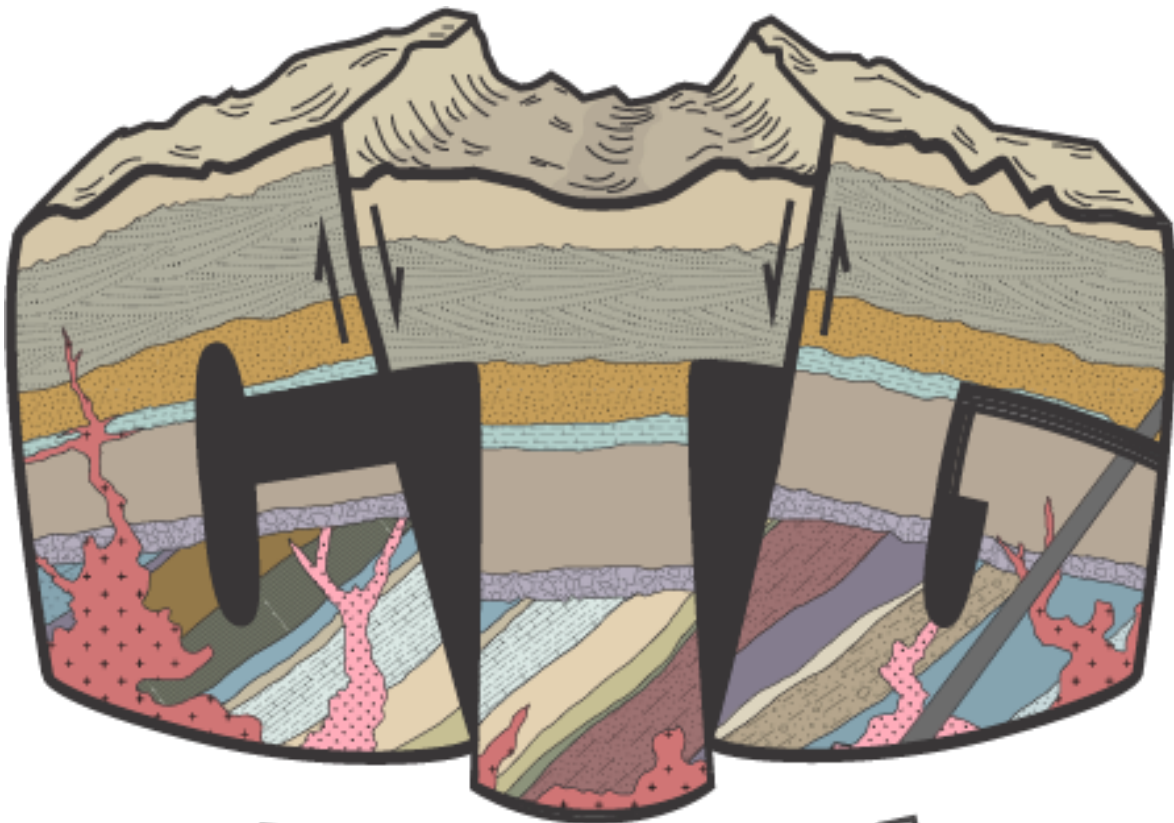


# THE MAIN THRUST

NEWSLETTER OF THE CANADIAN TECTONICS GROUP DIVISION OF  
THE GEOLOGICAL ASSOCIATION OF CANADA

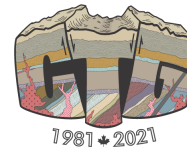


1981  2021

[www.canadiantectonicsgroup.ca](http://www.canadiantectonicsgroup.ca)



Winter 2024



## The Canadian Tectonics Group – Highlights from 2023-2024

Once again, the CTG has had a very successful year! Many of our members took part in the annual GAC-MAC-SGA, which took place in Sudbury this past Spring. CTG was proud to offer financial support to 5 students to attend the conference. Our annual workshop, which included a field trip to the Saint-François-de-Sales shear zone in the Grenville Province and virtual seminar component, was a huge success! We thank Renaud Soucy La Roche for the organization of this fantastic, well attended workshop! Our regular seminar series is continuing to be organized by Noah Phillips. However, Noah will be stepping down as organizer, so we are putting out calls to anyone interested in getting more involved with the CTG! We thank Noah for two awesome years as seminar organizer. Alex Peace has volunteered for another 3-year term as our secretary, having been voted in at our last AGM in June 2023. The CTG is also very excited to host (virtually) our first ever short course: EBSD applied to structural geology and petrology which will take place from April 2<sup>nd</sup> to 4<sup>th</sup>, 2024. Please see below for more details regarding schedule and registration!

