

# EARTH AND ENVIRONMENTAL SCIENCES



For Faculty, Staff, Students, Alumni, and Friends of Dalhousie Earth and Environmental Sciences

May 2020

## *Greetings from the Chair*

It is a great pleasure to provide you a report on this year's Earth and Environmental Sciences activities. This is the first year of the new department, merged from the two programs from which the name derives, and I can attest things have gone remarkably smoothly. A big thanks goes to faculty and staff from both programs for the extraordinary level of collegiality brought to the process, and to our esteemed merger facilitator, Professor Emeritus Martin Gibling, for his skill and wisdom in developing the new department's governance document.

A major focus this year has been to promote activities that are common to the undergraduates from both programs, to develop a spirit of belonging to a single department. These have included a welcome back bbq, perhaps the best-attended holiday potluck of all time, and a combined honours symposium. I think the two undergraduate clubs will be doing more together in future, although still maintaining their distinct identities.

The department strives to promote activities that involve our alumni. This past Fall we had our first Earth and Environmental Sciences Alumni engagement event involving students, Halifax-based alumni and other representatives from the re-

source industry. The guest speaker was VP of Exploration for Avalon Advanced Materials, Dr Bill Mercer, discussing sustainable development of the East Kemptville tin deposit. What a great story of how the two disciplines of Earth and Environmental Sciences contribute to the economic development of Nova Scotia. I would also like to offer sincere appreciation to alumni Dean Cutting (B.Sc. 1980) for his efforts in a very successful core logging workshop for our students. Dean drove from Quebec to Halifax in January with a truckload of core in a snowstorm to make this happen! We are seeking to further enhance our alumni engagement, so if you are interested in helping and have ideas for future alumni events, please let me know.

As I write this greeting, I have been working from my home since late March. The COVID-19 pandemic has brought to us some challenging times, including the complete closing of the Dalhousie campus, delivering the final weeks of the winter term in an on-line format, and cancellation of the Spring Convocation. Rest assured that the department and the university are committed to delivering the highest quality education possible. Although the on-line environment planned for Fall 2020 will not afford many of the experiential activities that would have come



James posing in front of his house with a show of solidarity to the tragic events of April 18-19 in Nova Scotia.

with a face-to-face environment, our highly talented faculty is in the process of developing an outstanding virtual experience.

Finally, I'd like to thank Professor Shannon Sterling and the department outreach committee for another outstanding job on the Newsletter. To find out more about departmental activities, visit our new website: <https://www.dal.ca/faculty/science/earth-environmental-sciences.html>, or check out our Twitter, Facebook and Instagram feeds. Comments and feedback are always welcome, and I encourage you to contact me personally.

Sincerely,

*James Brenan, Killam Professor and Department Chair*



We are renovating our departmental teaching space in the Life Sciences Centre! Here is room 2020 before (left) and after (right).

# Department News

## EES is ZOOM-ing

EES had our first physically but not socially-distanced ZOOM department meeting in March.



In line with this new approach to keeping connected, the Earth and Environmental Science Honour's students completed a very successful online ZOOM defense. All students presented a very high caliber of research and made our department proud. Congratulations!

## Media & Events

The inaugural Earth and Environmental Science Open House was packed with students, alumni, faculty and staff as we ushered in a new era of shared interests, between our two programs. Thank you to our guest Bill Mercer VP Exploration for Avalon Advanced Materials for the opening lecture.



The third annual and very successful BioBlitz was held in September, organized by Susan Gass, Amy Mui, Heather Cray, Lara Gibson (Biology), and Lillian Barraclough. Over 5600 observations were logged which captured over 600 species present on Studley and Truro campuses!



Dr. Tarah Wright developed an exciting new collaboration with the Cape Eleuthera Institute and Centre for Sustainable Development in the Bahamas. This initiative provides opportunities in conservation science, food security, sustainable energy systems and more.



Our department has appeared in local

and national media, including a feature by Global News on our undergraduate students views on the climate crisis (photo).



