



Oct. 8, 2019

How four decades of UCalgary geomatics engineers have changed the world

'We've entered an era where you will never be lost again'

AUTHOR

Sarah McGinnis, Schulich School of Engineering

Everyday use of paper maps has given way to satellite imaging and GPS-enabled smartphones as innovations sparked by University of Calgary geomatics engineers over the past 40 years have literally changed our understanding of the world.

“We’ve entered an era where you will never be lost again,” said geomatics engineering alumnus Jonathan Neufeld, BSc (Eng) ’03, MBA ’15, CEO of TECTERRA Inc. “Think about it. People will live and grow up and thrive and, thanks to geomatics, they will never be lost again,” he said.

It all started in 1979, when Dr. Ed Krakiwsky, PhD, became the first chairman of the University of Calgary’s then Division of Survey Engineering. His first graduating class had a mere eight students and its focus was

on surveying techniques.

- Photo above: Autonomous vehicle navigation research with Dr. Naser El-Sheimy, PhD, and a student.

Photo by Fritzology Inc

In the four decades since, geomatics engineering at the Schulich School of Engineering has become a world-leader in capturing, harnessing and commercializing the potential of location-based data – a field that has exploded in demand in our increasingly high-tech society.

“We have the biggest department of its kind in Canada. Our work is recognized worldwide and the demand for geomatics engineers continues to grow,” said Dr. Emmanuel Stefanakis, PhD, department head of geomatics engineering.

“With so many successful graduates working here and around the world, we know that, for our current students, geomatics engineering is a path to a successful career,” he said.

By studying geomatics, you enter a very tight-knit community – one that lives on well after graduation, said Neufeld, who leads a geospatial technology innovation centre that supports the development and commercialization of geomatics technologies.

“I look at the strength and the breadth of the geomatics community in Calgary – with big companies and smaller companies starting up now. There’s an incredible base of location-based technologies that’s grown out of this university. It’s created a whole other layer to the city,” said Neufeld.

Technologies made possible by geomatics engineering have integrated seamlessly into our everyday lives, said fellow geomatics graduate Natasha Spokes, BSc (Eng)’05. Spokes is CEO and co-founder of FarCloser Travel, a company that uses location-based data to help clients plan ideal vacations.

“People don’t realize they are using geomatics technology when they are pulling out their phones and getting directions to their next meeting. It’s being used for so much more. The UN is using location-based tweets to inform decision-making in conflict zones based on keywords. It’s all around us,” she said.

Spokes remembers when geomatics engineers were once consulted near the end of high-tech projects, almost as an afterthought. With the amount of modern data that has a spatial component to it, and the endless opportunities to make use of that data, Spokes said industries are now seeking out geomatics engineers to be at the forefront of their new developments.

“People know now that we need a seat at the table, that we’re not just surveyors,” she said.

Much of the new frontier of harnessing spatial data is being developed here. If you give geomatics professor Dr. Naser El-Sheimy, PhD, a few minutes, he will happily list off dozens of achievements sparked out of the small but mighty group that took on the mantle of the Geomatics Engineering Department in 1992.

- The first mobile mapping system was developed at the University of Calgary, an idea later used for Google Street View.
- The first GPS software engine in the world was created here, helping companies develop GNSS receivers.
- The first GPS/INS navigation software was developed here, helping many companies to develop

systems for mapping and navigation applications.

- The first 3D satellite-mapping engine was developed by our graduates and later acquired by Microsoft for Virtual Earth.

With an ever-increasing number of ways to access, gather and use spatial-location data, the future of geomatics engineering is in harnessing big data and ensuring it is used safely and accurately.

We are used to having information at our fingertips and we need to be careful it is the right information, said Spokes. “We need to be using all this data in responsible ways,” Spokes continued.

“We need to make sure we are collecting an appropriate amount of information and we are sharing an appropriate amount of information. There is an ocean of data and we need to carve it down to an island.”



