Greetings Everyone,

Well, it has been quite the year and an unfortunate gap in Geocetera updates – so a lot has happened since October 2019!

After an impressive 6 years at the helm of Earth Sciences, Brent Ward passed the mantle to me in September 2020…and what a transition this has been! On the upside, we celebrated our 25th Anniversary in 2019-2020 with a great seminar series from alumni, amongst other things.

Unfortunately, Spring 2020 obviously threw us all quite the curve ball, but thanks to the amazing work of everyone in the EASC family (faculty, staff, and students), we were able to quickly pivot, halfway through the semester, to full online teaching and research. In fact, in spite of obvious hurdles with quarantine and international travel, two new analytical instruments (SEM and iTRAX) were also delivered and we are half-way through their setup process.

While we were forced to cancel our 2020 summer field schools, by developing rigorous Safe Work Plans, we were thankfully able to deliver 6 of our fundamental undergraduate lab courses face to face (albeit masked and physically distanced) in both the Fall 2020 and Spring 2021 semesters – this was the most in the university.

Now that the vaccines are starting to roll out, we will again be able to offer the critical hands on field schools at the beginning and end of summer and look forward to going back to full face to face teaching in the Fall.

On the people front, Doug Stead has now retired, but as Professor Emeritus, he remains a vibrant and active department member. Sergio Sepulveda will be joining us in May as he takes over the role of FRBC Chair in Resource Geoscience & Geotechnics. Unfortunately, for us, in January 2021 Brendan Dyck made the tough decision to move on to UBC Okanagan, but since he is ‘just down the road’, Brendan will continue to be actively involved as an Adjunct Faculty. Other changes include new Associate member, Brenda Murphy (School of Environmental Science, EVSC) and new postdoctoral fellows, Isabel Hong, Yannick Le Moigne, and Braden Walsh. Postdocs Romain Vaucher will be heading to Taiwan (NTU) to take up a new research position while Davide Donati will be starting as an Assistant Professor at Università di Bologna. We have also just launched a new search for a Canada Research Chair position (joint with EVSC) for a Flood Science researcher.

I would also be woefully remiss if I did not mention the great news that Shahin Dashtgard was the recipient of the 2020 W.W.Hutchison Medal from the Geological Association of Canada, John Clague was awarded the 2020 Order of Canada, and Doug Stead was selected as a 2021 Fellow of the International Society for Rock Mechanics and Rock Engineering – our team continues to “do us proud”!

On my research side of things, we were fortunate to be able to take advantage of home-grown volcanoes in the Garibaldi Volcanic Belt and get out into the field in the Squamish and Pemberton areas and look forward to more this summer – conferences and international travel will have to wait till next year! Please read on for the further news and be sure to check out the newly refurbished Earth Sciences webpage!

“… and what a transition this has been!”

Un fortunately, Spring 2020 obviously threw us all quite the curve ball, but thanks to the amazing work of everyone in the EASC family (faculty, staff, and students), we were able to quickly pivot, halfway through the semester, to full online teaching and research. In fact, in spite of obvious hurdles with quarantine and international travel, two new analytical instruments (SEM and iTRAX) were also delivered and we are half-way through their setup process.

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GLYN WILLIAMS-JONES
Department Chair
## GRADUATES

