



Major Research Area #3 - Iron oxide-Copper-Gold (IOCG) Deposits

This project will focus on the geological, geophysical and geochemical study of Iron oxide-Copper-Gold (IOCG) deposits.

IOCG deposits are magmatic-hydrothermal deposits that contain economic Cu and Au, are structurally controlled, contain significant volumes of breccia, have alteration and or brecciation zones on a large to regional scale, are associated with paragenetically older, low Ti iron oxides and/or iron silicates, have LREE enrichment, lack abundant pyrite or quartz veins/silicification, and show temporal, but not spatial, relationships to magmatic intrusions

The candidate should be able to produce a 3D structural and alteration/mineralisation model for the deposit as well as geophysical models that could be utilised by the mineral industry to identify new exploration targets.



Major Research Area #4 - REE/ECE and Targets of Opportunity

Mineral deposits containing elements critical for new information and energy technologies will become increasingly important to the European Union for both economic development and defence. Locating sources of such elements in the EU or elsewhere is of critical importance.

This project will look at:

- 1) REE deposits in relation to supergene enrichment of low-grade deposits
- 2) Developing models of ECE-rich deposits to aid in exploration
- 3) Targets of opportunity in relation to newly important REE and/or ECEs as they arise.

As much of the exploration for REE and ECEs is conducted by junior mining companies, the proposed work will be conducted as locations are identified and become available for study.

iCRAG

IRISH CENTRE FOR RESEARCH
IN APPLIED GEOSCIENCES



We are hiring!



Available Positions:

IOCG Deposits:

- 1 PhD position

Available Positions:

REE/ECE and Targets of Opportunity:

- 2-3 Postdoctoral Positions

iCRAG is Ireland's national applied geosciences research centre. Comprising over 150 researchers collaborating with over 60 industry partners, our vision is to become a world leader in applied geosciences research. iCRAG's multidisciplinary, interlinked research is helping to deliver transformative economic and social benefit by developing improved technical knowledge and innovative techniques. iCRAG facilitates collaborative, multidisciplinary research to address five major research challenges:

- Supply of Raw Materials
- Energy Security
- Securing & Protecting Groundwater Resources
- Safeguarding the Geomarine Environment
- Protection from Earth's Hazardss

For more information contact us at:

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Prof. Murray Hitzman, Director of iCRAG

Murray W. Hitzman is a world expert economic geologist who has focused his research on basin-hosted metallic systems and iron oxide-copper-gold deposits. He was the Fogarty Professor in Economic Geology at the Colorado School of Mines from 1996 to 2016. Most recently he served as the Associate Director for Energy and Minerals at the USGS.



Major Research Area #1 - Ireland

Ireland is currently one of the world's major zinc producers and Ireland's ore deposits, known for their high quality, are premier exploration targets for mineral companies from around the world. However, exploration to date has located the "easy" deposits close to the earth's surface.

A better scientific understanding of the physical properties of these mineral deposits is required for geophysical exploration. Increased knowledge of the subtle dispersion of elements in rocks surrounding the deposits with sophisticated analyses is required for geochemical exploration.

This project will generate the data required to help discover new zinc deposits in Ireland and analogous deposits elsewhere in the world.

Available Positions:

Regional Scale Irish Zn-Pb Deposits:

- 2-3 Postdoctoral Positions
- 1 PhD position

Mineral deposits/prospects:

- 2-3 Postdoctoral Positions
- 1 PhD position

Major Research Area #2 - Sedimentary Rock-Hosted Stratiform Cu Deposits

Sedimentary rock-hosted stratiform copper deposits consist of fine-grained, Cu and Cu-Fe-sulfide minerals that form stratabound to stratiform disseminations in siliciclastic or dolomitic sedimentary rocks.

These deposits are the world's second largest source of Copper and are also important sources of critical elements such as cobalt, rhenium, and germanium.

The project will study sedimentary-hosted stratiform copper deposits in Africa and within Europe with the intent of bringing a fresh perspective to the research iCRAG is currently undertaking on Irish base metal deposits which have similar features.

Available Positions:

Central African Copperbelt and the European Kupferschiefer:

- 2-3 Postdoctoral Positions
- 1 PhD position