Thank you to all those who volunteer and continue to participate in our communities' events. We appreciate all the support and hope to keep growing the tectonics community in Canada into 2024 – 2025!

### CTG Seminar Series

The CTG seminar series continues to grow into an amazing monthly event which those in the Tectonics community look forward to participating in. We'd like to thank Noah Phillips, Lakehead University, who has once again volunteered as our seminar organizer for the 2023-2024 fall/winter seminar series. Thank you, Noah, for all your hard work in continuing the growth of this popular event!

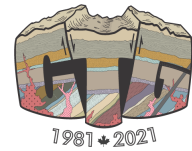
After this winter, however, Noah will be stepping down from this role. Therefore, the CTG is officially looking for volunteers to take over this important position in the Tectonics Community. If you'd be interested in taking over the role of the CTG Seminar Organizer please contact the CTG Chair, Shawna White, at [Shawna.White@smu.ca](mailto:Shawna.White@smu.ca).

You can find all upcoming talks listed on our website here:

<https://www.canadiantectonicsgroup.ca/2023-2024-seminar-series.html>



Winter 2024



Our next speaker will be **Dr. Caroline Lotout** from Université Clermont Auvergne. The talk will take place Wednesday, March 13<sup>th</sup>, 2024 at 1:00 pm EST. The title is: "*High-Pressure metamorphism in the Mesoproterozoic : petrochronological insights from the Central Grenville province*"



If you have missed any of our past speakers, you can still catch them on our YouTube channel:

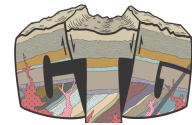
<https://www.youtube.com/channel/UCuCh-8Mx7dwH8cuxiWcieKQ>

Thank you again to Noah for keeping the series going strong!

## 2023 Canadian Tectonics Group Annual Field Trip and Workshop

**Field Trip:** This year's fall field trip and workshop was organized by Renaud Soucy La Roche, Institut national de la recherche scientifique (field trip organizer and leader), Lyal Harris, Institut national de la recherche scientifique (virtual workshop organizer), and Dana Silerova, Saint Mary's University (virtual workshop organizer).

Renaud and his team led an awesome CTG fall field trip to the Lac Bouchette area, south of Lac St. Jean, on October 20<sup>th</sup> – 22<sup>nd</sup>. Although the weather may not have cooperated, the rocks definitely did (and rocks are much more reliable anyhow!). The fieldtrip was guided by Renaud Soucy La Roche (Institut national de la recherche scientifique – INRS), with the assistance of Eve Gosselin (INRS) and Yannick Daoudene (Ministère des Ressources naturelles et des Forêts du Québec – MRNF). Ali Moukshil, Mhamed El Bourki, Isabelle Lafrance and Marc-Antoine Vanier (MRNF) provided invaluable logistical support. The group comprised 31 people from Quebec, Ontario and Nova Scotia, including 22 graduate students and postdocs, two professors, and seven geologists from the government sector.



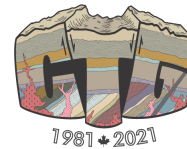
The group met on Friday night for a welcome dinner followed by an introduction presentation. The two-day field trip took place in the Grenville Province, which provides a window into structural styles of deformation at various levels in the continental crust. Participants were able to observe several phases of deformation that affected the Lac Bouchette area, ranging from mid-crustal folding and shearing to upper-crustal brittle faulting. The field trip focused specifically on five-star mylonite exposures of the Saint-François-de-Sales shear zone. This strike-slip shear zone marks a transition from exhumation to strike-slip and/or thrust tectonics at the end of the Ottawa phase of the Grenvillian orogeny.

The virtual workshop, organized by Lyal Harris (INRS) and Dana Silerova (SMU), included six poster presentations during the fieldtrip on Saturday evening and two nights of online talks on November 13-14. The online workshop included a keynote presentation by Brendan Dyck (UBC – Okanagan) on epitaxy, muscovite dehydration and metasomatism, and the life cycle of melting in an orogen. Topics of the remaining 15 talks covered regional geology, geophysics, geochronology and tectonics in the Appalachians, the Canadian Cordillera, the Himalaya, the Grenville Province, the Atlantic Ocean and the Superior Province. The online workshop attracted up to 60 participants from all across Canada, and presentations are available on the CTG YouTube channel.