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>THESIS TITLE</th>
<th>DEFENDED</th>
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</thead>
<tbody>
<tr>
<td>RACHEL WARWICK (MSc)</td>
<td>&quot;A COMPREHENSIVE VOLCANIC HAZARD ASSESSMENT FOR MOUNT MEAGER VOLCANIC COMPLEX, B.C.&quot;</td>
<td>NOVEMBER 25, 2020</td>
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<tr>
<td>YANNICK LE MOIGNE (PhD)</td>
<td>&quot;INVESTIGATING CANADA’S DEADLIEST VOLCANIC ERUPTION AND MITIGATING FUTURE HAZARDS&quot;</td>
<td>NOVEMBER 7, 2020</td>
</tr>
<tr>
<td>CHLOÉ CHÂTEAU (PhD)</td>
<td>&quot;RECONSTRUCTING DEPOSITIONAL ARCHITECTURE AND STRATIGRAPHY OF COASTAL- TO SHALLOW-MARINE STRATA IN A LOW-ACCOMMODATION SYSTEM: McMURRAY FORMATION, ALBERTA, CANADA&quot;</td>
<td>SEPTEMBER 24, 2020</td>
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<tr>
<td>MEGAN DEWIT (MSc)</td>
<td>&quot;APPLICATIONS OF TERRESTRIAL LIDAR, INFRARED THERMOMETRY, AND PHOTOGRAMMETRY FOR MAPPING VOLCANIC ROCKS IN SOUTHERN BC&quot;</td>
<td>AUGUST 14, 2020</td>
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<tr>
<td>TERESA ROSALES RAMIREZ (MSc)</td>
<td>&quot;MODELING WASTEWATER SPILLS AND MAPPING AREAS MOST VULNERABLE TO GROUNDWATER QUALITY DETERIORATION IN NORTHEAST BRITISH COLUMBIA.&quot;</td>
<td>APRIL 20, 2020</td>
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<tr>
<td>ANASTASIA OGLOFF (MSc)</td>
<td>&quot;THE MURRAY DYKE SWARM AND ITS BEARING ON CRETACEOUS MAGMATISM AND TECTONICS IN THE CANADIAN CORDILLERA&quot;</td>
<td>APRIL 17, 2020</td>
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<tr>
<td>MIRAND WALTERS (MSc)</td>
<td>&quot;INTEGRATED ICHNOLOGICAL, SEDIMENTOLOGICAL, AND GEOCHRONOLOGICAL ANALYSIS OF THE LATE CRETACEOUS UPPER NANAICO GROUP, SALTSpring ISLAND, B.C. CANADA&quot;</td>
<td>APRIL 8, 2020</td>
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<tr>
<td>NAKARI DIAZ (MSc)</td>
<td>&quot;SEQUENCE STRATIGRAPHY AND FACES ANALYSIS OF THE VIKING FORMATION IN CROSSFIELD AND ADJACENT AREAS, ALBERTA, CANADA&quot;</td>
<td>MARCH 18, 2020</td>
</tr>
<tr>
<td>MEGAN BINNER (MSc)</td>
<td>&quot;IMPLICATIONS OF EARLY HALO TYPE VEINS AT THE IKE COPPER-MOLYBDENUM-SILVER PORPHYRY DEPOSIT, BRITISH COLUMBIA, CANADA: ALTERATION STUDIES AS A GUIDE&quot;</td>
<td>FEBRUARY 17, 2020</td>
</tr>
<tr>
<td>JESSE MYSIOREK (MSc)</td>
<td>&quot;ENGINEERING GEOLOGICAL CHARACTERIZATION OF THE 2014 JURE NEPAL LANDSLIDE: AN INTEGRATED FIELD, REMOTE SENSING-VIRTUAL/MIXED REALITY APPROACH&quot;</td>
<td>DECEMBER 16, 2019</td>
</tr>
<tr>
<td>ERIC THIESSEN (PhD)</td>
<td>&quot;PALEOPROTEROZOIC TECTONOMETAMORPHIC EVOLUTION OF THE SOUTHEASTERN RAE CRATON MARGIN&quot;</td>
<td>DECEMBER 10, 2019</td>
</tr>
<tr>
<td>FRANK MA (MSc)</td>
<td>&quot;MERGING EARTH SCIENCE WITH ENVIRONMENTAL EDUCATION FOR CONTRACTORS THROUGH INQUIRY, CONSTRUCTIVIST AND PLACE-BASED LEARNING&quot;</td>
<td>DECEMBER 4, 2019</td>
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<tr>
<td>JEFFERY CROMPTON (PhD)</td>
<td>&quot;THE INFLUENCE OF BEDROCK GEOLOGY ON GLACIER DYNAMICS IN THE ST. ELIAS MOUNTAINS, YUKON, CANADA&quot;</td>
<td>NOVEMBER 27, 2019</td>
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<tr>
<td>JONATHAN BROADBENT (MSc)</td>
<td>&quot;SHORELINE GEOMETRY AND DEPOSITIONAL ARCHITECTURE OF WAVE-DOMINATED DELTAIC SUCCESIONS: UPPER McMURRAY FORMATION, CENTRAL-C AREA, NORTHEAST ALBERTA CANADA&quot;</td>
<td>NOVEMBER 18, 2019</td>
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## NEW STUDENTS

