

# EARTH SCIENCES NEWS

For Friends & Alumni of the Dalhousie Department of Earth Sciences

May 2016

## Greetings from the Chair

It is a great pleasure to provide you a report on this year's activities. First, let me introduce myself as a new faculty member at Dalhousie and the new Department Chair. I am a high temperature geochemist, interested in all things igneous (more on pg. 2). Just before Christmas, my wife Josée, daughter Catherine and I packed up our bags, and set out from Toronto in balmy weather, with reports of late-season golfing in Cape Breton and PEI. By the time we hit northern New Brunswick all that changed, and we were waylaid for a night in the midst of a fine East Coast snow storm. Happily, things got plowed out, and we arrived in Halifax intact, and are now settling in.

It has been a great experience to get to know the first-rate Earth Sciences faculty, staff, and students, as well as the "extended family" of adjunct professors that contribute so much to the department. I have also enjoyed participating in this year's honours thesis presentations, and was particularly impressed by the quality of the research, as well as the poise with which students responded to the intense grill-

ing by the faculty. *MacLean's* recognized the quality of our department this year, ranking Dalhousie at number four amongst geology departments in Canada. That is an outstanding showing for such a small department, and reflects a legacy of excellence that we have every intention to carry into the future.

I'd like to take this opportunity to thank Mladen Nedimović, who graciously served as Interim Chair before my arrival. He did a great job of keeping me in the loop on departmental affairs, which helped smooth the transition. Mladen took over from Becky Jamieson, who served as Chair for the previous four years. The department certainly owes Becky a debt of gratitude, especially for her efforts to enhance our visibility within the university, and to maintain the faculty compliance in the context of tight budgets.

Student enrolments continue to be strong, with our current graduate student population at 30+, and combined majors/honours at 40+ in each of years 2-4. Such large undergraduate enrolments have us bursting at the seams, with the need to offer multiple lab sections to meet the demand. With the large numbers comes a real sense of



vitality, especially at our well-attended department seminars, thesis defenses, and the traditional Friday afternoon DIRT talks. As you will see in the subsequent text, this is also a very high achieving group of students, with numerous awards for their research presentations, as well as highly placed finishes in national and international competitions.

Finally, I'd like to thank Shannon Sterling, and her outreach committee, who took the time to put together this year's Newsletter. To find out more about departmental activities, I invite you to visit our website: <http://www.dal.ca/faculty/science/earth-sciences.html>. Your comments and feedback are always welcome, and I encourage you to contact me personally.



## In This Issue

- News about our Department, Graduate and Undergraduate Students, and Alumni
- Who's who
- Undergraduate Field Training

# Department News

## Welcome James Brennan



James Brennan joined our department as our new Chair in January 2016, coming to us from University of Toronto where he was a faculty member since 1996. Dr.

Brennan is a petrologist and geochemist who simulates rock-forming conditions in the laboratory to understand the processes responsible for element distribution in the Earth and terrestrial planets. James was born in Needham, Mass., and moved to Canada for his undergraduate degree at McGill U., where he became hooked on Geology by the inspired teaching of A.E. "Willy" Williams-Jones. James acquired an interest for the "dark-coloured" igneous rocks under the influence of Don Francis. After McGill, James enrolled in the Ph.D. program at Rensselaer Polytechnic Institute (Troy, NY), studying under Bruce Watson, and conducting experiments to better establish the role of aqueous fluids in trace-element recycling through subduction zones. James then became post-doctoral researcher at the Geophysical Laboratory and Lawrence Livermore National Laboratory. We extend the warmest welcome and express our delight to have James take the lead of Dalhousie Earth Sciences.

## Kathryn Sullivan visits campus



Last month, **Dr. Kathryn Sullivan**, the U.S. Under Secretary of Commerce for Oceans & Atmosphere and NOAA Administrator, former NASA astronaut and Earth Sciences alum

(PhD'78), visited Dalhousie. During her two days on campus, she delivered the annual student-organized Gordon A. Riley Memorial Lecture in the Department of Oceanography, took part in a coffee chat and panel discussion with Dal students and faculty about women in science and technology, and delivered a public lecture titled "Looking at Earth" to a packed house in the McCain Building's Ondaatje Hall (*Dal News*).

