

Exploring for Iron Oxide Copper-Gold (Ag-Bi-Co-U) deposits: A practical course on alteration mapping and vectoring tools for the extraordinary range of IOCG and affiliated deposits

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Geological Association of Canada
Canadian Institute of Mining, Metallurgy and Petroleum
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Contributors

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Dr. Corriveau has recently authored a synthesis on IOCG deposits in a Canadian perspective and is now researching field vectors to IOCG mineralization and the nuclear energy potential of IOCG systems.

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Dr. Mumin has managed major exploration projects in the Ashanti Gold Belt, the Great Bear Magmatic Zone (NWT) and elsewhere, and participated in the discovery and development of several deposits.

Overview

The iron oxide copper-gold (IOCG) deposit type comprises an extraordinary range of polymetallic deposits that defy simple classification and genetic models, and challenge the mineral resources community with their oxide-rich rather than sulphide-rich ore zones and their atypical combination of commodities (base, precious, rare, strategic and/or nuclear metals, and industrial minerals). Commonalities in regional- to deposit-scale Na, Ca, K, Fe alteration, breccias, sequence of alteration, zoning patterns and clustering of deposits single out IOCG systems worldwide and provide practical vectors and guides for exploration. Such characteristics also provide means to reassess seemingly disparate Au, Cu, U, Ag, Co, REE showings and Kiruna-type alteration as parts of polymetallic IOCG systems, facilitating identification of potential IOCG targets in under-explored areas of Canada and global analogues. The short course addresses critical issues in exploring for IOCG deposits, emphasizes the importance of alteration mapping to validate the IOCG model and discover mineralization in under-explored terrains and describes giant metasomatic systems. Representative photos and rock samples from the stunning cross-sectional exposures of the Great Bear Magmatic Zone (Northwest Territories) will also be available for participants to examine and discuss.

A contribution of

- Geological Association of Canada and its Mineral Deposit Division
- Targeted Geoscience Initiative 3, Secure Canadian Energy Supply and Geo-Mapping for Energy and Minerals programs, NRCan
- Strategic Investments in Northern Economic Development program, INAC, Northwest Territories Geoscience Office
- The Canadian Institute of Mining, Metallurgy and Petroleum
- Brandon University
- Canadian Council of Professional Geoscientists

Topics

The extraordinary range of iron oxide copper-gold (Ag-Bi-Co-U) deposits and a Canadian perspective

The need for case studies, classifications and vectors to explore Canada's virgin territories and global analogs

Giant magmatic-hydrothermal systems in the Great Bear Magmatic Zone, NT

The IOCG – Porphyry (Cu) – Epithermal Continuum

Alteration vectors to IOCGs

The alteration and ore lab!

Who should attend?

- *Geoscientists*
- *Explorationists*
- *Managers*
- *Students*
- *Professors*

and those who wish to learn more about IOCG deposits and their hydrothermal systems for more effective exploration, mapping, research, sustainable economic development, government policy and land-use planning.

This one day short course consists of 6.5 hours of talks devoted to key characteristics of IOCG deposits, exploration vectors, exploration challenges and field exploration methods in a Canadian perspective.

As there is no better way to enrich our geoscience knowledge than with hands-on experience, participants will conclude the course with an alteration and ore lab that introduces the extraordinary range of IOCG deposits and their hydrothermal alteration, breccias and ores.

Share your own rock samples and experiences with us!

