

Acadia University

Earth and Environmental Science Newsletter 2018

View from the Department

Hello all alumni/ae and friends of the Earth and Environmental Science Department at Acadia University. 2017 (and the first half of 2018!) was an incredibly busy year as we all lived (taught and studied) through a huge interior and exterior renovation of Huggins. It is almost over now and on the third floor we have larger well-lit corridors, some new offices and, both inside and out, a new look.



We are hoping to add some new equipment and, along with a new X-ray Diffractometer and X-ray Fluorescence analyzer that will be housed in the old Honours room (that's room 44 in the basement), we are looking forward to having a new large format "poster-sized" plotter. We are also angling for a 3-D printer and new equipment for our rock room.

Another change is to move our newsletter to digital delivery. Snail mail costs continue to escalate and so we are trying out a (largely) paperless format. We value your input on this change, so if you would rather see a paper copy please let us know.

Finally, we completed an Environmental Science program accreditation review in 2017-2018, a process that has re-affirmed our commitment to a strong science-based program with a significant experiential component as field studies remain a cornerstone of our three programs. In light of this, I would encourage



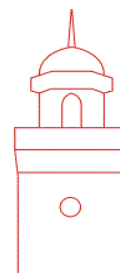
everyone to consider a donation to one of our funds (Field School or General) – the money that we do raise has largely been focused on providing access to students who require some financial aid to participate in field schools. If you are interested in donating to the department, please click on the gift box below to access our webpage (and feel free to browse all the stories that Rob and Lynn so diligently post!). Also feel free to drop a note to ees@acadiau.ca (that message goes to Ian Spooner) as we love to hear from you!

All the Best



Ian Spooner, Department Head
ian.spooner@acadiau.ca

Giving to Acadia



grow exponentially



WHERE ARE THEY NOW?

Some news of the adventures of our Geo-alumni.

Chris Annan (BSc Geol 2017) works for Tahoe at the Timmins Mine, logging core, uploading surveyed development, making composites of the drilling program and layouts of the drill holes for the engineers and mine departments.

Leah Chiste (BSc Geol 2011) married Michael Treloar (Acadia Chemistry graduate) and works for AMEC in Toronto.

Greg Edgecombe (BSc 1985) was elected Fellow of the Royal Society in the UK. Greg works at the Natural History Museum in London.

Catharine Farrow (MSc 1989) is CEO of TMAC Resources, focusing on the Hope Bay gold mining district of Nunavut.

Kaesy Gladwin (BSc 2001) completed his MSc at Laurentian University and has worked across the North for Newmont and Sabena, before switching to consulting mode, still working in Nunavut, but living in Rossland, BC.

Greg Jessome (BSc Geol 2005) has been with Statoil for the past 11 years, the last 5 years or so working on east coast Canada exploration.

Brandon Hall (BSc Chem/Geol 2016) works as a process development chemist with Pharma-Chem Technologies, a pharmaceutical drug manufacturer in the Bahamas.

Hassan Hassan (MSc 2000) worked for five years with BP in London, before returning to Libya where he is now department head in Geology at Misurata.

Mandy Landolt (BSc Geol 2009) is a Construction Engineer in the Air Force, where she employs many of the skills she acquired in classes – drilling for water in Egypt, planning for tsunamis in Esquimault, 3D bathymetry.

Melanie Plante (BSc 2014) completed her MA in Political Studies at U of Saskatchewan, and now lives in Montreal working as a compliance officer for Agnico-Eagle for their gold mining work in the Baker Lake area of Nunavut.

Hannah Sinclair (BSc Chem/Geol 2015) finished her MSc in Chemistry at Victoria and has been

teaching on Vancouver Island, but looking forward to relocated to Nova Scotia in 2018.

Aléna Wilson (BSc Geol 2000) moved to France to do a Master's in Viticulture and Enology, studying soils in northern Italy.

Robin Westland (BSc Geol 2010) worked for the Tr'ondek Hwech'in First Nation as part of an engagement team for the Coffee Gold project in Yukon. She then drove back Ontario where she is pursuing her PhD in Geography at Queen's.

Reunion of 1997-2017



Left to right: Scott Lister, Jason James, Bob Barter, Jonathan Gunstrom reuniting.

Twenty years after graduation this foursome is still going strong, back at Acadia to catch up and check that standards remain high at Acadia. Although they dropped by the Structural Geology lab, they deferred on showing off their stereonet skills, and instead located the Fletcher Club arms (just leave it there, guys!) After their visit to the department, there was some talk of searching for a glass item to see if it showed any evidence of devitrification...

