

SMC 2019

10th annual
**PDAC - SEG Student
Minerals Colloquium**

TUESDAY, MARCH 5, 10 AM – 6 PM
Cocktail Reception 3 – 6 pm | Awards presented at 5 pm



Metro Toronto Convention Centre (MTCC)
South Building, Room 701



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The Student Minerals Colloquium (SMC) brings together geoscience students and industry professionals at the world's largest minerals and mining industry conference.

Please join us in celebrating innovative student research in mineral deposits, geophysics, environmental sustainability, and experimental studies from students around the world.

The SMC highlights student research concentrating on innovative projects essential for the successful evolution of the modern mining industry. This event features hundreds of poster presentations from BSc., MSc., and PhD. students across the world studying mineral deposits and related disciplines, and provides industry professionals with an unparalleled opportunity to support ongoing student research related to the mining industry.

This year, we invite you to celebrate the 10th Anniversary of the SMC. Since its inception in 2009, the SMC has grown to include over 94 poster presentations available to a worldwide audience. This would not have been possible without generous support from our sponsors.

The event includes a cocktail reception from 3 - 6 pm.

Poster judging will take place from 3 - 5 pm,
with awards being presented after.



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To navigate the event, student posters have been organized into eight categories based on poster content and, if applicable, deposit type. Posters in each category are grouped into geographic regions and topics span a wide range of disciplines including geochemistry, geophysics, geographic information systems, field-based studies, experimental studies, and other interdisciplinary studies.

Category Descriptions:

Sedimentary Environments

- Sedimentary Exhalative (SEDEX) deposits in Canada and Brazil, Mississippi-Valley Type (MVT) deposits, and Canadian uranium deposits.

Volcanogenic massive sulphide (VMS) deposits

- VMS deposits across Canada and Australia, and studies of modern hydrothermal vent environments.

Epithermal deposits

- Epithermal systems in Canada, Mexico, Argentina, and China.

Intrusion-related deposits

- Intrusion-related studies (magmatic deposits, rare earth element pegmatites, porphyry ore deposits) and applicable experimental studies in Canada, Mexico, South Africa, Democratic Republic of the Congo, and Philippines.

Iron-oxide copper gold (IOCG) deposits

- IOCG systems in Chile, including El Laco and La Candelaria deposits.

Orogenic gold deposits

- Orogenic gold deposits and related studies in Canada, USA, Australia, and China.

Geophysics

- Geophysical methods and applications.

Other

- Diamond deposits and interdisciplinary studies.

