



Ed Cloutis on Mars

by Genevieve Berard

Ed Cloutis has been a Professor in the University of Winnipeg's Department of Geography since 1996 and his research is currently focused on planetary geology. Like a lot of kids, he always liked to collect rocks and minerals. Ed really got into the field of planetary geology as a second year undergrad elective and really, really liked it. That put him on the path of doing planetary geology.

There are a lot of projects going on in planetary geology right now because Canada has an interest in being involved in planetary exploration. Dr. Cloutis is part of a science team for a 2016 Mars orbiter mission that is going to look for signs of life on Mars. Ed's team will be looking at the composition of the Mars atmosphere with

the idea that they are going to look for gases that could be produced by biological processes. He is also involved in a 2016 asteroid sample return mission that's being run by NASA and Canadian Space Agency. For that mission, they are sending a spacecraft to a near-Earth asteroid to grab a couple of hundred grams of samples from the surface of the asteroid and bring those back to Earth which should be analyzed by 2023.

Right now, Dr. Cloutis has about seven or eight students working for him; half of them are here at the University of Winnipeg as undergraduate students, the other half are undergraduates and post-docs who are scattered at other universities. In terms of current opportunities, which will depend on funding, and with the two spacecraft missions, Dr. Cloutis should have enough funding to hire a few U of W students every year for at least the next decade. So keep your eyes out for job postings!

When asked if what he would do if he had access to unlimited research funding, Ed said he would build a Mars rover and send it somewhere on the planet that he think is interesting, and do some detailed geological mapping and look for signs of life using various techniques. "So it would definitely be looking for evidence of life on Mars". When asked if would want to go to Mars along with his sensors, Dr. Cloutis said "Not a chance. I can't see spending a year and a half or two years locked up in a spacecraft with other smelly people, so there's no way".



Dr. Ed Cloutis: a man on a (Mars) mission.

Welcome to the reinvented newsletter for Geography. The previous incarnation, *Dirty Earth*, was last published back in the 1970s. After a thought provoking "name the newsletter contest", **GeoMatters** was voted as the title for the newsletter. **GeoMatters** will be published twice a year; one edition each for the Fall and the Winter terms.

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 (UWinnipeg Geography).

This edition highlights Mars researcher, Ed Cloutis, student experiences in Churchill, York Factory and Brazil, and the introduction of Geomatics in the Department. 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>

An Insider's Look at the Churchill Northern Studies Centre

by **Caleigh Christie**

Located in Churchill, Manitoba, the Churchill Northern Studies Centre (CNSC) has always been an important institution for the University of Winnipeg's Department of Geography and its students. For the past 35 years, this northern research facility has been facilitating researchers and academics from around the world to come to Canada's sub-arctic to study the natural and cultural environment. The Centre's position on the transition zone between northern boreal forest, sub-arctic tundra, and marine environment makes it the perfect location to perform scientific field research initiatives in a variety of disciplines. This non-profit research and education facility provides accommodation, meals, equipment rentals, logistical support as well as a wide range of educational programming for those researchers.



The new Churchill Northern Studies Centre officially opened its doors on August 24, 2011.



Caleigh Christie

The Department of Geography is very involved with CNSC. Dr. Patricia Fitzpatrick, the department co-chair and a faculty member, serves as the University of Winnipeg representative on the board of directors for the Centre. The Department of Geography has also been conducting field research courses at these facilities for many

years. As a result of these field courses, many U of W geography students have had summer jobs with the Centre. This past summer, I was given the incredible opportunity to do data collection and processing, study site maintenance, bear monitoring and helping to host the Grand Opening Ceremony for the new multi-million dollar research facility that was under construction and completed in June 2011. The Centre boasts a strong international reputation as being a hub for arctic research where collaborative networking begins, good science is conducted and breakthroughs are made.

Rorschach's Map

Swiss psychologist Hermann Rorschach devised a series of inkblots used to test the perception of his patients. Results were analyzed to examine a person's personality characteristics.

