

## New Publications 2015-16

### Articles (in refereed journals):

**Baldwin, G.J., Turner, E.C.,** and Kamber, B.S., 2016. Tectonic controls on the distribution and stratigraphy of the Cryogenian Rapitan iron formation, northwestern Canada. *Precambrian Research*, v. 278, p. 303-322. doi:10.1016/j.precamres.2016.03.014

Bindi, L, Cooper, M.A. & **McDonald, A.M.** (2015): Twinning and disorder in the crystal structure of kurilite, Ag<sub>8</sub>Te<sub>3</sub>Se: Toward a new fast ionic conductor? *The Canadian Mineralogist* **53**, 159-168.

Cabri, L.J., **McDonald, A.M.**, Stanley, C.J., Rudashevsky, N.S., Poirier, G., Wilhelmiz, H.R., Zhe, W. & Rudashevsky, V.N. (2015): Palladosilicide, Pd<sub>2</sub>Si, a new mineral from the Kapalagulu Intrusion, Western Tanzania and the Bushveld Complex, South Africa. *Mineralogical Magazine* **72**, 295-307.

**Cafagna F and Jugo PJ** (2016) An experimental study on the geochemical behavior of highly siderophile elements (HSE) and metalloids (As, Se, Sb, Te, Bi) in a mss-iss-pyrite system at 650 °C: A possible magmatic origin for Co-HSE-bearing pyrite and the role of metalloid-rich phases in the fractionation of HSE. *Geochimica et Cosmochimica Acta* **179**:233-258.

**Desmarais, J.K., Smith, R.S.**, 2015, The total component (or vector magnitude) and the energy envelope as tools to interpret airborne electromagnetic data: a comparative study: *Journal of Applied Geophysics*, 121, 116–127.

<http://dx.doi.org/10.1016/j.jappgeo.2015.07.015>

**Desmarais, J.K., Smith, R.S.**, 2015, Combining spatial components and Hilbert transforms to interpret ground-time-domain-electromagnetic data: *Geophysics*, 80(4) E237-E246, doi:

10.1190/GEO2014-0528.1

Ghinassi, M., **Ielpi, A.**, Aldinucci, M., and Fustic, M., 2016. Downstream-migrating fluvial point bars in the rock record. *Sedimentary Geology*, 334, 66-96.

Ghinassi, M., and **Ielpi, A.**, 2015. Stratal architecture and morphodynamics of downstream- migrating fluvial point bars (Jurassic Scalby Formation, UK). *Journal of Sedimentary Research*, 85, 1123-1137.

Ghinassi, M., and **Ielpi, A.**, 2016. Facies architecture and morphodynamics of streamflow-dominated, sand-rich alluvial fans; Upper Vadarno Basin, Pleistocene, Italy. In: Ventra, D., and Clarke, L.E. (eds.), *Geology and Geomorphology of Alluvial and Fluvial Fans: Terrestrial and Planetary Perspectives*. Special Publications, Geological Society of London, 440, doi: 10.1144/SP440.1.

**Gourcerol, B., Thurston, P.C.,** and **Kontak, D.**, 2016. Depositional Setting of Algoma-type Banded Iron Formation, *Precambrian Research*, in press.

**Gourcerol, B., Thurston, P.C., Kontak, D.,** and Duparc, Q., 2016. Do magnetite layers in Algoma-type BIF preserve their primary geochemical signature: A case study of samples from three Archean BIF-hosted gold deposits? *Canadian Mineralogist*, accepted.

**Hahn, K., Turner, E.C.,** Babechuk, M.G., and Kamber, B.S., 2015. Deep-water seep-related carbonate mounds in a Mesoproterozoic alkaline lake, Borden Basin (Nunavut, Canada). *Precambrian Research*, v. 271, p. 173-197.

<http://dx.doi.org/10.1016/j.precamres.2015.09.025>

**Haring, M.C. & McDonald, A.M.** (2016): Nolzeite, NaMn<sub>2</sub>[Si<sub>3</sub>BO<sub>9</sub>](OH)<sub>2</sub>•2H<sub>2</sub>O: Characterization, crystal-structure determination and origin. *Mineralogical Magazine (Accepted for Publication 1 February, 2016)*

Hawkins, A. L., **Petrus, J. A.**, Anselmi, L. M., & Crawford, G. (2016). Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry analysis of copper-based artifacts from Southern Ontario and the chronology of the indirect contact period. *Journal of Archaeological Science: Reports*, 6, 332-341.

