

Assessing Gold and Base Metal Endowment in the Abitibi and Wabigoon Subprovinces

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3:50-4:20	Zsuzsanna Tóth: The geology of the Hardrock orogenic gold deposit with highlights from the geological evolution of the Beardmore-Geraldton greenstone belt.
4:20-4:30	Ross Sherlock: Summary and Conclusions.



Introduction Metal Earth 2018 Update

John Ayer
MERC Associate Director



Metal Earth

- **METAL EARTH** is a **MERC** led collaborative research project focused on metal endowment in the Precambrian shield
- **THE GOAL** is to improve the science for targeting and finding new orebodies
- Fully-funded seven-year \$104M applied R&D initiative.
- **Canada FIRST** Research Excellence Fund (CFREF)
 - project started in summer 2017

Metal Earth Strategy

- Focus on Archean greenstone belts, which represent 60% of Earth history and almost 50% of Canada's metal wealth
- Resolve ore system-scale controls at craton - greenstone belt - district - deposit scales
- Image ore and non-ore systems at full crust-mantle scale
- Develop transformative 3D-4D data integration, analysis, and visualization tools that will aid discovery of new districts and new deposits

Metal Earth: Building Scientific Capacity

People:

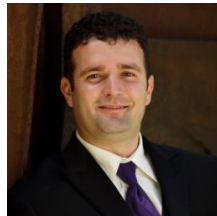
Five new faculty (4-LU, 1-UQAC)



Ross Sherlock
Chair in Exploration
Targeting



Leonardo Feltrin
Earth Systems
Modelling



Mostafa Naghizadeh
Seismic Methods



Stephane Perrouty
Precambrian Geology



Lucie Mathieu, UQAC
Institutional Chair in
Archean Metallogenic
Processes

HSES Faculty and MERC

John Ayer, Harold Gibson, Dan Kontak, Bruno Lafrance, Michael Lesher, Jeremy Richards, Richard Smith, Philips Thurston...others to join

Five Academic Partners












U. Alberta, U. Laval, U. Ottawa. UQAC, U. Toronto

Geological Surveys

Manitoba, NWT, Nunavut, Ontario, Quebec, Geological Survey of Canada

Metal Earth People

Research Associates (RA) and Post-doctoral fellows (PDF) – 11 Total

- Dr. Saeid Cheraghi, PDF, Metal Earth, Geophysics Seismic project 
- Dr. Esmail Eshaghi, PDF, Metal Earth, Geophysical potential field data and petrophysics 
- Dr. Ben Frieman, PDF, Metal Earth, Stormy-Dryden Transect 
- Dr. Graham James Hill, Senior RA, Metal Earth, Magnetotellurics 
- Dr. Taus Jørgensen, RA, Metal Earth, Rouyn-Noranda Transect 
- Dr. Jeffrey Marsh, PDF, Metal Earth, LA-ICP-MS 
- Dr. David Mole, PDF, Metal Earth, Craton Scale project 
- Dr. Rasmus Haugaard, PDF, Metal Earth, Swayze Transect 
- Kate Rubingh, RA, Metal Earth, Ben-Nevis – Larder Lake Transect 
- Zsuzsanna Toth, RA, Metal Earth, Geraldton-Onaman Transect 
- Dr. Xiaohui Zhou, RA, Metal Earth, Malartic Transect 











Metal Earth People

PhD Candidates - Mineral Deposits and Precambrian Geology– 9 Total

- Thomas Gemmell, Swayze Transect (OGS collaboration) 
- Josh Grattage, Larder Lake Transect 
- Dylan McKevitt, Thematic (TGI 5, Glencore) 
- Xuyang Meng, Thematic 
- Rebecca Moniston, Thematic 
- Eric Roots, Magnetotellurics 
- Marina Schofield, Rouyn-Noranda Transect 
- Keaton Strongman, Geraldton-Onaman Transect 
- Yujian Wang, Thematic (CSC) 