Our own Dr. John Gosse was featured in Dalhousie's popular podcast 'Sciographies'.

John discussed his childhood in Newfoundland, his adventurous undergrad experience studying Earth Sciences, and how his research will help us understand risks to the Canadian Arctic.

## Faculty Accolades



Congratulations to Dr. Sue Gass who received the Faculty of Science Award for Excellence in Teaching.



Kudos to Dr. Chris Greene: Earth and Environmental Sciences Professor of the Year!



Our own Tom Duffett received his Earth Ring - 41 years in the making! Congrats Tom!

After many years of service and support to the department, Brant Laidler is retiring. Thank you, Brant, for everything you have done for our department.



# Department News

## Earth Ring recipients 2020



We recognize that these are trying and taxing times across the globe and rapid changes are occurring daily if not hourly. It is has taken an extraordinary event such as the COVID 19 Virus to have us cancel the 20th Earth Ring ceremony and dinner, but we do want to recognize the significance of our graduates' accomplishments and the significance of the Earth Ring. This year's recipients are: **Bay Berry, Taylor Gregory, Jonathan Kabiito, Jessica Mignault, Olivia Rolfe, Graeme Wach** and past graduate, **Tom Duffett**.

*The Ring you will be wearing is symbolic of your chosen profession. The Ring should be worn on your working hand so those who know the significance of the Ring may recognize it. The Ring is new and shiny, bright as are new ideas you will discover, and your degrees. The circle of the Ring represents the Globe and is marked with the crossed hammers of geology, with the seismic trace of geophysics - signifying our surface and subsurface quest for the Earth's knowledge. You have been asked if you understand the path you have chosen to be an Earth Scientist and if you also recognize through your education that there is much that is unknown. We ask that you recognize your lawful and ethical responsibility to yourself, your peers, your employer and most importantly society. We ask that you perform your tasks during your career with these ethics guiding you, even though the right path can be obscured and there may be penalties for the wrong choices. You should always strive for these goals, and when your life is run, your labours will reflect that you carried out your work, your craft, to the highest of standards and pride. We welcome you to the joy and fellowship, the effort and the reward of our profession, followed in honour and perfected in integrity. You are now, as those who at another time have stood before their equals, obligated Geoscientists. Congratulations!*

*The Officers of the Covenant of the Earth Ring Society- March 20, 2020  
(Pat Ryall, Theresa Rushton, Cliff Stanley, Grant Wach & Peter Webster)*

## Petroleum Geoscience Field School (Trinidad)

In Mid February, for the **20th year**, the Petroleum Geoscience Field Methods course was held in Trinidad Tobago. A select group of ten Dalhousie students attended the field course taught by Professor Grant Wach, with Lauren Morris as Teaching and Field Assistant, and Professor Yana Fedortchouk. The group was joined by Xavier Moonan, Dr. Hasley Vincent and colleagues from UWI, Touchstone, and Heritage. Learning valuable skills for the evaluation of Petroleum Systems including core and outcrop logging, petrophysics and seismic interpretation, students return with a new take on the petroleum industry. The students remark that the course provides them with one of the best experiences of their degree.



*This year's Dalhousie Team: Jonathan Kabiito, Madison Matthews, Anna Ryan, Graeme Wach, Bailey Milos, Cole Christenson, Olivia Rolfe, Rosa Toutah, Sadie Jacobs-Peters, Natalie Shields, with Dr. Grant Wach, Lauren Morris and Dr. Yana Fedortchouk.*

# Department News

## EAGE Championships (London)

In June of 2019, Dalhousie sent two student teams to London for the Laurie Dake Challenge and the Minus CO2 Challenge. The teams, comprised primarily of undergraduate students, worked diligently, with mentors Darragh O'Connor and Adjunct Bill Richards, throughout the 2018-2019 school year to produce projects worthy of reaching the finals in London. The Laurie Dake team (**Juan Chavez, and Kanwar Multani, Max Angel, Ray Craddock, and Tanner Milne,**) took 3<sup>rd</sup> place in London, and the Minus CO2 team (**Graeme Wach (1<sup>st</sup> round), Jennifer Lee, Ryan Taylor, and Sarima Vahrenkamp**) were awarded 2<sup>nd</sup> place. This was a phenomenal opportunity for these students, and we hope to submit a team for the 2020-2021 challenges.



