



NSW Division Newsletter

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APRIL TALKS

Places limited, please RSVP: m.vanderley@unsw.edu.au

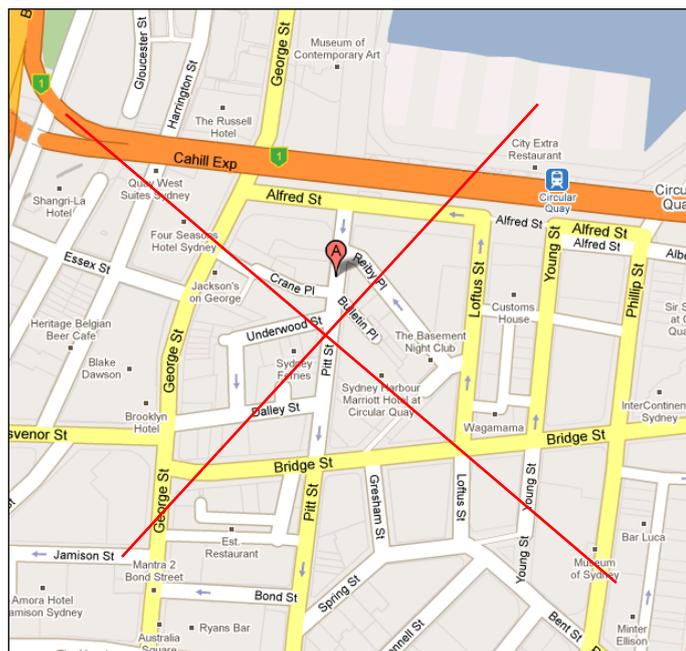
~~15th April – Joint SMEDG/GSA~~

~~**Dr Panagiotis Voudouris**~~

~~“Gold Deposits of Greece”~~

~~5.30pm~~

~~Sydney Rugby Club, Rugby Place (off 31 Pitt St),
Sydney~~



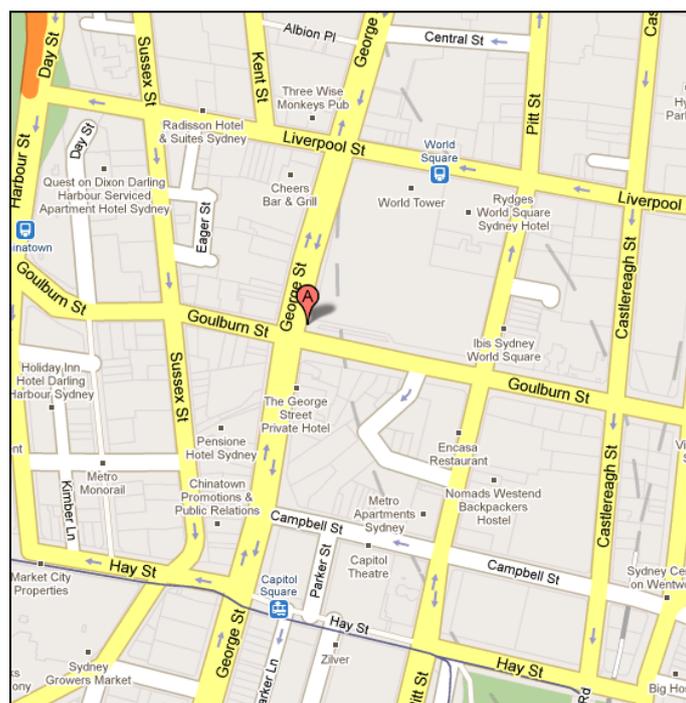
22nd April – Joint GSA/SMEDG

Prof. Damien Gaboury

"Archean lode gold deposits: new insights from
deposits in the Abitibi belt and implications for
exploration"

6.30pm

Parsons Brinckerhoff, L27 680 George St, Sydney



Prof. Damien Gaboury

“Archean lode gold deposits: new insights from deposits in the Abitibi belt and implications for exploration.”

Damien Gaboury is professor of Economic Geology at the University of Quebec at Chicoutimi. He is the director and founder of the LAMEQ, a research laboratory equipped with a flow thought autoclave system and a system for analysing fluid inclusion volatiles by mass spectrometry. His research interests include: 1) field-based gold and base metal metallogeny in the Archean Abitibi belt in Canada and in Birimian belts of West Africa, 2) trace elements in pyrite and 3) gas composition of fluid inclusions. He also acts as an internal consultant for SEMAFO, a Montreal-based exploration and mining company active in West Africa, where he was involved with recent exploration success in Niger.

Abstract

A large proportion of gold deposits in the Abitibi belt are described as “orogenic gold deposits”. Such deposits formed in mid-crustal level by metamorphic fluids, focused regionally along major trans-crustal faults during late accretionary orogeny. Gold-bearing veins occur in second- to third-order faults and form commonly during a single late event with no genetic association with magmatism. These genetic parameters were recognized more than 20 years ago and have driven exploration in Archean belts worldwide. In this talk, I address numerous paradigms of the Archean lode gold deposits based on new data from ongoing MSc and PhD studies at operating mines (Casa-Berardi, Beaufor, Goldex, Lapa) and exploration project (Dubuisson). At Casa-Berardi, recent study of the fluid volatile composition revealed that, in addition to metamorphic, magmatic and meteoric fluids were involved in the mineralizing processes. Meteoric fluids were involved in area where barren VMS lenses are occurring. Gold grades up to 5 ppm in nodular pyrites from black shale in association with barren VMS deposits may represent the gold source for the later auriferous quartz veins. At Beaufor, typical moderately dipping shear veins were formed by extensional opening of pre-existing shear zones and subvertical, high-angle discrete and barren faults acted as gold-bearing fluid conduits for the veins. Goldex, a granitoid-hosted tourmaline-rich stockwork deposit with albite alteration, shares similarities with pneumatolitic mineralization and structural data suggest formation during extensional period. Lapa is an exception by being a major gold deposit occurring within highly strained sedimentary and ultramafic rocks located in the Cadillac major regional fault. Detailed mineralogical study established a protracted history of gold mobilization and remobilization associated with prograde and retrograde metamorphism. Finally, gold at the Dubuisson project in Val-d’Or is centered on a late, calc-alkaline to alkaline multiphase intrusive complex recording dextral movement during mineralization. All these characteristics have implications for gold exploration by providing renewed importance of: 1) on-site gold pre-enrichment; 2) various tectonic regimes and mineralization timings in the same district; 3) association with late intrusive complexes; and 4) gold potential within the first-order faults.