

Join us!

APGO's Networking Event

Hosted by Doug Cater, P.Geo.

February 9, 2017

5:30 pm - 8:30 pm

Western University

Biological & Geological Sciences Bldg. (BGS)

Room 1053

1151 Richmond Street, London, ON



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Guest Speaker: Dr. Peter Lightfoot, Ph.D., P.Geo.

Nickel Sulfide Ore Deposits and Impact Melts: Origin of the Sudbury Igneous Complex

About Dr. Peter Lightfoot

Peter received his B.A. from Oxford University in 1980, his M.Sc. degree from the University of Toronto in 1982, and his Ph.D. from the Open University in 1985. Following post-doctoral studies at the University of Toronto with Tony Naldrett, he joined the Ontario Geological Survey in 1987, and worked extensively on Sudbury whilst undertaking research on Noril'sk. Peter started work as a Senior Geologist with Inco before Voisey's Bay was acquired, and then spent 20 years with Inco and Vale Base Metals until the end of 2016. He was responsible for the exploration programs at Sudbury, Thompson, and Voisey's Bay and for international project generation. Peter is now an independent consultant to the minerals industry. His company, Lightfoot Geoscience Inc, provides consulting services to companies exploring and developing magmatic sulfide ore deposits, and he provides expertise in the interpretation of geochemical data. Peter is an Associate Editor of Ore Geology Reviews. At the start of 2017, Peter was appointed as the Hutchinson Visiting Industry Professor at the University of Western Ontario.

About the Presentation

This talk explores the linkages between sulfide and silicate magmas generated by the 1.85 Ga Sudbury impact event which produced one of the principal Ni-Cu-PGE sulfide ore deposit camps that has been mined for over 100 years. I examine the relationship between crustal melts on the one hand and magmatic sulfide ore deposits on the other; normally such magmatic sulfide ore deposits rich in Ni, Cu, and PGE require a mafic or ultramafic contribution of magma; at first sight the relationships constitute an oxymoron. Melts of average upper crust would be felsic in composition and bereft of metals normally found in ultramafic and mafic magmas that are required to form magmatic sulfide ore deposits. The talk provides geological and geochemical evidence that the rocks of the SIC were produced by crustal melting, differentiation, and crystallization; these rocks record evidence for the formation of immiscible magmatic sulfide in the magma, and the gravitational concentration of these sulfides towards the base of the Complex where they form the main ore bodies. The timing of processes can also be established from geological relationships between the rocks, and these observations inform models of ore genesis, and help explain the diversity in composition and size which range from ore body systems containing several millions of tonnes of contained metal through to occurrences with just a few thousand tonnes of contained metal.

Thursday, February 9, 2017

APGO Update and Guest Speaker's Presentation

5:30 p.m. to 7:00 p.m.

Networking @ 7:00 p.m. - 8:30 p.m.

All attendees are invited to join us at the Grad Club for beer and hors d'oeuvres. 1 complimentary drink by APGO.

Cash bar.

REGISTRATION

Members: \$15

Non-members: \$30

Geoscience Students: Free

Click on this [link](#) to register online.

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