100 Sedimentary Environments

Sedimentary Exhalative (SEDEX)
Mississippi Valley-Type (MVT)
Uranium

200 Volcanogenic massive sulphide (VMS) Deposits

300 Epithermal Deposits

400 Intrusion-related Deposits

Porphyry systems
Magmatic systems
Rare Earth Elements

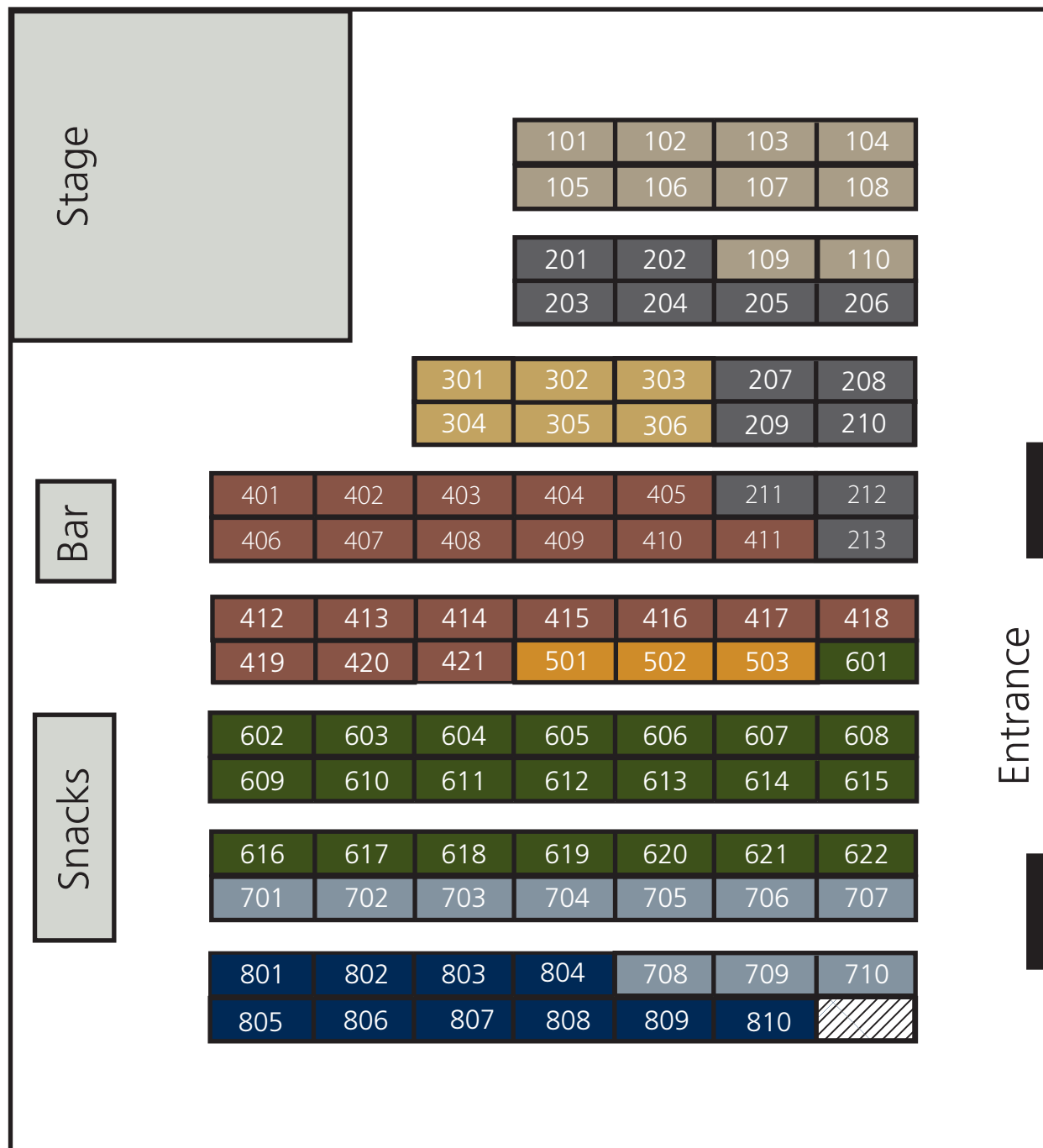
500 Iron oxide copper-gold (IOCG) Deposits

600 Orogenic Gold Deposits

700 Geophysics

800 Other

Geographic Information Systems (GIS)
Experimental studies
Indigenous relations
Curling stones
Diamonds



Sedimentary Environments



- 101 Trace element content in pyrite as a vector toward SEDEX Pb-Zn mineralization in the MacMillan Pass, Yukon
C Leighton¹, D Layton-Matthews¹, JM Peter², M Gadd²
¹Department of Geological Sciences, Queen's University, Kingston, Ontario, Canada;
²Geological Survey of Canada, Ottawa, Ontario, Canada
[*claireleighton95@gmail.com](mailto:claireleighton95@gmail.com)
- 102 Understanding potential linkages between magmatism and SEDEX mineralisation in the Selwyn Basin, Yukon, Canada: Initial findings and future work
E Scanlan¹, M Leybourne¹, D Layton-Matthews¹, S Paradis², N Van Wagoner³
¹Department of Geological Sciences, Queen's University, Kingston, Ontario, Canada; Geological Survey of Canada, Sidney, British Columbia, Canada; ³Department of Physical Sciences, Thompson Rivers University, Kamloops, British Columbia, Canada
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- 103 A Study of a Mineralization Occurrence on Somerset Island, Nunavut, Canada
T Moum¹, M Sanborn-Barrie², J Mungall¹
¹Department of Earth Sciences, Carleton University, Ottawa, Ontario, Canada; ²Geological Survey of Canada, Ottawa, Ontario, Canada
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- 104 Sediment-hosted zinc mineralization in the Central Metasedimentary Belt (CMB) of the Grenville Province, Canada: Calumet-Sud case study
H Lang¹, G Olivo¹, S Perreault², N Champigny³
¹Department of Geological Sciences and Geological Engineering, Queen's University, Kingston, Ontario, Canada; ²SOQUEM Inc., Val-d'Or, Québec, Canada; ³Sphinx Resources Ltd., Montréal, Québec, Canada
[*17hrl@queensu.ca](mailto:17hrl@queensu.ca)
- 105 The Paleozoic Sedimentary Rocks of the Ouachita Mountains and Arkoma Basin and their Genetic Relationship to the Mississippi Valley-Type Mineralization in the Southern Ozark Region: Insights from Radiogenic Pb Isotopes and Trace Elements Studies
C Simbo¹, A Potra¹
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[*cswakamy@uark.edu](mailto:cswakamy@uark.edu)
- 106 The Morro Agudo Pb-Zn Mine: Mineralogical and Lithogeochemical Evidence of Multiple Mineralizing Events
C Aldis¹, G Olivo¹, G Romagna², J Arruda²
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²Nexa Resources, São Paulo, Brazil
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Sedimentary Environments



