



**GEOMATICS**  
ENGINEERING



# Geomatics News

FALL 2013 · Volume 11, Issue 1

## Message from the Head

Dear Valued Reader,

Greetings and Happy New Year. I hope you had a relaxing holiday break.

This fall semester our new second year Geomatics Engineering students took their first course, ENGO 333 – Computing for Geomatics Engineering. we welcome our new students to the Department and trust that they had a rewarding experience with Dr Petovello in ENGO 333.

Our Department is very proactive in promoting Geomatics Engineering to first year engineering students who will, during the winter, select which engineering program they wish to enter in second year. As part of our ongoing effort to inform prospective students about our discipline, we hosted the First Year lunch event Engineer a Better Future held in November. Alumni Nathan Pugh and Stephanie Spiller from Trimble Navigation Ltd—the event’s corporate sponsor—did a marvelous job. Please continue reading this Newsletter to find out more about their very engaging presentation.

Many important department events will take place this winter semester. The first is the 2014 Geomatics Exposition on 23 January. Organized by the Geomatics Engineering Students’ Society (GESS), it will draw 36 companies to raise awareness of their company,

introduce their products and services, advertise positions and interview students. It is a brilliant networking opportunity and this year will feature a “Geomatics in Canada” panel discussion organized by Geomatics Engineering alumni. Panelists from five different areas of the Geomatics Engineering profession will discuss their experiences and where a career in Geomatics Engineering can lead to. I thank the GESS organizers, our alumni volunteers, the sponsors and the exhibitors whose hard work and contributions should prove to make this another very successful Geomatics Exposition.

We will host the annual meetings of the Geomatics Engineering Liaison Committee (GELC) on 22 January and

the Geomatics Engineering Advisory Committee (GEAC) on 14 March. I welcome new GEAC members Barbara Ball from WorleyParsons Canada and Nathan Pugh from Trimble Navigation Ltd.

Finally, it was extremely sad to learn of alumnus Bill Lovse’s passing in December. I had the privilege of first meeting Bill when we were graduate students in the Department in the mid-90s. He was very enjoyable to work with. I appreciated both his pleasant but very practical outlook and his willingness to provide advice and share his experiences. On behalf of the Department I express my deepest sympathies to Bill’s family.

Derek Lichti  
Professor and Head

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### COMING EVENTS

GELC Meeting  
January 22, 2014

Geomatics Exposition  
Thursday, January 23, 2014

Reading Week  
February 16-23, 2014

PI Week  
March 10-14, 2014

Geomatics Awards Night  
Thursday, March 13, 2014  
5:30 - 8:30 pm  
MacHall Cassio AB

GEAC Meeting  
Friday, March 14, 2014  
8:30 am - 4:30 pm

Capstone Design Fair  
Tuesday, April 8, 2014  
MacHall AB

ENGO 500 Projects  
April 9-11, 2014



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ENGINEER A Better Future...

1<sup>st</sup> Year Students Join Us for Lunch

GEOMATICS ENGINEERING

Trimble

Find out where a career in geomatics will take you

DOOR PRIZES

RSVP by Friday Nov. 8, 2013

Reserve Your Spot!  
Provide your Full Name and Contact Info to undergraduate@geomatics.ucalgary.ca or 403-220-5834

# AWARDS & RECOGNITIONS

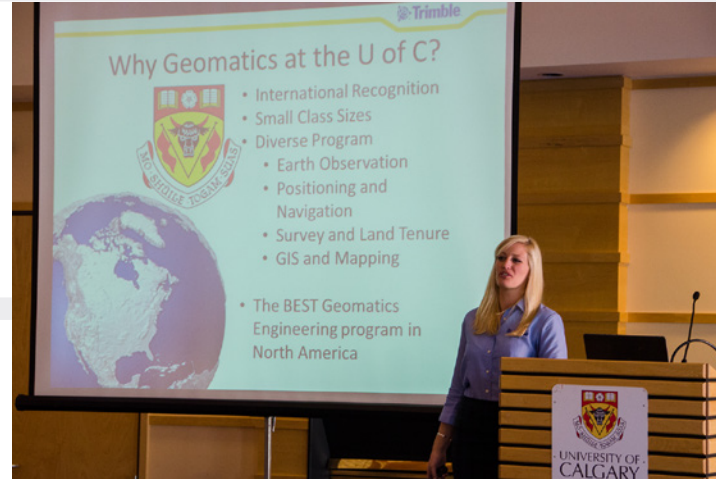
- Congratulations to Dr. Ali Jafamia, PDF in the PLAN Group, who was presented with a Best Paper Award at the 4th International Colloquium Scientific and Fundamental Aspects of the Galileo Programme held in Prague for his paper on “Spoofing Countermeasure for GNSS Receivers - a Review of Current and Future Research Trends”, co-authored by Saaed Daneshmand and Gérard Lachapelle.
- Ting On Chan, PhD student, has been awarded a 2014 Australia Award, Endeavour Research Fellowship. This highly-competitive, merit-based program gives overseas students an opportunity to undertake study, research and professional development in Australia. Ting will continue his PhD research in mobile LiDAR mapping system calibration and object recognition by working with experts in computer vision and robust statistics at Curtin University in Perth, Western Australia as part of Dr Derek Lichti's ongoing collaboration with Curtin's Department of Spatial Sciences.
- Congratulations to Steve Liang and Mohamed El-Habiby for being named Top 40 Under 40 by Avenue Magazine, who celebrate Calgarians who are doing more, doing better and making us all take note.
- Congratulations to Andrew Hunter for being named this year's recipient of the Teaching Excellence Award for 3<sup>rd</sup>/4<sup>th</sup> year courses in Geomatics Engineering. The award was presented by the University of Calgary Engineering Students Society at their annual 3<sup>rd</sup>/4<sup>th</sup> Year Dinner.