## Retirements

Martin Gibling (top) joined our department in 1981, served as Chair for 6 yrs., and retired in June 2015. Beginning as a sessional instructor in the early 1980's, Milton Graves (middle) taught the popular course "Dinosaurs" and also retired last year. Becky (bottom) will be retiring this year, after 37 years of service to the University. We wish them well. They will be missed!

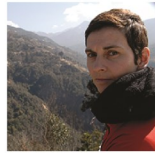


# Who's Who of Dalhousie Earth Sciences

## Faculty



**James Brenan**  
Experimental  
Geochemistry



**Isabelle Coutand**  
Structure /  
Geochronology



**Richard Cox**  
Mineralogy /  
Petrology



**Nicholas Culshaw**  
Structure /  
Tectonics



**Yana Fedortchouk**  
Petrology



**John Gosse**  
Geochronology /  
Geomorphology



**Djordje Grujic**  
Tectonics /  
Geochronology



**Rebecca Jamieson**  
Tectonics /  
Petrology



**Mladen Nedimović**  
Geophysics



**Lawrence Plug**  
Geomorphology



**Daniel Rainham**  
Environmental /  
Sustainability



**Anne-Marie Ryan**  
Petrology



**Shannon Sterling**  
Hydrology



**Grant Wach**  
Petroleum



**Charlie Walls**  
Geographic Information  
Systems



**Michael Young**  
Structure

## Postdoctoral Fellows



**Catherine Mottram**  
Tectonics /  
Metamorphic Petrology



**Ricardo Silva**  
Petroleum Systems

## Emeritus



**H. Basil S. Cooke**  
Paleontology



**Martin Gibling**  
Sedimentology



**G. Clint Milligan**  
Structure



**Peter Reynolds**  
Geochronology



**David Scott**  
Paleontology



**Marcos Zentilli**  
Ore Deposits /  
Geochronology

## Staff



**Ann Bannon**  
Administrator



**Gordon Brown**  
Thin Section Technologist



**Thomas Duffett**  
Geological Technologist



**Norma Keeping**  
Administrative Secretary



**Roman Kisilitsyn**  
Noble Gas Mass Spec  
Technologist



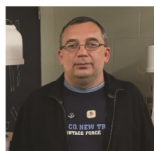
**Brant Laidler**  
Laboratory Technician



**Dan MacDonald**  
Electron Microprobe and Image  
Analysis Technologist



**John Thibodeau**  
Geosciences Computer  
Technician



**Sergei Ratchinski**  
Thin Section Technician



**Darlene Van de Rijt**  
Administrative Secretary



**Guang Yang**  
Cosmogenic Nuclide  
Extraction Facility Manager

## Honours and Awards

**Becky Jamieson** was selected as the H.S. Robinson Medalist and Lecturer 2016-17 for the Precambrian Division of the GAC.

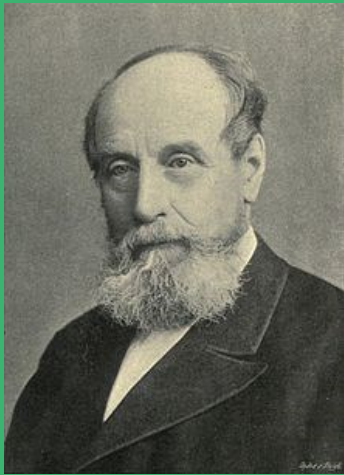
**Charles Walls** was voted Earth Sciences Professor of the Year for 2015/16.

**Anne-Marie Ryan** was promoted to University Teaching Fellow, received the 2015 Faculty of Science Excellence in Teaching Award, and received the Dalhousie Alumni Association Award for Excellence in Teaching.

**Shannon Sterling** and **Isabelle Coutand** were promoted to Associate Professor with tenure.

**Catherine Mottram** joined us in Apr. 2016 and was awarded a Killam Post-Doctoral Award to work with Drs. Grujic and Coutand.

