

**Dr. Phil J.A. McCausland**

R.L. Flemming (PI) and McCausland, P.J.A., deBruyn, J., Hutter, J., Osinski, G.R. and  
Upgrades to Bruker D8 Discover Micro X-ray Diffract

**RESEARCH EXPERIENCE since 2011**

Associate Research Scientist October 2023 present  
Department of Earth and Planetary Sciences, Yale University

Director, Western Paleomagnetic and Petrophysical Laboratory, September 2013 present  
Adjunct Professor, Department of Earth Sciences, University of Western Ontario

Meteorite Research Associate October 2021 August 2022; December 2022 April, 2023  
Royal Ontario Museum

Adjunct Professor September 2018 present  
Department of Earth Sciences, Brock University

Assistant Professor September 2017 August 2018  
Department of Earth Sciences, Brock University

Adjunct Professor September 2015 present  
Department of Earth and Environmental Sciences, University of Windsor

Assistant Professor September 2012 August 2015  
Department of Earth Sciences, University of Western Ontario  
Coordinator of ASTRO (Astromaterials Training and Research Opportunities) Cluster,  
Canadian Space Agency

5. Thomson, Andrew (Sept. 2014 – December 2017) co-supervised with C. Tsujita  
M.Sc. Geology, University of Western Ontario  
Devonian coral growth ridges for paleoenvironment
6. Warsame, Halima (September 2015 – October 2017) co-supervised with C. Tsujita  
M.Sc. Geology, University of Western Ontario  
Geology of Early Paleozoic Laurentia and Meguma, Avalonia terranes via paleomagnetism and
7. Gunawardana, Hiruni (Sept. 2015 – October 2017) co-supervised with G. Pratt  
M.Sc. Geophysics, University of Western Ontario: Geophysics and 3D  
modeling of sulphide mineralization distribution at the Marathon Cu-PGE deposit,
- 8.



Dr. Phil J.A. McCausland  
Research assistant, Meteorite Laboratory

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15. Uribe, Diego (summer 2014)  
Research assistant, Meteorite Laboratory
16.                   nda (summer 2014; co-supervised with E. Webb)  
Undergraduate CSA-ASTRO Research Award, University of Western Ontario
17. MacRae, Michelle (summer 2014; co-supervised with R. Flemming and G. Osinski)  
Undergraduate CSA-ASTRO Research Award, University of Western Ontario
18. CoDyre, Sarah (summer 2014; co-supervised with R. Flemming)  
Undergraduate CSA-ASTRO Research Award, University of Western Ontario
19. Nigim, Jamal (summer 2014; co-supervised with P. Simpson)  
Undergraduate CAMBR Research Award, University of Western Ontario
20. Bramble, Michael (summer 2013)  
NSERC USRA - University of Western Ontario
21. Uribe, Diego (summer 2013)  
Undergraduate CSA-ASTRO Research Award, University of Western Ontario

### **Graduate Committees and Examinations**

#### **Member of thesis advisory committee for:**

Guna, Ai Gusti (Ph.D. 2021-present), *McMaster University*, supervised by Alex Peace  
Lloyd, Simon (Ph.D. 2022), *University of Liverpool*; supervised by Andy Biggin  
Thallner, Daniele (Ph.D. 2022), *University of Liverpool*; supervised by Andy Biggin  
Zylberman, William (Ph.D., 2017); supervised by Gordon Osinski and Yoann Quesnel  
Anders, Denise (Ph.D., 2016); supervised by Gordon Osinski and Richard Grieve  
Kouhi, Derek (M.Sc., 2016); supervised by Kristy Tiampo and Bob Linnen

#### **Graduate Thesis examiner** (at *University of Western Ontario*, unless otherwise noted)

Chinchalkar, Neeraja (Oct 2023) Ph.D. Planetary Science, supervised by G. Osinski  
Clark, David (Sept 2023) Ph.D. Geophysics, supervised by P. Wiegert and G. Osinski  
Tambakis, Luke (Aug 2023) MEd, supervised by Ken Mclsaac  
Freeborne, Sean (Aug 2022) M.Sc. Geology, **St. Francis Xavier University** (external)  
Lenhart, Eric (Aug 20

**CONTRIBUTIONS TO RESEARCH**

	Total	Lead AU	citations (Web of Science)
Refereed Journal articles:	64	10	total 2496; H=19
Refereed other publications:	10	7	Google <a href="#">Scholar citations</a>
Articles submitted / in revisions:	2	0	
Conference abstracts:	149	50	

*My students listed in italics; mentored students (of collaborators) noted with asterisk\*.*

