18TH SGA Biennial Meeting

2025

Colorado School of Mines
Golden, Colorado USA

CONFERENCE PROGRAM

COLORADO SCHOOL OF MINES

WELCOME TO THE 60TH ANNIVERSARY OF SGA!

Welcome to Golden, and the **18th Biennial meeting of the Society for Geology Applied to Mineral Deposits**. Once again, the SGA Biennial has attracted delegates from around the world (>40 countries), and across academia and industry, to take part in the first ever SGA meeting held in the United States. The meeting is hosted by the Colorado School of Mines, founded in 1874, the oldest university in Colorado.

The Local Organizing Committee presents an exciting Scientific Program over the four days of presentations. We thank all of you who submitted an abstract for a talk or a poster for your efforts. We also have 4 Plenary and 22 Keynote talks that are dispersed over the four days of talks. Completing our program are Short Courses and Field Trips that are sure to be the most rewarding ways to begin and end our program.

To top it off, we are celebrating the 60th anniversary of SGA. The organization was founded in 1965 in Heidelberg, Germany. Therefore, the 18th Biennial SGA meeting in 2025 celebrates the 60th anniversary of the Society!

This conference would not have been possible without our many sponsors, and we thank each and every one.

Welcome to Golden – and welcome to the 18th Biennial meeting of the SGA!

Karen Kelley
Conference Chair,
SGA Golden 2025

Welcome Letter from the Mayor

Society of Geology Applied to Mineral Deposits 60th Anniversary Meeting

Welcome to Golden, Society of Geology Applied to Mineral Deposits!

On behalf of Golden's 20,000 residents, I'm delighted you've chosen our City to celebrate this milestone 60th anniversary meeting. Your gathering marks the largest convention ever hosted in our historic town, and we are excited to extend our warm Western hospitality. We hope you'll discover for yourselves why Golden is such a special place.

Golden is proud to be the home to the renowned Colorado School of Mines, one of our nation's premier institutions for geology and engineering. It's no secret that Golden and its surroundings offer some of the most fascinating geology in the world — where the majestic Rocky Mountains meet the sweeping Great Plains. To the east, 1,600 miles of prairie extend all the way to the Atlantic Ocean. Right here in Golden, at 5,765 feet in elevation, the land quickly rises another 2,000 feet into dramatic canyons and foothills, leading to the world-famous Rockies, and Colorado's 54 peaks more than 14,000 feet high. Beneath our feet lie rich layers of geologic history, and all around are countless opportunities for exploration and adventure.

We invite you to experience our City through a geologic adventure uniquely Golden, such as:

- **Fossil Trace Golf Course**, where you can play among ancient footprints of dinosaurs like T-Rex and Triceratops.
- **Dinosaur Ridge**, the site of America's first dinosaur bone discovery.
- **Red Rocks Amphitheatre**, this awe-inspiring natural amphitheater and legendary concert venue is set amongst 70-million-year-old formations and has hosted everyone from the Beatles to Bruce Springsteen.
- **Clear Creek Trail**, which runs from downtown through Clear Creek Canyon with soaring canyon walls and spectacular views.
- **Lookout Mountain**, where panoramic vistas of both Denver and the Rockies can be seen for miles.
- **Colorado School of Mines Museum of Earth Science,** home to one of the Goodwill moon rocks and the most extensive public collection of minerals from Colorado.

Had enough geology for the day? We have plenty of additional, unique experiences, including:

- Nine **craft breweries** or a tour of **Coors Brewery**, one of the largest single-site breweries in the world.
- The **Colorado Railroad Museum**, showcasing the largest operating narrow-gauge steam locomotive in the Western Hemisphere.
- Hiking, biking, paragliding, and kayaking on and through natural beauty, including **Jefferson County Open Space**.
- Downtown charm with **dining** options ranging from Nepalese to farm-to-table; **shopping** for children, adults, and avid adventurers; and **museums celebrating Golden's arts and culture** including the **Golden History Museum and Park** and the **Foothills Arts Center**.
- And local hotspots across town where strangers become friends over cups of coffee or bottles of wine.

We are honored to host you and grateful you are here. Please don't hesitate to reach out to me personally at lweinberg@cityofgolden.net if there is anything we can do to make your visit even better.

With warmest regards,

Laura Weinberg Mayor,
City of Golden

COMMITTEE MEMBERS

- **Karen Kelley**, *USGS, Conference Chair*
- **Rich Goldfarb**, *CSM, Technical Program Chair*
- **Erik Tharalson**, *USGS, Field Trips Co-Chair*
- **Mary Doherty**, *Consultant, Field Trips Co-Chair*
- **Lew Kleinhans**, *Consultant, Field Trips Co-Chair*
- **Katharina Pfaff**, *USGS, Short Courses Co-Chair*
- **Simon Kocher**, *CSM, Short Courses Co-Chair*
- **Ben Frieman**, *CSM, Social Program Chair*
- **Quinton Hennigh**, *San Cristobal Mining, Sponsorships & Exhibits Co-Chair*
- **Lauren Terry**, *CSM, Sponsorships & Exhibits Co-Chair*
- **Mary Carr,** CSM, *Advisory and Logistics Chair*
- **Garth Graham**, *USGS, Abstract Volume Editor*
- **Eric Anderson**, *USGS, Abstract Volume Editor*

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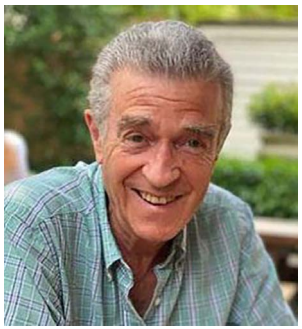
COLORADO SCHOOL OF MINES CAMPUS MAP

GRID AREA	Building	Description
I-5	Ellen Residence Hall	MINES MARKET LUNCH
G-8	Green Center	EXHIBITS AND POSTERS AND 3 CONCURRENT SESSIONS
F-8	Hill Hall	FOURTH CONCURRENT SESSION

Plenary 1: Richard Sillitoe (Consultant)

Bunker Auditorium, Monday, August 4, 11:00 AM

Doctor Copper: an exploration prognosis



Global efforts to attain Net Zero CO2 emissions by 2050 may require a doubling of Cu supply by 2050 or even earlier. Although optimization and expansion of current operations may enable production of the additional Cu, a global increase in both greenfield exploration activity and discovery rate of porphyry, sediment-hosted, and other Cu deposits is vital to guarantee future societal Cu needs; however, the exploration needs to focus on jurisdictions with low perceived ESG risks. A more creative exploration approach, involving step changes in geological concepts and formulation of novel deposit models, is a prerequisite because technological advances alone will prove insufficient. Enlarged greenfield budgets, more dynamic exploration teams, and government collaboration are imperatives.

Biography

Richard Sillitoe gained BSc and PhD degrees from the University of London, England. After working for the Geological Survey of Chile and then returning to the University of London as a Shell postdoctoral research fellow, he has operated for over 50 years as an independent consultant and adviser to more than 350 mining companies, international agencies, and foreign governments. He has worked on a wide variety of precious, base, and lithophile metal deposits and prospects in 100 countries and counting, but focuses primarily on the epithermal gold and porphyry copper environments.

Plenary 2: Anita Parbhakar-Fox (University of Queensland)

Bunker Auditorium, Tuesday, August 5, 1:30 PM

Net Zero mine waste – a realistic global target?