This version of the test will not analyze your personality though it may indicate your level of "Geo-Geekness".

The blot is a shape of someplace on the earth's surface. It could be a country, part of a country, a park, city, even your own backyard! ... anything that can be mapped is eligible. Be warned, nothing is sacred.

Our first "mapblot" features a magnificent trumpeting elephant. The answer is revealed on the next page.



Pass the grits, eh?

The southernmost parts of Canada are only 220 km from the Mason-Dixon Line, the cultural border of the American South. In fact, Atlanta Georgia is closer to Windsor, Ontario (960 km) than it is to Miami, Florida (975 km)!



Saving York Factory

by Matt Morison

York Factory National Historic Site represents a monumental time period in Canada's history. At the mouth of the Hayes River in northern Manitoba, the site was active as a trading hub for the Hudson's Bay Company for over 250 years, from 1684 until as recently as 1957 when it was finally decommissioned. Now, all that remains is the iconic depot building and seasonal Parks Canada staff to maintain and interpret the cultural artifacts left behind.

The site, however, is in grave danger. The York Factory site is located on the north bank of the Hayes River, which is eroding at an alarming rate. The last remaining structure on site (the depot building) is in danger due to this erosion. A multidisciplinary team of hydrologists, permafrost geologists, botanists, archeologists, and personnel from Parks Canada are currently working towards a long-term solution.

Student involvement was made possible by the Churchill Northern

Studies Centre under the project leader, Dr. LeeAnn Fishback. My time in York Factory this summer was spent collecting data and doing maintenance of the hydrological monitoring on site. We were busy measuring water levels at different "borehole" wells drilled at sample locations, performing "pump tests" on the wells, and maintaining a meteorological station. This work will contribute to the completion of an undergraduate thesis in the Department of Geography. In northern research, all work is accomplished with a watchful field partner who keeps a sharp eye out for any wandering polar bears. But also be prepared to be distracted from field work with all the amazing cultural artifacts littered around the site; we were literally stepping over cannonballs and discarded nails from the 17th century.

Hopefully this research yields some exciting results to truly determine if we can save York Factory National Historic Site.



Matt Morison found his job "boring" while measuring water levels at York Factory National Historic Site.

So Long, Goodbye, So Sad to See You Go

On Friday November 18th, there was an amazing retirement party held for Tom Carter, Salah Hathout (in absentia) and Geoff Scott at the residence of Jock and Kay Lehr. Everything about the evening was great - the friends, the food, the collegiality, the speeches, the humour, and the opportunity to meet with earlier retirees. Geoff and Tom wanted to give a special thanks to all involved in the evening - Jock and Kay for providing their cozy home, Weldon and his organizing people for pulling it off without a hitch, Danny for his 'official' speech, and to everyone else who contributed to the evening. Also a very special thanks for the beautiful crystal globe and stand - it is truly a geographers dream which are proudly displayed.

Geoff says that he was blessed to have had the opportunity to work with so many fine people for 39 years at the University of Winnipeg. Remaining a Senior Scholar means he'll still be around to maybe offer the occasional course, so in the words of that great, late governor of California, "I'll be back".

Tom wants everyone to know that Geography has been a great group to work with and he carries many fond memories of his time in Geography and the Institute. Tom's plan to keep busy in the future and in the New Year will be "joining an international consulting firm called fishingresearch.com".



Congratulations Tom, Geoff and Salah (in absentia) on your retirement. Best wishes with your future endeavours.

Answer to Rorschach's Map:

This map blot is a west centric view of southern Ontario west of Toronto.

One Student's Experience Researching a Mining Community in Brazil

by Joe Wasylycia-Leis

Four years into my degree and I had come to believe that the life of an undergraduate student existed solely in the confines of classrooms, cafeterias and libraries. Last February, however, that impression changed when Dr. Patricia (Trish) Fitzpatrick took me on as her research assistant and honours thesis student. Trish is coauthoring a three-year comparative study looking at the implications of government and voluntary sustainability policy in the mining industry in Canada and Brazil, starting with Vale mining company. Working on the project has been an eye-opening foyer into the world of field work in human geography.