Geo-Happenings

Looking back over the academic year 2017-2018, Huggins has been busy! See all the details at ees.acadiau.ca. By far the overwhelming activity of the year has been the renovations to Huggins and the construction of the Innovation Pavilion between Huggins and Elliott Halls. All the outer walls of corridors and offices were removed and replaced with insulated, double-glazed structures; the lighting was converted to

LEDs; and new space was made by pushing out the corridors on to the concrete beams.

A before and after photo will show you the result!



On the third floor a couple of new offices were constructed where once the pigeons roosted. It has been an “interesting” experience to work inside a construction zone for a year, and there is still a lot of dust to clean up, but we are fully open for business for anyone dropping by this summer!

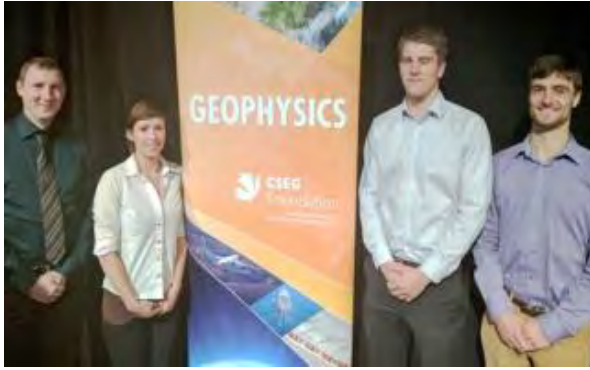
The 2017 AUGC was held in Memorial University, Newfoundland, in late October. The weather cooperated with reports of tee-shirts being all that was needed at Mistaken Point (surely a rare event any time of year!) The CSEG Challenge Bowl ran in the University Centre, with teams from each university participating. The Acadia team consisted of all four attendants (Max Chipman, Kirklyn Davidson, Baillie Holmes, Heather McGuire), who aced the first round, and came in fourth in the final round. The expected screech-ins (with pizza) ran along-side the Challenge Bowl.

On Saturday morning, students presented their work in talks and on posters. The usual high quality was maintained. Presenters for Acadia were Kirklyn Davidson, looking at "Spatio-temporal assessment of metal concentrations of pre-effluent estuarine sediments in a freshwater kraft pulp mill tailings pond using paleolimnological methods", Heather McGuire, giving "A paleolimnological approach to understanding metal retention and mobility Associated with salt-water intrusion inundation at Laytons Lake, Nova Scotia", and Max Chipman, discussing "The bountiful coprolites of the Joggins Formation." Congratulations to all three presenters who did a great job, and special note to Kirklyn, who won the AGS Environmental Geoscience Award, and Max, who won the Canadian Society of Petroleum Geologists Award for best presentation of a petroleum geology-related paper.



Max and Kirklyn (and a SMU student winner) displaying their trophies.

Each year the CSEG Challenge Bowl is hosted by the CSEG at the AUGC (Atlantic Universities Geoscience Conference). In 2016, Acadia students won all the rounds by a wide margin and won the unprecedented honour of supplying two teams to participate in the national championship in Calgary in May 2017.



Dillon Langelaan and Simon Poirier made up one team, and Sarah Dunn and Don Raeside the second team. Of the 12 teams from across the country, Sarah and Don took 2nd place behind the University of Manitoba, and Dillon and Simon placed 6th.



In the fall term, students from Acadia and Dalhousie participated in a short course led by petroleum industry professionals to examine the structure of sandbars in the Minas Basin as analogs for Triassic sandstones exposed in the cliffs behind them and petroleum deposits in Alberta. Thanks to Grant Wach (Dal) and Carla Skinner (Shell) for the instruction.

The following day, the Fletcher Club ventured along to Maitland to face the tides up close, sliding on the mud and rafting on the tidal bore.



With the AUGC behind them most of the students submitted papers to the annual AGS colloquium in Truro in February – 26 students and 4 professors went to the conference.



Heather McGuire discussing paleolimnological work in Tantramar Marsh area

Prominently featured at the Colloquium was the recently published compilation of Cape Breton Island geology by Sandra Barr and Chris White.



Following the scientific endeavours, the conference goers were entertained by the music of Ian Spooner, Physics prof Peter Williams, and recent grad student Dewey Dunnington.



With the conclusion of classes and the end of exams comes field school – a particularly large group of 42 students started with the exercises on the front lawn, although the numbers reduced as the Geology and Environmental Science schools parted way after Day 3. Rob Raeside and David McMullin took the budding geoscientists to Camp Geddie where (as always) the Acadia unconformity was located after diligent inspection of strike and dip angles.