As the global community focuses on the pursuit of a low-carbon economy, ambitious net-zero targets have been set. Responding to this, up to 194 new mines are required to open by 2050 (International Energy Forum, 2024) with Mining Companies and related stakeholders focused on how to fast-track projects to meet the challenge.

However, a new crisis is emerging- how will the extra billions of tonnes of mine waste (e.g., waste rock, tailings, slag, spent heap leach) be adequately managed to minimize future geochemical and geotechnical risks? Existing mine waste management practices typically focus on placing mine waste into purpose-built repositories or engineered piles. However, with increasing societal pressure to reduce mine waste footprints linked to gaining social licence to operate, the existing management approach may fast become outdated.

Motivated by circular economy and ore body knowledge principles, and underpinned by new technologies enabling multi-scale deposit characterization, therein lies the generational opportunity to set global net-zero mine waste targets. In summary, although collecting mineralogical and geochemical data and performing technoeconomic studies, by-products could, theoretically, be readily identified. For example, recovery of silica gangue as 'ore sands', transforming desulphurised tailings into construction materials or even extracting critical and precious metals from mine waste resources.

Over the past decade, established mining companies and start-ups have recognised this opportunity, with several government agencies (e.g., Geoscience Australia) providing additional funding to determine opportunities for mine waste valorisation. However, in the face of legislative red-tape, metallurgical complexities and challenging business cases, is net zero mine waste a realistic global target that must be pursued to safeguard our environment and mining industry, or is it simply an academic pipedream?

Biography

Associate Professor Anita Parbhakar-Fox is a geoscientist known for her research in mine waste mineral exploration and acid mine drainage prediction. Awarded her MSc from the Royal School of Mines Imperial College London in 2005, and her PhD (Environmental Geometallurgy) from CODES in 2011, after working at CODES in various research fellow roles, she went on to become the founder of the MIWATCH (Mine Waste Transformation through Characterisation) Group at the University of Queensland in 2021. Anita has led several major projects funded by Australian State Governments and Geoscience Australia examining mine waste as a potential resource of critical metals as needed for the energy transition, emphasizing the importance of responsible resource management

Anita is also the co-Deputy Director of the ARC ITTC for Critical Resources of the Future and the Director (Acting) of the W.H Bryan Mining Geology Research Centre. In these roles she continues working on topics related to ore body knowledge, metal extraction, geochemistry and the role of mineralogy across the mining value chain.

Anita was a Superstar of STEM (2022-2024), a twice recipient of the IOM3 Materials World Medal (2019, 2023) and most recently was recognised as a "100 Global Inspirational Women in Mining (2024).

Plenary 3: Mark Hannington (University of Ottawa)

Bunker Auditorium, Wednesday, August 6, 1:30 PM

Marine metallogeny and the future resource potential of the oceans.

Deep-sea mining is taking another step closer to reality. Early leases for exploration in the central Pacific manganese nodule fields and elsewhere in the oceans are coming to an end, and contractors are faced with a choice – extend the licenses to continue exploration or apply to mine the deposits they have found. The first 15-year licenses were originally signed into effect by the International Seabed Authority (ISA) in 2001 and began to expire in 2016.

With no operations in a position to commence mining and, more importantly, no regulations in place to allow it, most exploration licenses were simply renewed. Eight of the original licenses were extended for 5 more years, some twice, and new licenses have been granted. Today, there are 31 contracts for exploration: 19 for manganese nodules, 7 for seafloor massive sulfides, and 5 for Co-rich crusts. The first contract for massive sulfide exploration expires in 2026; the first for Co-rich crusts expires in 2029. Meanwhile, there is strong interest from a number of countries in the mineral resource potential of their EEZs. Against this backdrop of rapidly shifting exploration activity, it is time to take another look at marine minerals as a resource for the future. In a report on The Future of the Ocean Economy by 2030, the OECD (Organization for Economic Cooperation and Development) asked "what new developments could result in a complete revision of offshore mineral potential?". For most parts of the oceans, the answer to this question is plagued by inadequate mapping and a lack of geological knowledge as a basis for assessing the resources. However, new approaches to exploration are emerging, and recent discoveries, such as on the continental shelf and beneath the cover of sediment, are changing our view of the resource potential.

Biography

Mark Hannington is Professor of Economic Geology at the University of Ottawa and former Head of Marine Mineral Resources at the GEOMAR Helmholtz Center for Ocean Research in Kiel, Germany. He obtained his Ph.D. at the University of Toronto (1989) and spent 15 years as a research scientist in the Mineral Deposits Division of the Geological Survey of Canada before moving to the University of Ottawa in 2005. His research combines the study of active volcanoes on the ocean floor and ancient volcanic environments that host VMS deposits. He has

participated on 30 research cruises and has conducted major research projects on VMS systems, including the giant Kidd Creek deposit and regional-scale hydrothermal alteration in the Abitibi region. Mark was editor of the journal Economic Geology from 2001 to 2008.

Plenary 4: John Thompson: PetraScience Consultants

Bunker Auditorium, Thursday, August 7, 8:30 AM

Meeting the demand for metals: what needs to change?

Demand for many metals is increasing, especially for those classified as critical minerals. Estimates of future demand suggest the need for numerous new mines over the next 10-25 years, and the development of new processes and supply chains to capture critical minerals. Future demand estimates are uncertain, however, and it is hard to predict the speciality metals, mostly critical, that will be needed. As a result, there is potential for oversupply, as has happened in almost every cycle, and for mines to be developed for metals that become less critical. Reducing this risk for individual companies and jurisdictions requires a focus on quality and resilience.

Improving exploration and the discovery of quality resources is facilitated by access to data. Open data at the country level attracts exploration expenditure, benefiting the jurisdiction and industry, and increasing the efficiency of exploration. Programs should focus on the areas with the greatest potential. Industry can help countries develop open digital databases and donate data to enhance the database even when not mandated. To do this, companies must have confidence in their ability to use the data rather than relying on confidentiality to hide below average programs.

Having made a discovery or acquisition, a relentless drive is needed to maximize value in terms of the resource, mining and processing to recover multiple products, reducing or creating value from waste, and environmental stewardship. Acquiring and using the most important data to reduce uncertainty is key. Ideally, the goal is to develop "Tier 1 or 2" mines that have the resilience to survive price fluctuations and geopolitical uncertainty. Technical success must be matched with a deep understanding of communities and jurisdictions. The focus is on people – the best technical team, the needs and potential of communities, and political constraints and opportunities that may impact the project.

Biography

Since 2012, John Thompson has partnered in a consulting business based in Vancouver, BC, focused on exploration, mining, innovation and sustainability. He is the Honorary Professor of Responsible Resources, and previously Aegis Professor, at the University of Bristol, UK, and holds Adjunct Professor positions at Cornell University and the University of British Columbia. Before 2012, he wasChief Geoscientist and subsequently Vice President Technology and Development at Teck Resources with strategic roles in exploration, innovation, research, and technology-related transactions. Prior to Teck, John directed the Mineral Deposit Research Unit (MDRU) at the University of British Columbia.

John has held diverse leadership roles in many organizations including the Society of Economic Geologists, Genome BC, the World Economic Forum, and Resources for Future Generations 2018. He was a co-founder and Board Chair of both Geoscience BC and the Canada Mining Innovation Council. He is a director of KoBold Metals and MineSense Technologies, a director and Chief Innovation Officer of Regeneration Enterprises, and has advisory roles for several exploration, technology, venture capital and research organizations.

SOCIAL EVENTS

ICE BREAKER RECEPTION
Sunday, August 3rd, 5:00 - 8:00PM

The Ice Breaker Reception will take place in the Green Center on the Colorado School of Mines Campus. The reception is supported by our patron sponsor **BHP**.