- Ielpi, A.**, 2016. Lateral accretion of modern unvegetated rivers: remotely sensed fluvial-aeolian morphodynamics, and perspectives on the Precambrian rock record. *Geological Magazine*, doi:10.1017/S001675681600025X.
- Ielpi, A.**, and Rainbird, R.H., 2016. Inferring 1 Ga fluvial style from 3D-canyon sections: Nelson Head Formation of Brock Inlier, Northwest Territories, Canada. *Journal of Sedimentary Research*, 86, 199-216.
- Ielpi, A.**, and Rainbird, R.H., 2016. Reappraisal of Precambrian sheet-braided rivers: Evidence for 1.9 Ga deep-channeled drainage. *Sedimentology*, doi: 10.1111/sed.12273.
- Kolaj, M.**, and Smith, R., 2015, A multiple transmitter and receiver electromagnetic system for improved target detection: *Geophysics* 80 (4), E247–E255, doi: 10.1190/GEO2014-0466.1
- Lafrance, B.** 2015. Geology of the Cheminis gold deposit along the Larder Lake-Cadillac deformation zone, northern Ontario. *Canadian Journal of Earth Sciences*, 52, 1093-1108.
- Lafrance, B., Gibson, H.L., Pehrsson, S., Schetselaar, E., DeWolfe, Y. M., and Lewis, D.**, In Press. Structural reconstruction of the Flin Flon volcanogenic massive sulfide mining district, Saskatchewan and Manitoba, Canada, In press. A Special Issue on volcanogenic massive sulfide deposits of the Trans-Hudson Orogen, *Economic Geology*. Laurila, T.E., Hannington, M.D., **Leybourne, M.**, Petersen, S., Devey, C.W. and Garbeschönberg, D. (2015) New insights into the mineralogy of the Atlantis II Deep metalliferous sediments, Red Sea. *Geochemistry Geophysics Geosystems* 16, 4449-4478.
- Leybourne, M. I.**, Bloom, L. and Caughlin, B. (accepted). Hg in Rocks, Soils and Sediments: Speciation and Implications for Sample Processing and Analysis. *Explore*.
- Li, Yongxing and Richard S. Smith**, 2015, Forward modelling of radio imaging (RIM) data with the Comsol RF module: *Computers and Geosciences*, 85, 60–67. <http://dx.doi.org/10.1016/j.cageo.2015.08.012>
- Lo, B., Y. Li, **R. Smith**, J. Arce, M. Shore, and T. Lane, 2015, Introduction to special section: Mining and minerals exploration interpretation: *Interpretation*, 3(2), p. SLi. <http://dx.doi.org/10.1190/INT2015-0318-SPSEINTRO.1>.
- Long, S. M. R., Smith, R. S.**, and Hearst, R. B., 2016, Ground resistivity method and DCIP2D forward and inversion modelling to identify alteration at the Midwest uranium deposit, northern Saskatchewan, Canada: *Exploration Geophysics*, published on-line. <http://dx.doi.org/10.1071/EG15059>
- Lussier, A.J., Hawthorne, F.C., Abdu, Y., Ball, N.A., Tait, K.T., Back, M.E., Steede, A.H., Taylor, R. & **McDonald, A.M.** (2015): Ferro-ferri-nybøite,  $\text{NaNa}(\text{Fe}^{3+}_3\text{Fe}^{3+}_2)\text{Si}_8\text{O}_{22}(\text{OH})_2$ , a new mineral of the amphibole group from Mont Saint-Hilaire, Rouville RMC, Montérégie, Quebec, Canada: Description and crystal structure. *The Canadian Mineralogist* 53, 1-7.
- Mahmoodi, O., Smith, R.**, 2015, Clustering of downhole physical property measurements at the Victoria property, Sudbury for the purpose of extracting lithological information: *Journal of Applied Geophysics*, 118, 145–154. <http://dx.doi.org/10.1016/j.jappgeo.2015.04.015>
- Mahmoodi, O., Smith, R.S., and Tinkham, D.K.**, 2015. Supervised classification of down-hole physical properties measurements using neural network to predict the lithology. *Journal of Applied Geophysics*, v. 124, p. 17-26.
- Mathieu, J. Kontak, D.J., Turner, E.C.**, Fayek, M., Layne, G. 2015. Geochemistry of Phanerozoic diagenesis on Victoria Island, NWT, Canada *Chemical Geology*. 15, p. 47-69. doi:10.1016/j.chemgeo.2015.08.016
- McClenaghan, M. B., Parkhill, M. A., Pronk, A. G., Seaman, A. A., McCurdy, M. W. and **Leybourne, M. I.** (accepted). Indicator mineral and geochemical signatures associated with the Sisson W-Mo deposit, New Brunswick, Canada. *GEEA (Geochemistry: Exploration, Environment, Analysis)*
- McDonald, A.M.**, Cabri, L.J., Stanley, C.J., Good, D.J., Redpath, J., Lane, G. Spratt, J. & Ames, D.E. (2015): Coldwellite,  $\text{Pd}_3\text{Ag}_2\text{S}$ , a new mineral species from the Marathon deposit, Coldwell complex, Ontario, Canada. *The Canadian Mineralogist* 53 (Accepted for publication 22 April, 2015).