Sept. 10, 2019

Geomatics grad used engineering to pursue a passion for travel

Natasha Spokes tells first-year students to jump at every opportunity

AUTHOR

Michael Platt

She's an entrepreneur who connects travellers with niche travel providers to experience the best the world has to offer – but Natasha Spokes, BSc (Eng)'05, says the toughest journey was finding her own true calling.

That's the message the Schulich School of Engineering graduate had for a brand-new class of first-year students about to embark on the same academic adventure – and the CEO & Co-Founder of FarCloser Travel summed up her hard-won wisdom in four words.

“Give it a shot.”

Look off the beaten path

As the keynote speaker at the engineering faculty's welcome rally, Spokes told an auditorium full of scarf-clad freshmen that her best advice is to look off the beaten path, and give your own curiosity a chance to lead the journey, because it may lead you to something truly amazing.

“When I graduated, it was very much assumed most people would go straight into oil and gas, because it was easy and there was money to be made,” she explains.

“Now, times have changed, and things aren't as obvious for graduates. I think that's a good thing, because it's a real opportunity for students to find something they actually they enjoy doing.”

A new opportunity

Spokes, a geomatics engineer, followed the typical path when she graduated in 2005, and the oil industry proved a lucrative employer – that is, until 2017, when she found herself out of work.

Panic? That was one option. The other was to reassess what she really wanted to do with her life and her engineering degree.

“It was the kick in the butt I needed to go after the thing I'd really wanted for a few years,” says Spokes.

Using engineering to see the world

FarCloser Travel is a platform designed to help travellers discover and book unique, multi-day tours that they won't find at their local travel agency, using an intuitive, map-based comparison platform.

For Spokes, it's a labour of love, helping travellers find the dream vacation that falls outside the traditional options offered by typical travel agencies.

“I saw an opportunity to marry mapping and geomatics engineering with my love of travel, and that's how FarCloser was born.”

Take a chance

To those looking to engineering as a career, she suggests pursuing as many opportunities as possible while in school, while meeting the people who will form an invaluable network post-graduation.

“Take the opportunity in school to try something new, and take advantage of things like clubs,” she says.

“You never know where it can lead you or who you might meet.”



students at orientation

□ Fritzology





Oct. 4, 2019

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Study Abroad - Benefits To All Areas of Life

A semester abroad at at Hong Kong Polytechnic University (HKPU)

AUTHOR
Mairin Rockliff

As cliché as it may sound, my study abroad semester changed my life. I spent the second semester of my third year of geomatics engineering at the Hong Kong Polytechnic University (HKPU) as an individual exchange student in their Land Surveying and Geo-Informatics program.

A lot of students think that studying abroad will set them behind in their studies and that any benefits of studying abroad would not make it a worthwhile enough experience – this could not be further from the truth. I made sure that my time spent on my exchange would count towards my degree and I ultimately received credits for four geomatics courses during my semester in Hong Kong. The University of Calgary's Geomatics Engineering department was incredibly helpful in building a plan that allowed me to take required core courses as well as courses that were in my interest area and complimentary to my degree. Not only did I receive credits for all of the HKPU courses, I was able to take a really interesting course not offered at the University of Calgary: Geo-IT for Environmental Management. This course, and aspects of

my other courses taken at HKPU, opened my eyes to the different industries geomatics is applied in and especially to how geomatics is key to major cities and will help greatly to build smart cities for the future. My semester exchange at HKPU has already greatly aided my student career, it was hugely advantageous to have a study abroad semester at a top university on my resume while applying for internships: I received an internship at the Leica Geosystems headquarters in Switzerland in their network reference station team.



A Street Market in Hong Kong

□ Mairin Rockliff



An Ocean View

Mairin Rockliff

Outside of the academic experience, Hong Kong was such an amazing, diverse country to live in. I miss the boba on every street, the convenience store sushi that was actually good, the amazing Thai place I would go to every Friday with my friends for “Friday Thai-day”, and the Happy Wednesday horse races where exchange students from all of Hong Kong’s many universities would meet up. I miss riding the trams

on a night out and being able to get out of the city to a beach or island in under an hour on public transit. Figuring out how to live in another country that is so different from Canada has given me an amazing sense of confidence and has motivated me to live a life where I am constantly experiencing new places and people. One of the best parts of a study abroad semester is that for several months you are in a completely different part of the world as a starting point to exploring nearby countries. I saw the cherry blossoms bloom in Tokyo this spring, spent Easter vacation in Singapore and Thailand, and, as I'm currently living in Switzerland for my internship, just spent a weekend getaway in Milan vintage shopping and eating pasta.

