecosystem functions and aquatic habitats. In an effort to understand more about the mechanisms influencing waterfowl populations, my research is working on methods for measuring wetland vegetation and infrastructure expansion using aerial photographs and satellite imagery.

The relationships between wetland structure (vegetation) and function (habitat) compared to waterfowl populations will be examined in my Masters research using multiple-sensor data and object based image analysis (OBIA) framework. This work will incorporate both landscape level measures of wetland vegetation and local level measures of wetland vegetation, water chemistry, and invertebrate data to model breeding waterfowl populations.

At this stage, my first semester of my Masters, I am working on a literature review and exploring multi-scale remote sensing data (e.g., Landsat-ETM 30 metres data for landscape, aerial photographs for historic wetland extent, and Worldview-2 0.5 metres data to develop measures of wetland vegetation). The plan is to use landscape and local wetland vegetation measures to determine if difference in spatial patterns or systematic processes of the



Susan Witherly at Ducks Unlimited headquarters, Oak Hammock Marsh, Manitoba. (Photo: A. Samson)

Boreal wetland vegetation over the last 40 years can be detected. Also, to see how these patterns relate to waterfowl abundance and distribution. By quantifying the relationship between wetland vegetation with waterfowl abundance and anthropogenic factors, we hope to achieve a better understanding of the complex interactions between humans, environment and waterfowl in this region.

Susan is a MSc candidate within the Masters of Biological Sciences, Technology and Public Policy; she is conducting research with Ducks Unlimited and Dr. Joni Storie at the University of Winnipeg.

University Hosts Weather Station

by Dr. Danny Blair

The University of Winnipeg is home to one of the City of Winnipeg's weather stations. The city has a network of 32 automated weather stations, largely for the purpose of monitoring the variation in rainstorms across the city. Severe rainstorms can cause surface flooding and affect the sewer system; the city's entomologist also uses the rainfall data to determine which parts of the city might be in need of mosquito control.

The station at the University of Winnipeg—located on the roof of Lockhart Hall, where the Department of Geography also operates its own [weather station](#)—monitors rainfall with a tipping-bucket rain gauge and is connected to an online data management system that allows users to access rainfall data in real-time, to make maps of the rainfall across the city and to perform a variety of hydrological assessments. The station was installed on June 12, 2013 by Sam Brask, a technologist in the City of Winnipeg's Water and Waste Department; Andy Nadler, the Western Canada Operations Manager for Weather INnovations Consulting; and Daniel Hogue, also with Weather INnovations. Sam and Andy are graduates of the University of Winnipeg's Department of Geography, and Daniel is a graduate student in the University of Manitoba's Department of Environment and Geography.



Daniel Hogue, Sam Brask and Andy Nadler with City of Winnipeg weather station located on top of Lockhart Hall.

“Geography is just physics slowed down, with a couple of trees stuck in it.”

— Terry Pratchett

2014-2015 Geography Undergraduate Thesis Students

The following Geography students will present their undergraduate thesis results at the Geography Students Colloquium. The Colloquium will take place on March 27, 2015 from 1-4 pm in the University Club (4th floor Wesley Hall). All are welcome.



Jaime Orr

Thesis Title: Cultural Geography of The Canadian Geographical Journal

Advisor: Dr. Matt Dyce

Summary: My honours thesis looks at the cultural place of The Canadian Geographical Journal in the early twentieth century. Made up of geographical essays ranging from didactic taxonomies

of Canadian foliage to 'memorial' like essays on the 'disappearing Indian', the magazine functioned as a window into the way Canadians understand national space. I am deconstructing the journal to reveal the social role of these representations of Canada by exploring how the magazine employed nature, race and gender in its visual and written content. Employing a postcolonial critique, I will argue that these essays were documenting a Euro-centric representation of a nation using a male-oriented gaze.



Leslie Sarapu

Thesis Title: Urban green space and society: A remote sensing and GIS analysis of Winnipeg, Manitoba

Advisor: Dr. Chris Storie

Summary: The goal of this thesis is to examine the relationship, if any, between the socioeconomic status of neighborhoods and the location, size, distribution

of green space throughout the city of Winnipeg. The null hypothesis is that there is no relationship. Using a combination of high-resolution satellite imagery and a GIS-based analysis of Canadian census data, this relationship will be examined. The first objective will be to identify green space using an object based image analysis (OBIA) approach and will be compared to the City of Winnipeg planning map to assess its accuracy. The second objective is to compare the result of the OBIA to the census map and to test the null hypothesis.