Winter 2024



## 2024 Canadian Tectonics Group Annual Field Trip and Workshop

This year's field trip will be held on the east coast, in beautiful Nova Scotia and will be led by Brendan Murphy ([bmurphy@stfx.ca](mailto:bmurphy@stfx.ca)) and Donnelly Archibald ([darchiba@stfx.ca](mailto:darchiba@stfx.ca)). The theme for the field trip will be "ON THE EDGE: ANTIGONISH HIGHLANDS AS A RECORDER OF REGIONAL TO GLOBAL TECTONIC EVENTS". The purpose of this field trip is to examine how global to regional tectonic events are encoded in the geology of a small region (Antigonish Highlands) and to examine the feedback between the tectonic activity and the magmatism it produced (in particular, the interplay of magmatism and coeval fault motions). Most of the geology is exquisitely exposed along coastal sections of the Northumberland Strait.

Please keep your eyes peeled for the first circular which should be arriving to your email boxes near the end of March!

## CTG Short Course 2024: EBSD Applied to Structural Geology and Petrology

This year the CTG is very excited to be launching its first, free, online short course! The course, on EBSD application in structural geology and petrology, will be held from April 2<sup>nd</sup> to 4<sup>th</sup> and run by a number of experts. The goal of this short course is to provide basic training and a range of example applications to students and researchers interested in incorporating electron backscatter diffraction (EBSD) analyses into their own research, through a series of online, interactive lectures.

Participants should have access to Matlab and attempt to have MTEX installed (instructions provided to registered participants) to participate in the hands-on exercises. Any graduate student or researcher working in the fields of structural geology, metamorphic petrology, geochronology and tectonics may attend. However, you must be able to commit to attending all lectures and are expected to actively participate in online exercises and discussion.

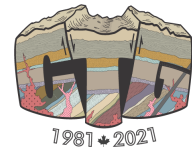
If interested, please contact **Dawn Kellett** ([dawn.kellett@nrcan.gc.ca](mailto:dawn.kellett@nrcan.gc.ca)) by **March 15, 2024**.

## Student Grants GAC-MAC-PEG 2024

Students can now apply for grants to attend GAC-MAC-PEG, taking place from May 19<sup>th</sup> to 24<sup>th</sup> in Brandon, Manitoba. The CTG will once again provide support to enable students to attend! Applications will be accepted until **end of workday, April 4<sup>th</sup>, 2024**.



Winter 2024



Priority will be given to a student or students who are presenting talks or posters on a tectonics-related topic. These students may also choose to use the funds to participate in a tectonics-related field trip.

Students should apply to the CTG Chair ([Shawna.White@smu.ca](mailto:Shawna.White@smu.ca)):

- A copy of their submitted abstract;
- A budget of the costs associated with attending the meeting including, e.g., abstract submission fee, travel and accommodation (if applicable), registration, childcare (even for online attendance) etc., as well as any other sources of funding available;
- A statement indicating why they wish to participate in the meeting, and how they expect to benefit from attending;
- A transcript or transcripts of their academic record.

**Deadline: April 4<sup>th</sup>, 2024**

## **Tectonics Related Programming: 2024 GAC-MAC-PEG, Brandon, Manitoba**

The Joint Annual Meeting of the Geological Association of Canada and Mineralogical Association of Canada will combine this year with the *10<sup>th</sup> International Symposium on Granitic Pegmatites* and commence from May 19<sup>th</sup> to 24<sup>th</sup> in Brandon, Manitoba.

Here are some important dates:

**April 7<sup>th</sup>, 2024:** Deadline for early registration

**April 7<sup>th</sup>, 2024:** Deadline for field trip and workshop registration.

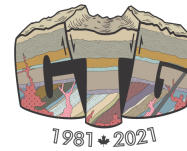
The following is a list of sessions that may be of interest to members of the CTG. For the full preliminary program please visit the following conference website: [Sessions GACMAC 2024](#)

### **Symposia:**

SY-2: Advances in the Study of Granitoids: Petrogenesis and Metallogeny Sponsor: VIP Division of GAC Organizer(s): Xue-ming Yang; Fazilat Yousefi; David R. Lentz



Winter 2024



SS-6 IT'S OUR FAULT! GEOLOGICAL AND GEOPHYSICAL INSIGHTS INTO FAULT AND SHEAR ZONE PROCESSES Organizers: Noah Phillips; Tarryn Cawood; Rellie Goddard; Matt Tarling; Tobias Stephan Duration: One day oral and posters

