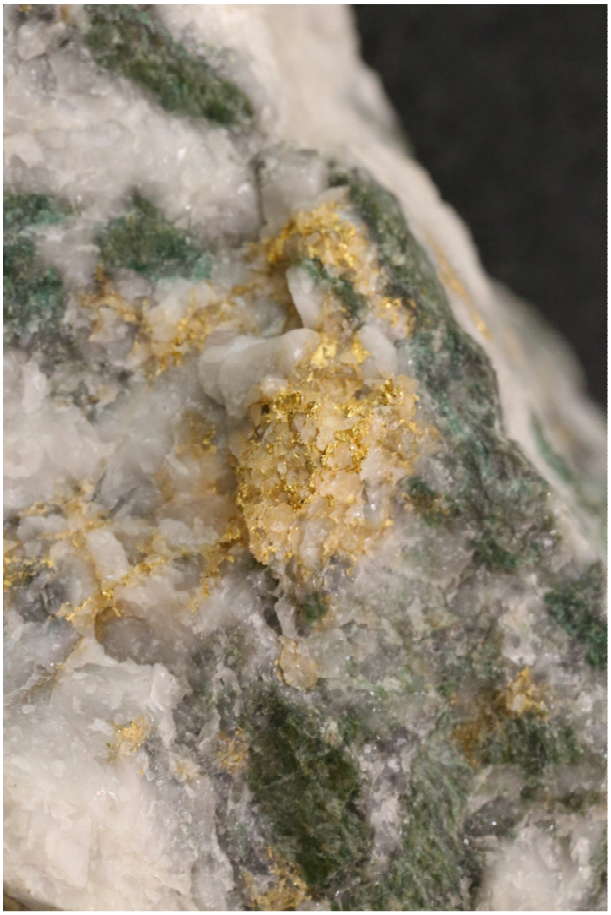

An assessment of Precambrian gold deposit models from deep to shallow crustal levels

PDAC Short Course

Metro Toronto Convention Centre
South Building
Saturday, March 3, 2018

PDAC 2018

An assessment of Precambrian gold deposit models from deep to shallow crustal levels
Agenda

8:30-9:00	Continental Breakfast
9:00-10:00	**Comparison of the Setting and Timing of Abitibi Gold Deposits with other Large Camps in the Superior Province; John Ayer**
10:00-10:20	Coffee break
10:20-11:20	**An Assessment of Gold Deposit Models from a Fluid Chemistry Perspective; Daniel Kontak**
11:20-12:20	**Structural Settings of Gold Deposits in Low to High Metamorphic Grade Terranes; Bruno Lafrance**
12:20-1:20	Lunch
1:20-2:20	**2D/3D GIS-based Integration for Gold Exploration in the Abitibi and Ashanti Greenstone Belts; Stéphane Perrouty**
2:20-3:20	**Key Features of Gold-rich VMS Deposits; Harold Gibson**
3:20-3:40	Coffee break
3:40-4:40	**Effective Exploration Targeting and methods**; **Ross Sherlock**
4:40-5:00	**Summary and Conclusions**

Presenters:
John Ayer; Associate Director of Mineral Exploration Research Centre, Harquail School of Earth Sciences. Laurentian University, Sudbury, Canada. jayer@laurentian.ca

Harold Gibson; Director of Metal Earth, Professor of Economic Geology, Harquail School of Earth Sciences. Laurentian University, Sudbury, Canada. hgibson@laurentian.ca

Daniel Kontak; Professor of Economic Geology, Harquail School of Earth Sciences. Laurentian University, Sudbury, Canada. dkontak@laurentian.ca

Bruno Lafrance; Professor of Structural Geology, Harquail School of Earth Sciences. Laurentian University, Sudbury, Canada. blafrance@laurentian.ca

Stéphane Perrouty; Assistant Professor of Precambrian Geology, Harquail School of Earth Sciences. Laurentian University, Sudbury, Canada. sperrouty@laurentian.ca

Ross Sherlock, Director of Mineral Exploration Research Centre, Professor of Economic Geology, Harquail School of Earth Sciences. Laurentian University, Sudbury, Canada. rsherlock@laurentian.ca

Picture on front cover: Sample of gold in quartz from the Addison Mine, from the Royal Ontario Museum collection.