STUDENT-INDUSTRY EVENT
August 4th, 7:00 - 10:00PM

This is a prime opportunity for students and early career scientists to meet and interact with industry delegates in a casual environment. This will take place at the Buffalo Rose Events Center in downtown Golden. The event is free but registration is required. This event is possible due to our sponsor **Freeport McMoran**.

GALA DINNER
August 5th, 7:00 - 11:00 PM

The location for the Gala Dinner is the Mount Vernon Canyon Club in the foothills overlooking Golden and Denver. Delegates can be assured of an evening of good food, fine wine, and entertainment! This is supported by **Rio Tinto**. Cost: $120 professional; $75 student

NIGHT AT THE MUSEUM
August 5th, 6:30 - 8:30PM

Enjoy catered food and drinks at the Colorado School of Mines Museum, which showcases the most extensive public collection of minerals from Colorado. This is a short 5 minute walk from the Conference venue. This event is sponsored by **DREGS** (Denver Region Exploration Geologists Society). Cost: $50 professional; $30 student.

NIGHT ON THE COMMONS
August 6th, 6:30 - 9:00PM

Join us for a casual social event with food trucks, drinks, music, and games on the Kafadar Commons outside the Green Center.

We also have other short excursions for delegates and accompanying persons. See our website for details https://sga2025.org/

THEME CONVENORS

Symposium: Metallogenic Provinces of North America
Rich Goldfarb – Colorado School of Mines
Craig Hart – Consultant
Elizabeth Holley – Colorado School of Mines
Steve Piercey – Memorial University

Critical Mineral Resources
Simon Jowitt – University of Nevada, Reno
Zhaoshan Chang – Colorado School of Mines
Phil Verplanck – U.S. Geological Survey

New Frontiers in Analytical Techniques for the Explorationist
Garth Graham – U.S. Geological Survey
Mary Doherty – Consultant
Anna Vymazalova – Czech Geological Survey

Structural Geology in Ore Deposit Genesis
Nicolas Thébaud – University of Western Australia
Amanda Hughes – University of Arizona
Yvette Kuiper – Colorado School of Mines
David Rhys – Panterra Resources

Evolution of Sedimentary Ore Deposits: Honor the Career of David Leach
Karen Kelley – U.S. Geological Survey
Salah Bouhlel – University of Tunisia
Lluis Fontboté – University of Geneva
Jan Pašava – Czech Geological Survey
Sam Spinks – Teck

Targeting Mineral Deposits in Metamorphic Terranes
Patrick Mercier-Langevin – Agnico Eagle
Anne-Sylvie Andre-Mayer – University of Lorraine
Paolo Garofalo – University of Bologna
Steffen Hagemann – University of Western Australia
Jochen Kolb – Karlsruhe Institute of Technology
Iain Pitcairn – Stockholm University

Plate Tectonics and Earth Evolution
David Huston - Australian National University
Hartwig Frimmel - Wuerzberg Univ
Yang Li - Peking University

SGA-SEG Session: Geochemical Processes in Ore Deposition
Crystal Laflamme – Laval University
Jeff Hedenquist – University of Ottawa
Gleb Pokrovski – University of Toulouse
Stuart Simmons – Consultant

Discovery through Geophysics, Remote Sensing, and Hyperspectral Techniques
Eric Anderson – U.S. Geological Survey
James Austin – CSIRO Mineral Resources

Ore Deposits Associated with Magmatic Systems

- ***Alkaline Magmatism and Carbonatites***
  Nolwenn Coint – Geological Survey of Norway
  Sophie Decree – Royal Institute of Natural Sciences, Belgium
  Danielle Ollinger – U.S. Geological Survey
- ***Magmatic Ni-Cu-PGE and Fe-Ti-P Deposits***
  Chris Jenkens – U.S. Geological Survey
  Chusi Li – Indiana University
- ***Porphyry/Epithermal Deposits***
  Gülcan Bozkaya – Pumukkale University
  Paola Chadwick – Eldorado Gold Corporation
  Tony Christie – GNS Science
  David Cooke – CODES, University of Tasmania
  Doug Kirwin – Consultant
  Zhiming Yang – Chinese Academy of Geological Sciences
- ***Volcanogenic Massive Sulfides: In Remembrance of Jim Franklin***
  Mark Hannington – University of Ottawa
  Jorge Relvas – University of Lisbon
- ***Tin-Tungsten and Rare Metal Deposits***
  Bernd Lehmann – Technical University Clausthal
  Jingwen Mao – Chinese Academy of Geological Sciences

MONDAY, AUGUST 4

S denotes student

Bunker Auditorium

8:30 AM	SGA President Stanislaw Mikulski - Welcome address Golden Mayor Laura Weinberg - Welcome Senator John Hickenlooper - Importance of minerals in society (Video) Walt Copron (Colorado School of Mines) - Welcome Anne Thompson (SEG) - Welcome
9:30 AM	SGA Awards
10:30 AM	Coffee Break
11:00 AM	**Richard Sillitoe Plenary: "Doctor Copper: an exploration prognosis"**
11:50 AM	SGA Local organizing committee - housekeeping items
12:00 PM	Lunch Mines Market

	Metals Hall	Bunker Auditorium
	Symposium: Metallogenic Evolution of North America *R. Goldfarb; C. Hart; E. Holley; S. Piercey*	**Geochemical Processes in Ore Deposition (SGA-SEG co-sponsored)** *C. Laflamme, J. Hedenquist; G. Pokrovski, S. Simmons*
1:30 PM	**INVITED:** Metallogeny of the Archean Superior Province ***Patrick Mercier-Langevin*** *(Agnico Eagle Mines Ltd)*	**KEYNOTE:** Auriferous pyrite geochemistry: implications for the origins of gold on the Carlin and Nadaleen trends ***Elizabeth Holley*** *(Colorado School of Mines)*
2:00 PM	**INVITED:** Craton Reconstructions and Plume Tracks in Deep Time: Context for Emplacement of the Bushveld Complex ***Wouter Bleeker*** *(Geological Survey of Canada)*	A pyrite geochemical perspective from volcanic geothermal systems in Iceland ***Nico Müller*** *(GeoZentrum Nordbayern)* **S**
2:15 PM		Quantifying sulfur speciation in geological fluids at elevated temperatures and pressures ***Gleb Pokrovski*** *(Univ. of Toulouse)*
2:30 PM	**INVITED:** Gold in the Trans-Hudsone Orogen ***Chistopher Lawley*** *(GSC)*	**INVITED:** Multiple sulfur isotopes record crustal recycling of Paleoarchean sediments ***Rajarshi Chakravarti*** *(Indian Inst of Technology)*
2:45 PM		Mercury and sulphur isotopes of cinnabar and stibnite, Hot Spring Mine District (Mt. Amiata, Italy) ***Paolo Garofalo*** *(Univ. of Bologna)*
3:00 PM	Coffee Break	