This summer, in addition to spending eight days in Thompson, Manitoba, I spent a month in Brazil conducting research for both the three-year study and my own thesis. Getting there involved a fair bit of work on my thesis, writing research grant proposals and time spent learning the basics of Brazilian Portuguese. Once in Brazil, with the help of the bilingual Brazilian study co-author Dr. Alberto Fonseca, we were able to interview twenty-seven people for a case-study on the mining city Itabira, Minas Gerais.

The Brazilian mining corporation Vale is the main economic driver in Itabira and mining activities challenge community well-being and sustainability with environmental degradation, economic dependence, and a range of social issues. In light of Vale's significant influence in the community, there is some debate over what the corporation's role is in the governance of sustainability issues. Hopefully, this research will provide insight into how communities, like Itabira, can reconcile large-scale mining activity with aspirations for healthy and sustainable futures.



Downtown Itabira, in the state of Minas Gerais.

Geomatics Redux

During the 2010-2011 academic year, the Department of Geography conducted a review and subsequent reorganization of the techniques (now called Geomatics) course offerings. The result is a streamline of course offerings which brought about a consistent, natural progression of coursework starting in the second year with

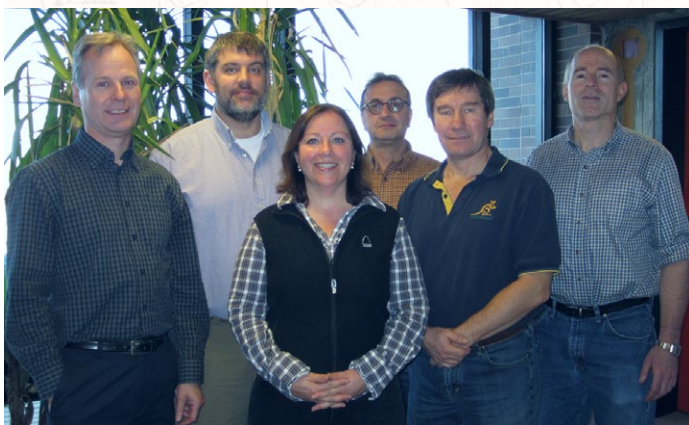
introductions to GIS, remote sensing and computer mapping. Third year courses focus on advanced skills development while, fourth year seminar courses work on applied skills, project management and advanced technologies. Geomatics is designed to function in parallel with existing Geography BA and BSc degree requirements.

The department has recently formalized a joint degree/diploma program in GIS with Red River College (RRC). Students within Geomatics spend their first two years in Geography at U of W, their third year at RRC in the Applied GIS Diploma program, and their fourth year back in Geography at U of

W. At the end of their study, students receive a 4-year BA or BSc plus a Diploma in Applied GIS.

These changes were precipitated by the recent addition of new geomatics faculty within the department. Dr. Ed Cloutis (GIS, Remote Sensing), Brian McGregor (GIS, Computer Mapping), Brad Russell (on-line GIS, Map Librarian) and Weldon Hiebert (Cartographer) have been joined by Dr. Christopher Storie and Dr. Joni Storie. In summer 2010, Dr. Christopher Storie (GIS, Remote Sensing) was hired to replace the recently retired Dr. Hathout. Chris is responsible for teaching courses in Remote Sensing, GIS, urban geography, and human geography. This past summer (2011) Dr. Joni Storie was hired due to her specialized expertise in radar remote sensing for water resource management.

We encourage our students to examine our current offerings and talk to any of our geomatics faculty if they have questions.



The UofW Geomatics team: (from left) Brad Russell, Christopher Storie, Joni Storie, Ed Cloutis, Weldon Hiebert and Brian McGregor.