



# 18<sup>TH</sup> SGA Biennial Meeting 2025

Colorado School of Mines  
Golden, Colorado USA

August 3-7, 2025

[www.sga2025.org](http://www.sga2025.org)



## THE VENUE

Golden is home to the Colorado School of Mines (CSM), which was founded in 1874. The Conference will be held in the Green Center on the CSM campus.

## 2025 THEMES WITH SESSION CHAIRS

- Metallogenic evolution of the North American continent (R. Goldfarb, C. Hart, E. Holley, S. Piercey)
- Sustainability of future critical mineral resources (M. Harlaux, S. Jowitt, P. Verplanck)
- New frontiers in analytical techniques for the explorationist (M. Steele-MacInnis, A. Vymazalova)
- Applications of structural geology to understanding ore controls (A. Hughes, Y. Kuiper, D. Ryhs, N. Thébaud)
- Environment, Society, and Governance (ESG): Challenges related to economic geology (K. Goodenough, M. Hitzman)
- Ore deposits associated with magmatic systems
  - Porphyry/epithermal deposits (G. Bozkaya, P. Chadwick, T. Christie, D. Cooke, Z. Yang)
  - Alkaline magmatism and carbonatites (S. Decree, N. Coint, D. Ollinger)
  - Volcanogenic massive sulfides: a session in remembrance of Jim Franklin (M. Hannington, J. Relvas)
  - Tin-tungsten deposits (B. Lehmann, J. Mao)
  - Magmatic Ni-Cr-Cu deposits (S. Dare, C. Li, W. Maier, E. Mansur)
- Sedimentary processes and ore formation: Special session to honor the career of David Leach (S. Boulel, L. Fontboté, K. Kelley, J. Pašava, Y. Song, S. Spinks)
- Targeting mineral deposits in metamorphic terranes (A. André-Mayer, P. Garofalo, S. Hagemann, J. Kolb, P. Mercier-Langevin, I. Pitcairn)
- Plate tectonics and secular distribution of mineral systems (D. Huston, H. Frimmel, Y. Li, S. Pehrsson)
- SGA-SEG combined session: Geochemical processes in ore deposition (J. Hedenquist, C. Laflamme, G. Pokrovski, S. Simmons)
- Discovery through geophysics, remote sensing, and hyperspectral techniques (E. Anderson, J. Austin)

Plus some exciting plenary speakers to be announced soon!

## FAST FACTS

### SGA CONFERENCE OVERVIEW

The SGA Conference is a premier forum for exchange of ideas on issues related to mineral deposit research, exploration, development, and the environment.

### WHEN

August 3-7, 2025

### WHERE

Colorado School of Mines campus, Golden, CO, USA

### WHAT

Four days of oral and poster presentations, pre- and post-conference short courses, and exciting field trips, plus accompanying persons program and other social activities

### EXPECTED NUMBERS

600-700 national and international delegates. Delegate representation includes academia, industry, government research organizations, consultants and service providers.

### HISTORY

SGA conferences have been held in Australia, Canada, Chile, China, Czech Republic, Finland, France, Greece, Ireland, New Zealand, Poland, Scotland, Spain, Sweden, Switzerland, and the UK

**SGA 2025 will be the first ever in the US!**

**ABSTRACT SUBMISSION AND STUDENT  
GRANT APPLICATIONS WILL  
OPEN JANUARY 6, 2025  
PLAN AHEAD!**

*We highly encourage student participation  
as well as professionals*

## Thank You to Our 2025 Sponsors!!





# 18<sup>TH</sup> SGA BIENNIAL MEETING

Golden, Colorado, USA August 3-7, 2025

## PRE-CONFERENCE FIELD TRIPS

### ALASKA GOLD

Duration: 7 days

Leaders: Doug Kreiner and Erin Marsh

This trip through the interior of Alaska will focus on visits to intrusion-related gold at Ft Knox mine, Gil and Golden Summit projects, low-sulfide quartz veins at Pogo mine, porphyry related, Au-rich skarn at Man Choh mine, porphyry Cu-Au at the Shorty Creek deposit, and a modern producing placer operation at Valdez Creek, where gold is sourced from orogenic gold veins.

### BUTTE PORPHYRY SYSTEM, MT

Duration: 5 days

Leaders: Eric Anderson, John Dilles, Kyle Eastman, Mark Reed, Chris Gammons, Karen Lund, Kaleb Scarberry

The world-class deposits of the Butte district, Montana, include a deep porphyry Cu-Mo and overlying shallow Cu-rich (Au-Ag-Pb-Mn-Zn bearing) zoned-lode deposit. We will explore the geology and mineral deposits that occur (will include underground and open pit workings) and observe mineralization and alteration in historic deep drill holes. The timing of Butte mineralization will be compared to other nearby skarn, carbonate replacement, stockwork, and lode-vein deposits. In addition, we will discuss environmental issues associated with historical mining, and provide updates on current research and future directions for critical commodity production.