**SPRING 2020**

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<tr>
<th>STUDENT</th>
<th>PROGRAM</th>
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<tbody>
<tr>
<td>GREG ACKERSON (MSc)</td>
<td>(BRENT WARD)</td>
<td>MSc</td>
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<tr>
<td>APRIL GULLACHER (MSc)</td>
<td>(DANA ALLEN)</td>
<td>MSc</td>
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<tr>
<td>MATTHEW MARTINOLICH (MSc)</td>
<td>(DIRK KIRSTE)</td>
<td>MSc</td>
</tr>
<tr>
<td>YU-YEN PAN (PhD)</td>
<td>(GLYN WILLIAMS-JONES/ EILEEN VAN DER FLIER-KELLER)</td>
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**FALL 2020**

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<tr>
<th>STUDENT</th>
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<tbody>
<tr>
<td>SARAH AUFRERE (PhD)</td>
<td>(GLYN WILLIAMS-JONES)</td>
<td>PhD</td>
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<tr>
<td>AMY HSIEH (PhD)</td>
<td>(SHAHIH DASHTGARD)</td>
<td>PhD</td>
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<tr>
<td>ERIC SCHMIDTKE (PhD)</td>
<td>(DAN GIBSON)</td>
<td>PhD</td>
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<tr>
<td>DANA SILEROVA (MSc)</td>
<td>(BRENDAN DYCK/DAN GIBSON)</td>
<td>MSc</td>
</tr>
<tr>
<td>ALEC SILEROVA (MSc)</td>
<td>(SHAHIH DASHTGARD)</td>
<td>MSc</td>
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**SPRING 2021**

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<thead>
<tr>
<th>STUDENT</th>
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<tbody>
<tr>
<td>ELIA EASTON (MSc)</td>
<td>(BRENT WARD)</td>
<td>MSc</td>
</tr>
<tr>
<td>COURTNEY ONSTAD (PhD)</td>
<td>(EILEEN VAN DER FLIER-KELLER)</td>
<td>PhD</td>
</tr>
<tr>
<td>JESSI STEINKE (MSc)</td>
<td>(BRENT WARD)</td>
<td>MSc</td>
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MATT MARTINOLICH PRESENTED HIS THESIS PROPOSAL ON DECEMBER 7TH, 2020. TITLE: “ESTABLISHING REGIONAL GROUNDWATER CHEMISTRY BASILINES FOR NORTHEAST BC TO SUPPORT INTERPRETATION OF GROUNDWATER ANALYTICAL RESULTS”

APRIL GULLACHER PRESENTED HER THESIS PROPOSAL ON JULY 30TH, 2020. TITLE: “GROUNDWATER DROUGHT: DEVELOPING QUANTITATIVE INDICATORS AND MAPPING DROUGHT SUSCEPTIBLE AQUIFER-STREAM SYSTEMS IN BRITISH COLUMBIA”

ANDREW NOLAN PRESENTED HIS THESIS PROPOSAL ON JULY 29TH, 2020. TITLE: “CLIMATE SENSITIVITY OF GLACIER THERMAL STRUCTURE AND DYNAMICS”

ADAM MITTON PRESENTED HIS THESIS PROPOSAL ON JULY 6TH, 2020. TITLE: “AN ECOLOGICAL ASSESSMENT OF AQUIFER-STREAM CONNECTIVITY”


TRYGGVI UNNSTEINSSON PRESENTED HIS THESIS PROPOSAL ON JUNE 17TH, 2020. TITLE: “GLACIOLOGICAL CONTROLS ON FUMAROLE EMERGENCE”

CAROL-ANNE NICOL PRESENTED HER THESIS PROPOSAL ON APRIL 14TH, 2020. TITLE: “FLUID INCLUSION AND STABLE ISOTOPE STUDIES FOR THE KENTICHA EMERALD DEPOSIT OF SOUTHERN ETHIOPIA”


GIOVANNI CORTI PRESENTED HIS THESIS PROPOSAL ON JUNE 4TH, 2020. TITLE: “OPTIMIZING HIGH-RESOLUTION SPECKLE TRACKING FOR GLACIER MOTION”


CONGRATULATIONS TO NAKÁRÍ DÍAZ ON RECEIVING THE CANADIAN SOCIETY OF PETROLEUM GEOLOGISTS BEST MSC THESIS AWARD FOR 2020

“SEDIMENTOLOGY, SEQUENCE STRATIGRAPHY PETROLEUM POTENTIAL OF THE VIKING FORMATION IN THE CROSSFIELD AREA OF SW ALBERTA”

ALEXANDER GRAHAM BELL AWARD

REBECCA CANAM RECEIVED THE ALEXANDER GRAHAM BELL CGS AWARD FROM THE NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL

CONGRATULATIONS TO ERIC THIESEN ON RECEIVING THE JACK HENDERSON AWARD BY THE CANADIAN TECTONICS GROUP DIVISION OF THE GEOLOGICAL ASSOCIATION OF CANADA FOR 2019

“PALEOPROTEROZOIC TECTONOMETAMORPHIC EVOLUTION OF THE SOUTHEASTERN RAE CRATON MARGIN”
REBECCA CANAM is the 2021 recipient of the Mary-Claire Geoscience Award from the Geological Association of Canada / Prospectors & Developers Association of Canada.