- 107 Nature and role of deformation bands in post-Athabasca faulting and genesis of unconformity-related uranium deposits; case study of the C1 fault zone in the eastern Athabasca Basin, northern Saskatchewan
A Kitchen¹, K Bethune², G Delaney², E Miller¹
¹Department of Geology, University of Regina, Regina, Saskatchewan, Canada; ²Saskatchewan Ministry of Economy Saskatchewan Geological Survey, Regina, Saskatchewan, Canada
[*arin_kitchen@hotmail.com](mailto:arin_kitchen@hotmail.com)
- 108 White Micaceous in the Arrow Uranium Deposit, Patterson Lake Corridor, Southwestern Athabasca Basin, Northern Saskatchewan
S Cross¹, S Hillacre¹, K Ansdell¹, B McEwan¹
¹Department of Geological Sciences, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
[*sec529@mail.usask.ca](mailto:sec529@mail.usask.ca)
- 109 The evolution of metasomatic uranium ore systems in the Central Mineral Belt of Labrador
C Duffett¹, E Potter², B Cousens¹
¹Department of Earth Sciences, Carleton University, Ottawa, Ontario, Canada; ²Geological Survey of Canada, Ottawa, Ontario, Canada
[*charleneduffett@cmail.carleton.ca](mailto:charleneduffett@cmail.carleton.ca)
- 110 Exploring for Carlin-type Au-deposits using ore-stage, Mn-rich veins: implications for the timing, temperature, and scale of hydrothermal fluid flow
A Steiner¹, K Hickey¹
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Volcanogenic Massive Sulfide (VMS) Deposits



- 201 **Petrogenesis of iron formation and metasedimentary units of the Archean Beaulieu greenstone belt, Slave Craton, Northwest Territories**
J Spanier¹, C Partin¹
¹Department of Geology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
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- 202 **Tectonic setting of the Sunrise Volcanogenic Massive Sulfide Deposit, Beaulieu River Volcanic Belt, NWT**
A Oberland¹, M DeWolfe², H Gibson¹
¹Harquail School of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada; ²Department of Earth and Environmental Sciences, Mount Royal University, Calgary, Alberta, Canada
*aoberland@laurentian.ca
- 203 **Isotopic and Geochemical Signatures of Base Metal Indicator Minerals from Regional Surficial Samples in the Southern Mackenzie Region, Northwest Territories, Canada**
RD King¹, SJ Piercey¹, RC Paulen²
¹Department of Earth Sciences, Memorial University of Newfoundland, St. John's, Newfoundland and Labrador, Canada; ²Geological Survey of Canada, Ottawa, Ontario, Canada
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- 204 **Structural Analysis of the Glennie, Wapassini, Robertson and Palmer Lakes Area, Glennie Domain, Reindeer Zone, Saskatchewan, Canada**
S Brandt¹, KM Bethune¹, S Van De Kerckhove²
¹Department of Geology, University of Regina, Regina, Saskatchewan, Canada; ²Saskatchewan Geological Survey, Regina, Saskatchewan, Canada
*shelbybrandt1@gmail.com
- 205 **Metallogeny of the Woman River Iron Formation: implications for timing of hanging wall and foot wall volcanic successions, Swayze area of the Abitibi greenstone belt, Ontario**
B Mowbray¹, H Gibson¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 206 **Metallogeny and chemostratigraphy of the Elmhirst-Rickaby tectonic assemblage: An Archean andesitic package**
K Strongman¹, H Gibson¹, B Lafrance¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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Volcanogenic Massive Sulfide (VMS) Deposits



