



SCHULICH
School of Engineering

DEPARTMENT OF
GEOMATICS
ENGINEERING

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Geomatics News

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COMING EVENTS

- First Year Engineering Open House November 25th 12-2pm
- Final Exams December 11th—22nd
- Holiday Break U of C closed December 25th—January 4th
- Geomatics Career Exposition January 21, 2016
- APEGA Science Olympics Saturday April 9th @ U of C Olympic Oval
- Calgary Youth Science Olympics April 15th & 16th @ U of C Olympic Oval

Message from the Head

Dear Reader,

After a short hiatus caused by a temporary staff shortage in the summer, our newsletter returns to update you on developments in the Department of Geomatics Engineering.

After serving five years, Dr. Kyle O'Keefe finished his term as Associate Head, Undergraduate, in June 2015. His strong organizational skills and meticulous nature were assets to the department, ensuring that our undergraduate program ran smoothly and that we met our accreditation needs. Staff, students and faculty have all greatly benefited from his encyclopaedic knowledge of the undergraduate calendar and his reliability and willingness to do whatever is needed to help. We all thank him for his selfless service as Associate Head.

Fortunately for the Department, Dr. Mark Petovello agreed to take over the position for a five-year term beginning

on 1 July 2015. Recognized on numerous occasions as an excellent teacher, Mark brings very strong organizational skills, reliability and meticulous attention to the detail to the job. I'm very glad that someone with Mark's abilities has stepped into this role.

Some sad news to report is the resignation of Dr. Andrew Hunter, who moved back to his native New Zealand after many years in the Department as a student and as a faculty member. Andrew was a very dedicated faculty member who contributed in many ways including excellent teaching, survey camp coordinator and Associate Head, Undergraduate, for one year. We will certainly miss him and his dry antipodean sense of humour.

In June, I attended the Convocation ceremony. It was my first opportunity to do so as Head; other commitments had, unfortunately, prevented me from doing so previously. I found it to be an

extremely rewarding experience. It was a pleasure to congratulate each graduating student, new parchment in hand, just before they left the stage. The icing on the cake was having Emeritus Professor Ed Krakiwsky as mace bearer.

Finally, I had the pleasure to attend Emeritus Professor Gérard Lachapelle's last lecture in May. It was an interesting journey through his career that began in geodesy in Québec and took him to northern Canada, several European countries, and of course Alberta, in addition to many interesting places along the way. Congratulations on a superb career!

Derek Lichti
Professor and Head



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Special Presentations

- Dr. Ekram Azim, a ‘Senior Environmental Scientist, with Hatfield Consultants gave a presentation on “Global climate change and food production” on Monday June 1st. He is a leading authority in the field environmental issues in particular to water quality and climate change and its relation on the aquatic environment.
- Dr. Sue Lynn Choy, from Melbourne Australia, gave a presentation on “Real-Time Precise Point Positioning Utilising the Japanese Quasi-Zenith Satellite System (QZSS) LEX Corrections” on Thursday June 6th. She works as a full-time academic staff at the School of Mathematical and Geospatial Sciences in RMIT University. She teaches land surveying, geodesy, and GNSS navigation to undergraduate and graduate students. Her current research interests are in the areas of multi-GNSS PPP and using GNSS for atmospheric and ground remote sensing.
- Dr. Chengyi Wang from the Institute of Remote Sensing Applications Chinese Academy of Sciences, Beijing, China, gave a presentation “Brief Introduction of RADI and IRSA Remote Sensing Processing System” on Thursday June 6th. Dr. Chengyi Wang is currently an associate professor at the Institute of Remote Sensing Applications at the Chinese Academy of Sciences, Beijing, China. He is currently joining GeoSensor Web Lab as a visiting scholar.
- Prof. Erhu Wei, from the School of Geodesy at Wuhan University gave a presentation “Improving EOP and Orbit Parameters Estimate with Change ‘E-1 ∇ VLBI and Space VLBI Observations” on Friday August 15th. His research area focuses on deep space geodesy, satellite geodesy and navigation and orbit determination.
- Dr. Jan Skaloud, from EPFL Switzerland, gave a presentation “Life beyond Allan Variance—GMWM Framework for Sensor Calibration on August 27th. Dr. Skaloud is a past and current Chair of Working Groups of the International Association of Geodesy (IAG) and the International Society for Photogrammetry and Remote Sensing (ISPRS). He is recognized as one of the 50 world’s most influential scientists in the field of satellite navigation.



Michael Sideris elected President of the International Union of Geodesy and Geophysics

- Michael was elected by unanimous vote as the new president of the International Union of Geodesy and Geophysics (IUGG) for the period of 2015-2019 by the country-member Council of the IUGG at the XXVI IUGG General Assembly in Prague, Czech Republic June 22 to July 2, 2015.

Congratulations Michael!

Geomatics Home rooms

- A heartfelt thank you and acknowledgement to Stephen Green and Janet MacPhee as the Geomatics Home room has changed location due to the building renovations. Geomatics students now have access to two spaces, one for studying and one for student collaboration and relaxation.

Thank you Stephen and Janet!

SU Teaching Excellence Award

- Dr. Michael Collins received the SU Teaching Excellence Award for SSE on Wednesday, April 22, 2015. The award recognizes individuals who make significant contributions in assisting students in reaching their highest potential.

Congratulations Michael!