On a more serious note, my semester in Hong Kong has given me so much empathy and understanding for the issues the protesters there are facing – many of whom are students just like me. I am grateful for having left my comfort zone in Canada because it has aided my academic career, allowed me to travel, and given me a greater sense of self, but also because it has made me better able to appreciate the world.



A Buddha statue

Mairin Rockliff



Recent graduate

Sergey Krasovski, MSc (Geomatics Engineering) '15



MSc Geomatics Engineering

Specialization in Positioning, Navigation and Wireless Location

Schulich School of Engineering,
University of Calgary

Engineering job

Strategic Marketing Analyst at Trimble Inc., Denver, Colorado

Schulich alum Sergey Krasovski gets strategic about the future of technology

One Saturday, when Sergey Krasovski was an undergraduate studying radiophysics at **Belarusian State University** in Minsk, Belarus, he started to think about where he might like to go to pursue a graduate degree abroad and also improve his English. He had a eureka moment. "I remembered some really great papers I'd read about GPS signals and signals from inertial sensors and I thought 'Why don't I check out those schools?'" Krasovski says. "I opened the papers on my PC and I realized that like five of the papers came from the exact same university and the exact same research group."

Fast forward a few years, and Krasovski was now a graduate student at this exact same university and research group – the University of Calgary's

offers to do heavy technical work. But his meeting with Trimble Inc., a top geospatial firm, stood out. The company's rotational development program would let a new employee like Krasovski spend his first two years of work doing four rotations in different business groups; He would get exposure to engineering rotations and management rotations while working with a number of different technologies.

"I talked with some friends who had done it and it sounded amazing. It sounded like a way to not only try to see what you might like best, but also as a way to find your strengths and weaknesses and be exposed to so many things," he says.

After a series of interviews Krasovski landed the job, working first for Trimble in Germany, and then

Position, Location And Navigation (PLAN) group in the Department of Geomatics at the Schulich School of Engineering. “I was extremely passionate about space navigation and satellites, and I knew that the University of Calgary is really known in that industry,” he says.

Krasovski’s master’s thesis focused on interference and the techniques that can fool GPS receivers – like if you were travelling from point A to B and your device tells you the wrong information. He found the topic especially appealing because he could see real-world applications. The project was “super technical” and Krasovski initially wanted to continue and pursue a PhD in this area and maybe work as an algorithm developer for GPS or related sensors.

“But then after talking to my geomatics mentors and supervisors who were professor Mark Petovello and professor emeritus Gérard Lachapelle, I changed my mind,” he says. “They suggested ‘Go to the industry. Explore what you might prefer for your long-term career, and then if you want to do a PhD, come back.’ That was great advice.”

So Krasovski went to a University of Calgary job fair. And he sent out a lot of resumes. He ended up interviewing with Intel, Microsoft, several Calgary-based firms, and others, and received a couple job

in Denver, Colorado. He particularly enjoyed his third and fourth job rotations, which were focused on product management and marketing. Specifically, in his third rotation, Krasovski worked as a product manager in Trimble’s Mixed Reality division, which partners with hardware vendors and develops AR and VR software for industrial and enterprise applications. That last rotation, with some adjustments, became his current role: working in strategic marketing in Trimble’s emerging markets sector to create products that will solve customers’ business problems.

Day to day, Krasovski still draws on his technical engineering background as he acts as a bridge between end users and software developers, sales representatives and colleagues from marketing. “It’s extremely important, and there are so many interesting things to discover,” he says.