- 207 **The Powell fault, Rouyn-Noranda, Québec: Evidence for a synvolcanic origin**
M Schofield¹, B Lafrance¹, KH Poulsen², H Gibson¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada; ²Consultant, Ottawa, Ontario, Canada
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- 208 **A metalliferous exhalative horizon in the Pontiac Subprovince: characterization and potential for mineral exploration, Lac Bellecombe, Rouyn-Noranda, Québec, Canada**
AT Paleczny¹, GR Olivo¹, TRC Jørgensen²
¹Department of Geological Sciences, Queen's University, Kingston, Ontario, Canada; ²Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 209 **Volcanic reconstruction of the ca. 2701 Ma Duprat-Montbray formation and implications for targeting new volcanogenic massive sulfide deposits in the Lower Blake River Group, Rouyn-Noranda, Québec**
JC Sutton¹, HL Gibson¹, TRC Jørgensen¹, MA Hamilton²
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario; ²Jack Satterly Geochronology Laboratory, University of Toronto, Toronto, Ontario
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- 210 **Siting of the seafloor massive sulfides at the Lucky Strike segment, Mid-Atlantic Ridge**
D Sánchez Mora¹, J Jamieson¹
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- 211 **Exploring lineament analysis (volcanic ridges and faults) and the distribution of seafloor massive sulphide deposits in the Lau Basin**
J Ryan¹, MD Hannington¹, AT Baxter¹, ME Stewart¹, J Emberly¹, K Breker¹
¹Department of Earth and Environmental Sciences, University of Ottawa, Ontario, Canada
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- 212 **Host rocks in the active Lau Basin and ancient mineralizing systems**
ML Fassbender¹, MD Hannington¹, M Stewart¹
¹Department of Earth and Environmental Sciences, University of Ottawa, Ottawa, Ontario, Canada
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- 213 **Structural Evolution of the NE Lau Back-arc Basin: Links to Tectonic Regime and Magmatic-hydrothermal Systems**
C Norris-Julseth¹, MO Anderson¹
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*chantal_norris@live.com