Laurie Dake Team. L-R: Ray Craddock, Juan Chavez, Kanwar Multani, Max Angel & Tanner Milne



Minus CO2 Team. Left to right: Ryan Taylor, Sarima Vahrenkamp, Jennifer Lee. Not Shown: Graeme Wach



Ray, Max and Tanner in London

## Atlantic Geoscience Society Award Recipients

### Rupert H. MacNeil Award

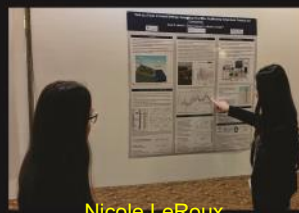
Award given for the best undergraduate student paper presented at the annual AGS Colloquium.



Olivia Rolfe

### Rob Raeside Award

Award given for the best undergraduate student poster presented at the annual AGS Colloquium.



Nicole LeRoux

### Graham Williams Award

Award given for the best graduate student poster presented at the annual AGS Colloquium.



Caitlin MacCavour

### Sandra Barr Award (Best Graduate Oral Presentation Award)

Award given for the best graduate oral presentation at the annual AGS Colloquium.



Phil Sedore

# Who's Who in Dalhousie Earth and Environmental Sciences

Faculty: Instructors, Professors (Assistant, Associate, Full, and Emeritus)



Lexie Arnott



James Brenan



Isabelle Coutand



Richard Cox



Heather Cray



Yana Fedortchouk



Susan Gass



John Gosse



Chris Greene



Djordje Grujic



Vittorio Maselli



Amy Mui



Mladen Nedimovic



Lawrence Plug



Daniel Rainham



Anne Marie Ryan



Owen Sherwood



Shannon Sterling



Grant Wach



Tarah Wright



Mike Young



Miao Zhang



Martin Gibling



Rebecca Jamieson

## Staff



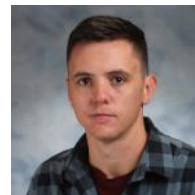
Thomas Duffett



Sean Hartwell



Norma Keeping



Darragh O'Connor



Marcos Zentilli



Roman Kislitsyn



Brant Laidler



Dan MacDonald



Chelsea Fougere



Darlene Van de Rijt



Kate Woods



Guang Yang



Trudy Lewis



Kristin Hart

### Not Pictured:

Dawn Hall  
Chloe Younger  
Helen Lau

# Earth and Environmental Sciences 2020 Graduates

## GRADUATE STUDENTS

### Carrie-Ellen Gabriel, Ph.D.

*Losses of Carbon from mineral-associated organic matter pool in podzolic horizons following climatic changes associated with forest clear-cut harvesting.* Supervisors: A. Ryan and L. Kellman (St. Francis Xavier University)

### Kim Taylor, M.Sc. (St. Francis Xavier University)

*Occurrence, origin and applications for sampling groundwater methane in the Stellarton Basin, Nova Scotia.* Supervisors: D. Risk (St. Francis Xavier University) and O. Sherwood

### Peter Regan, M.Sc.

*Structural evolution of the Twelve Mile Bay shear zone, Grenville Province, Ontario, Canada.* Supervisor: N. Culshaw

### Laura-Anne Broom, M.Sc.

*Postglacial Chronology and Geohazards of Pond Inlet and Eclipse Sound, Northeastern Baffin Island Nunavut.* Supervisors: J. Gosse and C. Campbell (Geological Survey of Canada, Atlantic)

### Harold Kuehn, Ph.D.

*Along Trench Segmentation and Downdip Limit of the Seismogenic Zone at the Eastern Alaska - Aleutian Subduction Zone.* Supervisor: M. Nedimović