Metal Earth People

MSc Candidates - Geology- 14 Total

- Sean Brace, Ben-Nevis – Larder Lake Transect 
- David Downie, Dryden Transect 
- Nicolas Estrada, Thematic 
- Fabiano Justina, Geophysical Gravity and Magnetism 
- Amir Maleki, Geophysical Gravity and Magnetism 
- William McNeice, Geophysical Gravity and Magnetism 
- Blake Mowbray, Swayze Transect 
- Adrian Rehm, Candidate Geology, Rouyn-Noranda Transect 
- Brendon Samson, Malartic Transect 
- Danielle Shirriff, Malartic Transect 
- Connor Small, Thematic 
- Nadia St.Jean, Ben-Nevis – Larder Lake Transect 
- Jonathan Sutton, Rouyn-Noranda Transect 
- Kendra Zammit, Dryden Transect 

Metal Earth People

Technical (4) and Administrative (4) Staff – 8 Total

Technical

- Bryona Fernandes, GIS Visualisation Specialist, Metal Earth
- Kipp Grose, Information Technologist, Metal Earth
- Rebecca Montsion, GIS Visualisation Specialist, Metal Earth (currently Ph.D. Candidate)
- Database Manager, Metal Earth (open position)

Administrative

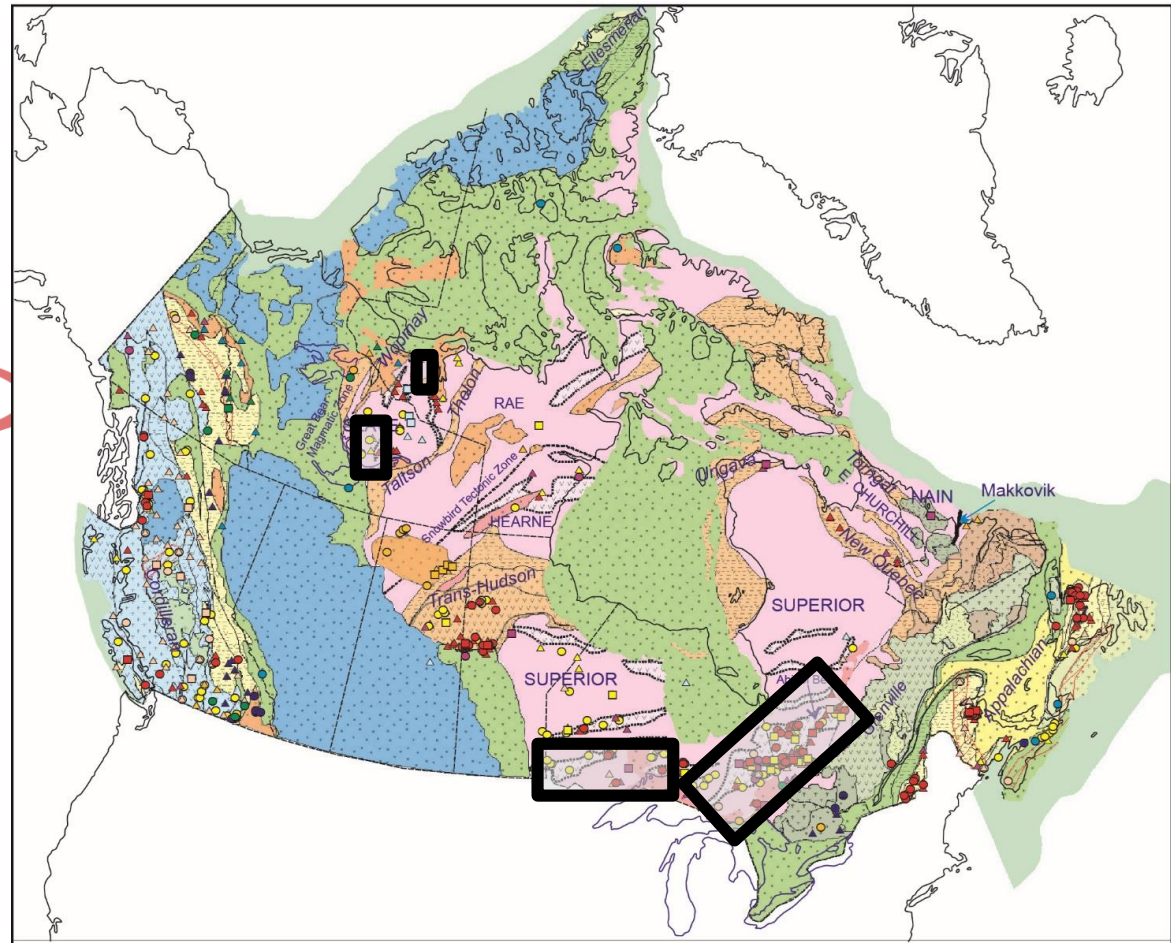
- Lindsay Cooper, Communications & Promotions Manager
- Chantal Duval, Executive Assistant, MERC
- Courtney Foltz, Administrative Coordinator
- Natalie Lafleur Roy, Administrative and Finance Manager