- McDonald, A.M.**, Tarassoff, P. & Chao, G.Y. (2015): Hogarthite,  $(\text{Na,K})_2\text{CaTi}_2\text{Si}_{10}\text{O}_{26}\cdot 8\text{H}_2\text{O}$ , a new member of the lemoynite group from Mont Saint-Hilaire, Quebec: Characterization, crystal-structure determination and origin. *The Canadian Mineralogist* **53**, 13-30.
- Medig, K., **Turner, E.C.**, Thorkelson, D.J., and Rainbird, R.H., 2016. Rifting of Columbia to form a deep-water siliciclastic to carbonate succession: The Mesoproterozoic Pinguicula Group of northern Yukon, Canada. *Precambrian Research*, v. 278, p. 179-206. <http://dx.doi.org/10.1016/j.precamres.2016.03.021>
- Naprstek, T.** and **R. S. Smith**, 2016, The effect of dielectric permittivity on the fields radiated from a radio-frequency electric dipole in a homogeneous whole space: *Geophysics*, 81(2), K1-K8. DOI:10.1190/geo2015-0219.1
- Olanian, O., R. S. Smith, B. Lafrance**, 2015, Regional 3D geophysical investigation of the Sudbury Structure: Interpretation 3(2), SL63-SL81. <http://dx.doi.org/10.1190/INT-2014-0200.1>
- Ordóñez-Calderon, J.C., Lafrance, B., Gibson, H.L.**, Schwartz, T., Pehrsson, S., and Rayner, N.M., In Press. Petrogenesis and Geodynamic Evolution of the Paleoproterozoic Trout Lake Volcanogenic Massive Sulfide Deposit, Flin Flon, Manitoba, Canada. A Special Issue on volcanogenic massive sulfide deposits of the Trans-Hudson Orogen, *Economic Geology*.
- Owen, J. V., Cruise, P., Greenough, J. D., **Petrus, J. A.** (2016). An SEM/EDS - LA-ICP-MS Investigation of a suspected mid-18th-century Wistarburgh glass globular bottle. *Technical Briefs in Historical Archaeology*. 10: 1-8.
- Parry, D., R. S. Smith** and **O. Mahmoodi**, 2015, Tools used in mineral exploration for measuring the conductivity and the resistivity in drillholes and on drill core: observations on their range of sensitivity: *Exploration Geophysics*, published on-line. <http://dx.doi.org/10.1071/EG14083>
- Pehrsson, S., **Gibson, H.L.**, and Gilmore, K., In Press, Preface: A Special Issue on volcanogenic massive sulfide deposits of the Trans-Hudson Orogen, *Economic Geology*.
- Petrus, J. A.**, Kenny, G. G., **Ayer, J. A.**, Lightfoot, P. C., & Kamber, B. S. (2016). Uranium–lead zircon systematics in the Sudbury impact crater-fill: implications for target lithologies and crater evolution. *Journal of the Geological Society*, 173(1), 59-75.
- Piercey, S.J., **Gibson, H.L.**, Kamber, B.S., and **Tardif, N.**, In Press, Litho-geochemistry of shales from the Wolverine volcanogenic massive sulphide deposit, Yukon: Implications for ambient environment if formation and hydrothermal activity. *Economic Geology*
- Poulin, R.Y., McDonald, A.M., Kontak, D.J.** & McClenaghan, M.B. (2015): Crystal-chemical influences on the cathodoluminescence of scheelite. *The Canadian Mineralogist* **79**, 295-307.
- Rissmann, C. F. W., **Leybourne, M. I.**, Benn, C. and Christenson, B. (2015). The origin of solutes within the groundwaters of a high Andean aquifer. *Chemical Geology*, 396, 164-181.
- Schindler, M., Lanteigne, S., McDonald, A.M.** & Hawthorne, F.C. (2015): The role of mineral surface-coatings in soils contaminated by atmospheric pollution (*Accepted for publication 16 October, 2015*).
- Stern, R. J., Ali, K., Ren, M., Jarrar, G. H., Romer, R. L., **Leybourne, M. I.**, Whitehouse, M.J., and Ibrahim, K. M. (2016). Cadomian (approximately 560 Ma) crust buried beneath the northern Arabian Peninsula; mineral, chemical, geochronological, and isotopic constraints from NE Jordan xenoliths. *Earth and Planetary Science Letters*, 436: 31-42.
- Sun, L., **Leybourne, M.I.** Rissmann, C. and Brikowski, T. (2016). Geochemistry of a large impoundment – Part II: Fe and Mn cycling and metal transport. *GEEA (Geochemistry: Exploration, Environment, Analysis)*.
- Thurston, P.C.**, 2015. Greenstone belts and granite-greenstone terranes: constraints on the nature of the Archean world, *Geoscience Canada*, vol. 42, p.437-484.