## Other News

# 1<sup>st</sup> Year Student Event: Trimble Navigation Ltd.

by Courtenay Canivet

We invited Stephanie Spiller and Nathan Pugh (both University of Calgary Geomatics Engineering alumni) from Trimble Navigation Ltd. to present and partner with department in recruitment activities to attract first year students. The lunch time presentation was held at the Rozsa Centre on November 20, 2013 and was a great success! It was attended



Stephanie Spiller, Technical Solutions Manager

by 104 prospective and current students, faculty and staff.

In the presentation, Trimble spoke on the different areas in industry that students could find future employment by providing real life pictures and examples of some of these areas including GPS applications for oil & gas, GPS for precision agriculture machines and UAVs.

Left: Nathan Pugh, Business Area Director, Mining Solutions

Below & Right: 104 prospective and current students, faculty and staff.

At the end of the presentation, we held a virtual scavenger hunt to encourage student participation, in which a prospective student received an iPad mini door prize from Trimble. A big thank you to Stephane, Nathan and Trimble.



Fort Conger is a tiny outpost on Lady Franklin Bay near the north end of Ellesmere Island. In July 2010, my company was contracted by the University of Calgary and Parks Canada to laser scan the site for historical preservation. The history of the site is riveting from Nares, Greely and Peary expeditions with Peary using this as his last settlement prior to the attempted trek to the North Pole in 1909.

I have been asked to focus on a geomatics perspective of trip so let's start with the travel. Not that travel should be new to a geomatics engineer. What was critical, is understanding one has to pack as little as possible to complete the required tasks, realizing you are closer to the North Pole than any store in the world, planning was essential. The cargo was shipped from Calgary to Resolute Bay commercially and then on board a chartered Twin Otter from Resolute Bay to Eureka, Tanqueray Fjord, Lake Hazen and finally to a rough landing on the tundra at Fort Conger.

Once we made it to site, which was about a kilometre from the landing site, we started the process of surveying and documentation from geomatics, archeological, historical and preservation perspective. From a geomatics point of view, I started looking for evidence that was left behind from a detailed site plan created in 1972. We were able to find numerous pieces of evidence that supported the plan from '72 and even found the wooden hub that marked the origin. I did bring some GPS along to determine the coordinates and orientation of the baseline and this was done using NRCAN Precise Point Positioning.

As GPS is not accurate enough for laser scan dimensional control, a total station was used to survey the laser



## SCANNING FORT CONGER

by Chris Tucker,  
President, SarPoint Engineering

scan targets and network adjustment and least squares analysis to quantify the errors with respect to the control. Lastly was the laser scanning.

The site at Fort Conger has a great deal of discarded equipment, the foundation of a dwelling from the Greely expedition of 1881 and 3 semi-subterranean cabins in different states of repair remaining from Peary expeditions starting in 1899 and finishing 1909. The entire site was scanned in 43 scan positions. Even though this would have been a one day job with a complete arsenal of equipment, we knew we were not to be picked up for a week or so we were never in a rush. As such there was some time to enjoy the surroundings and hike to some cairns set by the Nares expedition of 1875.

Ten days in the mid-summer near the North tip of Ellesmere Island was without doubt, one of the best trips of my geomatics career, in no small part to the exceptional people on the trip with me. It gave me a glimpse into some amazing Canadian history and allowed me to go where very few people have ever been. As a last point about geomatics at Fort Conger, we could easily look across Nares Strait to Greenland. With climate change and Arctic seaways and exploration opening up, international boundary law will play a larger

role in the Arctic and without question geomatics will have a role to play there. Coincidentally as I write this, I read in today's paper President Putin is laying claim to the North Pole for Russia.

[www.pointgeomatics.ca](http://www.pointgeomatics.ca)



# Department Activities

## SSE Faculty & Staff 2013 Awards featuring the SSE Christmas Party

Mark Petovello / Derek Lichti  
Outstanding Teaching Performances

Steve Liang  
Research Excellence

Coral Bliss Taylor  
Teaching Assistant Excellence

Michael Collins  
Teaching Excellence

Kyle O'Keefe  
Service Excellence

Courtenay Canivet  
Leadership Excellence

Danielle Marceau  
Graduate Educator

Babak Amjadiparvar  
Teaching Assistant Excellence

Kirk Collins  
Social Committee

*Congratulations Everyone*



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