## BSc Honours Students

### EARTH

Ben Myrer (Supervisor: Jamieson)

Taylor Gregory (Supervisor: Maselli)

Alexandra Bonham (Supervisor: Cox)

Bay Berry (Supervisor: Greene)

Rachel Noddle (Supervisor: Sherwood)

Olivia Rolfe (Supervisor: Grujic)

### ENVIRONMENTAL

Lily Barraclough (Supervisor: Rainham)

Evan Muise (Supervisors: Greene, Gass)

Julia Walker (Supervisors: Rainham, Kim)

Hannah Miller (Supervisor: Mui)

Julia Fast (Supervisor: Crossin)

Jordan Haughn (Supervisor: Duinker)

Peter Issekutz (Supervisor: Duinker)

Trisa Ngo (Supervisor: Jamieson)

## Graduating Gold Medalists

Gold Medal for Earth Science: **Bay Berry**



Gold medal for Environmental Science: **Julia Fast**



## Honours Thesis Awards

Best Thesis Earth Science: **Ben Myrer**

Best Thesis Presentation Earth Science: **Olivia Rolfe**

Best Thesis Environmental Science: **Jordan Haughn**

Best Thesis Presentation Environmental Science: **Julia Fast**

# Earth and Environmental Science Undergraduate News

## *Congratulations to our award-winning undergraduates!!*

AGS Best Undergraduate Student Presentation:  
**Olivia Rolfe**

Art and Dorothy Cook Scholarship: **Lily Barraclough**

CSPG Student Industry Field Trip (SIFT): **Rachel Noddle**

Cunningham Award: **Nina Garrett**

David Barlow Memorial Award: **Jessica Mignault**

Environmental Science Award: **Jordan Carrier**

GAC-PDAC Logan Student Prize: **Bailey Milos**

G.V. Douglas Award: **Michael Powell**

James L. Hall Scholarship: **Bailey Milos**

MacEachern-Ponsford Memorial Award: **Anna Ryan**

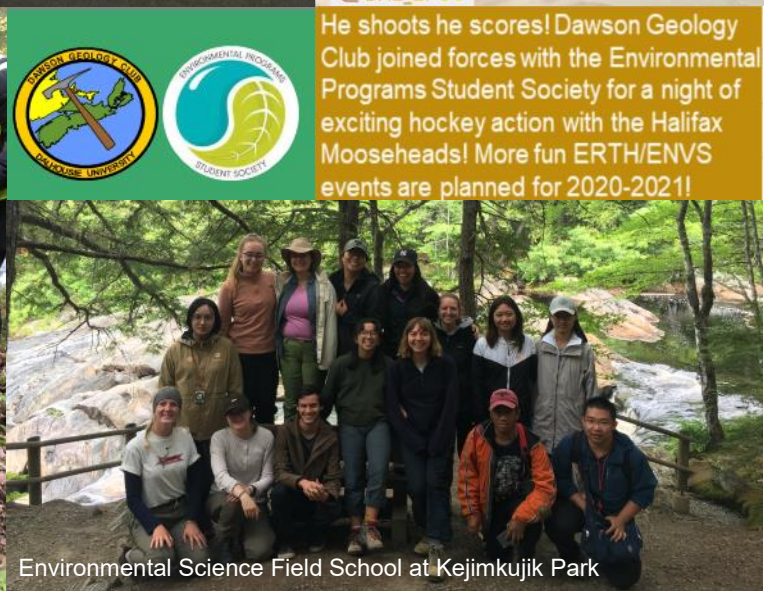
Michael Keen Memorial Award: **Anna Ryan**