“I realized that I am not only excited about state-of-the-art technology, but also I am extremely passionate about technology strategy,” Krasovski says. “I wanted to know more about what would happen in the industry in the next three, five years. I’d rather not try to change a little bit. I’d like to see that bigger picture and the strategy for the future. That really excites me.”

They suggested ‘Go to the industry. Explore what you might prefer for your long-term career, and then if you want to do a PhD, come back.’ That was great advice.

Sergey Krasovski
MSc (Geomatics Engineering) '15

How did UCalgary's Schulich School of Engineering prepare you to be an engineer?

The University of Calgary was a great place for me to get exposed to experts who really know what they are doing – especially in my research group, PLAN, which stands for Positioning, Location And Navigation. I had about 30 peers: master's students, PhD students, and post docs from all over the world – from Austria, China, India, Iran, Europe, Canada etc. in addition to my amazing supervisors. It was an extremely great circle of people who I got to discuss technology with every day – not only GPS, but augmented reality and all kinds of things. The experience just planted even more curiosity into me.

What were your Schulich School of Engineering highlights?

The first year of my master's, I was heavily involved in coursework. I did labs, I did lectures. The second year was focused on my thesis research as well as a project I did for an industrial partner where I collaborated with a professor. It was a great experience. I practised presentation skills because we gave weekly or monthly updates to the company that was sponsoring a research project that I was a part of. I was able to gain extra skills beyond what I was learning for my master's and also work with different equipment. So I learned extra things which are not necessarily thought in the classroom. I really learned what it's like to be part of a team and what it means to have deadlines. For my thesis, I learned what it means to analyze and defend your results, and what it means to understand others. There were so many things to learn and to just gain experience with at the University of Calgary – it was just phenomenal.

Who were your UCalgary mentors?

What is your advice for new engineering students?

I have always been very curious about all sorts of things. My high school teachers would always call me 'why man.' I would always ask questions like, 'Hey, why is that?' I think throughout my career at school and grad school and now at the company, I really prefer to listen first and observe. One of the people I admire is the former soccer player Sir Alex Ferguson, who used to manage Manchester United for like 25 years. My favourite expression is something he said: 'There's a reason that God gave us two ears, two eyes, and one mouth. It's so you can listen and watch twice as much as you talk. Best of all, listening costs you nothing.' This is why I always prefer to listen a lot, but also I like to ask questions if I don't understand, and that leads to really powerful conversations, especially if you talk to people who are experts in what they do.

What is your life beyond engineering?

I did some volunteering while I was at the University of Calgary, especially with an organization called Let's Talk Science Canada. I did sessions at different schools, and that was just a phenomenal experience for me. I talked with kids about what we do in technology, and why science is cool and engineering is cool. I really loved it. It also helped contribute to the development of my communication skills in English.

I love mountains. Hiking is the hobby I acquired in Canada.

What does it mean to you to be an engineer?

My job title right now at Trimble Inc., it doesn't say anything about engineering. But Trimble has the motto, 'Transforming the way the world works.' Engineers think about how things work and how they can transform things. That's what makes me

I really value relationships with my mentors and supervisors. When it comes to finding a mentor, I think you should try to look to somebody you admire – and it may not necessarily be Mark Zuckerberg. It should be someone who you can build a personal relationship with. It should be someone who can coach you and guide you through your career and provide new perspectives. So I just cannot emphasize enough how much I'm grateful for having both professor Mark Petovello and emeritus professor Gérard Lachapelle [both geomatics professors at the Schulich School of Engineering] as my mentors. I'm in touch with them and I admire them, and they're my role models. I wish I could be as successful at some point in my life as both of them.

curious. Like if you look at Elon Musk, he's always curious, asking, 'Can we fly to Mars?' or in daily life we ask: 'How does the telephone work? Why do we have a WiFi signal that's stronger in one room than another? Why does your GPS watch take 30 to 40 seconds to start when you come out of your building for a run?' There are so many questions that make me curious. I think that curiosity and the ability to find answers is something that engineers always need to possess. If you do something as an engineer, you better do it well. Because if you engineer something, others will use it. And it better be good because businesses depend on it and lives depend on it.