	Petroleum Hall	Hill Hall Room 202
	Critical Mineral Resources: Opportunities and Challenges *S. Jowitt; Z. Chang; M. Harlaux; P. Verplanck*	**Ore Deposits associated with magmatic systems: Tin-W and Rare Metals** *B. Lehmann and J. Mao*
1:30 PM	**KEYNOTE:** Innovative approaches to delivering critical minerals ***Saskia Duyvesteyn*** *(Rio Tinto Copper)*	**KEYNOTE:** Can Sn4+ be transported in hydrothermal fluids? ***Shunda Yuan*** *(China University of Geosciences)*
2:00 PM	Neodymium-rich, hydrothermal REE-Th deposits of the Lemhi Pass district, Idaho and Montana ***Virginia Gillerman*** *(Idaho Geological Survey)*	Precipitation mechanisms of wolframite and scheelite from hydrothermal fluids ***Xiang-Chong Liu*** *(CAGS)*
2:15 PM	Mineralogy and Zonation of the Manono-Kitotolo lithium pegmatites, DRC ***Juan Rodriguez-Ardilla*** *(KU Leuven)* **S**	Magmatic Hydrothermal vs. Metamorphic Hydrothermal Fluids: Scheelite Trace Element Signatures ***Kairan Liu*** *(CSM)*
2:30 PM	Indium deportment as a component of hydrothermal mineralization, West Desert skarn deposit, UT ***Dalton Pell*** *(Univ. of Nevada)* **S**	Metal source evolution of Mo-W mineralization during growth of a granite batholith (Late Variscan Aar Massif, Switzerland) ***Nicolas Saintilan*** *(Univ. Alabama)*
2:45 PM	Critical mineral inventory of select IOA-IOCG deposits, southwestern USA ***Ryan Taylor*** *(USGS)*	Timing of meteoric-water incursion controls tin mineralization scale ***Peng Liu*** *(Northwest University, China)*
3:00 PM	Coffee Break	

MONDAY, AUGUST 4

S denotes student

	Metals Hall	Bunker Auditorium
3:30 PM	**KEYNOTE:** Metallogeny of the Mesoproterozoic Belt-Purcell Basin, northern Rocky Mountains, USA-Canada ***John Slack*** *(retired)*	Stable isotope insights on acid sulfate alteration in the Sulphur Bank Mercury Mine, CA ***David Muller*** *(Univ. of Texas)*
3:45 PM		Polymetallic ore weathering and the evolution of secondary minerals, Breiner deposit, Romania ***Anna Januszewska*** *(Polish Geol. Inst)* **S**
4:00 PM	**INVITED:** Idiacaran to Permian gold systems of the Appalachian orogen ***Ian Honsberger*** *(Geological Survey of Canada)*	The role of organic matter in ore formation in the Kupferschiefer ***Hans-Martin Schulz*** *(GFZ Helmholtz Centre)*
4:15 PM		Solubility of REE phosphates and REE speciation in high temperature saline hydrothermal fluids ***Charles Kershaw*** *(New Mexico Tech)* **S**
4:30 PM	**INVITED:** Mississippi Valley-Type deposits of the North American Midcontinent: Characteristics and Genesis ***Martin Appold*** *(University of Missouri)*	Platinum-group element occurrences in western North America: Establishing geochemical exploration vectors ***Justin Mistikawy*** *(Univ. of Wyoming)* **S**
4:45 PM		Influence of nodule vs crust morphology on composition of seamount-hosted ferromanganese minerals ***Kira Mizell*** *(USGS)*
5:00 PM to 7:00 PM	**INVITED:** Middle Paleozoic sedimentary- and volcanic-hosted base metal deposits of the Northern Cordillera ***Stephen Piercey*** *(Memorial University)*	**Exhibit and Poster Reception**
	Exhibit and Poster Reception	

S denotes student

MONDAY, AUGUST 4

	Petroleum Hall
3:30 PM	The Sb±As±Au mineralizations from Corsica (France) to Tuscany (Italy): a review ***Danis Filimon*** *(Univ. of Pisa)* **S**
3:45 PM	Age and potential for critical metals in regolith-hosted Mn deposits of the Franceville basin (Gabon) ***Augustin Dekoninck*** *(Université Libre de Bruxelles)*
4:00 PM	Rare earth element minerals in a skarn regolith: A case study from Doradilla, northern NSW, Australia ***Rory Carter*** *(Univ. New South Wales)* **S**
4:15 PM	Airborne geophysics for critical mineral systems mapping in the southern Midcontinent, USA ***Chelsea Amaral*** *(USGS)*
4:30 PM	Characterizing critical metals of the atypical Avebury nickel sulfide deposit in Western Tasmania, Australia ***Jose Barillas-Diaz*** *(Univ. of Tasmania)* **S**
4:45 PM	The potential for New Mexico basalts to sequester CO2 with a focus on critical element mobility ***Jonathan Adams*** *(New Mexico Inst. Min Tech)* **S**
5:00 PM to 7:00 PM	**Exhibit and Poster Reception**

S denotes student

	Metals Hall	Bunker Auditorium
	Symposium: Metallogenic Evolution of North America *R. Goldfarb; C. Hart; E. Holley; S. Piercey*	**Geochemical Processes in Ore Deposition (SGA-SEG co-sponsored)** *C. Laflamme, J. Hedenquist; G. Pokrovski, S. Simmons*
8:30 AM	**KEYNOTE:** A tectonic framework for formation and evolution of northern North American Cordillera porphyry copper deposits ***Craig Hart*** *(Consultant)*	Patchy pyrophyllite replacement texture near the base of lithocaps, over porphyry intrusions ***Jack Halloran*** *(presented by J. Hedenquist)* **S**
8:45 AM		**INVITED:** Origin of silver enrichment in Filo del Sol porphyry-epithermal Cu-Au-Ag deposit, Cincuna District, NW Argentina" ***M. Camila Sojo*** *(Univ. of Arizona)* **S**
9:00 AM	**INVITED:** Evidence for offset of Cretaceous plutons by the Tintina fault in eastern Alaska: implications for regional metallogeny ***Doug Kreiner*** *(USGS)*	Skarn-hosted copper mineralization at Oracle Ridge, Arizona (USA) ***Madeline Murchland*** *(CSM)* **S**
9:15 AM		Insights into the ~2715-2665 Ma magmatic and metallogenic evolution of the Boddington Au-Cu-Mo deposit ***Edmore Marima*** *(Univ. Western Australia)* **S**
9:30 AM	**INVITED:** Jurassic to Eocene orogenic gold of the North American Cordillera ***Rich Goldfarb*** *(Goldfarb Global Gold)*	Greenstone belt-hosted Mesoarchaean Mbarga BIF prospect, NW Congo Craton (southern Cameroon) ***George Ngiamte*** *(Univ. of Melbourne)* **S**
9:45 AM		Evidence of multi-stage orogenic gold mineralization at the Bonnefond deposit, Val-d'Or, Québec ***François-Xavier Bonin*** *(Univ. of Laval)* **S**
10:00 AM	Coffee Break	
10:30 AM	**INVITED:** Reconstruction of Cenozoic tectonic extension and the initial distribution of porphyry copper deposits in the greater Sonoral Desert region ***Jon Spencer*** *(Univ. of Arizona)*	**KEYNOTE:** Metal distribution in porphyry-centred hydrothermal systems: Insights from mineral and fluid inclusion geochemistry at Butte, Montana **Zoom Presentation** ***Kalin Kouzmanov*** *(Univ. of Genevea)*