Timm, C., **Leybourne, M.I.**, Hoernle, K., Wysoczanski, R.J., Hauff, F., Handler, M., Caratori-Tontini, F., de Ronde, C.E.J. (accepted). Trench perpendicular geochemical variation between two adjacent Kermadec arc volcanoes Rumble II East and West: the role of the subducted Hikurangi Plateau on element recycling in arc magmas. *Journal of Petrology*.

**Turner, E.C., Long, D.G.F.**, Rainbird, R.H., Petrus, J.A., and Rayner, N.M., 2016. Late Mesoproterozoic rifting in Arctic Canada during Rodinia assembly: impactogens, trans-continental far-field stress, and zinc mineralisation. *Terra Nova*, doi:10.1111/ter.12207

**Turner, E.C.**, and Bekker, A., 2016. Thick sulfate evaporite accumulations marking a mid-Neoproterozoic oxygenation event (Ten Stone Formation, NWT, Canada). *Geological Society of America Bulletin*, v. 128, p. 203-222. doi: 10.1130/B31268.1

#### **Articles/reports (in non-refereed journals):**

Bédard, J.H., Rainbird, R.H., Currie, L.D., **Turner, E.C.**, 2015. Geology, Uqpilik, Victoria Island, Northwest Territories. Canadian Geoscience Map 188, (ed. prelim.). 1 sheet, doi:10.4095/297277

Fallas, K.M., MacNaughton, R.B., **Turner, E.C.**, Sommers, M.J., 2015. GEM 2 Mackenzie Project: Colville Hills bedrock mapping, stratigraphy, and related studies. Geological Survey of Canada Open File 7963, 19 pages, doi:10.4095/297301

**Gourcerol, B., Thurston, P.C., Kontak, D.J.**, Côté-Mantha, O., and Biczok, J. 2015. The geochemistry of chert from the Banded Iron Formation-type Musselwhite and Meadowbank gold deposits: Distinguishing primary and mineralization-related signatures of chert; Geological Survey of Canada, Current Research 2015-1, 24 p. doi:10.4095/295531

**Hastie, E.C.G., Lafrance, B. and Kontak, D.J.** 2015. Observations on the Kenty and Rundle deposits, Swayze greenstone belt; in Summary of Field Work and Other Activities 2015, Ontario Geological Survey, Open File Report 6313, p.9-1 to 9-9.

Ielpi, A., Rainbird, R.H., Greenman, J.W., and Creason, C.G., 2015. The 1.9 Ga Kilohigok Paleosol and Burnside River Formation, western Nunavut: stratigraphy and gamma-ray spectrometry. Summary of Activities 2015, Canada-Nunavut Geoscience Office, 1-10.

