Geometallurgy Initiative

MDRU
MINERAL DEPOSIT RESEARCH UNIT

About the Initiative

MDRU's Geometallurgy Initiative will develop and implement a range of collaborative research opportunities, strategies, and projects with industry partners to characterise and quantify variability in orebody parameters that relate to the mining value chain. We will provide the leadership required to facilitate a new era in geometallurgical research, training, and education in this rapidly developing field.

MDRU has two approaches to geometallurgical research. Firstly, we have a holistic approach that spans and links all components of the mining value chain from exploration to tailings. The aim is to improve the fundamental understanding of resource economics by integrating geology, mining, metallurgy, tailings, and environmental information to maximize the value of an orebody while minimizing technical and operational risk. This approach factors ore variability into flowsheets, infrastructure design, production, and quality forecasts over life-of-mine.

Secondly, MDRU's has a "rocks first" approach with an emphasis on material characterization to establish domains and domain characteristics (e.g., mineralogical, geochemical, petrophysical, textural) that relate to mineral processing, recovery, and tailing disposal/storage. We have strengths in petrology, geochemistry, mineralogy, physical properties, alteration characterization, mineral deportment, comminution, and tailings. This initiative will collaborate closely with the UBC NBK Mining Engineering group who have strengths in rock breakage and mine-to-mill integration.

Geomet research areas

The Geometallurgy Initiative has three areas of research focus:

1 **Getting more from core** – testing and development of tools and protocols for the collection of systematic, quantitative, spatially constrained data that relate to the mining value chain

2 **Domain definition and characterization** – interrogating existing (e.g., logging, geochemistry, RQD) and newly acquired data sets to identify domains, determine relationships to the mining value chain, and develop predictive indices

3 **Geological context for mineral deportment** – identifying rock parameters (and proxies) that can be used to enhance decision-making for improved comminution, mineral liberation, and recovery

MDRU will exploit its traditional expertise and will focus geometallurgical efforts on porphyry copper deposits and gold deportment in gold-only and Cu-Au-porphyry systems.
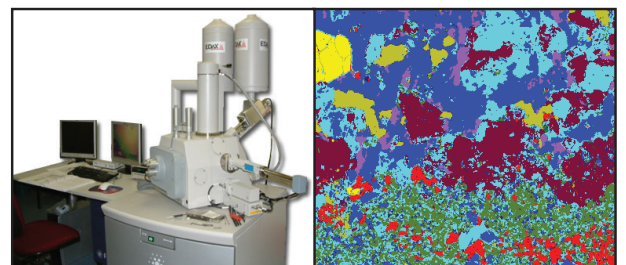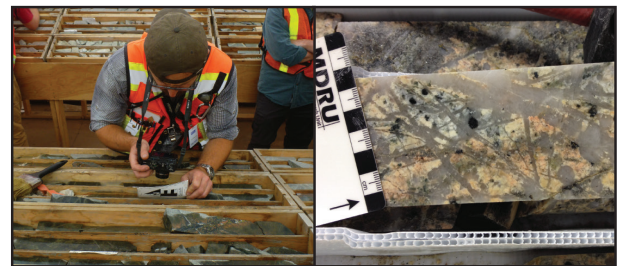
Engage with us

We are keen to engage with industry partners on a range of collaborative research projects. These may be one-on-one projects where a single company sponsors a project that supports a senior researcher, and/or a MSc or PhD student; or projects can be supported by a multi-company research consortium. We are particularly keen to engage in scoping studies or proof-of concept projects. Make a suggestion, submit a proposal, or talk to us, share your challenges.

MDRU has:

- a **track record** of collaborating with the minerals industry to develop and deliver research results that contribute to problem solving and improved decision-making;

- **experience** in developing problem solving strategies, utilizing a range of technologies and analytical approaches;

- **expertise** in the acquisition, interpretation and application of a wide range of analytical approaches including SWIR, XRF, SEM/MLA, CL, EMPA, LA-ICPMS mineral data;

- **research relationships** with other researchers and commercial labs, as well as access to world-renowned equipment and expertise in the faculties of Science and Engineering at The University of British Columbia

Contact
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