McAras Brook unconformity location

Although Nova Scotia enjoyed fine weather for most of the field school, a privileged group of nine students headed to Bermuda with Peir Pufahl for the annual field course to explore modern and ancient carbonate rock environments. They were joined by participants from Queen’s and by Dr. Melissa Grey (Joggins Fossil Institute) to examine the mysteries of limestone deposits.

Graduation in May saw 40 degrees issued from the department, with Jackson Malone receiving the University Medal in Geology and Mining Society of Nova Scotia Centennial Medal, and Kirklyn Davidson receiving the University Medal in Environmental Geoscience.

Fletcher Club

AUGC 2017

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Heather, Kirklyn, Baillie and Max at the AUGC

Just before the December exams, the club organized the annual end-of-term pot-luck, attended by both Fletcher and ESSA members. Great food, fun games, and a few door prizes were enjoyed by all!



EnviroNews

Eleven Acadia students attended the Science Atlantic (Environment) conference at Mt. Allison University in March, accompanied by lecturer Sara Klapstein. Awards went to Acadia presenters: first place poster: Maggie MacDonald, "Identification and impact in commercial onion in Nova Scotia"; second place graduate presentation: Eileen Haskett, "Response of intertidal communities on a tidal gradient to high and low suspended sediment concentrations".



The whole group managed to get together for a photo – with surprisingly little green showing considering it was 17th March!

WHERE ARE THEY NOW?

Some news of the adventures of our Environmental Science alumni, etc.

Hend Alhudhaif (BSc 2017) and Ziyad Alsudays (BSc 2016) returned to Riyadh after their graduations. They now have two sons, Solomon and Tariq. Hend is entering a Masters program in Birmingham, UK, in October. Ziyad works for the Ministry of Environment, Water and Agriculture and Ministry of Health in Saudi Arabia.

Kaitlin Almack (BSc 2008) earned her Master's in Environmental Studies and Sustainability Science from Lund University in Sweden. She is now a consulting professional facilitator with First Nations in Northern Ontario and Senior Policy Advisor with the Ontario Ministry of Transportation in the Indigenous Relations Branch.

Sonya Ardley (BSc 2016) is working on an MBA program at Dal, involving an 8-month corporate residency at Scotiabank on Bay Street as a corporate banking analyst.

Kelli Armstrong (BSc 2012) is an Environmental Scientist at Caribbean Coastal Services (CCS) in Nassau, Bahamas, following the completion of an MA in Climate and Society at Columbia University in New York. She conducts environmental assessments, writes proposals, and manages projects and subconsultants. Working in the Bahamas, she achieved Environmental Professional in training (EPT) certification from ECO Canada, completed field training in Principles of Wetland Design with The Swamp School, and became a founding member of the Bahamas 350 Climate Action Group.

Julia Beresford (BSc 2005) works as an Environment Officer with the Government of Canada, Public Service and Procurement Canada, providing advice and guidance on sustainable buildings and GHG emissions reductions projects.

Emily Beveridge (BSc 2011) is a policy advisor with the Environmental Commissioner of Ontario. She earned her JD in 2015 with a specialization in environmental law and was called to the bar in 2016.

Lauren Bobby (BSc 2017) and Wade Forrest returned to Timmins, Ontario, after graduation where they married and left for a cross-Canada honeymoon, driving west to Tofino, BC, and back getting a chance to see 13 national parks along the way. She now works for the Essex Region Conservation Authority as a Prairie Restoration Technician.

Ben Brown (BSc 2009) completed a Certificate in Teaching English to Speakers of Other Languages course and lives in South Korea where he teaches English. He is now a Service Manager at a branch of Wall Street English, a language school for adults.

Scott Cassidy (BSc 2010) completed a Master's in Forest Conservation at the University of Toronto and works at Bioforest Technologies Inc. out of Etobicoke as the Urban Forest Health Technician. He is also in the process of becoming a registered professional forester.

Giselle Deane (BSc 2015) works for the Bahamas National Trust as an Assistant Science Officer, on conference organization, environmental lobbying, assisting with ecological assessments, helping researchers as they come through The Bahamas (granting research permits or tagging along on research trips), and educating the Bahamian public on our natural resources and organisms (especially snakes!)

Olivia Dennis (BSc 2015) went to NSCC Centre of Geographic Sciences to obtain her GIS diploma before working for the Municipality of the Colchester County Wastewater Treatment Plant doing laboratory and sampling work.

Sarah Fancy (BSc 2017) is working on her MSc in Agriculture (plant-fungal interactions) at Dalhousie Agricultural Campus, funded by Acadian Seaplants, a company she encountered through the co-op program at Acadia.