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Biographies

John Ayer received BSc and MSc degrees from Carleton University and a PhD degree from the University of Ottawa (UO). He worked for 28 years with the Ontario Geological Survey (OGS) mapping Precambrian greenstone belts at detailed to regional scales in the Wabigoon and Abitibi Subprovinces and 10 years for the exploration industry. He was leader for the OGS Precambrian mapping group in NE Ontario, Targeted Geoscience Initiative 3 on the Abitibi and coordinator of the Greenstone Architecture project at Laurentian University (LU) under the Discover Abitibi Initiative. He supervised graduate students as an Adjunct Professor at UO and LU and is currently the Associate Director of the Mineral Exploration Research Centre at LU. His academic interests include geochronology, stratigraphy, lithogeochemistry and geodymanics with a focus on the controls of metal deposition in Archean Terranes.

Harold Gibson received a BSc degree from Queens University, and MSc and PhD degrees from Carleton University. He spent 10 years working with the exploration industry prior to joining the faculty at Laurentian University (LU) in 1990. His research is focused on understanding and documenting interrelationships between magmatism, volcanism, tectonics, and the timing of volcanogenic massive sulfide (VMS) ore systems during the construction and evolution of submarine volcanoes through time. As a full professor at LU and director of the Mineral Exploration Research Centre (MERC) he has guided its expansion from a Sudbury-focused centre in 2004, to a globally recognized, industry and government funded, collaborative mineral exploration and educational research centre, which conducts research on Precambrian and younger ore systems. With more than 20 projects located across Canada and globally, MERC's annual research expenditures have exceeded >$2M over the past 4 years. As the director of the newly initiated $104 million Metal Earth project he will be responsible for guiding research on crust to mantle scale metal endowment in the Canadian Shield.

Daniel J. Kontak, originally from Nova Scotia, has degrees from St. F.X. (BSc, 1976), the University of Alberta (MSc, 1980) and Queen's University (PhD, 1985). He worked for the Nova Scotia Department of Natural Resources for 20 years (1986-2006) before joining the faculty at Laurentian where he is now a Full Professor of Ore Deposit Geology. His work focuses on characterizing a wide variety of ore deposit types (e.g., Sn-W, REEs, rare metals, Zn-Pb, Au) in Canada and abroad (e.g., Peru, Argentina., India, Mongolia, Alaska) by integrating field observations with a variety of micro-analytical methods. His work has been recognized with awards from a variety of societies, including the Atlantic Geoscience Society, Mineralogical Association of Canada, and Mineral Deposits Division of the Geological Association of Canada.

Dr. Bruno Lafrance graduated from the University of New Brunswick with a PhD in structural geology in 1991, served three years as resident geologist in northern Saskatchewan, and joined Laurentian University in 1999, where is a professor in structural geology and does research on primary and secondary structural controls on ore deposits.

Dr. Stéphane Perrouty joined Laurentian University in January 2018 as assistant professor of Precambrian Geology. He is a field structural geologist who extensively uses mineralogical, lithogeochemical, and geophysical tools to understand tectonic processes associated with Precambrian ore deposits. In his research, he develops 2D and 3D GIS of Precambrian regions to help in visualizing interactions between structures and mineralized or altered domains, and also support further geological integration and prospectivity analyses. Stephane obtained his PhD in 2012 from the University of Toulouse, in France, working on the structural evolution of the Ashanti Greenstone Belt in the West African Craton. He subsequently held a post-doctoral research associate position at Western University for five years, working on the world-class Canadian Malartic gold deposit footprint in the Abitibi Greenstone Belt. He is currently involved in the NSERC-CMIC Exploration Footprints (www.cmic-footprints.ca), the AMIRA West African Exploration Initiative (www.tectonique.net/waxi3), and the Metal Earth projects.

Dr. Ross Sherlock graduated from the University of Waterloo with a PhD on Economic Geology in 1993. Ross' career has spanned, junior and senior exploration companies, government surveys and consulting working nationally and internationally on a variety of deposit types and geologic terranes. Ross joined the faculty of Laurentian University in August 2017, as Chair of Exploration Targeting and Director of the Mineral Exploration Research Center.