**Refereed Journal Publications since 2017 (n=22)**

1. Brown, P.G., McCausland, P.J.A., Hildebrand, A.R. and 26 others. 2023. The Golden meteorite fall: Fireball trajectory, orbit, and meteorite characterization. *Meteoritics and Planetary Science*, doi.org/10.1111/maps.14100
2. Flemming, R.L., Gao, S., Freckelton, C.N. and McCausland, P.J.A. *accepted*. Trends in unit cell parameter for kimberlitic versus non-kimberlitic and diamond-indicating chromite. *Canadian Journal of Mineralogy and Petrology*.
3. Domeier, M., Robert, B., Meert, J.G., Kulakov, E.G., McCausland, P.J.A., Trindade, R.I.F., and Torsvik, T.H. 2023. The enduring Ediacaran paleomagnetic enigma. *Earth Science Reviews*. v. 242, 104444. doi:10.1016/j.earscirev.2023.104444
4. *Li, Y., McCausland, P.J.A., Flemming, R.L. and Hetherington, C.J. 2023. Witness to Strain: Subdomain Boundary Length and the Apparent Subdomain Boundary Density in Large Strained Olivine Grains. American Mineralogist, v. 108 (10), pp 1897-1905*
5. Lloyd, S.J.\*, Biggin, A.J., Paterson, G.A. and McCausland, P.J.A. 2022. Extremely weak early Cambrian dipole moment similar to Ediacaran: Evidence for long-term trends in geomagnetic field behaviour? *Earth and Planetary Science Letters*, v. 595, doi: 10.1016/j.epsl.2022.117757
6. Waldron, J.W.F., McCausland, P.J.A., Barr, S.M, Schofield, D.I., Reusch, D. and Wu, L. 2022. Terrane history of the lapetus Ocean as preserved in the northern Appalachians and western Caledonides. *Earth Science Reviews*, v. 293, doi: 10.1016/j.earscirev.2022.104163
7. Charles, C.R.J., Ames, F., Kester, O. and 12 others. 2022. Production of Radioactive Molecular Ions in Radiofrequency Quadrupole Gas-Reaction Cells. *Journal of Physics: Conference Series*, v. 2244, doi:10.1088/1742-6596/2244/1/012100
8. *Li, Y., McCausland, P.J.A. and Flemming, R.L. 2021. Quantitative shock measurement of olivine in ureilite meteorites. Meteoritics and Planetary Science v. 56, pp 1422-1439. doi.org/10.1111/maps.13706*
9. Thallner, D.\*, Biggin, A.J., McCausland, P.J.A. and Fu, R.R. 2021. New palaeointensities of the Skinner Cove Formation, Newfoundland, suggest a changing state of the geomagnetic field at the Ediacaran-Cambrian transition. *Journal of Geophysical Research Solid Earth* v 126, doi.org/10.1029/2021JB022292
10. Evans, D.A.D., Pesonen, L.J., Eglington, B.M. and 14 others. 2021. An expanding list of reliable paleomagnetic poles for Precambrian tectonic reconstructions, in *Ancient Supercontinents and the Paleogeography of Earth*, Elsevier (L.J. Pesonen, Ed.). p. 605-639.
11. *Brooks, K.I., McCausland, P.J.A. and Waldron, J.W.F. 2021. Paleomagnetic Study of the Early Carboniferous Fountain Lake Group, Cobequid Highlands, Nova Scotia, Canada. Canadian Journal of Earth Sciences v 59, doi.org/10.1139/cjes-2020-0165*
12. *Warsame, H.S, McCausland, P.J.A., White, C.E., Barr, S.M., Dunning, G.R. and Waldron, J.W.F. 2020. Meguma terrane orocline: U-Pb age and paleomagnetism of the Silurian Mavillette gabbro, Nova Scotia, Canada. Canadian Journal of Earth Sciences v 58, pp 315-331,*

13. Rupert, A.N., McCausland, P.J.A. and Flemming, R.L. 2020. Ordinary Chondrite Shock Stage Quantification using in situ 2D X-Ray Diffraction of olivine. *Meteoritics and Planetary Science* v 55, pp 2224–2240. [doi.org/10.1111/maps.13572](https://doi.org/10.1111/maps.13572)
14. Wen, B., Evans, D.A.D., Anderson, R.P. and McCausland, P.J.A. 2020. Late Ediacaran paleogeography of Avalonia and the Cambrian assembly of West Gondwana. *Earth and Planetary Science Letters* v 552. [doi.org/10.1016/j.epsl.2020.116591](https://doi.org/10.1016/j.epsl.2020.116591)
15. Li, Y., McCausland, P.J.A. and Flemming, R.L. 2020. Best Fit for Complex Peaks (BFCP) in





14. Currie, B.G.\*, Flemming, R.L., McCausland, P.J.A. and McNeil, A.G. 2021. Classifying Northwest Africa ordinary chondrite `SdB-06': Possible late stage mobilization of Ni and S and metasomatic reaction of Ni-bearing minerals. GAC-MAC 2021, November, 2021, London, Canada. *Abstract*
15. Li, Y., McCausland, P.J.A., Flemming, R.L. and Hetherington, C.J. 2021. Shocked crystal misorientation quantified by 2D XRD strain-related mosaicity and EBSD unit segment length. GAC-MAC 2021, November, 2021, London, Canada. *Abstract*
16. Thallner, D.\*, Biggin, A.J., Hill, M.J., Halls, H.C. and McCausland, P.J.A. Evaluating anomalous palaeomagnetic field behaviour in the Ediacaran with new palaeointensity data from Laurentia. GAC-MAC 2021, November, 2021, London, Canada. *Abstract [invited]*
17. McCausland, P.J.A. 2021. Northern Cordillera assembly over 200 Ma - revisiting the paleomagnetic record. GAC-MAC 2021, November, 2021, London, Canada. *Abstract*
18. Flemming, R.L., Sabarinathan, J., Pilles, E.A. and 15 others. 2021. In Situ X-ray Diffraction (ISXRD) for Exploring Mineralogy and Geology on Mars. GAC-MAC 2021, November, 2021, London, Canada. *Abstract*
19. Charles, C.R.J.\* , Malbrunot, S., Ames, F., Flannigan, E., Alary, J-F., Kester, O., Kunz, P., Laxdal, A., McCausland, P.J.A. and Flemming, R.L.F. 2021. Production of Radioactive Molecules in a Radiofrequency Quadrupole Gas-Reaction Cell. International Conference on Ion Sources (ICIS2021), Vancouver, Sept 2021. *Abstract*
20. McCausland, P.J.A. 2021. Legacy Paleomagnetic Collections: The Need for Preservation and Archiving of Key Sample Sets. IAGA-IASPEI 2021,





