

LIPS-EXPLORATION SHORT COURSE AND SPECIAL SESSION

AT

RFG 2018 Conference, Vancouver, June 16-21

<http://rfg2018.org/> Resources for Future Generations

(PREMIER CONFERENCE ON ENERGY • MINERALS • WATER • THE EARTH)

SPECIAL SESSION ON LIPS AND EXPLORATION TARGETING

Title: MIN11: Multi-Commodity, Multi-Scale Exploration Targeting Using the Large Igneous Province Record

Convenors: Drs. Richard Ernst and Simon Jowitt

Abstract (only 300 words max): deadline January 15, 2018

The Large Igneous Province (LIP) record is becoming important as a tool in exploration targeting for a wide range of commodities and at regional to local scales. Presentations are welcome on all aspects of LIPs (and associated silicic, carbonatite and kimberlite magmatism) and their links with economic resources (orthomagmatic, hydrothermal and other types of ore deposits, and also oil/gas) and including ideas for the use of the LIP record in exploration targeting

The goal of the session is to kindle new ideas (from Industry experts and the academic community) for exploration targeting using LIPs.

SHORT COURSE ON LIPS AND RESOURCE EXPLORATION AND CLIMATE CHANGE (see course outline on next page)

Course Title: “Large igneous province research frontiers (including resource exploration and climate change)”

Instructors: Drs. Richard Ernst and Simon Jowitt, Date: Friday, June 22, 2018

This one-day short course (\$250 CAD; see attached outline and description) will provide a provide a ‘state of the art’ training in all aspect of Large Igneous Provinces (LIPs) with a focus on research frontiers related to resource exploration and environmental/ climate change

Short course description on next page

22 October 2017
RFG 2018 SHORT COURSE

**LARGE IGNEOUS PROVINCE RESEARCH FRONTIERS
(INCLUDING RESOURCE EXPLORATION AND CLIMATE CHANGE)**

Presenters: **Drs. Richard E. Ernst & Simon M. Jowitt**

Date: **Friday June 22, 2018**

Time: **8 AM to 5 PM (includes lunch)**

OUTLINE/SCHEDULE:

- 8:00-9:00: INTRODUCTION / OVERVIEW
- 9:00-10:15: CONTINENTAL FLOOD BASALTS & OCEANIC PLATEAUS
- 10:15-10:30: Coffee Break
- 10:30-11:45: LIP PLUMBING SYSTEMS (LAYERED INTRUSIONS, SILLS, DYKES & UNDERPLATE)
- 11:45-12:45: Lunch
- 12:45 - 15:15: LIPs, SLIPs & RESOURCE EXPLORATION
- 15:15 – 15:30: Coffee break
- 15:30-16:30: LIPs, SLIPs & ENVIRONMENT/CLIMATE CHANGE
- 16:30-17:00: WRAP UP DISCUSSION

HANDOUTS:

- Memory stick with course materials
- Spiral-bound course notes

SUMMARY:

This one-day short course will provide a provide a 'state of the art' training in all aspect of Large Igneous Provinces (LIPs) with a focus on research frontiers related to resource exploration and environmental/ climate change. The basics will be covered in the morning sessions: continental and oceanic flood basalts and their plumbing systems (layered intrusions, sills, dykes & deep crustal underplating). There will be an overview of additional topics: Archean LIPs, planetary analogues, associated Silicic LIPs (SLIPs), carbonatites and kimberlites, origin (plume & alternatives), links to continental breakup and the supercontinent cycle, geochemistry, associated topographic effects (regional uplift & basin formation) & associated compressional tectonics.

The afternoon sessions will first focus on links with resource implications (metallogey, oil/gas and aquifer systems). The links with a broad range of commodity types are captured in our 5-part classification system and we will also present our latest strategies for using the LIPs record in multi-commodity, multi-scale exploration targeting.

The second afternoon focus will be on the rapidly developing links with dramatic environmental & climate change including mass extinction events. We summarize the latest research on the role of LIPs (and SLIPs) in dramatically changing atmospheric and oceanic composition through time, including global warming, glaciations, anoxia, step-wise oxygenation, acid rain/ocean acidification, enhanced hydrothermal and terrestrial nutrient fluxes, and mercury poisoning.