NSERC USRA Awards: **Lily Barraclough, Sef Everest and Michael Kischuk**

Owen Hertzman Prize: **Julia Fast and Michelle Mann**

Pearson Education Canada Book Prize: **Ashlynn Fleming**

Student-Industry Mineral Exploration Workshop (S-IMEW): **Rosa Toutah**



# Graduate Student News

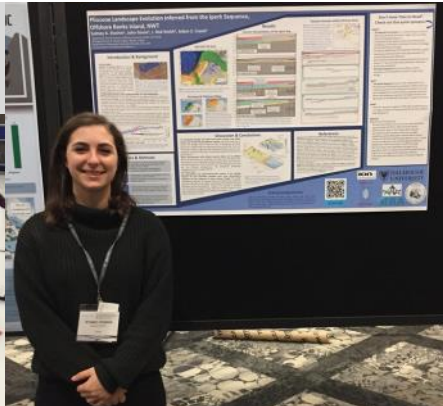


The Graduate Society continued their excellent representation at world-wide conferences, with attendance of American Geophysical Union (AGU), Atlantic Geoscience Society (AGS), the ArcticNet Annual General Meeting, Goldschmidt conference, and European Geoscience Union (EGU). We invited numerous incredible speakers to the department's weekly DIRT Talks that were well attended by graduate and undergraduates alike. We organized a Halloween pumpkin carving night (above), the annual Christmas Potluck, a successful Valentine's Day candy gram campaign, and the annual Wine and Cheese night. Adapting to the COVID-19 pandemic, we finished off the year with virtual research seminars and coffee hangouts via video conferencing.

*Below: The annual Graduate students vs. Faculty curling match. After a hard fought match, the grad students pulled out the victory.*



*Below: MSc student Philip Sedore onboard the RV Nulijuk conducting field work with the Geological Survey of Canada in the Canadian Arctic.*



*Above: MSc student Sydney Stashin presented her research at the 2019 ArcticNet Annual General Meeting in Halifax, NS.*



*Above: Jennifer Yakamovich (MES) curated an exhibit at the Dalhousie Art Gallery exploring the intersections of art and environmental education/communication.*

## Scholarships & Awards

Dalhousie University President's Award: Sean Kelly (PhD)

TOSST: Ana Corbalan Castejon (PhD)

Nedimovic Family Graduate Scholarship:

Ana Corbalan Castejon (PhD), Lobke Rotteveel (MSc)

Earth and Environmental Sciences PhD Scholarship: Marina Dottore Stagna (PhD), Nina Golombek (PhD)

NSERC Post-graduate Scholarships:

Natashia Drage (MSc), Caitlin McCavour (MSc), Sean Kelly (PhD)

Nova Scotia Graduate Scholarships:

Lobke Rotteveel (MSc), Sean Kelly (PhD), Natashia Drage (MSc), Kara Vogler (MSc)

AGS Best Poster and Best Presentation:

Caitlin McCavour (MSc), Philip Sedore (MSc)

Geological Society of America Student Research Award:

Shaomin Chen (PhD)

SEG Graduate Student Fellowship:

Natashia Drage (MSc)

James Maxwell Human Geography Award (RCRGS): Jennifer Yakamovich (MES)

## Executives 2019/2020

**President:** Lobke Rotteveel, **Vice-president:** Winson Li, **Treasurer:** Ana Corbalan Castejon, **Secretary:** Kara Vogler

*Below: Caitlin MacCavour showcased her research in the Dalhousie Graduate 3-minute thesis competition. She went on to win her preliminary heat and compete in the finals.*





From all of us to all of you ...



Dalhousie Department of Earth and Environmental Sciences, Fall, 2019

*... please keep in touch!*

## Giving to Dalhousie Earth and Environmental Sciences

Your gift provides assistance to the department to support a variety of activities that enhance the learning experience. This includes our various field schools and scholarships, and support for other undergraduate and graduate activities. Please consider a donation within a specific category, or donate to the department to use in the area of greatest need. For details, visit: <https://alumniapps2.dal.ca/giving>.

*To receive information via email about upcoming departmental events, or to receive the departmental newsletter, please ensure that your personal information on file is current. You can update your contact information at:*

[http://www.dal.ca/faculty/science/earth-sciences/alumni\\_friends/update\\_your\\_contact.html](http://www.dal.ca/faculty/science/earth-sciences/alumni_friends/update_your_contact.html)

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