McClenaghan, M. B.; Parkhill, M. A.; Pronk, A. G.; McCurdy, M. W.; Boldon, G. R.; **Leybourne, M. I.**; Pyne, R. M.; Rice, J. M. (2015) Geochemical and indicator mineral data for stream sediments and waters around the Sisson Sn-W-Mo deposit, New Brunswick (NTS 21-J/06, 21-J/07). 62.

McClenaghan, M.B., Parkhill, M.A., Pronk, A.G., Seaman, A.A., McCurdy, M.W., Poulin, R.S., McDonald, A.M., Kontak, D.J. and **Leybourne, M.I.** (2015) Till, stream sediment, and stream water geochemical signatures of intrusion-hosted Sn-W deposits: examples from the Sisson W-Mo and Mount Pleasant Sn-W-Mo-Bi-In deposits, New Brunswick. 39-58.

**McDivitt, J.A., Lafrance, B., Kontak, D.J.**, and Robichaud, L., 2015. Characterization of Gold Mineralization in the Missanabie-Renabie District of the Wawa gold camp; in Summary of Field Work and Other Activities, Open File Report 6313. P.6-1 to 6-8.

Rainbird, R.H., Craven, J.A., **Turner, E.C.**, Jackson, V.A., Fischer, B.J., **Bouchard, M.**, Greenman, J. W., Gibson, T., 2016. Reconnaissance geological mapping, stratigraphy and magnetotelluric survey of northern Brock Inlier, Northwest Territories. Geological Survey of Canada Open File 7955, 16 pages, doi:10.4095/297296

**Turner, E.C.**, 2015. Gossans of the Cornwallis District, central high Arctic islands, Canada. in, Environmental and economic significance of gossans; Williamson, M -C (ed.); Geological Survey of Canada, Open File 7718, 2015; p. 54-57.

**Turner, E.C.**, and Armstrong, D.K., 2015. Upper Ordovician stratigraphy of northern Ontario: differential subsidence and deposition in two late Ordovician basins contemporaneous with Hirnantian glaciation and the Taconic orogeny. Ontario Geological Survey Open File Report 6313, p. 32-1 – 32-22.

## Conference presentations:

- Brown, D.J.**, Rissmann, C., and **Leybourne, M.I.** (2016). Boron isotopes as a tracer of river catchment eutrophication (Southland, New Zealand). Goldschmidt. Yokohama, Japan. June 26 – July 1, 2016.
- Cherdantseva M, Vishnevskiy A, **Jugo PJ** (2015) The Distribution Patterns of Platinum Group and Chalcophile Elements in Zoned Sulfide Blebs: Example from the Rudniy Intrusion, NW Mongolia. World-Class Ore Deposits : Discovery to Recovery. Hobart, TAS, Australia, Sep. 27-30, 2015. Abstract with Programs.
- Cherdantseva M, Vishnevskiy A, **Jugo PJ** (2015) The behaviour of PGE and other chalcophile elements in sulfide blebs from the Rudniy intrusion, NW Mongolia. Proceedings of the 13<sup>th</sup> Biennial SGA Meeting: Mineral resources in a sustainable world. Nancy, France, Aug. 24-27, 2015.
- Conly, A.G., Moore, L.C. & **McDonald, A.M.** (2016): Application of X-ray diffraction- and microRaman-based geothermometers to the formation fluid-derived graphite. Whitehorse, June, 2016. GAC-MAC meeting.
- Desmarais, J. K.**, Pan Y., **McDonald, A.M.** & Tse, J.S. (2015): Crystal and Electronic Structure of (Fe,Ni,PGE)-Pentlandites: Planetary and Economic Implications. Montreal, May, 2015. AGU-GAC-MAC meeting.
- Desmarais, J.K.**, Pan, Y., Tse, J.S., **McDonald, A.M.** (2016): Energetic Constraints on Platinum-Group-Element speciation in Chromite. Whitehorse, June, 2016. GAC-MAC meeting.
- Desmarais, J.K.**, **Smith, R.S.**, 2016, Approximate semi-analytical solutions for the electromagnetic response of a dipping sphere interacting with conductive overburden. Session SS18, GAC-MAC, Whitehorse, Yukon, June 1-3, 2016
- Englehardt, P.O., Ward, B.C., Bond, J.D., **Leybourne, M.**, **Petrus, J.** and Coleman, M.J. (2016). Early Pleistocene glaciations in the Mount Nansen area and implications for placer gold deposits, Yukon Territory. Roundup, Vancouver BC, 2016.
- Friesen, V.**, **Engelbert, M.**, DeWolfe, M., and **Gibson, H.**, 2015. Volcanic reconstruction of the Powderhouse Dacite in the Paleoproterozoic VMS hosting Chisel Sequence, Snow Lake, Manitoba. In, Program with Abstracts, GAC/MAC/AGU Joint-Annual Meeting, Montreal.
- Gaucher, F.** and **Smith R.**, 2015, Exploring for copper-gold deposits with geophysics in the Chapais-Chibougamau greenstone belt, Quebec. MERC Exploration Symposium, Laurentian University, Sudbury
- Généreux, C-A.**, **Lafrance, B.**, **Tinkham, D.K.** 2016. Structural geology in the South Range of the Sudbury impact structure: past and recent ideas. Ontario Prospectors Association, Northeastern Ontario Mines & Minerals Symposium, Sudbury.
- Généreux, C-A.**, **Lafrance, B.**, **Tinkham, D.K.**, Gordon, C.A. and Simard, R-L. 2016. Structural and metamorphic history in the South Range of the Sudbury footwall, Ontario, and its implications for low-sulfide PGE mineralization. PDAC-SEG Minerals Colloquium 2016, Prospectors and Developers Association of Canada Convention, Toronto
- Gibson, H.L.**, Ulrich Schwarz-Schampera, Michelle DeWolfe, **Margaret Engelbert** and Ralf Freitag, 2015. Contrasting the settings of seafloor massive sulfide deposits on the South Central Indian Mid-Ocean Ridge: Results of the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) INDEX 2013 cruise. In Program with Abstracts, GAC/MAC/AGU Joint- Annual Meeting, Montreal.
- Gourcerol, B.**, **Kontak, D.J.**, **Thurston, P.C.**, Duparc, Q., 2016. Do magnetite layers in Algoma-type BIF preserve their primary geochemical signature: A case study of samples from three Archean BIF-hosted gold deposits? ; PDAC-SEG Canada Student Minerals Colloquium, March 7th, Toronto, Student Poster.
- Gourcerol, B.**, **Thurston, P.C.** and **Kontak, D.J.** 2015. Depositional Setting of Algoma-type Banded Iron Formation from the Meadowbank, Meliadine and Musselwhite gold