Hillary Beattie

Thesis Title: Tourism and the Landscape of Antimodernism in Postwar Manitoba

Advisor: Dr. Matt Dyce

Summary: My honours thesis explores how modern practices of tourism influenced perceptions of landscape and identity in postwar Manitoba. In 1945, the provincial Travel and Public-

ity Bureau was established to develop and promote a local tourist industry. The Bureau produced various media which promoted Manitoba's 'natural', historical, and agricultural landscapes as tourist sites. My thesis investigates how the province sought to create 'tourism consciousness' among residents by redefining their relationship with space. Using a poststructural analysis, I consider how the Bureau imagined a modern geography of tourism in the post-war period, one promoting a 'master narrative of progress' which continues to influence how we understand Manitoba today.



Alex Goodman

Thesis Title: Effects of temperature and water level changes on *Lithobates sylvaticus*: A mesocosm experiment in Churchill, MB

Advisors: Dr. LeeAnn Fishback and Dr. Nora Casson

Summary: This research project explores how wood frog tadpoles respond to temperature and water-level

manipulations in a subarctic environment using an experimental approach. The experiment used 110 gallon stock tanks to examine how climate change may influence activity and growth rates of tadpoles. This 2x2 factorial experiment consisted of 3 water level and 3 warming treatments over a 65-day larval period. We expect that wood frogs would respond to warmer water temperatures resulting in earlier metamorphosis and faster growth rates. Identifying environment tolerances of wood frog populations in northern regions is important as warming trends could influence their distribution and abundance.

Mapping the Churchill Cemetery

by Rob Curtis

During this past August, I was one of the students who participated in the Geography field research course in Churchill. Of the many projects we undertook, perhaps the one I enjoyed the most was mapping the graveyard. As some of you may know, I like history a little bit, some may say a lot, and this project combined my love of history and geography into one. More importantly, it held great value to the community of Churchill and surrounding area, something which we would discover later that day.

Upon our arrival at the graveyard we were split into three groups to cover different sections of the graveyard. The task of each group was to record the name, birth and death dates, to take a clear picture of the grave marker and to write down the relative location of each marker. Each group seemed to go

about this a different way and faced challenges in their section. I collected data in an area that contained the unmarked graves of the Dene people but nearby was a larger monument that had the names of the deceased Dene remembered by the community.

Following the mapping at the graveyard, we were invited to have tea with the elders and community leaders at the St. Paul's Anglican Church.

This made the mapping exercise much more personal, like they were sharing a piece of themselves and their history with us. We learned that the community often did not know where to look for their relatives or who was buried in the graveyard. The final product will be a map created by Dr Christopher Storie and Brad Russell for the community to share with those individuals looking for their ancestors.



Cemetery at Churchill, Manitoba. (Photo: R. Curtis)

...On Doctoral Dissertations

by Dr. Matt Dyce

For those who don't know, a doctoral dissertation usually consists of about four years of independent research and 400 words of writing on a topic that interests you (or at least it did when you started!). To assist you in this endeavour you don't only take courses, but rely on your 'committee' - a group you assemble that includes your supervisor and three or four professors who each may have a speciality in the area you're researching. Upon completion of the dissertation, you become the 'expert' in that subject and thank your committee for the help. All that remains before you receive your PhD is the oral defence, a gruelling three-hour process that basically consists of you sitting at a table with that very same committee tearing into you trying to prove that everything you've done for the past five

years is misguided, wrong, backwards, unimportant and myopic nonsense, and that you are most definitely anything but the 'expert' you presume to be. Weakened to the point of exhaustion, at the end of this process you get up and leave the room while they 'deliberate' over how you performed and whether you deserve to graduate. After a few tense minutes, your supervisor comes out with a graven face before breaking the bad news: the committee all agrees that you have a fantastic dissertation and that you've supported yourself admirably!! Yes, even academics have a sense of humour.

There was pretty much only one thing in the long career of my PhD that was more surprising than this, which happened when I lifted the lid on the gift the department gave me for gradu-

ating and saw the beady little eyes of a stuffed squirrel staring back at me!!! If there's one thing I learned from the experience: be careful what you tell your colleagues! Thanks everyone!!