# Undergraduate News



## Who was Dawson?

Our Undergraduate society's namesake, Sir John William Dawson, was a Canadian geologist born in Pictou, Nova Scotia. He made special study of the fossil cliffs of Joggins Nova Scotia, and even discovered the oldest known reptile *Hylonomus lyelli*, which he named after his mentor Charles Lyell. He was also known for his enthusiasm for school design, teacher education, and curriculum during his time as Nova Scotia's first superintendent of education.

## 2015-16 Undergraduate Awards: Congratulations!

Fourth year Earth Sciences student **Sean Kelly** won both the NSERC Graduate and the Nova Scotia Graduate Scholarship Awards.

**Monique Ruhl** was awarded the S-IMEW award and the monetary PDAC Convention travel award.



Dalhousie's EAGE Student Chapter won 1st place in the International European Association of Geoscientists and Engineers (EAGE) Geoscience Competition in Madrid, Spain in June 2015. The team included EARTH students **Charles Carlisle, Darragh O'Connor and Connor Wentzell** (above).

The Dalhousie 2015 Imperial Barrel Award team tied for 4th place at the IBA competition in Calgary. Team members included: **Billy Garrison, Paige Montgomery, Phil Sedore, Stefanie Wenker, & Annabel Causer.**

Dalhousie won 1st place in the CSEG's Challenge Bowl during the October 2015 AUGC conference. Congratulations to the Dal team which included **David Currie, Kate Gonzalez Wood, Olivia King, and Kai Boggild** (right).



**Ring Ceremony:** Dr. Pat Ryall, P.Geol. and President of the Covenant of the Earth Ring Society, presided over the Earth Ring Ceremony on April 8, 2016 at Dalhousie (left). From right to left: **Monique Ruhl; Kyle Wittenberg; Caitlin Wood; Kai Boggild; Erin Keltie; Connor Maessen; Dr. Pat Ryall, P.Geol.; Art Fitzpatrick; Carmen Braun; Billy Garrison; and Grant Wach, P.Geol.** Missing from the photo are **Jillian Haynes and Thomas Allen.**



- MacEachern-Ponsford Memorial Award: **Erin Anderson & Patrick Manion**
- Michael Keen Memorial Award: **Jillian McKenna, Eve Norberg & Nora Whalen**
- Douglas Award: **Raymond Craddock**
- Best Undergraduate Honours Thesis: **Robert Varcoe** (left)

# Graduate Student News



Graduate 6350 Field Trip (Fall 2015)

## Recent Graduates

Ambrose, Sarah (M.Sc.)

Barresi, Tony (Ph.D.)

Braschi, Lea (M.Sc.)

Christians, Andrea (M.Sc.)

Creason, Christopher (M.Sc.)

Cullen, Janette (M.Sc.)

Louis, Bertha (M.Sc.)

Margreth, Annina (Ph.D.)

Papoutsas, Angeliki (Ph.D.)

Skinner, Carla (M.Sc.)

Wenker, Stefanie (M.Sc.)

## Congratulations to

**Jocelyn Egan** (PhD, supervised by D. Risk, SFX), who was awarded a PGS-D Scholarship from NSERC.

**Sarah MacLeod** (seen river sampling in photo below) (MSc, supervised by S. Sterling), who won the Graduate Research Award at the recent Science Atlantic Environment Conference and the Nova Scotia Graduate Scholarship.

**Nick Nickerson** (PhD'14, supervised by D. Risk SFX), who was awarded the Emerging Professional Prize by the Nova Scotia Discovery Centre and also won the award for best Thesis of 2014 for the Faculty of Science.

**Ryan Kressall** (PhD supervised by Fedortchuk) who won Earth Sciences TA of the year for 2015/16.

## A Message from DGGS

2015/2016 had a busy social calendar for our graduate students. DIRT Talks and Geobeers were as popular as ever, while off-campus activities such as learning to curl, a Halloween corn maze adventure and the annual Art and Music Gala kept us going. Thanks to everybody for the memories!