- 301 **The formation and origin of ultra-high-grade gold ore at the Brucejack deposit, northwest British Columbia: insights from nanoscale imaging of electrum and high-resolution trace element and sulphur isotope analyses of pyrite**
 DF McLeish¹, AE Williams-Jones¹, WS Board², RA Stern³, JR Clark¹, OV Vasyukova¹
¹Department of Earth and Planetary Sciences, McGill University, Montréal, Québec, Canada; ²Pretium Resources Inc., Vancouver, British Columbia, Canada; ³Department of Earth and Atmospheric Sciences, University of Alberta, Edmonton, Alberta, Canada
 *duncan.mcleish@mail.mcgill.ca
- 302 **Magmatic-hydrothermal history of the Klaza epithermal deposit in the Mt. Nansen district, Dawson Range, Yukon**
 WL Lee¹, JP Richards¹, M Turner², DJ Kontak¹, A DuFrane³, J Crowley⁴
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada; ²Rockhaven Resources Ltd., Vancouver, British Columbia, Canada; ³Department of Earth and Atmospheric Sciences, University of Alberta, Edmonton, Alberta, Canada; ⁴Department of Geoscience, University of Nevada, Las Vegas, Nevada, USA
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- 303 **Geochronology and stable isotope of the Tiegelongnan porphyry-epithermal Cu deposit, Tibet, China**
 C Yang¹, G Beaudoin¹, J Tang¹
¹Département de géologie et de génie géologique, Université Laval, Québec City, Québec, Canada
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- 304 **Characterization of ammonium bearing alteration associated with epithermal gold mineralization in southern Kyushu and northeastern Hokkaido, Japan**
 NK Kristoffersen¹, K Hattori¹, E Izawa², T Hayashi³, A Rowe⁴
¹Department of Earth Sciences, University of Ottawa, Ottawa, Ontario, Canada; ²Department of Mining, Kyushu University, Higashi-ku, Fukuoka, Japan; ³Japan Oil, Gas, and Metals National Corporation, Minato-ku, Tokyo, Japan; ⁴Japan Gold Corp, Vancouver, British Columbia, Canada
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- 305 **Ammonium alteration associated with epithermal silver mineralization in Mexico**
 T Sheppard¹, K Hattori², A Fonseca³
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- 306 **Thallium mineralogy of the Taron epithermal Cesium deposit: Implications for economics, mining, metallurgy and the environment**
 TJ Ledoux¹, PA Winterburn¹, B Downing², D Trueman²
¹Mineral Deposit Research Unit, Earth, Ocean and Atmospheric Sciences, University of British Columbia, Vancouver, British Columbia, Canada; ²Cascadero Copper Corporation, Vancouver, British Columbia, Canada
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- 401 **White mica geochemistry as a vectoring tool applied to exploration of porphyry systems**
 C Uribe¹, K Maher¹
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- 402 **Sulfur mobility in arc magma systems: Implications for porphyry ore deposits**
 J Wrage¹, A Fiege¹, B Konecke¹, A Simon¹, P Ruprecht², H Behrens³
¹Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor, Michigan, USA; ²Department of Geological Sciences and Engineering, University of Nevada, Reno, Nevada, USA; ³Institute of Mineralogy, Leibniz University Hannover, Hannover, Germany
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- 403 **Analysis of K-Feldspar from NYF-Type Rare-Element Pegmatites**
 O Pushie¹, A Anderson¹
¹Department of Earth Sciences, St. Francis Xavier University, Antigonish, Nova Scotia, Canada
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- 404 **Geochemical characterization of K-feldspar from LCT-type granitic pegmatites**
 M Besaw¹, A Anderson¹
¹Department of Earth Sciences, St. Francis Xavier University, Antigonish, Nova Scotia, Canada
 *besawmary@gmail.com
- 405 **An integrated stable isotopic and textural study of the Little Nahanni LCT-type rare-metal pegmatite system, NWT**
 J Pfister¹, D Kontak¹, L Groat²
¹Harquail School of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada; ²Department of Earth, Ocean and Atmospheric Sciences, University of British Columbia, Vancouver, British Columbia, Canada
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- 406 **Lithium Isotope Signature and Gold Mineralization at the Dryberry Batholith, Western Wabigoon, Ontario**
 M Simon¹
¹Department of Earth and Environmental Sciences, University of Ottawa, Ottawa, Ontario, Canada
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- 407 **Raiders of the Lost Lake: New perspective for intrusion-related gold exploration in the western Wabigoon subprovince, Ontario**
 D Downie¹, BM Frieman¹, S Perrouy¹
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- 408 **Characterizing the magnetic responses of felsic-intermediate intrusions in the western Wabigoon subprovince**
A Mavundza^{*1}, S Perrouty¹, BM Frieman¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 409 **The Rundle Intrusive Complex: Investigating Oxidation Processes Related to Gold Mineralization in an Archean Alkaline Intrusive Setting**
CR Small^{*1}, AM McDonald¹, ECG Hastie¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 410 **Metasomatic modification of structurally focused Archean alkaline intrusions, Larder Lake, Ontario**
S Brace^{*1}, D Kontak¹, K Rubingh¹, P Jugo¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 411 **Characterization of an enriched Mg-Cr-Ni unit hosted in Timiskaming Group metasedimentary rocks: implications for subsidiary structures of the Cadillac-Larder Lake deformation zone, Rouyn-Noranda, Québec**
AM Bradley^{*1}, TRC Jørgensen¹, PC Thurston¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 412 **Preliminary investigation of partial melting relationships to identify the behavior of metals during high-grade metamorphism, Kapuskasing Structural Zone, Ontario, Canada.**
NS Estrada^{*1}, DK Tinkham¹, TRC Jørgensen¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 413 **Identifying the source of the ca. 2.2 Ga Nipissing Diabase sills using geochronology and geochemistry with insights into their Ni-Cu-PGE potential**
S Davey^{*1}, W Bleeker², S Kamo³, D Davis³, M Easton⁴, R Sutcliffe⁵
¹Department of Earth Sciences, Carleton University, Ottawa, Ontario, Canada; ²Geological Survey of Canada, Ottawa, Ontario, Canada; ³Jack Satterly Geochronology Laboratory, University of Toronto, Toronto, Ontario, Canada; ⁴Ontario Geological Survey, Geoscience Resources and Mapping Section, Ministry of Northern Development and Mines, Sudbury, Ontario, Canada; ⁵Pavey Ark Minerals Inc
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- 414 **A Mineralogical Study of Ni Distribution in an Atypical Pyrrhotite-rich, Cu-Ni Footwall Deposit, Norman Township, Ontario**
L Foucault^{*1,2}, A McDonald¹
¹Harquail School of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada; ²Sudbury Integrated Nickel Operations, Sudbury, Ontario, Canada
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- 415 **The East-Sullivan Intrusion and its Associated Au, Ag, Cu, Mo Mineralization, Val d'Or District, Abitibi, Québec**
F Bigot^{*1}, P Berthelot², M Jebrak¹
¹Département des sciences de la Terre et de l'atmosphère, Université du Québec à Montréal, Montréal, Québec, Canada; ²Alexandria Minerals Corporation, Val d'Or, Québec City, Québec, Canada
^{*}florent-bigot@live.fr
- 416 **Mobilization of Ni-Cu-(PGE) mineralization at the Cubric showing in the La Motte-Vassan Formation, La Motte, Québec**
D Shirriff^{*1}, CM Leshner¹, B Lafrance¹, X Zhou¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 417 **Evaluation of iron formation and mafic-ultramafic intrusions for economic potential: Results from new regional bedrock mapping, Northwestern Baffin Island**
P Bovington^{*1}, D Tinkham¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 418 **Behaviour of ore-forming elements in the subcontinental lithospheric mantle below the slave craton**
C Veglio^{*1}, C Lawley², B Kjarsgaard², DG Pearson¹
¹Earth and Atmospheric Sciences, University of Alberta, Edmonton, Alberta, Canada; ²Geological Survey of Canada, Ottawa, Ontario, Canada
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Intrusion-related Deposits