Matt celebrating his PhD defense with his (a)corny friend. (Photo: J. Storie)

Human Dimensions of Hydraulic Fracturing

by Jordan Poitras

It was late March when Dr. Ian Mauro asked me if I'd be interested in lending him a hand with his research on the human dimensions of hydraulic fracturing. First, I did coding and then ranking of public submissions for a Nova Scotia-mandated expert panel on the topic of HF. From this we learned how Nova Scotians understand hydraulic fracturing and what recommendations the people of this province had for policy makers and developers.

Once the Nova Scotia coding was done, Dr. Mauro hired me as a Research Assistant using funding from the Canadian Water Network (CWN). In August, I went on site-visits in Colorado with the CWN research team (water scientists, engineers, policy analysts) to learn about the technical aspects of hydraulic fracturing and exchange of current hydraulic fracturing knowledge. Within this project, I developed an ethics protocol for interviewing Elsipogtog First Nation people in New

Brunswick so that we could find out how they perceive the implications of hydraulic fracturing.

In addition to learning social-science research methods in this project, I also had the opportunity to use some amazing equipment. In October, armed with exceptional camera equipment, I went to New Brunswick with Dr. Mauro to interview Mi'kmaq community members. These video interviews will be released in a publicly accessible film/documentary. The most challenging aspect of this work was bringing all the methods and data together. In preparation for Dr. Mauro's media lab to be operational, I am transcribing our interviews, creating a short documentary from the interviews, and participating in academic papers and reports for the CWN.

What I find most appealing about this experience is the creation of something that can be shared with more people than with academic papers.

With the help of Ian, I feel I am making geography and science more accessible to everyone.



Jordan at a hydraulic fracturing site in Colorado. (photo courtesy J. Poitras)

Geography Award Winners 2014

The Department of Geography has a number of bright and talented students and we like to recognize these students every year. The winners of this year's awards: Susan L Rogers Scholarship in Geography - **Hilary Beattie**; Victor Dolmage Memorial Scholarship in Geography - **Andrew Curtis**; Brian Evans Memorial Scholarships in Geography - **Adrienne Ducharme, Andrew Curtis, Ruth Ann Dickinson, Geneva Cloutis, Georgia MacDonald, Hilary Beattie, John Huillery, Samantha Fraser, Jaime Orr, Victoria Jonatanson, Heather Reeves**; Marcia Anne Faurer/Peter Bennet Memorial Scholarship in Geography - **Geneva Cloutis**; Humbolt Scholarship in Geography - **Geneva Cloutis**; and Ray Pederson Scholarship in Cultural Geography - **Katrina Derbecker**. Good job everyone!

Front row (left to right): Jaime Orr, Adrienne Ducharme, Ruth Dickinson

Back row (left to right): Hilary Beattie, Andrew Curtis, Samantha Fraser, Georgia MacDonald

Missing: John Huillery, Victoria Jonatanson, Heather Reeves, Geneva Cloutis, Katrina Derbecker



A Student's Perspective of the 2014 Geography Field Seminar in Churchill

by Andrew Curtis

This past August, I had the pleasure of spending the final two weeks of my summer in Churchill, Manitoba as a part of the Geography Field Seminar course. The course was intended to expose us to a variety of different field data collection skills and design sampling methods; skills that helped us collect data for our own projects.

There were also some unintended lessons along the way, such as to always carry extra pens and pencils into the field and what it meant to BE PREPARED for "four seasons" of weather. For many of us this was the most exhausting two weeks and hardest we had ever worked in our entire lives. It was definitely not a tourist trip to say the least.

Before I make this experience sound too unappealing, we were still able to experience all Churchill has to offer. We were able to view several polar bears (for some of us, a little too

close for comfort), beluga whales, Fort Prince of Wales and watch the flickering aurora borealis under the vast tundra sky. As well, there were a few brave (or perhaps foolish?) souls who took a dip into Hudson Bay.

The most enjoyable aspect of the course was the bonding that took place between the students. Spending two weeks in tight quarters with the same people can be at times taxing, but we all came out no worse for wear. We returned back to Winnipeg with a new group of friends that was united by two weeks in the tundra.

Oh, and one last quick note for the next group of students to take this course. Though the train is great for bonding, the ride is long. Very long. Now, consider taking the train home after 10+ 14-hour days in the field... just a friendly word of caution. Plan accordingly!



Participants of the Geography Field Seminar, including a special visit from Dr. Annette Trimbee, President and Vice-Chancellor of the University of Winnipeg.

Did you know...