Dalhousie Earth Science's academic reputation is certainly one to uphold, so recently inducted graduate students were kept on their feet by Prof. Culshaw as we explored the geology of Nova Scotia. This graduate-only course proved a fascinating insight into the geologically rich history as we clambered across outcrops not on the tourist map – invaluable for those of us from away! With guest lectures and field interpretations from world-class geoscientists, we enjoyed ourselves immensely. This, coupled with Prof Jamieson's class on research skills in pursuit of a valid research proposal, has made for a busy year. At the end of the year, DGGS has elected a new executive, with Laura Broom (Pres.), Masoud Aali (Vice Pres.), Taylor Campbell (Sec.) and Rachel Milligan (Treas.) taking the reins. We wish them the very best of luck! DGGS would also like to thank the faculty (esp. Dr. Gosse) for creating the EARTH Graduate student handbook—a fantastic resource for any incoming student. Preparations are now underway to get a crew of graduate students eastward for a field trip in the summer, incorporating the Caledonides of Norway and the plate boundary of Iceland.



# Alumni News

## 1970's

**Kathryn Sullivan (PhD 1978)** Kathy's career has literally taken her from outer space to the ocean floor, first with NASA, then as CEO for the Centre of Science and Innovation (Columbus, Ohio), and most recently as Administrator for NOAA. Kathy visited in Halifax in April to give the annual Riley Lecture in the Oceanography Department.

## 1980's

**Colin MacKenzie (BSc 1980)** Recently retired after a remarkable career in mineral exploration that included the discovery of the Duck Pond deposit in Newfoundland (Cu used in bronze medals for the Vancouver Olympics) and the Los Azules porphyry Cu-Au and Casposo Au-Ag deposits in Argentina. When asked by managers what his career goals were, he replied, "I just want to find ore. The rest will fall into place".

**Frank Thomas (BSc 1977; MSc 1986)** Retired in 2008 from GSC-A after a career in paleontology, now managing his woodlot on North Mountain, with goal of restoring the original Acadian mixed forest on his property. Frank reports 6 acres done, 39 to go!

**Stephanie L. Douma (MSc 1988)** Owner of Canada's first medical geology company, Terrapetratox, and co-chair of the Canadian Chapter of the International Medical Geology Association. She is now entering University of Ottawa as a PhD student (Geography Dept) pursuing research in the Medical Geography of radon.

## 1990's

**Margaret Burke Donelick (Ph.D. 1991)** Worked for Amoco Prod. Co. for 6 yrs. after finishing at Dal. Then joined her husband Ray's company (then Donelick Analytical, Inc., changed to Apatite to Zircon, Inc) and became a specialist in LA-ICP-MS analysis of apatites and zircons; she holds a patent related to the method and co-authorship on many papers. Margaret and Ray have started a new business venture developing energy storage. An award winning quilter, Margaret has a son and daughter with Ray.

**Trent Rehill (PhD 1996)** Currently living in Tunisia as the president of Winstar Tunisia BV, a subsidiary of a Canadian oil and gas company. His career in oil and gas started 3 days after his PhD defense, working for Chevron Canada Resources. Has since traveled the world working in the exploration industry, describing this as "A fantastic set of experiences for my family and myself, I would not trade them for anything."

## 2000's

**Melanie (Purves) Regehr (BSc 2002)** Petrophysicist with Baker Hughes in Calgary; volunteers for CSPG - Student-Industry Field Trip (SIFT) program. Is "giving back" to our programme by introducing Dalhousie SIFT participants to the oil patch.

**Elizabeth McIsaac (BSc Hon 2009)** Has switched gears to focus on a different aspect of the resource industry; still in Halifax, but now a lawyer practicing in the Energy & Natural Resources group with McInnes Cooper. Received a Juris Doctor from the Schulich School of Law at Dalhousie University (2014) and a Master of Public Administration from Dal (2014), and was admitted to the NS Barristers' Society in 2015.

**Shawn Goss (BSc 2007, MSc 2010)** Working for ExxonMobil in the Upstream Research Co. for the last 6 years, using geophysical methods to find/delineate hydrocarbons. That work has taken him to all the world's basins.

*Thank you to all who contributed news. In the interest of space, contributions were edited. Keep sending your updates to [Norma.Keeping@Dal.ca](mailto:Norma.Keeping@Dal.ca) for our next Earth Sciences Newsletter!*



**Susan R. Eaton (Dal BSc Hons '80)** is founder and leader of the 2014-2018 Sedna Epic Expedition, a 3,000-kilometre snorkel relay route of the Northwest Passage from Pond Inlet, Nunavut, to Inuvik, Northwest Territories. [www.sednaepic.com](http://www.sednaepic.com)



The all-female 2014-2016 expedition is featured in the April 2015 edition of Canadian Geographic Magazine.