ASPEN ANDERSON was awarded the 2020 International Association of Hydrogeologists CNC Scholarship for graduate studies in hydrogeology.

ANTONINA CALAHORRANO won the 2020 University Women’s Club of Vancouver Trust Fund Graduate Scholarship in Earth Sciences.

PETRO CANADA GRADUATE SCHOLARSHIP

CAMILLE JORDAN was the 2020 recipient of the Petro Canada Graduate Scholarship in Earth Sciences for demonstrating outstanding achievement in research.

MICHAEL STEVENSON PRESIDENTIAL LEGACY FUND

MATT MARTINOLICH won the 2020 BC Ground Water Association Award – awarded to doctoral student who has demonstrated research excellence.

In celebration of Pi Day, March 14th, 2020, the grad students of EASC gathered with a selection of home-made sweet pies. There were apple pies, pecan tarts, classic lemon meringue, raspberry-cherry pie and more! It was a day of delicious pies and a new appreciation for the great number 3.14...
I did not believe my eyes when I saw the sheer cost of attending post-secondary education. Tuition, books, housing, food, student fees all add up. It could have been easy for me to lose hope. I questioned if I might have to forget my dream of attending university and settle for mediocrity. Nevertheless, I did not let these obstacles deter me.

Hearing millions of dollars went unclaimed from scholarship organizations, I realized I had a chance. I searched hard, looking high and low for any scholarships or bursaries to help me fuel my dream. I was elated when I finally found the Kin Canada Bursary. As I researched the Kin Canada Club and wrote the application, I felt that I truly found a group caring deeply about community, our country, and the impact the next generation will have on the world.

A few months after completing my application, I was overjoyed to see Kin Canada had granted me a $1000 bursary! Along with many summers’ worth of student job savings, I was able to completely pay for my first year at Simon Fraser University!

I have discovered many lessons about hard work, asking for help, and persistence over the past couple of months at SFU. A degree in sciences will certainly not be easy for me, however, it is a challenge worthy of pursuit. Most importantly, I am reminded of the importance of giving and serving the community.
SFU EARTH SCIENTIST
DR. JOHN CLAGUE
NAMED TO ORDER OF CANADA

Simon Fraser University professor emeritus John Clague is one of 38 new Officers of the Order of Canada. He is being recognized for his national contributions to environmental hazards, such as earthquakes, tsunamis, landslides and floods.

Clague is a recognized expert on the geological history of Earth that spans the ice age to the present, known as Quaternary science. Clague is a fellow of the Royal Society of Canada and a professor emeritus with the Geological Survey of Canada. He is also the past Canada Research Chair in Natural Hazard Research and former director of the Centre for Natural Hazard Research at SFU.

Clague’s research on a range of scientific topics has resulted in the publication of more than 200 papers and books and numerous awards and citations. He is a frequent media commentator on worldwide natural disasters. He also engages in numerous outreach events that educate the public about natural hazards and local geology.

Since his retirement, Clague remains active in geological research with projects in Argentina and the European Alps and in consultation projects for private-sector geotechnical companies. An active philanthropist, he is the chair of the board of directors of the Association of Engineers and Geoscientists of B.C. Foundation and is involved in several charities serving children and disadvantaged people in Metro Vancouver.

The Order of Canada was created in 1967. Since then, more than 7,000 people from all walks of life have been invested for their desire to “create a better country.” The Governor General makes appointments on the recommendation of the Advisory Council for the Order of Canada.

DR. SHAHIN DASHTGARD is the 2020-2021 Geological Association of Canada WW Hutchison Medalist

“For innovative integration of modern and ancient complimentary sedimentological datasets, including ichnology and palynology, which have significantly contributed to our understanding and better interpretation of the sedimentary rock record.”