- 419 **Ni isotopic fractionation associated with Ni mineralization in the Zambales ophiolite complex and Palawan ophiolite complex, Philippines**
C Zhu*¹, C Schardt², S Wang³, L Wazylenki⁴, A Withers^{1,5}, A Bouvier^{1,5}
¹Department of Earth Sciences, Western University, London, Ontario, Canada; ²Department of Earth and Environmental Sciences, University of Minnesota Duluth, Duluth, Minnesota, USA; ³State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences, Beijing, China; ⁴School of Earth and Sustainability, Northern Arizona University, Flagstaff, Arizona, USA; ⁵Bayerisches Geo-Institut, Universität Bayreuth, Bayreuth, Germany
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- 420 **Tin (SnO₂) occurrences of Mwanza region and related Alterations and Rocks, Democratic Republic of the Congo, Central Africa**
P Afazali*¹
¹University of Lubumbashi, Katanga, Democratic Republic of the Congo
*pascal.afazali@gmail.com
- 421 **Mineral chemistry of major sulfides: application to the understanding of PGE mineralisation in the Northern Limb of the Bushveld Igneous Complex**
S Mkhonto*¹, P Jugo¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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Iron oxide copper-gold (IOCG) Deposits



- 501 **A new magmatic-hydrothermal genetic model for the world-class El Laco magnetite-apatite deposit, northern Chile**
JT Ovalle*¹
¹Department of Geology, University of Chile, Santiago, Chile
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- 502 **ATLAS 5 large-area and nano-scale imaging of iron ore from the El Laco volcano, Chile**
JF de Fourestier*¹, JE Mungall¹, D Schumann², RF Martin³
¹Department of Earth Sciences, Carleton University, Ottawa, Ontario, Canada; ²Fibics Incorporated, Ottawa, Ontario, Canada; ³Fibics Incorporated, Ottawa, Ontario, Canada;
³Department of Earth and Planetary Sciences, McGill University, Montréal, Québec, Canada
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- 503 **Evidence for the IOCG - IOA Continuum from Fe-O Stable Isotopes and Trace Element Chemistry of Magnetite from the Candelaria Iron Oxide-Copper-Gold and the Quince Iron Oxide-Apatite Deposits, Chile**
MA Rodriguez-Mustafa*¹, AC Simon¹, I del Real², JFH Thompson², F Barra³, M Reich³
¹Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor, Michigan, USA; ²Department of Earth and Atmospheric Sciences, Cornell University, Ithaca, New York, USA; ³Department of Geology and Andean Geothermal Center of Excellence (CEGA), Universidad de Chile, Santiago de Chile, Chile
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Orogenic Gold Deposits