### CLIMAX PORPHYRY MOLYBDENUM, CO

Duration: 1 day

Leaders: Mac Canby, Freeport McMoRan geologists

The world-class molybdenum deposit at Climax has produced Mo concentrate intermittently for more than 100 years. The Climax deposit, which is genetically associated with Oligocene rhyolitic and granitic stocks, is a complex igneous hydrothermal system characterized by multiple intrusive and mineralizing events. The orebodies are composed of molybdenite stockwork veinlets that form dome-shaped masses centered on an intrusive stock. This trip will emphasize current knowledge of these deposits as well as mining history.

## PRE-CONFERENCE SHORT COURSES

- 1. Micro-XRF analysis in the applied geosciences: from fundamentals to application - 1 day**  
*Nigel Kelly (Bruker)*
- 2. Exploration of sediment-hosted metals – 2 days**  
*Ali Jaffri (Applied Stratigraphix)*
- 3. Orogenic Gold – 1 day**  
*Jochen Kolb (Karlsruhe Institute of Technology), Georges Beaudoin (Université Laval), Iain Pitcairn (Stockholm University), Nicolas Thébaud (University of Western Australia), and Rich Goldfarb (CSM)*
- 4. Ore microscopy – 2 days**  
*Simon Kocher (CSM), and Tobias Fusswinkel (RWTH Aachen)*
- 5. Tectonic and structural framework for precious metal deposits in North America – 3 days**  
*Dave Rhys (Panterra), Franck Valli (Newmont), and Amanda Hughes (University of Arizona)*
- 6. Database design to capture and archive geological observations – 1 day**  
*Wiley Skewes (Alamos Gold)*



Visit our website at [www.sga2025.org](http://www.sga2025.org) for more details  
Questions? Send queries to [sganetwork2023@gmail.com](mailto:sganetwork2023@gmail.com)

## POST-CONFERENCE FIELD TRIPS

### CARLIN GOLD SYSTEMS, NV AND UT

Duration: 5 days:

Leaders: Mike Ressel and Jim Wise

This field trip in Nevada and Utah focuses on recent discoveries of deep, high-grade deposits and overviews of some major deposits, the shallow expressions of Carlin-type systems, and the relationships of deposits to regional Eocene processes including arc magmatism and intrusion, sedimentary basin development, and extension. The links between these regional processes led to the unique metallogeny of this region.

### CRIPPLE CREEK EPITHERMAL, CO

Duration: 1 day

Leaders: Richard Pilco, Newmont geologists

This trip will include an overview of the active mining area and deposit discussion with Newmont geologists at the core shed. Cripple Creek is a world class alkalic epithermal deposit and has produced more than 20 million ounces of gold (historical and modern production) from a diatreme complex. The Oligocene-aged volcanism hosts vein and disseminated-style mineralization extending to depths of more than 1,000 m from present-day surface.

### YELLOWSTONE HYDROTHERMAL SYSTEM, WY

**NOTE: This is a combined SGA and SEG sponsored trip**

Duration: 5 days

Leaders: Jeff Hedenquist and Stuart Simmons

This tour will focus on the geology and geochemistry of the Yellowstone hot spot, volcanic and hydrothermal deposits. As the largest concentration of active geysers known globally, we will view active travertine deposits and learn about the dynamic geologic environment associated with one of the largest known calderas, 10,000 hydrothermal features including over 500 geysers, and highly active seismic zone.

### SAN JUAN VOLCANIC FIELD, CO

Duration: 5 days

Leaders: Mario Guzman, Doug Yager, Mary Doherty, and Steve Enders

The San Juan Volcanic Field in Southwest Colorado provides an opportunity to compare several intermediate-sulfidation (IS) and high-sulfidation (HS) type epithermal mining districts, and porphyry occurrences, as well as various volcanic welded tuffs, lavas and caldera features. The trip will include visits to the world class Creede epithermal deposit and the Summitville HS-epithermal deposit. The trip will focus on mineralization in a geologic context, but each site visited has legacy mining issues, and thus we will explore topics in volcanology, mining history and environmental stewardship.

## POST-CONFERENCE SHORT COURSES

- 1. Fluid inclusions – 1 or 2 days**  
*Matthew Steele-MacInnis (University of Alberta) and Tobias Fusswinkel (RWTH Aachen)*
- 2. Mineral Economics – 1 day**  
*Rod Eggert (CSM)*
- 3. UAV-borne hyperspectral mapping approaches – 1 day**  
*Frederike Koerting (HySpex) and Katerina Savinova (University of Queensland)*
- 4. Concepts and Application of Machine Learning to Mining Geoscience: A Practical Course - 2 days**  
*Francisca Maepa (BHP)*
- 5. Geological mapping in mineral exploration – 2 days**  
*Andreas Dietrich (Dietrich consulting) and Ben Frieman (CSM)*