SS-7 PALEOPROTEROZOIC TECTONICS: FROM OUR CANADIAN BACKYARD TO THE BROADER PICTURE Organizers: Cristina Accotto; Antoine Godet; Daniele Regis; Eric Thiessen Duration: One day oral and posters

GS-8 RECENT ADVANCES IN STRUCTURE AND TECTONICS Sponsor: Canadian Tectonics Group Organizers: Chris Yakymchuk; Alexander Peace; Shawna White Duration: One day oral and posters

SS-10 RECENT ADVANCES IN OUR UNDERSTANDING OF THE GEOLOGICAL HISTORY AND MINERAL SYSTEMS OF THE TRANS-HUDSON OROGEN Organizers: Chris Couëslan; Ralf Maxeiner; Kevin Ansdell; Kathy Bethune Duration: One day oral and posters

SS-16 MAGMATIC ORE DEPOSITS Organizer: Tafa Kennedy Duration: One day oral and posters

GS-41 GENERAL GEOPHYSICS Sponsor: GAC Geophysics Division Organizers: Ian Ferguson; Philip McCausland Duration: One day oral and posters

### **Workshops:**

WS-3: Rates and Dates: Dating Methods and Applications Organizers: Eva Enkelmann; Birk Haertel; Akeek Maitra University of Calgary Contact: [eva.enkelmann@ucalgary.ca](mailto:eva.enkelmann@ucalgary.ca) Online Workshop 1-day post-meeting Virtual Short Course.

WS-4: Quantifying Sediment Provenance and Basin Thermal Histories Organizers: Eva Enkelmann; Akeek Maitra; Birk Haertel (University of Calgary) Contact: [eva.enkelmann@ucalgary.ca](mailto:eva.enkelmann@ucalgary.ca) Online Workshop.

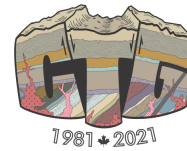
WS-5: How to Publish in Geoscience Journals Sponsors: Canadian Journal of Earth Sciences; Canadian Science Publishing Organizers: Brendan Murphy; Sally Pehrsson Location: TBA Date: Sunday May 19, 2024, 4:00 PM – 6:00 PM Cost: FREE!

### **Relevant field trips:**

FT-3: Volcanic stratigraphy, hydrothermal alteration and metamorphism associated with VMS deposits in the Flin Flon-Snow Lake mining camp Sponsor: Manitoba Geological Survey Organizer: Kyle Reid Date and time: Post-conference, May 23rd AM to May 26th PM Departure and destination: Departs from Brandon with final destination in Winnipeg.



Winter 2024



FT-6: Stratigraphy, ore deposits, and metamorphism in the Thompson Nickel Belt, Manitoba. Sponsor: Manitoba Geological Survey Organizer: Chris Couëslan Date and time: Pre-conference; May 16th AM to May 19th PM Departure and destination: Departs from Winnipeg with final destination in Brandon.

## Award Winners and Grant Recipients

We are very proud of the recipients of the Jack Henderson awards for best PhD and MSc thesis, completed during the 2022 calendar year:

### Best MSc thesis

The **Best MSc Thesis Award** goes to **Kade Damant** for their thesis entitled "Prolonged Post-Orogenic Extension in the Southeastern Canadian Cordillera: Miocene Reactivation of the Columbia River Fault". University of Calgary. Supervisor: Eva Enkelmann.

### Jack Henderson Best PhD thesis

The **Jack Henderson Best PhD Thesis Award** goes to **Dr. Nicolas Piette-Lauzière** for their thesis entitled "Late Devonian shear zone reactivation in the Canadian Appalachian Orogen". UBC Okanagan. Supervisors: Kyle Larson, Dawn Kellett

Congratulations to both winners and their supervisors, and thanks to all our readers!

### Winner of the D. Elliott Best Paper award

The David Elliott award is presented each year by the Canadian Tectonics Group division to an exceptional publication in the field of tectonics by a researcher at a Canadian institution (lead author) or investigating a Canadian field area. The D. Elliott award for best paper in Canadian structural geology and tectonics, with publication year 2022, was awarded to:

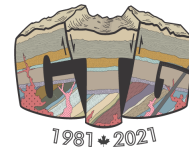
**Taylor Ducharme** and their coauthors, David Schneider, Bernard Grasemann, and Iwona Klonowska for their paper, *Stretched thin: Oligocene extrusion and ductile thinning of the basal unit along the Evia shear zone, NW Cyclades, Greece*, published in *Tectonics*.