Emily Hale (BSc 2016) worked as a Conservation Program Specialist through a joint contract between NS-Department of Natural Resources and Ducks Unlimited Canada in Kentville, conducting biodiversity surveys for farmland owners in the province.

Corey Hamilton (BSc 2014) has been crewing aboard sail training ships (tall ships) in the Great Lakes and beyond. Starting as a summer job and he graduated to a Mate's position aboard one of the Canadian ships, the Fair Jeanne. He worked at sea for the better part of the last 3 years, sailing around the Atlantic with Class Afloat for two semesters and throughout the Great Lakes with the Canadian organizations Bytown Brigantine and Toronto Brigantine. He recently captained the training ship Fair Jeanne through the Lakes to Quebec City to take part in the festival celebrating Canada's 150th.

Allison Healey (BSc 2012) completed a diploma in Environmental Engineering Applications from Conestoga College, doing groundwater monitoring with a contaminated sites spin to it. She now works for Stantec Consulting as an Environmental Scientist on projects such as municipal groundwater monitoring, community development, and water quality work for mines. She is also doing a Masters part-time to pick up course requirements toward P.Geol.

Jill MacDonald (BSc 2014) works for LP Consulting in Lower Sackville, NS, as a professional agrologist, following a program with the Dalhousie Agriculture Campus in Truro. She works on nutrient management plans for farmers waste-to-resource programs with industry.

Matt MacLeod (BSc 1999) and his wife Marla are dentists in Kentville.

Claire McIntyre (BSc 2009) works for the Dept. of Fisheries and Oceans at the Bedford Institute of Oceanography in the Centre for Offshore Oil, Gas and Energy Research. She is a technician in an analytical organic chemistry lab, running GC-MS and GC-FID and doing some field work/at-sea expeditions.

Kelly Moores (BSc 2010) completed her MES and is working for the Grand River Conservation Authority, Ontario. She has worked as Mill Creek crew leader (stream restoration), a field technician (surface and ground water sampling and monitoring), and Interpretive Program Guide teaching school groups and youth groups about our environment through curriculum and outdoor experience programming.

James Patterson (BSc 2012) has had a very varied career post-Acadia. After school he took a motorcycle from Yukon to Argentina, then worked on a ranch in Manitoba and became a pilot. He recently moved to Europe traveling between Scotland, Portugal and Brazil and working as a musician and writer and was looking forward moving again to Glasgow.

Shawna Johnson Prince (BSc 2000) completed her MES and Education degrees at Memorial and taught in high school before starting a whale-watching company in Trinity, NL (Sea of Whale Adventures). She also uses her Geology memories to run guided tours in this area that is applying for Geopark status for the Bonavista Peninsula.

Mary Samolczyk (BSc 2007) completed her MSc at the University of Calgary in of Geoscience and is a faculty member at Yukon College in Whitehorse, teaching in the School of Science for the Geological Technology program.

Miranda Saroli (BSc 2000) obtained her MES at York University, and works at a community health centre serving vulnerable immigrant/refugee/racialized groups in Toronto. She is the project coordinator for a provincial Health Equity Project and supports the internal planning, evaluation, and quality activities of the organization.

Bryanna Sherbo (BSc 2017) is working on a MSc Biology in Manitoba, studying the effect dissolved organic carbon has on boreal lake metabolism at the Experimental Lakes Area.

Jeff Sutherland (BSc 2010) completed a diploma in Advanced GIS at CoGS and worked initially for the Department of Fisheries and Oceans at the St. Andrews Biological Station (NB) as a GIS Specialist providing GIS support on benthic imagery research projects under the Canadian Healthy Oceans Network program and the Strategic Program for Ecosystem-Based Research and Advice. At the end of 2016, he took a full-time Product Engineer position with ESRI in Redlands, California, where he has been staying warm since January 2017.

Hannah Windatt (BSc 2016) lives in the Ottawa Valley and works as a seed production and research technician at Valley Bio Limited in Cobden. As a registered seed establishment, they produce certified seed crops for farmers. Her job includes soil and data collection, seed plot management, report writing, tractor driving, etc., and she oversees research trials, comparing the agronomy performance of many different cereal, hemp and soybean varieties.

Club News

ESSA

An Exercise in Food Management

Students in Environmental Science and ESSA (Environmental Science Students Association) took the chance to go gleaning in September. Taproot Farms called for corn harvesters and they answered! They had a blast picking corn for donation to Found Forgotten Food NS.



These trucks were off to food banks and soup kitchens all around Nova Scotia.