Oct. 11, 2019

Survey Camp 2019

ENGO 501 - Field Surveys: A Fun and Challenging part of the Geomatics Engineering program

AUTHOR

Ivan Detchev

The 2019 iteration of ENGO 501 – Field Surveys (aka ‘survey camp’) ran from Mon, Aug 19 to Wed, Aug 28 at the Biogeoscience Institute or the Barrier Lake field station in Kananaskis. The camp was taught by Paul Gratton, Kent Jones, Dr. Elena Rangelova, and Dr. Ivan Detchev, who were assisted by the department’s temporary tech Tyler Greene. The ten-day field school is one of the highlights of the geomatics engineering degree at the University of Calgary. This year we had a class of 15 students, who were divided into three groups of five. They were challenged to complete the following exercises: EDM calibration and GNSS RTK repeatability on the first day, cadastral retracement survey (two days), precise levelling and static GNSS, hydrographic survey, dam deformation survey, RTK surveying and mapping (which also includes sun shots), GIS and data management on the second to last day, and lost peg competition on the last day.

One of the developments for the course this year included using a remotely controlled mini catamaran

(called HyDrone by Seafloor Systems) for the hydrographic surveying exercise. The vessel was used in conjunction with a single beam echo sounder and an RTK rover for mapping the lake bed of a portion of Barrier Lake. The exercise retained the rigorous plate check calibration performed in a 14-foot fishing rental boat. This year, for the first time, the students enjoyed using a custom made winch for dropping and raising the plate.



On Barrier Lake with the HyDrone

□ Ivan Detchev

The weather cooperated most of the time with the exception of a thunderstorm in the late afternoon on Sunday. Several students even managed to squeeze in a scramble to the main peak of Mount Baldy on one of the last days. They carried a hand-held GPS receiver, radios, and multiple prisms up the mountain. We managed to measure the height of the peak with a total station to within a metre of the published value of 2,192 m above mean sea level.



Student hikers seen through a Total Station

□ Ivan Detchev

Every year the students participate in the Lost Peg competition. This exercise is very different than the rest of the survey camp exercises, which is why it is considered a great challenge. Congratulations to the red-white team (aka Candy Cane Lane) team; Aaron Chan, Trisha Escorpiso, Erica Lemieux, Juan Rivera, and Steven Schroeder. They were literally within an arm's reach of the lost peg

The camp ended with a few guest presentations related to professional practice. This year the guest speaker coordinator Aaron Shufletoski (BCLS) invited Bob Haagsma (ALS), Reid Egger (ALS, BCLS, CLS, PEng) from the Director of Surveys Office, and Sandy Cooke (CLS) and Ryan Schuler (CLS, PEng) from Underhill Geomatics Ltd. The instructors hope that the students had a positive learning experience and are looking forward to teaching survey camp again in the future.



Survey Camp 2019 group photo

□ Ivan Detchev



Oct. 16, 2019

Geomatics has Close Ties with Industry

Andy Hoggarth from Teledyne CARIS gives a guest presentation

AUTHOR

Emmanuel Stefanakis

Andy Hoggarth, Director of Business Development at Teledyne CARIS, visited the Department of Geomatics on September 13, 2019. During his visit, he gave a presentation to Geomatics Engineering students and faculty on the trends in hydrography, specifically automation

advancements in Hydrographic surveys; the emergence of machine learning for noise removal; the use of cloud data services for the distribution of new products and services that will support autonomous shipping and marine science; and, finally, the Airborne Lidar Bathymetry as a tool that is being used more and more in coastal waters.

After the presentation, Andy Hoggarth met with Geomatics Engineering faculty to discuss collaboration opportunities. The Department of Geomatics Engineering has academic licenses for CARIS HIPS & SIPS software available for teaching and research, while the software is included in the training of 4th year undergraduate students taking the Hydrography class.