S denotes student

TUESDAY, AUGUST 5

	Petroleum Hall	Hill Hall Room 202
	Critical Mineral Resources: Opportunities and Challenges *S. Jowitt; Z. Chang; M. Harlaux; P. Verplanck*	**Ore deposits associated with magmatic systems: Ni-Cu-PGE and Fe-Ti-P deposits** *C. Jenkins; C. Li*
8:30 AM	**KEYNOTE:** Critical minerals in granite-related ore systems ***Yanbo Cheng*** *(Geoscience Australia)*	New Perspectives on Fe-Ti±V Mineralization in the Ślęża-Kunów area, SW Poland: Findings from the SEMACRET project ***Tomasz Bieńko*** *(Polish Geological Institute)*
8:45 AM		LA-ICP-MS trace element data (ilmenite, apatite) from Fedorivka, Stremyhorod and Nosachiv Ti-P deposits in the Ukrainian Shield ***Krzysztof Foltyn*** *(Univ. of Krakow)*
9:00 AM	Mine Rehabilitation of Sulphide-rich Ore Deposits: A Pioneering Project at the Lousal Mine, Portugal ***Jorge Relvas*** *(Univ. of Lisbon)*	Mafic underplating as a possible source for iron oxide-apatite deposits in Norrbotten, Sweden ***Tobias E Bauer*** *(Luleå University)*
9:15 AM	Sourcing tungsten from mine waste: Geological controls on the application of ore sorting technologies ***Nathan Fox*** *(Univ. of Queensland)*	Petrogenesis and mineralization potential of the Bradley Peak komatiitic basalts, Wyoming Province ***Lisa Zieman*** *(USGS)*
9:30 AM	Mine Waste as a Potential Source of Critical Minerals: Examples from the Four Corners States, USA ***Jeff Mauk*** *(USGS)*	Petrogenesis/ore-forming processes of the ultramafic Kylmäkoski Ni-Cu-(Co) magmatic sulfide deposit, SW Finland ***Patrick Hehn*** *(GeoZentrum Nordbayern)* **S**
9:45 AM	Graphite characterization of the Sahavaara and Kahujärvi iron deposits, Norrbotten province, Sweden ***Maria Uzieda*** *(Luleå University)* **S**	Understanding lower crustal sulfide ore systems: Insights from ultramafic pipes in the Ivrea-Verbano Zone, Italy ***Shelby Clark*** *(Univ. of Texas)* **S**
10:00 AM	Coffee Break	
10:30 AM	Controls on grade in lithium clay deposits: Lessons learned from the San Juan Caldera Complex in Colorado, USA ***Ali Jaffri*** *(CSM)*	Origin of the high Pd/Pt ratio of the J-M Reef Stillwater Complex Montana USA ***Christopher Jenkins*** *(USGS)*

TUESDAY, AUGUST 5

S denotes student

	Metals Hall	Bunker Auditorium
1045 AM	**Continued from page 28**	**Continued from page 28**
11:00 AM	**INVITED:** Tertiary metallogeny of the Rocky Mountains Province, USA ***Sean Gaynor*** *(USGS)*	Uranium Mineralization from Former Arsenic Mine Giftkies, Jáchymov Ore District, Czech Republic **Michal Roll** (Charles University) **S**
11:15 AM		
11:30 AM	**INVITED:** Carlin-type and Carlin-like gold districts in Nevada **Elizabeth Holley** *(CSM)*	
11:45 AM		
12:00 PM	**INVITED:** Low sulfidation epithermal deposits of the central Basin and Range Province, USA ***Thomas Monecke*** *(CSM)*	Lunch
12:30 PM	Lunch	
1:30 PM	**Anita Parbhakar-Fox plenary: "Net Zero mine waste – a realistic global target?" - Bunker Auditorium**	
	Ore deposits associated with magmatic systems: Volcanogenic Massive sulfide deposits in honor of Jim Franklin *M. Hannington; J. Relvas*	**Ore deposits associated with magmatic systems: porphyry/ epithermal deposits** *G. Bozkaya, P. Chadwick, T. Christie, D. Cooke, D. Kirwin, Z. Yang*
2:30 PM	**KEYNOTE:** The volcanic-hosted massive sulfide mineral system in space and in time – a tribute to Jim Franklin ***David Huston*** *(ANU)*	**KEYNOTE:** The Porphyry to Epithermal Transition: A 2025 Explorer's Perspective Toward Improving Discovery Rate ***Mac Canby*** *(Freeport McMoRun Exploration Corporation)*

S denotes student

TUESDAY, AUGUST 5

	Petroleum Hall	Hill Hall Room 202
10:45 AM	Reinventing the Lousal Mining Site (Portugal): Shifting Perceptions of Mining Through Cultural Heritage, Science, and Education ***Álvaro Pinto*** *(Univ. of Lisbon)* **S**	**KEYNOTE:** The Mineral System Approach Applied to Magmatic Ni-Cu-PGE Sulfide Deposits: Sink Processes Revisited by Recent Experimental Studies ***Giada Iacono-Marziano*** *(BRGM)*
11:00 AM	Geology and geochemistry of Ni-Co laterites, northern California and southern Oregon ***Erin Marsh*** *(USGS)*	
11:15 AM	Impact of weathering on distribution of Li and other critical metals in Central African pegmatites ***Jolan Acke*** *(KU Leuven)* **S**	
11:30 AM	Rare Earth Elements at Thacker Pass Deposit, a Lithium Sedimentary Deposit in Northern Nevada, USA ***Jorge Crespo*** *(Univ. of Nevada)*	
11:45 AM	Geochemical evolution of a regolith developed from a REE-bearing garnet-biotite tonalite ***Nicolás Bustos*** *Univ. of Chile)* **S**	
12:00 PM	Lunch	
12:30 PM	Lunch	
1:30 PM	**Anita Parbhakar-Fox plenary: "Net Zero mine waste – a realistic global target?" - Bunker Auditorium**	
	Plate Tectonics, Earth evolution and the secular distribution of mineral systems *D. Huston, H. Frimmel, Y. Li*	**Structural geology in ore deposit genesis: Mechanisms, models, and mineralization** *N. Thébaud, A. Hughes, Y. Kuiper, D. Rhys*
2:30 PM	Archean climate change: the role of land distribution and atmospheric composition ***Lisa Wasitschek*** *(Univ. of Würzburg)* **S**	Crustal-scale transpressional control on gold mineralisation: insights from the Séguéla gold project, southern West African Craton ***Julien Perret*** *(Univ. Western Australia)*

