REPORT

2010-2011 CSEG Distinguished Lecturer Tour Diary – Part II

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After having covered five different locations on my earlier two DL trips, namely, Simon Fraser University, the Geological Survey of Canada (GSC) in Sidney, University of Victoria, Carleton University and the GSC in Ottawa, next I headed back to Ontario to deliver my DL talk at Lakehead University in Thunder Bay, Laurentian University in Sudbury, Queen's University in Kingston, the University of Toronto, and the University of Western Ontario in London, in that order. I took the 10 am morning flight out of Calgary on January 16th, and headed to Toronto, from where I took an evening flight to Thunder Bay. Interestingly, flights are not available between the smaller centres, so the way it worked out was that each time I had to come to Toronto to pick up my next flight. Anyhow, I reached Thunder Bay at about 8 pm to falling snow, and was surprised that my taxi ride to the hotel took only seven minutes! I was told that Thunder Bay is a small city of about 120,000 people and it does not take long to get about - to go from one end of the town to the other would take just about 15 minutes.

Lakehead University

The next morning I woke up to find about five inches of snow on the ground and it was still snowing. Dr. Mary Louise Hill, Professor at the Department of Geology, Lakehead University was the person I was coordinating with for my DL talk there. Mary Louise, a structural geologist in the Geology department (and former VP Academic of Lakehead University), is also the recipient of Lakehead's 2010 Distinguished Instructor Award. She picked me up at 9 am to get me to the 10 am talk at the Department of Geology. Established in 1965, Lakehead University offers 32 different graduate programs and has an enrolment of over 7,000 students. The Geology department at Lakehead offers undergraduate and Master's degrees in geology, and of course there is some geophysics incorporated into their courses. I soon found out that Mary Louise is not only a popular teacher but also well-liked by the other faculty members. There were about 18-20 attendees comprised of both undergraduate and graduate students, as well as a few faculty members including the Chair of the Department of Geology. The talk went off well and Mary Louise presented me with a coffee mug as a souvenir of the university. Later Mary Louise, as well as Dr. Andrew Dean, who appropriately enough is the Dean of the Science Faculty, took me out for lunch. Dean presented me with a pen stand, and so that made it two souvenirs that I received from Lakehead! Dr. Philip Fralick and another faculty member, Dr. Patricia Gillies, were also there and I later met them and their undergraduate student Paul Geller to chat about a seismic profile from the Lithoprobe program that they are trying to re-interpret. It was an interesting conversation that I was having with them, when I received a call from Air Canada that my 5:50 pm flight to Toronto had been cancelled due to bad weather and that there was a plane leaving Thunder Bay at 3 pm that I could catch instead. Philip was kind enough to drop me off at the airport, even though it was a bit of a scramble. I reached Toronto airport at 5 pm and had to wait for 5 hours before I could board my next flight to Sudbury.

Laurentian University

Sudbury is again a small city with a population of 165,000. Laurentian University enrolls about 9,000 full-time and part-time students and is one of only two universities in Canada that offer programs in two languages. It was again snowing in Sudbury when I reached there, and it was almost midnight when I reached my hotel, conveniently situated close to the university. Though I am an early riser, I got up the next morning a couple of hours late, and after having a leisurely breakfast, I took a five minute taxi ride to reach the Willet Green Miller Centre at the Department of Earth Sciences. Dr. Richard Smith, the CSEG DL for 2010 and the only geophysicist on staff at Laurentian, was my coordinator. The Willet Green Miller Centre was constructed by the Ontario Geological Survey (OGS) and Laurentian University has rented two floors from the OGS to house the Department of Earth Sciences. The close proximity of the two groups helps the members of the faculty and students to interact with the OGS scientists and have a good rapport. On a brief visit to the OGS I also learnt about the discovery and history of oil production in the mid 19th century near the town of Petrolia and Lambton County Ontario. This region is famous for developing and commercializing the early

Lecture in progress at Lakehead University in Thunder Bay, Ontario.

Cold day and snowy in Kingston, with Lake Ontario as the backdrop.

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Lecture in progress at Laurentian University in Sudbury, Ontario.

methods used to drill for oil. At Laurentian, I met four geophysics graduate students who are all undertaking research on the application of geophysical methods in the Sudbury area. The work is sponsored by NSERC and four local companies and the aim is to search for metallic ore bodies and to better understand the geology using petrophysics. There were about 30 – 35 attendees for my talk. They seemed interested in the topic and there were quite a few questions at the end of the talk.

Richard was kind enough to take me out for a quick lunch at the university cafeteria. After lunch Richard had to attend a meeting and so I took a taxi and headed to the airport. My return flight to Toronto was a little bumpy as it was raining in Toronto and snowing on the way. One reason could be that these are all small planes flying between these smaller cities, and at altitudes lower than I am used to, ranging between 8,000 ft. to 15,000 ft. I was dreading that due to the snowy conditions, the flight to Toronto might get cancelled and that the rest of my travel plan would be put in disarray.