Andy Hoggarth is the Director of Business Development at Teledyne CARIS and co-chair of OGC Marine Domain Working Group. He has worked for Teledyne CARIS for 17 years following a 7 year period working offshore around the world as multibeam data processor. Teledyne CARIS has been part of the Teledyne Technologies for 3 years but has been developing geospatial software for 40 years from its headquarters in Fredericton, NB.



Andy Hoggarth's presentation
Emmanuel Stefanakis

Oct. 15, 2019

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Collaboration and Partnership with Hong Kong Polytechnic University

Dr. Zhizhao (George) Liu shares his knowledge

AUTHOR

Emmanuel Stefanakis

Dr. George Liu, U of C Alumnus, PhD, 2004, visited our department in July 2019. Dr. Liu is an Associate Professor in the Department of Land Surveying and Geo-Informatics (LSGI), The Hong Kong Polytechnic University (PolyU), Hong Kong.

On July 25th, Dr. Liu gave a presentation to our faculty and graduate students. In the first part of this talk, he gave a brief introduction to Hong Kong's tertiary system. Then, he presented the only geomatics engineering program in Hong Kong – the Department of Land Surveying and Geo-Informatics at the Hong Kong Polytechnic University, focusing on the undergraduate and graduate student exchange opportunities and potential research collaborations.

In the second part of this talk, Dr. Liu introduced the research activities focusing on the ionospheric research that have been carried out at the PolyU Micro-Laboratory of Atmospheric Research and Geomatics Engineering (Micro-LARGE).

Research Output among Outstanding Institutions in Geomatics

- LSGI ranks **HIGH** among the top world Geomatics departments in the impact of our research, as measured by the Web of Science's Science Citation Index. The table shows the average number of times our work has been referred to in the works of others, for each full time staff member.

| No. | Abbrev. | No. of FTE | Total no. of paper | Publications per FTE | Sum of Times Cited | Citations per FTE |
|-----|---------------------------------|------------|--------------------|----------------------|--------------------|-------------------|
| 1 | Calgary | 23 | 1391 | 60.48 | 12973 | 564.04 |
| 2 | LSGI, PolyU | 19 | 937 | 49.32 | 10221 | 537.95 |
| 3 | Curtin | 35 | 1175 | 33.57 | 18477 | 527.91 |
| 4 | Nottingham | 12 | 237 | 19.75 | 4444 | 370.33 |
| 5 | Wuhan | 110 | 4997 | 45.43 | 29612 | 269.20 |
| 6 | New Brunswick | 23 | 407 | 17.70 | 5378 | 233.83 |
| 7 | Vienna University of Technology | 7 | 163 | 23.29 | 78 | 11.14 |

LSGI's research is among the top tier in the world

Data retrieved from 2000 to 2018

Research Output among Outstanding Institutions in Geomatics

□ George Liu

Notably, during his presentation Dr. Liu projected a slide produced by the Hong Kong PolyU librarians summarizing the research output among outstanding Geomatics Engineering programs around the world for the period 2000-2018. It is excellent news that U of C is ranked first!

On July 26, Dr. Liu met with faculty in the Department of Geomatics Engineering to discuss the student exchange programs between our units as well as various opportunities for research collaboration.

After the meeting Dr. Liu presented a leather-framed Certificate signed by Prof. Wen Zhong John Shi, Department Head of Land Surveying and Geo-Informatics, Hong Kong PolyU, to Prof Emmanuel Stefanakis, Head of Geomatics Engineering at U of C, celebrating the long term collaboration between our units.



Presentation by Dr. George Liu

□ Emmanuel Stefanakis



Framed Certificate

□ Emmanuel Stefanakis



Visiting Students from Shandong University of Science and Technology (SDUST)

Eight graduate students are studying at U of C for the Fall 2019 term

AUTHOR

Emmanuel Stefanakis

PhD students from Shandong University of Science and Technology (SDUST), China have joined the U of C this September to carry out research under the supervision of four faculty members in the Department of Geomatics Engineering: Dr. R Wang, Dr. Y. Gao, Dr. M. Sideris, and Dr. X.

Wang.