TUESDAY, AUGUST 5

S denotes student

	Metals Hall	Bunker Auditorium
2.45 PM	**KEYNOTE:** The volcanic-hosted massive sulfide mineral system in space and in time – a tribute to Jim Franklin (Cont.) ***David Huston*** *(ANU)*	**KEYNOTE:** The Porphyry to Epithermal Transition: A 2025 Explorer's Perspective Toward Improving Discovery Rate ***Mac Canby*** *(Freeport McMoRun Exploration Corporation)*
3:00 PM	Insights on the formation of tin ores in the Neves Corvo Cu-Zn-Pb(-Sn) deposit, from in situ trace element analysis and O-isotopes of cassiterite ***Marta Codeço*** *(Univ. of Arizona)*	Ages and trace element fertility of porphyry-related mineralization in the Philipsburg polymetallic district, Montana, with a comparison to Butte ***Celine Beaucamp*** *(Montana Technological University)* **S**
3:15 PM	Coffee Break	
3:45 PM	Definition of Besshi-type VMS deposits based on their geological, geochronological features and tectonic settings ***Tatsuo Nozaki*** *(Waseda University)*	Porphyry ore-deposit potential of northeast Australia – New insights from early-Paleozoic tectonic models ***Alexander Edgar*** *(Univ. of Western Australia)*
4:00 PM	The mid-Cretaceous VMS belt in the Peruvian coast ***Lluis Fontboté*** *(Univ. of Geneva)*	A porphyry ore deposit in the making: unique insights into magmatic processes leading to ore fertility through the Taapaca volcano ***Iván Mateo Espinel Pachon*** *(Univ. of Geneva)* **S**
4:15 PM	Geologic setting, Pueblo Viejo Au-Ag-(Cu-Zn) district, DR – links to volcanogenic massive sulphide (VMS) mineralization ***Carl Nelson*** *(Recursos del Caribe)*	Geology, Mineral Alteration and Mineralization of the Santa Cecilia Porphyry Au-Cu Deposit, Maricunga Belt, Northern Chile ***Jose Franco*** *(Univ. of Texas)* **S**
4:30 PM	Mineral and geochemical zonation at the Åkulla Au-Te deposit, Skellefte VMS district, Sweden ***Paulina Nordfeldt*** *(Stockholm University)*	A Multi-scale Study of Gold Deportment in the Goldstorm Porphyry Cu-Au Deposit, Northwest British Columbia, Canada ***Jessica Baldwin*** *(Univ. of British Columbia)* **S**
4:45 PM	In-situ sulfur isotope analysis of pyrite in the c. 1.88Ga Rävliden North VMS deposit, Skellefte district, Sweden ***Jonathan Rincon*** *(Luleå University)* **S**	Geochemical and C-O signatures in carbonates around the Basin porphyry, Utah, USA ***Michael Kirschbaum*** *(CSM)* **S**
5:00 PM	**Exhibit and Poster Reception**	The Huntoon Copper Project, Mineral County, Nevada – Unravelling a dismembered magmatic-hydrothermal system ***James Blight*** *(Great Western Mining Corp)*
5:15 PM		**Exhibit and Poster Reception**

S denotes student

TUESDAY, AUGUST 5

	Petroleum Hall	Hill Hall Room 202
2:45 PM	Constraints on the Relative Timing and Tectonic Framework of Mesozoic Orogenic Gold Mineralization in the Corona de Oro Belt, NW Nicaragua ***Ben Freiman*** *(CSM)*	Multi-stage gold in the Guiana Shield: insight from the Oko West deposit, Guyana ***Pierre-Jean Hainque*** *(Université de Franche-Comté)* **S**
3:00 PM	Gold Paleoplacers Through Precambrian Time: the Case of the 1.9 Ga Roraima Supergroup, Guyana ***Hartwig Frimmel*** *(Univ. of Würzburg)*	District to mineral-scale geometry of the world-class Antino orogenic gold system, southeastern Suriname (Guiana shield) ***Vincent Combes*** *(Founders Metals, Inc)*
3:15 PM	Coffee Break	
3:45 PM	**KEYNOTE:** Impact of the Great Oxidation Episode on sedimentary and magmatic mineralization processes ***Andrey Bekker*** *(Univ. of California)*	Ultra-high-grade Au formation via open space growth in a mid-crustal orogenic deposit ***Lauri Virnes*** *(Univ. of Western Australia)* **S**
4:00 PM		Integration of structural data into geological models: case studies from an underground mine to an early stage exploration project ***Ashleigh Ball*** *(First Quantum Minerals)*
4:15 PM	Convergent margin metallogenic cycle and transition from Archean tectonic modes to plate tectonics in the Paleoproterozoic southern West African Craton ***Julien Perret*** *(Univ. of Western Australia)*	**KEYNOTE:** Structural Interpretation of the Cerro Negro Camp (Deseado Massif, Argentina): Insights for Identifyingnew exploration targets ***Franck Valli*** *(Newmont Corporation)*
4:30 PM	**KEYNOTE:** Re-occurrence of carbonatites along plate boundaries as a control on rare earth elements mineralization ***Yang Li*** *(Peking University)*	
4:45 PM		Resolving Fold Interference Pattern to Predict Ore Shoot: The RIPPOre Method ***Brice Lacroix*** *(Kansas State University)*
5:00 PM	**Exhibit and Poster Reception**	Formation of the Hammond Reef Gold Deposit (Ontario, Canada): Evidence for the Development of a Contractional Step-Over Zone ***Gabrielle Fouillard*** *(Laurentian University)*
5:15 PM		**Exhibit and Poster Reception**

S denotes student

	Metals Hall	Bunker Auditorium
	Targeting mineral deposits in metamorphic terranes *P. Mercier-Langevin; A. André-Mayer, P. Garofalo, S. Hagemann, J. Kolb, I. Pitcairn*	**Ore Deposits associated with magmatic systems: Porphyry/ Epithermal deposits** *G. Bozkaya, P. Chadwick, T. Christie, D. Cooke, D. Kirwin, Z. Yang*
8:30 AM	**KEYNOTE:** The metamorphic model in Archean orogenic golddeposits ***Crystal Laflamme*** *(Laval University)*	**KEYNOTE:** Te and Au mobility at the porphyry-epithermal transition: Insights from experiments and numerical simulations ***Nicole Hurtig*** *(New Mexico Tech)*
8:45 AM		
9:00 AM	Polyphase folding makes large greenstone gold deposits ***Marc Bardoux*** *(Barrick)*	Oligocene flare-up into the development of Ag high-grade veins at San Marcial area, Mexico ***Paula Montoya-Lopera*** *(Univ. of Tasmania)*
9:15 AM	Early mineralization in an overprinted gold deposit,High Lake greenstone belt, Nunavut, Canada ***Evan Hall*** *(Laurentian University)* **S**	Genesis of stibnite mineralisation in epithermal deposits based on coupled Sb and S isotopic composition of stibnite ***Peter Kordera*** *(Comenius University)*
9:30 AM	The Great Bear gold deposit: evidence for a second mineralisation event in the Archean Red Lake greenstone belt? ***Jack Simmons*** *(Laurentian University)*	Revisiting the classic Tonopah Ag-Au district, Nevada ***Cristy Stoian*** *(CSM)* **S**
9:45 AM	Crustal growth, gold fertilization and concentration in the northern Sukumaland granite-greenstone belt, Archean Tanzania Craton ***Celestine Berthier*** *(Univ. of Lorraine)* **S**	Multi-million-year magmatic maturation preceding the formation of the Llurimagua porphyry Cu-Mo deposit (Ecuador) ***Hugo Carrasco*** *(Univ. of Geneva)* **S**
10:00 AM	Coffee Break	
	Targeting mineral deposits in metamorphic terranes *P. Mercier-Langevin; A. André-Mayer, P. Garofalo, S. Hagemann, J. Kolb, I. Pitcairn*	**Ore Deposits associated with magmatic systems: Porphyry/ Epithermal deposits** *G. Bozkaya, P. Chadwick, T. Christie, D. Cooke, D. Kirwin, Z. Yang*
10:30 AM	The polymetamorphosed Amaruq gold deposit, Nunavut, Canada: Implications for gold exploration in Precambrian terranes ***Manon Valette*** *(Univ. of Quebec)*	Efemçukuru Intermediate Sulfidation Epithermal Gold Deposit, Türkiye: Evidence for a Magmatic-Hydrothermal Origin ***Tim Baker*** *(Eldorado Gold Corporation)*