E&ES Year-end Banquet

The Earth and Environmental Science year-end banquet was organized by ESSA, with 40 participants from the department enjoying a catered dinner in the Clark Commons.



ESSA invited three alumnae to address the gathering – Monica Reed, Emily Walker and Kaycee Morrison clearly enjoyed reminiscing about their time at Acadia, revealed some their subsequent peregrinations, and offered words of advice to those still in programs.

Scholarship and prize winners were recognized at the event:



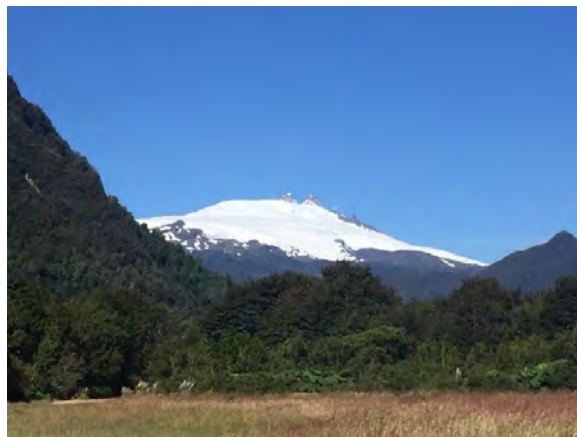
Left to right, back row: Heather McGuire, Harcourt Cameron Award, Maurice Haycock Scholarship, GAC-PDAC Logan Prize; Kirklyn Davidson, AGS Environmental Geoscience Award at AUGC; Maggie MacDonald, best poster prize at Science Atlantic Environment conference; Jackson Malone, Rupert MacNeill Book Prize; Rachel Clarke, Linda Lusby Award. Front row: Dylan Wyles, Bancroft Scholarship; Max Chipman, CSPG Prize for best student presentation at AUGC, Rupert MacNeill Prize at AGS conference; Philicity Byers, Pound Family Scholarship. Thanks to Anthony Chu for the photos!

Sabbatical Travels

Dr. Nelson O'Driscoll took sabbatical leave for the winter term. His travels took him to Chile, England, Portugal, and Slovenia, but most of the time was at the University of Trieste, Italy. Here are few activities he squeezed in:



His time in Chile solidified many useful collaborations with researchers at MERI (Melimoyu Ecosystem Research Institute) such as Dr. Gustavo Chiang and Dr. Paulina Bahamonde. This travel was part of continuing research on mercury bioaccumulation in the glacial-fed rivers of Northern Patagonia and the influence of volcanoes. As part of this work Dr. O'Driscoll is hosting MSc student Elvia Vergara Pineda at Acadia during June-August of this year. The Chile portion of the sabbatical also culminated in the teaching of a graduate field school in Northern Patagonia (Melimoyu Research Center) which was an educational and teaching highlight.



Nelson spent a short time in England collaborating with former Acadia postdoctoral fellow Dr. Tom Sizmur (at Reading University) on mercury speciation and the effects of flooding on the Thames River. PhD student Jessica Ponting will visit Acadia in the summer of 2019 as part of this collaboration. In Portugal Dr. O'Driscoll met with collaborators (Dr.

Canario's group) working on Hg contamination in the Tagus Estuary in Lisbon which was Dr. O'Driscoll's base for his last sabbatical.



In Italy Nelson initiated collaboration with researchers from the Università degli studi di Trieste (Dr. Stefano Covelli) and ARPA FVG (Agenzia Regionale Per La Protezione Dell'Ambiente Del Friuli-Venezia Giulia) (Dr. Alessandro Acquavita).



Research focused on solar attenuation and mercury speciation and distribution in the contaminated coastal lagoons near Trieste, as well as at sites in Slovenia and Croatia.



Dr. O'Driscoll also met with many other mercury researchers in Europe, gave talks in five different countries and hosted mercury sessions at the Society of Environmental Toxicology and Chemistry (SETAC) Conference in Rome. It was a highly productive and enjoyable 6 months. Details of recent publications from his program can be found at:

https://scholar.google.com/citations?hl=en&user=IUOwXXwAAAAJ&view_op=list_works&sortby=pubdate

Final Thoughts

With the Huggins renovation in its final stages we are ready to start to refresh our displays and repurpose several labs and offices. We also continue to reflect upon our field schools and field trips in terms of content and location. They are important to us and we want them to continue to be a centre-piece of our programs.

Likely all of you have an idea or two on how we can improve or advance both our

department and our field activities whether through your experiences after graduation or from your time here at Acadia; please feel free to share them with us!

We hope you have had a great summer and look forward to hearing from you!



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