DR. DOUG STEAD was selected as a 2021 Fellow of the International Society for Rock Mechanics and Rock Engineering

The status of Fellow, as the highest and most senior grade of membership of the ISRM. It is conferred on individuals, affiliated with the ISRM, who have achieved outstanding accomplishment in the field of rock mechanics and/or rock engineering and who have contributed to the professional community through the ISRM.
Our first 25th Anniversary Alumni event was held on Sunday, January 19th at Mahoney and Sons in Vancouver and was a great success with 82 attending! We were able to reconnect with alumni (Undergraduate and Graduate) from over our 25 year history in a friendly social environment. The former EASC Chair, Brent Ward, gave a brief history of the early days of the Department and thanked everyone for coming, and handed out door prizes. The event was very well received, and most people are looking forward to having another alumni event next year. We were lucky to have Ted Hickin in attendance, one of the original founding members of the Department. He and Mike Roberts, (both from Geography), identified the need for an Earth Sciences Department for professional registration and stickhandled it through the University administration back in 1995. Unfortunately, Mike Roberts could not attend. Also in attendance was Roberta Donald, the very first hire, and Derek Thorkelson and James MacEachern, two of the first three research hires of the Department. Other current faculty attending were Andy Calvert, Brent Ward, Glyn Williams-Jones and staff member Ellian Ganesathas.

Earth Sciences continued to celebrate 25 Years by hosting as alumni guest speaker lineup for the Spring 2020 Seminar Series. It was good too see so many past Earth Science faces!
On the cover of INNOVATION is EASC alumni ALLEGRA WHISTLER. With her Below BC colleagues, they encountered this giant Titanites sp. ammonite fossil (first discovered in 1947). This photo drew international attention, including from Snopes.com and The Washington Post. Read the full article here.
March 2020, **ANDREA CORDONIER** joined the Department in the role of Artist-in-Residence (AiR). She will be creating a series of fine art work based on the interests/work of the Earth Sciences department and will be exploring ways to raise the departmental profile both within and outside of the university.

New Associate Member, **BRENDAN MURPHY** joined the Department in November 2020 from the School of Environmental Science. We look forward to his collaboration with Earth Sciences.

**ISABEL HONG** joined the Department as a Postdoctoral Fellow in September 2020 having received her PhD at Rutgers University. Her current research is in understanding the short- and long-term effects of relative sea-level change caused by geohazards in coastal environments. She is also a National Science Foundation Postdoctoral Fellow.

Having recently graduated from SFU, **YANNICK LE MOIGNE** joined the Department as a Postdoctoral Fellow in January 2021. Yannick is a volcanologist specialised in physical volcanology and geochemistry of volcanic systems.

In January 2021 we also welcomed Postdoctoral Fellow **BRADEN WALSH**. Braden received is PhD from Massey University, NZ and is a geophysicist who works on volcanic and alpine hazards for risk management and warning purposes around the world.

**SERGIO SEPULVEDA** will be joining the Department in May 2021. He comes to us from the University O’Higgins, Chile, and will be taking on the roll of FRBC Chair in Resource Geoscience & Geotechnics. Welcome Sergio!
AND GOINGS…

DOUG STEAD retired on December 31, 2020, but remains an active member of the department as Professor Emeritus.

BRENDAN DYCK had made the decision to move to UBC Okanagan, but will continue to be involved in the department as Adjunct Faculty.

Postdoctoral Fellow ROMAIN VAUCHER finishes his term with EASC and will be heading to Taiwan (NTU) to take up a new research position.

Postdoctoral Fellow DAVIDE DONATI completed his term with the department and will be starting as an Assistant Professor at Università di Bologna.

IN THE NEWS

Are you ready for wet & cold winter at SFU? Burnaby Mountain temperatures can go from rain to snow really fast. See SFU news story with JOHN CLAGUE here with video.

Evidence found that large ambush-predatory worms roamed the ocean floor over 20 million years ago. See Earth Sciences PhD student YU-YEN PAN lead author, in the news.
As the warnings about climate change grow ever more dire, we discuss what needs to be done with climate scientist Merritt Turetsky and glaciologist GWENN FLOWERS — who was one of 11,000 signatories to sign a declaration of a climate emergency. Listen to the full podcast here.

SFU organizes a supply drive to collect critically needed personal protective equipment (PPEs) donated to help protect healthcare workers from COVID-19. See the complete SFU news story here with video.

Global TV News interview with BRENT WARD. “Landslides are happening all the time. I think we notice them when they actually affect infrastructure, such as a major highway”... Full interview can be watched here.

Faculty, staff, students, and alumni check us out on our LinkedIn group and twitter @EarthSciSFU.