S denotes student

WEDNESDAY, AUGUST 6

	Petroleum Hall	Hill Hall Room 202
	Evolution of sedimentary basins and ore formation: Special session to honor the career of David Leach *K. Kelley, S. Bouhlel, L.Fontboté, J. Pasava, Y. Song, S. Spinks*	**Structural geology in ore deposit genesis: Mechanisms, models, and mineralization** *N. Thébaud, A. Hughes, Y. Kuiper, D. Rhys*
8:30 AM	A tribute to David Leach's career ***Rich Goldfarb*** *(Goldfarb Global Gold)*	**KEYNOTE:** Linking multi-scale structural and tectonic observations to the localisation of Giant porphyry Cu deposits ***Alexander Farrar*** *(First Quantum Minerals)*
8:45 AM	**Keynote:** Shale-hosted massive sulfide mineral systems – the North Australian Zinc Belt as an exemplar ***David Huston*** *(Australian National University)*	
9:00 AM		Cu deposits (Bou Azzer-El Graara, Anti-Atlas, Morocco): mineral chemistry and fluid inclusions ***Marieme Jabbour*** *(Ibn Zohr University)* **S**
9:15 AM	**INVITED:** Modern SHMS Models and Analytical Techniques mixed with the Traditional Core Shed, Red Dog Zn-Pb District, Alaska ***Peter Christoffersen*** *(Teck American)*	Fluid Transfer in a Basement Fault System and Structural Controls of Unconformity-related Uranium Deposits ***Martin Quessandier*** *(Univ. of Lorraine)* **S**
9:30 AM	Evaporite Diapir-Related MVT Pb-Zn Deposits in Hydrocarbon Traps, North Africa ***Salah Bouhlel*** *(Univ. of Tunisia)*	How to form large LCT pegmatites: Clues from the western Superior Province of Canada ***Tarryn Cawood*** *(GSC)*
9:45 AM	Assessing United States Gallium and Germanium resources in basin-hosted deposits – the good and bad ***Garth Graham*** *(USGS)*	Structural control of Pb-Fe-Zn-Cu mineralizations of the Bou-Oumaldene deposit (Morocco): Archean Red Lake greenstone belt? implications for mineral exploration ***Zoubair El Ouad*** **S** *(preented by M. Jabbour)* **S**
10:00 AM	Coffee Break	
	Evolution of sedimentary basins and ore formation: Special session to honor the career of David Leach *K. Kelley, S. Bouhlel, L.Fontboté, J. Pasava, Y. Song, S. Spinks*	**Critical Mineral Resources: Opportunities and Challenges** *S. Jowitt; Z. Chang; M. Harlaux; P. Verplanck*
10:30 AM	**INVITED:** Revitalizing U-Pb Carbonate Geochronology: New Insights into Sediment-Hosted Base Metal Deposits *Cyril Chelle-Michou (ETH Zurich)*	Mineralogy & geochemistry of chromitites and PGM in the Santa Cruz Ni-laterite deposit, Acoje, Philippines ***Matias García-Tudela*** *(Luleå Univ.)* **S**

WEDNESDAY, AUGUST 6

S denotes student

	Metals Hall	Bunker Auditorium
	Targeting mineral deposits in metamorphic terranes *P. Mercier-Langevin; A. André-Mayer, P. Garofalo, S. Hagemann, J. Kolb, I. Pitcairn*	**Ore Deposits associated with magmatic systems: Porphyry/ Epithermal deposits** *G. Bozkaya, P. Chadwick, T. Christie, D. Cooke, D. Kirwin, Z. Yang*
10:45 AM	Lithostructural controls on gold mineralization at the Merian gold deposit, Suriname ***Gabriel Soares*** *(Univ. of Western Australia)* **S**	Geology, alteration and mineralization of the La Virgen high-sulfidation epithermal-porphyry district, Peru ***Raul Montesinos*** *(CSM)* **S**
11:00 AM	Deciphering the relationship between alteration and mineralization in metamorphic rocks; a Swedish case study from the Riddarhyttan area ***Robert Dunst*** *(Stockholm University)* **S**	Distribution of In and Te in epithermal deposits: Insights from LA-ICP-MS analyses of sulfides and sulfosalts ***M. Melfou*** *(Univ. of Thessaloniki)* **S**
11:15 AM	Primary ore features in the massive magnetite ore in the Malmberget IOA deposit, northern Sweden ***Jens Henriksson*** *(Luleå University)* **S**	Ore deposits and prospects in the Bolnisi mining district: general overview and future exploration prospectivity, Lesser Caucasus, Georgia ***Nino Popkhadze*** *(Tbilisi State Univ. Georgia)*
11:30 AM	The geology and breccia evolution of the Havieron breccia-hosted Au-Cu deposit ***Isaac Brown*** *(Univ. of Tasmania)* **S**	Relationships of lithocaps to porphyry and epithermal deposits – an example from the Baguio district, Philippines ***David Cooke*** *(CODES, Univ. of Tasmania)*
11:45 AM	Evolution of the fluid regime at the Queensway orogenic gold deposit, Newfoundland, Canada ***Thomas Monecke*** *(CSM)*	
12:00 PM	Mixing matters: resolving the fluid sources of metasediment-hosted auriferous veins in the Grampian Terrane of the Northern British Isles ***Shane Webb*** *(Laval University)*	Lunch Mines Market
12:15 PM	Lunch Mines Market	
12:30 PM	Lunch Mines Market	

S denotes student

WEDNESDAY, AUGUST 6

	Petroleum Hall	Hill Hall Room 202
	Evolution of sedimentary basins and ore formation: Special session to honor the career of David Leach *K. Kelley, S. Bouhlel, L.Fontboté, J. Pasava, Y. Song, S. Spinks*	**Critical Mineral Resources: Opportunities and Challenges** *S. Jowitt; Z. Chang; M. Harlaux; P. Verplanck*
10:45 AM	**Continued from page 29**	Exploration Information System (EIS) for geospatial mapping of spodumene-bearing LCT pegmatites in the Bothnian Orocline Belt of Finland ***Bijal Chudasama*** *(Geological Survey of Finland)*
11:00 AM	Age of mineralization in the Raibl Pb-Zn deposit (Italy) from U-Pb geochronology of gangue carbonates ***Lorenzo Tavazzani*** *(ETH Zuirch)*	Country scale prospectivity assessment and uranium mineral system approach in Uganda ***Patrick Ledru*** *(Tectolog)*
11:15 AM	Metallogenesis of vein-type U-deposits in the Bohemian Massif, constrained by U–Pb uraninite-apatite dating and AFT thermochronology ***Martin Kubeš*** *(Czech Geological Survey)*	Geochemistry, Isotopic Constraints, and REE Enrichment of the Late Miocene Abovyan Iron Oxide-Apatite Deposit, Armenia **Samvel Hovakimyan** *(National Acad Sci)*
11:30 AM	Volcanism and hydrothermal fluids led to oolitic ironstone deposition under highly oxygenated Carboniferous atmosphere ***Alex Kovalick*** *(Univ. of California)* **S**	Quantitative Mineral Resource Assessment of Lithium Pegmatite Deposits in the Appalachian Orogen, USA ***Niki Wintzer*** *(USGS)*
11:45 AM	**INVITED:** Sediment-hosted, marine iron deposits through time: evolving sources, depositional mechanisms, mineralogy, and geochemistry ***Andrey Bekker*** *(Univ. of Calif)*	Utilizing downhole datasets for modelling the aeromagnetic signature of the Iron Creek Co-Cu deposit in the Idaho Cobalt Belt ***Daniel Schmidt*** *(CSM)* **S**
12:00 PM	Constraints on ore forming fluid temperature evolution of Zn-Pb deposits in the San Vicente district (Peru): a clumped isotope approach ***Candice Filoche*** *(ETH Zurich)* **S**	Lunch Mines Market
12:15 PM	Relationship of sparry dolomite cement to burial diagenesis/ halokinetic processes: a focus on the San Vicente MVT deposit ***Raul Berrspi*** *(National University of Peru)* **S**	
12:30 PM	Lunch Mines Market	