deposits. Geological Association of Canada, Mineralogical Association of Canada, Montreal, Canada, Program with Abstracts, v. 38, p. 382

**Hahn, K., Turner, E.C.,** and Kamber, B.S., 2015. Deep-water seep-related carbonate mounds: implications for seawater and vent fluid geochemistry in the Mesoproterozoic Borden Basin, Nunavut. AGU-GAC Joint Assembly, Montreal May 3-7, Abstract PG12A-06

**Hall, M., Lafrance, B.,** and **Gibson, H.**, 2015. Deformation and structural controls at the Broken Hammer deposits, Sudbury, ON. In, Program with Abstracts, GAC/MAC/AGU Joint-Annual Meeting, Montreal.

**Hastie, E.C.G., Lafrance, B. and Kontak, D.J.** 2016. Archean gold mineralization at the Kenty and Rundle deposits, Swayze greenstone belt. PDAC-SEG Minerals Colloquium 2016, Prospectors and Developers Association of Canada Convention, Toronto

**Kelly, C.H., Kontak, D.J., Lafrance, B.**, 2016. Assessing the role of lithology on gold mineralization and alteration in the intrusion-related Hislop deposit, Matheson, Ontario. PDAC-SEG Minerals Colloquium 2016, Prospectors and Developers Association of Canada Convention, Toronto.

**Kolaj, M** and **Smith, R.**, 2015, Inductive electromagnetic data interpretation using simplified models. British Columbia Geophysical Society Annual Symposium, Oct 16, 2015

**Kontak, D.J., Poulin, R.Y., McDonald, A.M. & McClenaghan, M.B.** (2014): A review of scheelite chemistry and its use as a discriminator in ore-deposit settings, use as an indicator mineral and monitor of ore-forming processes. International Applied Geochemistry Symposium, Tucson, Arizona (April 2015)

**Lafrance, B.** 2015. Structural controls on gold mineralization in the Archean Superior craton. Mineral Exploration Symposium: New Research and Concepts Focused on Gold, Ni-Cu- PGE-Cr, & VMS, Sudbury