Queens University

I finally reached Kingston at about 9:30 pm. In the morning I was met by Dr. Savka Dineva, Assistant Professor at the Department of Geological Sciences and Geological Engineering and the coordinator for the DL talk. We reached the Department in good time and Savka showed me around the museum, where they have some interesting fossils and an impressive collection of rock samples. In particular, I saw the cast of the Mistaken Point fossils found in eastern Newfoundland that decorates one wall in the museum. These fossils are an assemblage of the most ancient complex organisms that ever existed anywhere in the world. They lived at the bottom of a deep ocean before they got covered suddenly due to some neighbouring eruption more than 565 million years ago.

Thereafter we went to the lecture hall where we met a group of eight students and two faculty members. The students looked at the slide presentation very carefully and seemed to like what they saw. Some inquisitive and interesting questions followed, which was a lot of fun, chatting about their answers as well as some other topics. After the lecture, I attended Savka's regular meeting with her students. It was about a project that the students are about to start, analyzing aftershock data from a recent earthquake which will be sought from the GSC office in Ottawa. After this meeting, Savka suggested that I should see Lake Ontario as it is round the corner, barely a five minute walk away. So, though it was snowing, we went for a bit of an outing and saw some parts of the Queen's campus as well as the lake. The sheer expanse of water there is amazing. The wind chill was getting noticeable and it was time for me to head to the airport, so we quickly returned. I really appreciated Savka's hospitality and the time spent with me explaining about the students and the university campus. Savka gave me a Queen's diary and a pen as souvenirs, which I have added to my collection.

At Queen's University in Kingston, Ontario.

Savka explaining a new project to her students, Queen's University, Kingston, Ontario.

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Lecture in progress at University of Toronto, Ontario.

University of Toronto

My flight from Kingston to Toronto was delayed, but as I reached my hotel in downtown Toronto, where U of T had sponsored my stay for the night, Dr. Bernd Milkreit and his colleague Dr. Qinya Liu and student Emanuel were already there. They invited me out for dinner and it was fun chatting about various things including geophysics research being pursued at U of T, professional memberships and exchanging general pleasantries. Before dispersing, Bernd gave me clear instructions on how to reach his office the next morning, which was about a ten minute walk.

The following morning, the fire alarm sounded in the hotel and we were asked to vacate the premises. As I stood outside the hotel in the cold (-16°C), along with other guests, I decided to look for a restaurant close by and have breakfast, which was rather easy. By the time I finished breakfast and returned, the fire alarm issue had been resolved. It was a minor problem on one of the top floors. I was soon at Bernd's office, where I chatted with him for about 45 minutes. Later I sat down with Qinya Liu, her student, as well as Emanuel. Geophysics at the U of T forms part of the Department of Physics and has a good reputation in both basic and applied studies. The research is varied and highly interdisciplinary. I surmised that seismology is a big topic for research at U of T, and exploration seismic is not as big a focus. The attendance at my talk at noon was about 35 people including about 4 faculty members. It was fun interacting with them during the Q and A session. Pizza and drinks had been arranged which was welcome. After finishing with lunch and chatting, I headed for the airport, a taxi ride that takes about 40 minutes, a big contrast to the smaller cities!

University of Western Ontario

My next flight to London was relatively short, about 45 minutes, although it was foggy and snowing. London has a population of 350,000 and the main attraction in the town is the university and the students. The enrolment at the university is about 30,000. My contact at UWO was Dr. Robert Shcherbakov and I was looking forward to meeting him and some other faculty members. My first meeting was scheduled with Dr. Burns Cheadle, who is the Bill Bell Chair in Petroleum Geology. Burns and I chatted for some time and then he took me for a tour of the Earth Sciences Department. UWO is very well equipped with state-of-the-art laboratories for X-ray diffraction, stable isotope science, electron-probe microanalysis, geochemical analysis, and a petroleum

Lecture in progress at University of Western Ontario, London, Ontario.

laboratory. For geophysics, a focus is the POLARIS project, which is a national initiative wherein 90 broadband seismograph systems across Canada were installed in 2001 and the data transmitted to UWO and GSC is available for researchers to study earthquakes and deep earth structure. Besides this, there is also a computational lab for fault modeling and analysis. After a leisurely lunch with Robert and Burns at a campus restaurant, I met with students, two of whom are working with Robert and the other two with Gerhard Pratt. It was a real pleasure talking with them and finding out what they are engaged in - volcano modeling, statistical analysis of aftershocks, tomographic inversion and some processing of seismic data. My lecture was arranged in a spacious lecture room. The talk went off well and was followed with some interesting questions and answers.

After the lecture, I headed to the airport for my flight to Toronto and thereafter a late evening flight back to Calgary. It was a hectic schedule to cover five locations in five days, but very enriching to find out what is being done at these universities. Likewise, the attendees at the CSEG Distinguished Lectures now have a perspective on what can be achieved with the use of seismic attributes for different purposes. It was again with a feeling of satisfaction that I flew back home in the night.

The next trip is planned for the first week of March 2011, when I will visit five more locations, and I plan to share those experiences with you. *R*