Metal Earth Strategy

4 Integrated Activities:

1. Craton Scale Research - 2017
2. Transect Scale Research - 2017
3. Thematic Research
4. Data Analytics

Data Collection Phase

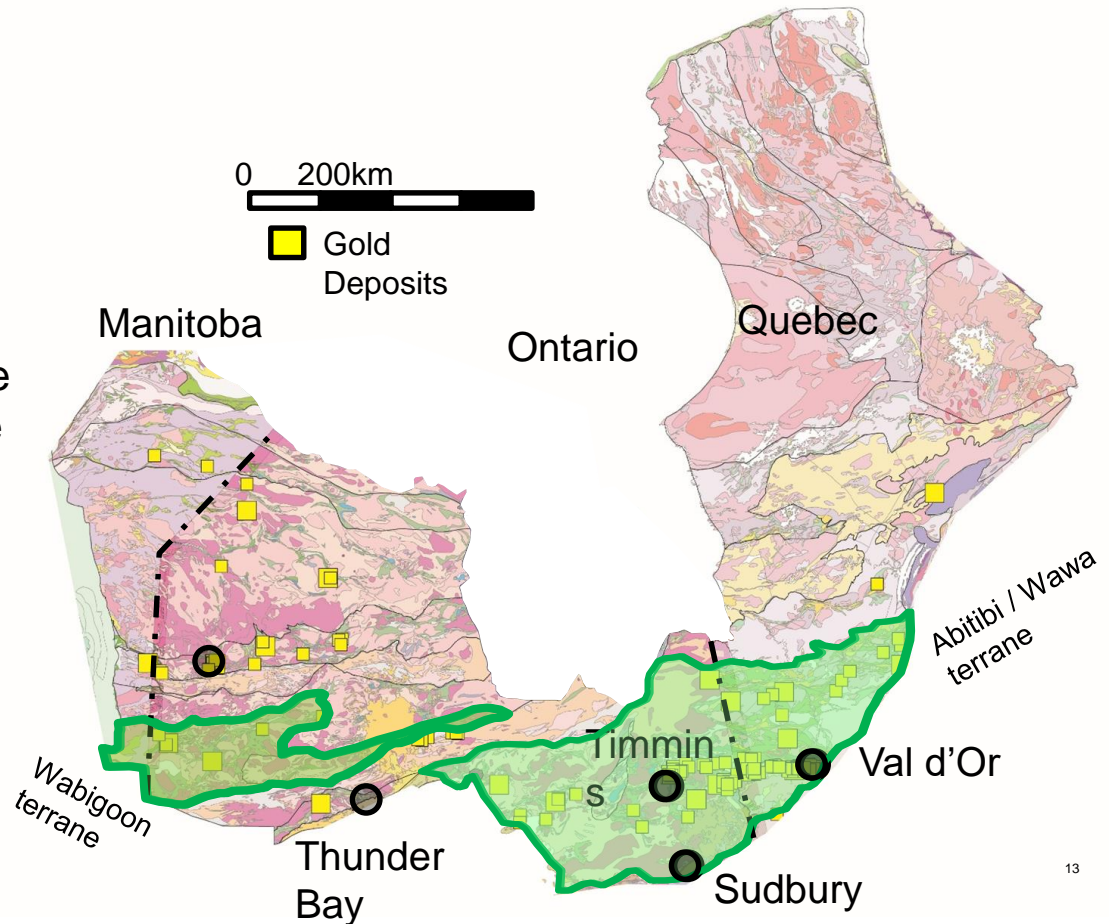


Metal Earth Strategy

Transect Research 2017-2021

Geological, Geochemical and Geophysical transects through the Abitibi and Wabigoon Greenstone Belts to resolve the lithospheric-crustal architecture and fluid (magma/heat) pathways of differentially endowed greenstone belts and trans-crustal structures.