**Li, Yongxing** and Richard Smith, 2015, Modeling radio imaging (RIM) data with the Comsol RF module. SEG Technical Program Expanded Abstracts 2015: pp. 2042-2046. doi 10.1190/segam2015-5816603.1

**Mathieu, J., Kontak, D.J., Turner, E.C.,** and Fayek, M., 2015. Origin of copper showings in the Cornwallis District and Borden Basin, Arctic islands, Nunavut. AGU-GAC Joint Assembly, Montreal May 3-7, Abstract MD42A-06

Matthews, W., **McDonald, A.M.,** Hamilton, B. & Guest, B. (2015): Improved accuracy and precision in LA-ICP-MS U-Th/Pb dating of zircon through the reduction of crystallinity related bias. San Francisco, December, 2015. AGU Meeting.

**McDivitt, J.A., Lafrance, B., and Kontak, D.J.,** 2015. Structural and Hydrothermal Overprinting of a Long-Lived Ore System in the Missanabie-Renabie Gold District. Mineral Exploration Symposium: New Research and Concepts Focused on Gold, Ni-Cu- PGE-Cr, & VMS, Sudbury.

**McDivitt, J.A., Kontak, D.J., and Lafrance, B.,** 2016. Using Multiple Geochemical Tools to Discriminate Multistage Gold Mineralization at the Archean Intrusion-Hosted Renabie Gold Deposit, Missanabie, Ontario, Canada

**McDivitt, J.A., Lafrance, B., and Kontak, D.J.,** 2016. Shear Zone-Hosted Ore Shoots at the Archean Intrusion-Hosted Renabie Gold Deposit: The End Product of Structural Inheritance. GAC-MAC Annual Mining, Whitehorse

**Parry, D., Smith, R.S., Mahmoodi, O.,** 2015, Tools Used in Mineral Exploration for Measuring the Conductivity and the Resistivity in Drill-Holes and on Drill Core: Observations on

Their Range of Sensitivity. Paper MD24A-0270. AGU-GAC-MAC-CGU Joint Assembly, Montreal Quebec, May 3-7, 2015.

**Poulin, R.S., McDonald, A.M. & Kontak, D.J.** (2016): Scheelite crystal chemistry and application to ore deposits. Whitehorse, June, 2016. GAC-MAC meeting.

**Poulin, R.S., McDonald, A.M., Kontak, D.J. & McClenaghan, M.B.** (2015): Scheelite chemistry and its use as an indicator mineral for hydrothermal ore deposits. Montreal, May, 2015. AGU-GAC-MAC meeting.



- Rubingh, B., Lafrance, B., and Gibson, H.,** 2015. Structural geology of the McLeod Road- Birch Lake Sequence, Snow Lake, Manitoba and implications for the evolution of the southeastern Trans-Hudson Orogen. In, Program with Abstracts, GAC/MAC/AGU Joint- Annual Meeting, Montreal.
- K.E. Rubingh, B. Lafrance, H.L. Gibson,** 2016. Structural geology of the New Britannia mine and nearby gold zones in the Flin Flon greenstone belt, Manitoba, and implications for other gold deposits across the belt. Mineral Exploration Symposium: New Research and Concepts Focused on Gold, Ni-Cu-PGE-Cr, & VMS, Sudbury
- Slater, E., Kontak, D.J. & McDonald, A.M.** (2015): Estimating Ore-fluid Conditions in the Cortaderas Ag-Zn-Sn-In Deposit, NW Argentina: Integrated Fluid Inclusion Thermometry, Sulfosalt Assemblages, and Tetrahedrite Chemistry. Montreal, May, 2015 AGU-GAC- MAC meeting.
- Smith, R.,** 2014, A career in Exploration Geophysics. After dinner talk to PDAC Student- Industry Mineral Exploration Workshop.
- Smith R.,** 2015, Geophysical research in the Sudbury Basin. MERC Exploration Symposium, Nov 5, Laurentian University
- Smith, R.,** 2015, Keynote Address. An introduction to EM inversion modelling. British Columbia Geophysical Society Annual Symposium, Oct 16, 2015
- Smith, R.,** 2015, Airborne Geophysics. PDAC Student-Industry Mineral Exploration Workshop
- Smith, R.S.,** 2016, Electromagnetic methods for mineral exploration. Goldschmidt Lecture, Norwegian Geological Survey
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