This is the beginning of the collaboration between SDUST and U of C led by Dr. R. Wang and Dr. Y. Gao, and the support of Jingchang (Tom) Liu, Country Coordinator – China at U of C.

Shandong University of Science and Technology established in 1951 is a university in **Shandong** province, China. The university's main campus has been in Qingdao since 2003. It has regional campuses in Tai'an

and Jinan. The total area of the university is 243.16 hectares with a floor space of 1.35 million square meters. More than 44.600 students were enrolled in 2010.



Oct. 8, 2019

Spring 2019 Convocation

Congratulations to our Geomatics Engineering students

AUTHOR

Department of Geomatics Engineering

The Schulich School of Engineering celebrated the convocation of Undergraduate and Graduate students the afternoon of Tuesday June 4th. The day was bright and smiles were big as the students, friends, family and loved ones gathered to celebrate the great achievement.

The graduating class was fortunate to have Harold Kvisle receive an Honorary Degree and give the convocation address. With his knowledgeable and prestigious background there were some great words of wisdom passed along.

Upon graduation, the vast majority of the 2019 class already had job offers and/or were returning to school to pursue further studies at a higher level. The Geomatics Department would like to extend our heartfelt congratulations and well wishes to all the graduates and we wish you every success in your future endeavors!



Oct. 11, 2019

Open Geospatial Consortium 2019

September 9 - 13

AUTHOR
Steve Liang

Dr. Steve Liang's research group, GeoSensor Web Lab, hosted the 112th Open Geospatial Consortium Technical Committee (OGC TC) Meeting in Banff, Canada. More than 150 geospatial experts from all over the world came to Banff for the one week meeting to advance the interoperability of geospatial information. This event was also sponsored by SensorUp Inc, Natural Resources Canada, and ESRI Canada. As part of the OGC TC, we also organized the OGC IoT Summit 2019, featured speakers from Google, University of Calgary, Japan's The National Institute of Advanced Industrial Science and Technology, and Germany's Fraunhofer.

Sept. 24, 2019

G³ Student Council for 2019

Meet our Geomatics Graduate Group (G³) student council for 2019-2020 academic year

AUTHOR

Department of Geomatics Engineering



G³ 2019 Student Council

□ Sandra Simeonova

Our G^3 council is off and running, planning many activities to engage all the graduate students in the department. Many students are from different countries and cultures from around the world, so a big thank you to G^3 for creating a welcoming community feel for everyone!

Below is a list of the council members and their positions

- President - Sandra Simeonova
 - Vice President - Rodrigo Augusto de Oliveira E Silva
 - GRC Reps - Bahareh Yekkenkhany and Yizhi Huang
 - Treasurer - Changlin Yang
 - Secretary - Paul Gratton
-





Sept. 24, 2019

GESS 2019 - 2020 Student Council

Meet our student council for the 2019-2020 academic year

AUTHOR

Courtenay Canivet



GESS 2019 Council

□ Brandon Langdon

Our Geomatics Engineering Student Society (GESS) unites the undergraduate students with annual activities and represents the department at SSE and UC events. An important event they host annually is the Geomatics Career Exposition which bring in industry contacts, alumni and donors to a fantastic job recruitment and network opportunity.

Below is the GESS council list for 2019-20:

- President - Brandon Langton
 - VP Academic - Rohit Sangha
 - VP Events - Enis Alushi
 - VP External - Apekhchya Shrestha
 - VP Finance - Nicole Lim
 - VP Internal - Alex Ubt
 - VP Communications - Carley Hopkins
 - Events Commissioner - Greg Brewster
 - Geomatics Expo Commissioners - George Lin and Jacky Zhou
 - NGC Commissioner - Carter Jansson
 - Artistic Commissioner - Mikko Ramos
 - Third Year Rep - Teagan Drever
 - Fourth Year Rep - Hojo Duurenbileg
 - Swiss Commissioners - Eric Ho and Nicholas Malbasa
 - Secretary - Iffah Hamdan
 - Second Year Rep - Jan Erik Naess
 - Events Officer - Seema Mustaqeem
-