Product: Crust to Mantle slices through areas of differential metal endowment



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Abitibi Transects

Chibougamau

Malartic

Rouyn-Noranda

Larder Lake

Matheson

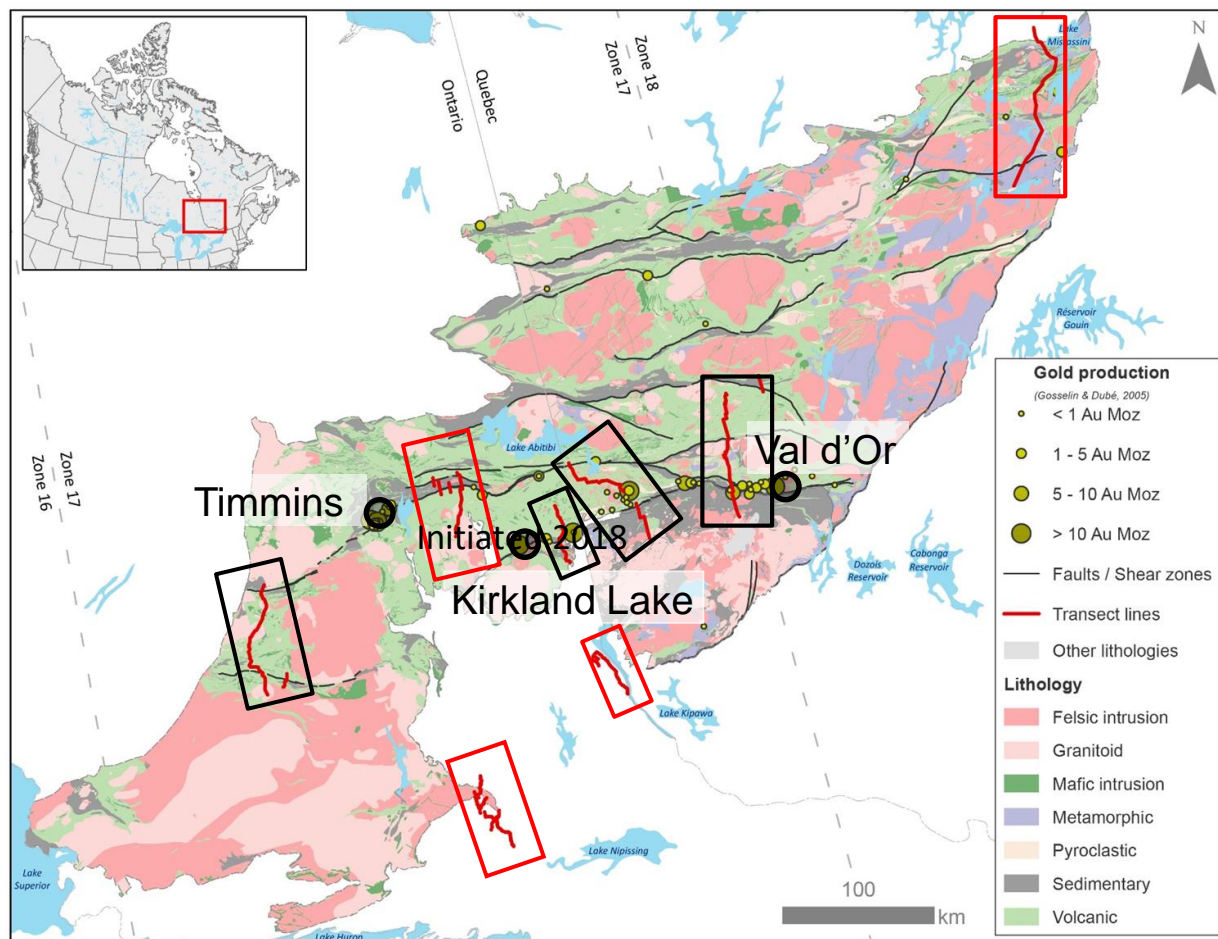
Swayze

Cobalt

Sudbury

Initiated 2017

Initiated 2018



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