

TOPS AND BOTTOMS OF EPITHERMAL DEPOSITS, AND TRANSITION TO PORPHYRY DEPOSITS: APPLICATION TO EXPLORATION



Saturday 20
March, 2021



From 9:00 am.
to 4:00 pm.



Language: English
(simultaneous interpreting)

ABSTRACT

This course examines features of intrusion-related epithermal ore deposits and the transition to the tops of porphyry deposits, with observations relevant to mineral exploration and assessment. The course is directed to exploration geologists with all levels of experience, as well as students who wish to learn about ore deposits and aspects of exploration.

The presentation includes: 1) Active hydrothermal systems, since this is the best and most interesting way to understand the genetic processes that are directly relevant to the types of deposit we will cover. 2) Formation of lithocaps and high-sulfidation ore deposits, including various environments of 'advanced argillic alteration' with different exploration implications. 3) Lithocaps have a transition to the tops of porphyry Cu-Au deposits, the most economically significant target present at the core of the magmatic-hydrothermal system, beneath the epithermal environment. 4) Epithermal veins, both intrusion-related and those formed during extension, have a large variation in tectonics, metals, sizes and shapes, and features – including alteration mineralogy. Geologists must think laterally, figuratively and literally, during exploration for epithermal deposits.

INSTRUCTORS

Dr. Jeffrey Hedenquist



Jeffrey Hedenquist received a Ph.D. in geology at the University of Auckland, New Zealand. Following this, Dr. Hedenquist conducted research with DSIR–Chemistry Division in New Zealand and the Geological Survey of Japan for 10 years each on geothermal energy development and volcanic discharges, respectively, as well as the formation of epithermal gold and porphyry copper deposits. Since 1999 he has been an independent advisor to the mining industry, several governmental agencies, and the World Bank, providing assessments of hydrothermal gold and copper projects in over 40 countries, as well as training related to mineral exploration. He is also an adjunct professor at the University of Ottawa, and in 2010 served as President of the Society of Economic Geologists.

Dr. Antonio Arribas



Professor, Kenneth F. & Patricia Clark Distinguished Chair in Economic Geology in the University of Texas in El Paso. Dr. Arribas has more than 35 years of professional experience, including research, higher education, and technical and managerial positions in the industry. He is a geologist with expertise in economic geology and exploration, mineralogy, and geochemistry. Prior to UTEP, he served as professor in the Faculty of International Resource Sciences at Akita University in Japan. In 1986, Dr. Arribas earned a Fulbright scholarship to attend the University of Michigan to conduct research on gold deposits in southeastern Spain. He received his PhD from the University of Michigan in 1992. In the industry, Dr. Arribas has held a variety of positions, including Exploration Manager for South America with Placer Dome Inc., Chief Geologist with Newmont Corp., and Vice-President of Geosciences with BHP Exploration. He is currently a member of the Board of Directors of Auryn Resources Inc., a Vancouver-based junior exploration company. Dr. Arribas is a member of various professional associations, including the National Association of Geoscience Teachers, Society of Resource Geology, Société Géologique aux Gites Minéraux, and the Society of Economic Geologists (SEG). He was President of SEG in 2013.

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