**Shortlist committee citation:** Ducharme et al.'s paper is an excellent integrated structural, geochronological and petrologic study of a major extensional shear zone in the NW Cyclades with significant implications for regional geodynamics. Grounded in good field geology, this well-written and well-illustrated synthesis brings together structural observations,  $40\text{Ar}/39\text{Ar}$  and (U-Th)/He dating, and thermodynamic modeling to identify an Oligocene ductile to Miocene brittle-ductile extensional structure of regional extent.





Winter 2024



Separating HP rocks of the Basal Unit from the Cycladic Blueschist Unit, the Evia Shear Zone is shown to have facilitated exhumation through simultaneous normal displacement and oblate coaxial flattening. This study demonstrates the importance of ductile thinning in controlling exhumation of HP rocks in the Cyclades and similar tectonic settings elsewhere.

### **Honourable Mentions**

**John Waldron** and coauthors, Phil McCausland, Sandra Barr, Dave Schofield, Doug Reusch and Lei Wu, for their paper, *Terrane history of the Iapetus Ocean as preserved in the northern Appalachians and western Caledonides*, published in Earth Science Reviews.

Congratulations to all the authors! Many thanks to all those who nominated papers (including all our councillors) and a particular thank you to the short list committee. Without their time and dedication to CTG, these awards would not be possible. We encourage everyone to take the time to read these excellent contributions!

### **Forthcoming D. Elliott Best Paper Award**

The nomination deadline for the David Elliott Best Paper Award for the publication year 2023 has now passed. We will appoint a small committee of individuals not involved with any of the shortlisted papers to review the papers and select a winner, to be announced at the CTG annual general meeting in May, 2024.

### **Excellence in the Canadian Tectonics Community Recognitions**

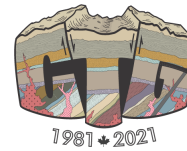
We invite ongoing nominations for members of the community that merit special recognition for short or long term efforts/initiatives that have contributed positively to the field of structural geology and tectonics in Canada, including anyone demonstrating leadership, dedication, or vision in their research, teaching, outreach, diversity, equity and inclusion initiatives, mentoring, etc.

Recognition is open to all members of CTG as well as students who are not members (if nominated by members or by other students). Nominations will be evaluated, and recipients announced on a biannual basis ahead of our fall and spring meetings (CTG fall workshop and GAC annual meeting). Please find the nomination form here:

<https://forms.gle/Sf3fon6tzMH21gtLA>



Winter 2024



## **GACMAC 2023 Student Grants**

The CTG provided funding to support five students' attendance to the 2023 GACMAC in Sudbury.

- Shania Ramharrack-Maharaj – BSc – Macmaster
- Helen Kopystecki – BSc – UBC
- Yip, Cheuk Yin – MSc – MUN
- Susan Strowbridge – PhD – MUN
- Julia Pires Leandro – BSc – UBC

## **CTG Business Meetings**

The last business meeting of the CTG was held online via the Zoom platform May 2023. Minutes can be found on the CTG website.

The next CTG business meeting will be held via Zoom in 2024 around the time of the GACMAC annual meeting.

## **Current CTG Executive and Councillors**

**Chair:** *Shawna White*, Saint Mary's University

**Vice Chair:** *Chris Yakymchuk*, University of Waterloo, Waterloo

**Secretary:** *Alexander Peace*, McMaster University, Hamilton

**Treasurer:** *Luke Beranek*, Memorial University of Newfoundland, St. John's

### ***Councillors:***

***Dawn Kellett***, Geological Survey of Canada-Atlantic, Dartmouth, Nova Scotia

***Kathryn Bethune***, University of Regina, Regina

***Normand Goulet***, Université Québec à Montréal

***Lyal Harris***, Institut national de la recherche scientifique, Québec

***John Waldron***, University of Alberta, Edmonton



Winter 2024



**Joseph C. White**, University of New Brunswick, Fredericton

**Laurent Godin**, Queen's University, Kingston

**Dan Gibson**, Simon Fraser University, Burnaby

**Deanne van Rooyen**, Acadia University, Wolfville

**Camille Partin**, University of Saskatchewan, Saskatoon

**Shoufa Lin**, University of Waterloo, Waterloo

**Dazhi Jiang**, University of Western Ontario, London