

A SHORT COURSE on
**Mineral deposit evaluation:
Resource estimation, classification and reporting**

Monday, October 1 to Thursday, October 4th, 2018

Location: The Conference Center, Courtyard by Marriott
1 Ballpark Lane, Reno, NV 89501

Who should attend: Geologists, mining engineers, project managers and other professionals in the mining industry who want to learn the details of the mineral resource estimation, applied geostatistics, resource classification and reporting as per NI-43-101 or the JORC guidelines.

Pre course readings: The registered participants will receive readings in pdf format prior to the short course as preparation materials.

Course material: Printed course material includes selected set of slides to be presented at the course and published case-studies and other literature

Fees: Standard price of \$2290.00

- Early registration price of \$1990.00 ends on 8/31/2018 11:59 PM
- Group discount for a group of 5 or more additional 20%
- Student discount: 50% (Write an email to info@geoglobal.co for an unique discount code)
- **REGISTRATION:** <https://geoglobal.co/mde-reno-2018-1#>
Alternate site: <https://goo.gl/ruuq1v>

Course registration fees include Printed course material, one lunch and two tea breaks every day of the course.

- **HOTEL:** Group rate for the Short Course at the Courtyard Marriott Downtown, Reno: <https://goo.gl/wzN1X1>

Accreditation:

Total PDHs: 34 hours or **3.4 CEU's** through The American Institute of Professional Geologists (AIPG)



Tentative Program Schedule



Day 1

Registration and Introduction

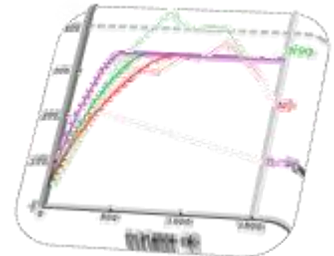
- **Project development and studies in mining project development (Abani Samal)**
In this session discussions will be held on the mining project development cycle. Various stages of deposit development and studies carried out at different stages will be presented. Participants will have an opportunity to interact with the presenter to clarify requirements of various stages.
- **Opportunities in Global Mineral Resources (Jon Price)**
This session will review prices, global markets, production statistics, and geological factors to highlight the mineral resources that are most attractive for exploration and new approaches to metallurgical extraction.
- **Ore-Forming Systems (Jon Price)**
In this session, a geochemical approach to understanding the geology of mineral resources will be used to explain characteristics of the major ore deposits throughout the world.
- **Mineral deposit evaluation and Resource estimation (Abani Samal)**
*In this session, the presentation will focus on use of geological controls of mineralization in mineral deposit evaluation. The participants will be encouraged to work on a simple **group task** which is designed to provide a learning experience which can enhance the understanding of this topic.*



Day 2: Will be conducted by Dr Abani Samal

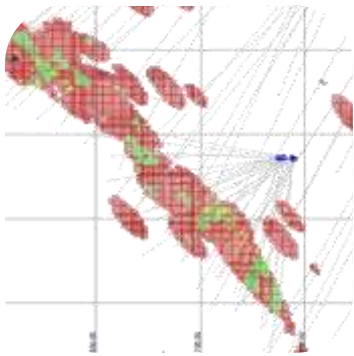
- **Review of Day 1 presentations -**
In this session the faculty will review the presentations and learnings of day 1 followed by a brief Q&A session.

- Mineral Resource Estimation -1: **data quality**
In this session, the presentations will focus on data collection and data quality.
- Mineral Resource Estimation -2: **data management and exploratory data analyses**
*In this session, the presentations will focus on data collection and exploratory data analysis (EDA) that includes compositing and statistical analyses. The session will end with a **group exercise** on EDA.*
- Mineral Resource Estimation -3: **Variography**
The presentations will focus on various interpolation techniques. A discussion on the application of geostatistics in resource estimation will be there.
Group exercise on Variography



Short course dinner (time and place to be decided at a later date)