# Undergraduate Field Training

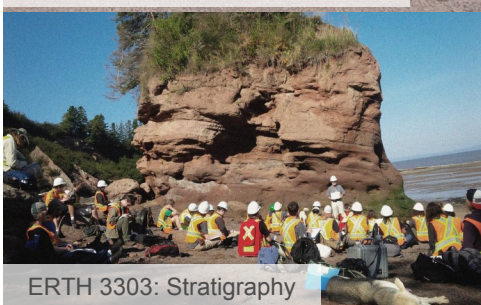
ERTH 2000: Second Year Field School



ERTH 2270: Geophysics Field School



ERTH 3000: Earth Scii. Field School



ERTH 3303: Stratigraphy



ERTH 4157: Petrol. Geosci. Field Methods

*"It was the ultimate classroom. We learned skills we will carry through our careers in geology. After experiencing the field schools, you can't help but grin and feel a certain sense of pride knowing what you have learned, accomplished, and the places you have seen"*

- Paige Montgomery,  
BSc, 2015

*"The trip really was an experience of a lifetime! The geological experience was amazing, and being able to map the designated areas really allowed you to learn and gain knowledge on a different level. Having the opportunity to live outside for an entire month was one of the coolest things I have done. I still think about field school and our outdoor lifestyle on a regular basis. No words can really justify how beautiful the landscapes are, how much fun was had, the friends we made, or the memories we shared"*

- Kathryn Beaton,  
BSc, 2015

**Watch our video:**  
<http://tinyurl.com/k6qf535>

ERTH 2110: Field Methods



ERTH 3701: Fundamentals of Hydrology



ERTH 3000: Intermediate Field School



ERTH 3010: Igneous Petrology

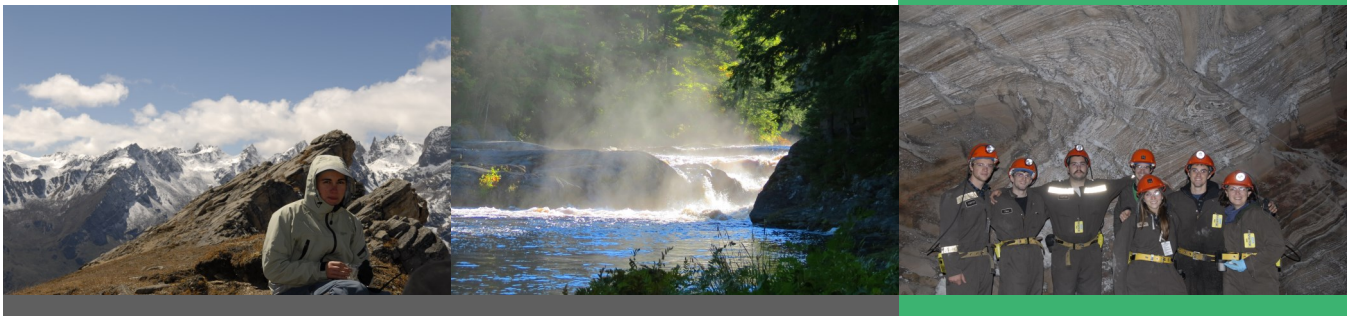


ERTH 4002: Advanced Field School



## Giving to Dalhousie Earth Sciences

Your gift provides assistance to the department to support a variety of activities that enhance the learning experience. This includes numerous field trips, field schools, as well as support to offset the cost of undergraduate and graduate education. Please consider a donation within a specific category, or simply to the department to use in the area of greatest need. Also, please be aware that a number of companies offer matching to employee donations to Dalhousie (e.g., Suncor, Encana, Vale/Inco, BP to name a few), so the value of your donation could be enhanced significantly. You can find out company eligibility by looking on: <https://alumniapps.dal.ca/giving/giving.php> If your company is not in the matching database, please consider adding them!



## Stay in Touch

*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/>

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