Everyone knows that Mount Everest is the world's highest mountain with the summit reaching 8848 m above sea level. But is it? Because of the Earth's rotation, the planet ever so slightly flattens at the poles and bulges at the equator. Mount Chimborazo, in Ecuador, is only 6268 m above sea level but its location near the equator makes its summit the furthest point from the centre of the earth at 6384.4 km (Everest is only 6382.3 km). So which is it? Do we measure summit tops using sea level or the centre of the Earth? Since this issue ranks low on the Who Cares Meter, there has not been much debate over this. But as geographers should we? This newsletter has not taken a stand on the issue, but I have! I am on the side of Chimborazo. Any mountain top that is nearest to the moon deserves to be named the highest point on the planet. Have an opinion? E-mail me with your choice for highest point on the surface of the Earth: Everest or Chimborazo? Let me know at: w.hiebert@uwinnipeg.ca



alpineinstitute.com

Mount Chimborazo?



storysouthasia.com

Mount Everest?

GESA Announcements

2014-2015 GESA Eco-Grant: GESA is once again offering a \$2000 Eco-Grant to students of the University of Winnipeg and Collegiate, faculty members, staff or community member (anyone with an affiliation to the University of Winnipeg) that wish to submit a project proposal on how to make our campus more sustainable. Preference for a winning proposal will be given to campus based projects that will have the largest impact on our campus's sustainability. The last day to apply is December 15, 2014 and the winner will be notified after the winter break and publicly announced during the Winter 2015 term. Please visit the GESA Facebook page at <https://www.facebook.com/groups/gesastudents> to download the project proposal form or email us at gesastudents@gmail.com for more information.

On November 13th, GESA hosted our 2nd Annual Beer Night at Gar-

bonzo's! The event was a great success with eleven representatives offering 30 types of beers and ales to a thirsty crowd. Students and faculty alike imbibed in their favourite fermentations and had the opportunity to try new tastes.

GESA social activities are a fun and exciting way to get to know more people and spend some great quality time getting to know your professors. Keep your eyes peeled in the New Year for our announcements regarding Trivia Night!

GESA Members are very excited to announce that the GESA lounge will undergo a slight makeover this fall! The lounge will be

sporting some new, fabulous and comfortable seating and we also plan to do a "clean-sweep" of the lounge and removing any unnecessary clutter to make the space appealing for more students. It has been many years since the GESA lounge has had an overhaul and we look forward to making the space more inviting for everyone!



Organizers of GESA's 2nd Annual Beer Night.
(Photo: W. Hiebert)

2014-15 GESA Executive

Left to Right (back row)

Ashley Santucci - Media Czar
Dustin Brooks - Co-Vice President
Tori Jonatanson - Co-Vice-President
Geneva Cloutis - Secretary

Left to Right (front row)

Keshia Carriere - Treasurer
Kimberly Thomson - Co-President
Adrienne Ducharme - Co-President

Photo: W. Hiebert



A Day in the Life of Geography



It's a Beautiful Day for a Field Trip

In late September, Dr. Nora Casson took her Fluvial and Hillslope Processes (GEOG 2218) class on a field trip to look at geomorphology in the Assiniboine River basin. The class drove out to Portage la Prairie, making stops along the way at significant landforms and places of interest, including the Portage Diversion as seen in the picture. It was a beautiful sunny day, and highlights included a picnic lunch on the river banks! Pictured here is Dr. Bill Rannie talking about flood control along the Assiniboine River to the class.

(Photo: Alex Goodman)

UW Spring Convocation Geography Graduates

Congratulations to all Geography students who graduated at the 2014 Spring Convocation. (from left: Dr. Bill Buhay, Dr. Marc Vachon, Avery Artimowich, Lena Yusim, Dr. Danny Blair, Adrian Werner, Cameron Hunter, Rebecca Wilks, Jill Swan, Paul Paul Szymanski)

(Photo: uncredited)



PCAG UWGeography Contingent

The Prairie Division of the Canadian Association of Geographers (PCAG) held their annual meeting at the Elkhorn Resort at Riding Mountain National Park and once again UWGeography was represented by a large contingent of faculty and students. The conference featured paper sessions, field trips, a spectacular northern lights display at Clear Lake and a thought-provoking key note address by Dr. David Duffus on the treatment of killer whales at water parks. Congratulations to Dr. Marc Vachon who received the John Welsted Award for Service to Geography in the Western Interior. The Department also dominated the Slide (photo) Competition winning in three of the five categories. Congratulations to Weldon Hiebert (cultural), Adrienne Ducharme (physical) and Christopher Storie (humour).

(Photo: uncredited)