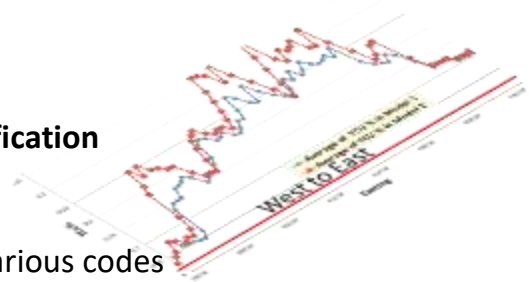
Day 3: Will be conducted by Dr Abani Samal



- **Review of day 2 presentations**
- Mineral Resource Estimation -4: Grade estimation: **Interpolation**
In this technical session, the discussion will be about estimation and interpolation
- Mineral Resource Estimation -5: Grade estimation: **Kriging**
In this technical session, the discussion will be about estimation and interpolation
Case study demonstration
- Q & A session

Day 4: Will be conducted by Dr Abani Samal

- Review of Day 3 presentations
- Mineral resource estimation: **Density model**
Importance of getting density model right
- Mineral resource estimation: **Resource classification**
Fundamentals and best practices will be discussed
- **Model Validation**
- Mineral resource reporting: Role of QP and various codes
In this session we will discuss the role of a qualified person in making sure that the resource estimation is done in such a way that it meets the requirements of most of the international standards.
- **Geological risk analyses in resource estimation**
The discussion in this session will focus on fundamentals of risks associated with resource estimation and how to quantify them.
*A **group exercise** on geological risk analyses*
- Q& A



Concluding function and certificate distribution.

Faculty profiles



Dr. Abani Samal (Lead Faculty):

Dr Abani R Samal holds M. Tech degree from IIT(ISM), Dhanbad, MS and DIC from Imperial College, London and PhD from SIU-C, USA. He joined mining industry in January 1996 as a geologist in a surface and underground chromite mining operation in the eastern India. He has nearly 22 years of experience in the mining industry. Dr Samal is an expert in mineral deposit studies and evaluation.

He is well recognized as an economic geologist, a geostatistician and a leader in the mining industry. Currently he is the owner and Principal of GeoGlobal, LLC in USA. Prior to this role, he worked as a Principal with RioTinto at their Salt Lake City regional headquarters. He also was the lead resource geologist and geostatistician at the Pincock, Allen and Holt (now RPM Global). Dr Samal has experience in gold-silver, copper, lead-zinc, iron ore, diamond and rare-earth element deposits.

He is a Registered Membership of SME and a Certified Professional Geologist (CPG) with AIPG. He also maintains as a life member of MEAI, MGMI, fellow of GSI (India), a Fellow of SEG, life member of member of IAMG and a member of GSA. Dr Samal is practices as a qualified person (QP) globally. He is an honorary representative of the CRIRSCO in India.



Dr. Jonathan G. Price (Guest Faculty):

Jon is a consulting geologist and the Nevada State Geologist Emeritus. Jon was Director of the Nevada Bureau of Mines and Geology, a research and public service unit of the University of Nevada, Reno, from 1988 until his retirement from the University in 2012. He earned a bachelor's degree in geology and German from Lehigh University and master's and Ph.D. degrees in geology from the University of California, Berkeley. His geological career has included experience with industry, teaching, research, and government. He has worked in copper, iron, uranium, lithium, and gold exploration and mining; taught undergraduate and graduate geology courses and supervised graduate theses; and conducted and directed research at state geological surveys. He is a past president of the American Institute of Professional Geologists, Association of American State Geologists, Society of Economic Geologists, and Geological Society of America. Among other honors, Jon was the 2009 recipient of the American Geological Institute's Medal in Memory of Ian Campbell for Superlative Service to the Geosciences, the 2013 recipient of the Ben H. Parker Memorial Medal of the American Institute of Professional Geologists, and the 2013 recipient of the Gold Medal of the Mining and Metallurgical Society of America.