- 601 **Petrographic and geochemical analysis of host rocks to auriferous quartz veins, Fisher property, Seabee Gold Operation, Saskatchewan**
C Onstad¹, K Ansdell¹, C Partin¹, A Carlson²
¹Department of Geological Sciences, University of Saskatchewan, Saskatoon, Saskatchewan, Canada;
²SSR Mining Inc., Saskatoon, Saskatchewan, Canada
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- 602 **Hydrothermal Alteration Footprint of the Monument Bay Gold Deposit, Stull Lake Greenstone Belt, Manitoba, Canada**
J Casali¹, C Hao¹, Z Ghorbani¹, HE Cavallin², LL Van Loon¹, NR Banerjee¹
¹Department of Earth Sciences, Western University, London, Ontario, Canada; ²Yamana Gold Inc., Toronto, Ontario, Canada
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- 603 **Gold Mineralization at the Monument Bay Deposit, Stull Lake Greenstone Belt, Manitoba, Canada**
C Hao¹, J Casali¹, Z Ghorbani¹, HE Cavallin², LL Van Loon¹, NR Banerjee¹
¹Department of Earth Sciences, Western University, London, Ontario, Canada; ²Yamana Gold Inc., Toronto, Ontario, Canada
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- 604 **Linking Metamorphism and Orogenic Gold in the Proterozoic Lynn Lake Greenstone Belt, northern Manitoba**
R O'Connor^{1,2}, C Lawley², D Schneider¹
¹Department of Earth and Environmental Sciences, University of Ottawa, Ottawa, Ontario, Canada;
²Geological Survey of Canada, Ottawa, Ontario, Canada
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- 605 **Mapping the Hydrothermal Footprint of the MacLellan Au Deposit by Handheld Laser-Induced Breakdown Spectroscopy (LIBS)**
J Watts¹, C Lawley², J Gagnon¹, S Rehse³
¹Department of Earth and Environmental Sciences, University of Windsor, Windsor, Ontario, Canada;
²Natural Resources Canada, Geological Survey of Canada, Ottawa, Ontario, Canada; ³Department of Physics, University of Windsor, Windsor, Ontario, Canada
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- 606 **Preliminary results from regional mapping and petrographic analyses of mineralized and barren deformation zones in the western Wabigoon subprovince, Ontario**
K Zammit¹, BM Frieman¹, S Perrouty¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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Orogenic Gold Deposits



- 607 **Kinematic analysis of the Manitou-Dinorwic deformation zone and its implications for mineral exploration in the Western Wabigoon subprovince**
K Holt¹, S Perrouty², BM Frieman², L Godin¹
¹Department of Geological Sciences and Engineering, Queen's University, Kingston, Ontario, Canada;
²Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
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- 608 **Archean gold mineralization in the Wawa Gold Corridor, Wawa, Ontario**
EA Wehrle¹, JF Montreuil², IM Samson¹, J Hoyle¹, DJ Kontak³
¹Department of Earth and Environmental Sciences, University of Windsor, Windsor, Ontario, Canada;
²Red Pine Exploration, Toronto, Ontario, Canada; ³Harquail School of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada
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- 609 **Lithium Isotopes for Gold Exploration at Red Lake/Cochénour Mine, Ontario, Canada**
A Gatenby¹, O Nadeau¹, SL Novlan², K Robitaille-Feick²
¹Department of Earth and Environmental Sciences, University of Ottawa, Ottawa, Ontario, Canada;
²Goldcorp Inc., Vancouver, British Columbia, Canada
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- 610 **Metavolcanic evolution of the Swayze area of the Abitibi Greenstone Belt – Preliminary interpretations**
TP Gemmell^{1,2}, H Gibson¹, B Lafrance¹
¹Harquail School of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada; ²Earth Resources and Geoscience Mapping Section, Ontario Geological Survey, Sudbury, Ontario, Canada
*thomas.gemmell@ontario.ca
- 611 **Structural architecture and gold mineralization of a metasedimentary basin located along the Larder Lake–Cadillac deformation zone in the Abitibi greenstone belt, Québec**
B Samson¹, B Lafrance¹, X Zhou¹
¹Mineral Exploration Research Centre, Harquail School of Earth Sciences, Goodman School of Mines, Laurentian University, Sudbury, Ontario, Canada
*bsamson@laurentian.ca
- 612 **Structural and geochemical analysis of a mineralized exposure from the Cadillac - Larder Lake deformation zone, western Abitibi subprovince, Ontario: implications for gold mineralization**
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613 Geology of the Windfall Lake gold deposit, Québec, Canada

