

Centre for **EXPLORATION  
TARGETING**



CET  
Online  
Short  
Course  
Series

# Magmatic Mineral systems

(Centre Exploration Targeting and CSIRO Mineral Resource)

Recent advances and current multi-scale thinking on magmatic Ni-Cu-PGE sulfide

17<sup>th</sup> November to 20<sup>th</sup> November 2020  
From 15:00 to 18:00 (Perth time - UTC+8)



THE UNIVERSITY OF  
**WESTERN  
AUSTRALIA**

## Audience

The course is aimed at geoscientists from both industry and academia who desire to gain a better insight on the latest advances in nickel-sulfide targeting, from terrain to deposit scale

## Language

English

## Course Content

This four-day course will provide a comprehensive overview of the nickel-sulfide mineral system, showcasing the latest advances in the fundamental science that underpins genetic models for a wide range of magmatic systems, with sample material from key world class deposits.

The organisers are A/Prof Marco Fiorentini (University of Western Australia) and Stephen Barnes (CSIRO), who will present case studies on the discovery of large nickel-sulfide systems in Australia and globally, and focus on how the Minerals Systems Approach can be used to as an exploration targeting strategy. Invited scholars and experts in the discipline will also be presenting targeted overviews on specific topics, ranging from the newest isotopic tracers to the cutting-edge geophysical methods for magmatic nickel-sulfides, based on the latest studies on the petrophysics of mafic and ultramafic rocks. The content will be delivered face-to-face and online to facilitate the attendance of professionals and researchers located remotely.

## Duration

4 days (12 hours), three-hour daily sessions from 15:00 to 18:00 (Perth time - GMT+8)

## Location

Online Zoom and face to face on campus at the University of Western Australia, Perth, WA

## Cost

CET Members AU\$ 360 + GST (Euro \*218) - Non-Members AU\$ 500 + GST (Euro \*302)- University Postdocs and Fellows AU\$ 200 +GST (Euro \*122) - Students AU\$ 100 +GST (Euro \*60)

Payment will be charged in Australian Dollar

\*Estimated price

## Certificate of Attendance

Upon completion, participants will receive a certificate of attendance

## Registration

For registration and payment information please visit our website [www.cet.edu.au](http://www.cet.edu.au)

See the CET website for more information  
[www.cet.edu.au](http://www.cet.edu.au)

# Who will be looking after you - Course Leaders



Margaux Le Vaillant



Marco Fiorentini



Steve Barnes



Jon Hronsky

## Schedule

TIME	TOPIC	PRESENTER
<b>Tuesday 17/11/2020</b>	<b>Fundamentals – The Big Picture</b>	<b>Margaux Le Vaillant</b>
15:00	Lithospheric architecture and craton margins	Graham Begg
16:00	Fundamentals of magmatic sulfides: how, where, why?	Steve Barnes
17:00	Lithospheric mantle fertility and reactivation	Marco Fiorentini
18:00	Summary and discussion	All presenters
<b>Wednesday 18/11/2020</b>	<b>Ore Forming processes in magmas</b>	<b>Marco Fiorentini</b>
15:00	Time scales of magma emplacement, physical processes of sulfide incorporation, transport and deposition	Steve Barnes/Giada Iacono-Marziano
16:00	Sulfide textures in 2D and 3D and their meaning. (Including sample display)	Margaux Le Vaillant/Steve Barnes
18:00	Summary and discussion	All presenters
<b>Thursday 19/11/2020</b>	<b>Magmatic mineral systems</b>	<b>Steve Barnes</b>
15:00	Layered intrusion hosted PGE reefs and Platreef	David Holwell
16:00	Komatiite-hosted Ni-Co-Cu systems	Marco Fiorentini
17:00	Mafic intrusion hosted sulfide-rich Ni-Cu-Co-PGEs, shallow and deep: Norilsk-Talnakh and Nova	Steve Barnes/Margaux Le Vaillant
18:30	Summary and discussion	All presenters
<b>Friday 20/11/2020</b>	<b>Exploration tools and techniques</b>	<b>Jon Hronsky</b>
15:00	Geophysical signatures of magmatic Ni-Cu-PGE systems. EM techniques in exploration targeting for orthomagmatic systems	Mike Dentith/Dave Annetts
16:00	Litho geochemistry and latest analytical advances	Steve Barnes/Margaux Le Vaillant
16:30	In-situ mineral signature of mineralised systems	Louise Shoneveld
17:00	New lithospheric tracers: Te-O-S fingerprinting	Marco Fiorentini/David Holwell
17:45	Summary and discussion	All presenters

See the CET website for more information

[www.cet.edu.au](http://www.cet.edu.au)