New Equipment for Geomatics Labs

- Through a recent purchase negotiation and donation from Trimble Navigation, Geomatics students will be working with state-of-the-art equipment. This includes new total stations for surveying and Global Navigation Satellite System (GNSS) receivers to replace aging technology in our labs.

Thank you to Trimble and all involved!

Survey Camp 2015



2015 Survey Camp took place at the Barrier Lake Field Station from August 17 to 26. The 10 day camp was similar to that of the last several years and included calibration, cadastral, deformation, static GNSS, RTK, and Hydrography exercises as well as a GIS exercise to compile all of the results, and the annual lost peg competition. 41 students and 7 staff participated.

The weather this year was excellent for the first 4 days and then cooled considerably. On Tuesday the first groups completing the hydrography exercise actually went swimming in Barrier Lake but then on Friday field work (particularly RTK and levelling) was cancelled due to a combination thunderstorm/blizzard.



For the rest of the week the lake was warmer than the air but the students managed to complete all of their fieldwork successfully. We can also happily report that this year's class redeemed the lost peg competition after the 2014 debacle. The winning team, Dustin Gutsche, Gina Kisell, Haley Lawrence and Markus Polini, had a misclosure of 18.5 cm. Seven more teams finished closely behind and the TAs were able to locate the true coordinates easily.

Four professional land surveyors, Calvin Bourassa, SLS, CLS, David Marquart, ALS, Bob Haagsma, ALS, and Aaron Shuftloski, BCLS, presented four interesting projects to the class after the lost peg competition. Special thanks to Arlin Amundrud, ALS, for organizing this year's guest speakers.

Department News

The summer of 2015 offered many changes for the Geomatics Administration team. In early April, Kristal Turner, the Graduate Program Administrator (GPA), accepted a new position in the Engineering Student Centre to develop international programs and student advising. June Au Yeung, our Project Administrator, stepped into the GPA position in early May.

Shortly after, Monica Freeman's position was transformed from front desk reception into a much-needed GPA assistant, and she and June are working together to amend processes and develop the graduate student experience.

Finally, Courtenay Canivet took over the vacant Project Administrator role in October when the Engineering

Faculty centralized all of the undergraduate administrative and advising programs.

Also this summer, the Schulich School of Engineering made the decision to centralize all undergraduate administration and advising to the Engineering Student Centre. As a result, each department's Undergraduate Advisor position moved from working within their home departments to operating out of the Engineering Student Centre. By providing a first point of contact for all undergraduate students, this centralization will provide consistent advising and support for the undergraduate programs within Engineering.

Tanya Brucker
Department Manager



The 2016 Survey Camp is scheduled for August 22 to 31, 2016.

Swiss Trip 2015

The 2015 Geomatics Swiss trip saw students from all years of the Geomatics program travel to Switzerland to be immersed in the active Geomatics industry of another country.

The 9th annual trip began in the city of Geneva, which is located in *Romandie*, the French-speaking side of the country. To start the trip off, students toured the 2nd largest UN offices at Geneva. Seeing the meeting rooms and other facilities where world leaders gather regularly to discuss United Nations issues was an eye-opening experience for many students.

The group then visited CERN (*Centre Européen pour la Recherche Nucléaire*) for several presentations on particle physics and the work that is done at the world-renowned facility. Although this was not a visit specific to Geomatics, students were



quick to wonder about the high-precision surveying required to align the particle accelerator.

This year, we re-connected with our colleagues at EPFL (*École Polytechnique Fédérale de Lausanne*), which is the technical university in Lausanne. Dr. Jan Skaloud, an adjunct U of C professor, and his colleague, Prof. Bertrand Merminod, along with a few grad students gave several presentations primarily focused on the Swiss school system, aerial photogrammetry, and inertial navigation which was met with much interest.

Students also visited the offices of Pix4D, a startup company of EPFL students that creates software for 3D modeling using UAV (drone) platforms.

Making our way eastward across the country, we then visited the de facto capital city of Bern, where the Swiss federal institute of mapping (Swisstopo) is located. This visit consisted of presentations in the morning and a visit to their geodetic/astronomic observatory in the afternoon, located just outside of the city in the small town of Zimmerwald.

After stops in both Interlaken and Lucerne for some recreation, we continued to the largest Swiss city of Zurich. From here, we visited the Leica Geosystems factory located in Heerbrugg, on the Austrian border. The Leica visit was unsurprisingly the highlight of the trip for many of the students, as it gave them the ability to see first-hand how much of the equipment which is used in their assignments is manufactured. In addition to the tour, Leica also graciously provided us

with two demonstrations of their new GNSS and total station equipment.

Our final tour of the trip was at the ETH Zurich University, where we witnessed several presentations from graduate students on their current projects. Later, we were treated to a visit of the Uetliberg, which is a small mountain adjacent to Zurich providing some spectacular photos of the area. During the trip, the students also had the opportunity to experience some Swiss culture, including a visit to one of the largest wineries in the country.

GESS would like to thank the Schulich Student Activities Fund (SSAF) and the Shell Energy and Experiential Learning fund (SEEL) for their continued support of the Swiss trip, and a huge thank you to alumni Jeff Cornish for assisting in the planning of the winery tour. I strongly encourage anyone interested in taking part in the trip to do so, if not this year then next.

-Jesse Vanneste, GESS
Switzerland Commissioner
2014/2015