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614 Metallogeny and Geological Setting of the Pierre Showing in the La Grande Subprovince, Superior Craton, Québec

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615 The controls of Gold Mineralization at The Orenada Zone 4 Deposit, Val d'Or, Québec

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616 New interpretation and relative chronology of gold mineralization in the Upper East-main Greenstone Belt, Québec, Canada

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617 Understanding the geology and gold distribution in the Archean Mistumis pluton, James Bay, Québec

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618 Geology of the Tiriganiaq gold deposit, Meliadine district, Nunavut

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619 Hydrothermal alteration of the gabbro-hosted orogenic Au mineralization in the Argyle deposit, Baie Verte, Newfoundland: Preliminary results

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620 Origins of the Black Hills terrane in the eastern Wyoming craton: An atypical supergiant orogenic gold province within supercontinent Nuna

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621 Reverse shear, horizontal shortening and lode-gold mineralisation along the Mougood-erra Shear Zone, Western Australia

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622 Stable Isotope (H, O, C, Si, He, Ar) Systematics of the Turbidite-Hosted Shangxu Gold Deposits in the Bangong-Nujiang suture belt, Central Tibet, China: Implications for ore genesis

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- 701 Are magnetic susceptibilities derived from aeromagnetic data consistent with measurements on outcrop?
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- 702 UAV-borne Aeromagnetic Survey Delineates Structural Controls in Greenstone Gold Exploration
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- 703 Potential field data modelling along Metal Earth's Chibougamau transect using geophysical and geological constraints
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- 704 Multi-Focusing stacking technique: A robust method of improving subsurface seismic imaging
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- 705 3D magnetic data inversion using a Lanczos bidiagonalization algorithm with the choice of the regularization parameter based on the normalized cumulative periodogram
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- 706 A Study of Seafloor Massive Sulphide Deposit Systems through Magnetic Inversion; East Manus Basin
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- 707 Geophysical Signature of Camel Back and Flat Landing Brook VMS deposits, Bathurst, NB
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- 708 Massive Sulphide Exploration with the use of Geophysics: Key Anacon and Orvan Brook, Bathurst, New Brunswick
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- 709 Removal of Severe Noise from Airborne Time-Domain Electromagnetic Data Acquired Across a Devonian Rift Basin in New Brunswick, Canada
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- 710 Calculating the terrain correction for gravity gradiometry data using 3D forward modelling and unstructured tetrahedral meshes
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- 801 3D Fault Network in the Western Wabigoon Subprovince: Implications for Orogenic Gold Prospectivity**
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- 802 Optimization of GIS-based lithology and structural variability analysis for Archean greenstone belts: A case study in the western Wabigoon subprovince, Ontario**
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- 803 Random Forest Classification and Principal Component Analysis in Geochemical Data of a Sulfide and Silicate Base Metal Mineralization in Vazante District, Brazil**
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- 804 Mineralogical reaction modelling of partial extractions in geochemical exploration samples**
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- 805 Magnetite geochemistry as a tool for exploration in Guyana**
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- 806 Direct discovery of buried mineralization through microbial community-fingerprinting**
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- 807 Brazil and Canada: A Comparative Study on the Mining Industry towards the Indigenous Peoples**
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- 808 Taking rocks for granite: An integrated mineralogical, textural, and petrographic baseline of curling stones used in international-level competition**
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- 809 Till geochemistry as a tool to discover concealed kimberlites, NWT**
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- 810 Experimental study of reaction textures in volcanoclastic kimberlites**
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