S denotes student

1:30 PM	**Mark Hannington Plenary "Marine metallogeny and the future resource potential of the oceans" Bunker auditorium**	
2:30 PM	**SGA General Assembly - Bunker Auditorium**	
3:30 PM	**Coffee Break**	
	Metals Hall	**Bunker Auditorium**
	Targeting mineral deposits in metamorphic terranes *P. Mercier-Langevin; A. André-Mayer, P. Garofalo, S. Hagemann, J. Kolb, I. Pitcairn*	**Ore Deposits associated with magmatic systems: Porphyry/ Epithermal deposits** *G. Bozkaya, P. Chadwick, T. Christie, D. Cooke, D. Kirwin, Z. Yang*
4:00 PM	**KETNOTE:** The nanoscale processes controlling gold mineralisation in orogenic belts ***Denis Fougerouse*** *(Curtin University)*	Cu-Mo(-W) porphyry ore mineralization based on isotopic geochronology and geochemistry – Variscan orogenic belt in Poland ***Stanislaw Mikulski*** *(Polish Geological Institute)*
4:15 PM		Camp Creek Cu-Mo (Au) Alteration-Mineralogy Classification. Exploring for blind mineralization in Northern British Columbia, Canada ***Mazwell Porter*** *(Univ. of British Columbia)* **S**
4:30 AM	Textural characterization of gold-bearing pyrite in orogenic gold deposits (Val-d'Or, Canada): Insights from NIR microscopy ***Maxime Bertauts*** *(Laval University)* **S**	Ferropyrosmalite-bearing fluid inclusions in the porphyry Cu-Mo deposits: A record of regional metasomatism in NW Turkiye ***Gülcan Bozkaya*** *(Pumukkale University)*
4:45 AM	Metamorphism of pyrite during the Himalayan orogeny: implications for orogenic gold genesis ***A. Latheef Thathrampally*** *(Indian Inst. Tech)* **S**	Lithology, alteration and mineralization, Apollo Porphyry Breccia Complex, Caldas, Colombia ***Jonathan Orozco-Rios*** *(given by D. Venegas)* **S**
5:00 PM	Metamorphism and deformation of the Windy Craggy VMS deposit, British Columbia: effect on sulfide-hosted critical- and precious- metals ***Tarryn Cawood*** *(Geological Survey of Canada)*	**Exhibit and Poster Reception**
5:00 PM to 7:00 PM	**Exhibit and Poster Reception**	

WEDNESDAY, AUGUST 6

1:30 PM	**Mark Hannington Plenary "Marine metallogeny and the future resource potential of the oceans" Bunker auditorium**	
2:30 PM	**SGA General Assembly - Bunker Auditorium**	
3:30 PM	**Coffee Break**	
	Petroleum Hall	**Hill Hall Room 202**
	Evolution of sedimentary basins and ore formation: Special session to honor the career of David Leach *K. Kelley, S. Bouhlel, L.Fontboté, J. Pasava, Y. Song, S. Spinks*	**Ore deposits associated with magmatic systems: Volcanogenic Massive sulfide deposits in honor of Jim Franklin** *M. Hannington; J. Relvas*
4:00 PM	**KEYNOTE:** Proposed links between lithium pegmatites in New England (USA), delamination of an orogenic plateau, and evaporative brines ***Dwight Bradley*** *(Dartmouth College)*	The Hambok volcanic-associated massive sulfide deposit, Bisha VMS District, Eritrea: discovery, geology and mineralogy ***C. Tucker Barrie*** *(CTBA Geoconsultants)*
4:15 PM		Zircon petrochronology of Paleoproterozoic VMS deposits in the Penokean Orogen, Wisconsin, USA ***Robert Lodge*** (Univ. of Wisconsin)
4:30 PM	Sedimentary Controls of Carbonate-hosted Copper Mineralization in the Anti-Atlas, Morocco: the Role of Evaporites ***Bastien Lesage*** *(Univ. of Rennes)* **S**	Mineralization Processes at Escanaba Trough ***Amy Gartman*** *(USGS)*
4:45 PM	Sandstone-hosted pipe-like features from the Cu-Ag Kupferschiefer deposits, Poland ***Krzysztof Foltyn*** *(Univ. of Krakow)*	James Franklin and ore deposits in the 1970s ***Lawrence Cathles*** *(Cornell University)*
5:00 PM	3D Numerical Modelling of Copper Leaching, Migration, and Mineralisation in Sedimentary Basins ***Meissam Bahlali*** *(Imperial College)*	**Exhibit and Poster Reception**
5:00 PM to 7:00 PM	**Exhibit and Poster Reception**	

THURSDAY, AUGUST 7

S denotes student

8:30 AM	**John Thompson plenary "Meeting the demand for metals: what needs to change?" - Bunker auditorium**	
	Metals Hall	**Bunker Auditorium**
	Ore Deposits associated with magmatic systems: Alkaline magmatism and carbonatites *N. Coint; S. Decree; D. Ollinger*	**Ore Deposits associated with magmatic systems: Porphyry/ Epithermal deposits** *G. Bozkaya, P. Chadwick, T. Christie, D. Cooke, D. Kirwin, Z. Yang*
9:30 AM	**KEYNOTE:** The 3D structure and evolution of a REE-rich carbonatite: insights from the Chilwa Alkaline Province ***Sam Broom-Fendley*** *(Camborne School of Mines)*	Mineralogy, Paragenesis, and Geochemistry of the Zgounder Ag Hg Deposit (Central Anti Atlas Morocco): Insights into Ore Genesis ***Atiq El Majid*** *(Univ. Lorraine)*
9:45 AM		Igneous Amphibole and Apatite from the Grasberg Porphyry Cu-Au Deposit, Indonesia: Insights into the magmatic degassing of volatiles ***Adi Sulaksono*** *(PT Geo Fix)*
10:00 AM	Formation of the Mount Weld rare earth deposit, Western Australia: geochronology constraints ***Phil Verplanck*** *(USGS)*	Exploring the apparent dominance of low Ti zircon in porphyry Cu deposits and its implications on the origin of zircon: perspective matters ***Maria Castellanos-Melendez*** *(ETH Zurich)*
10:15 AM	Coffee Break	
10:45 AM	Stable Isotope Composition and Geochemistry of Calcite and Dolomite in the Mountain Pass carbonatite: A lens into petrogenesis ***Erin Benson*** *(USGS)*	Paleosurfaces and hydrodynamics of a diatreme complex during formation of the Sunnyside porphyry Cu-Mo-Ag system, Arizona ***Peter Vikre*** *(USGS)*
11:00 AM	Fingerprinting magmatic REE deposit sources with zircon petrochronology ***Ian Hillenbrand*** *(USGS)*	Trace and critical elements in UV-fluorescent and nonfluorescent sphalerite from the Butte porphyry-lode deposit, Montana, USA ***Kyle Eastman*** *(Montana Tech Univ)* **S**
11:15 AM	Hyperspectral Cathodoluminescence of Bastnäsite at the Mountain Pass Mine, USA: Implications for REE Mineralisation and Mining ***Paul Slezak*** *(Idaho National Lab)*	Skarn-Porphyry Transition: Understanding and Applications in Exploration ***Zhaoshan Chang*** *(CSM)*

S denotes student

THURSDAY, AUGUST 7

8:30 AM	**John Thompson plenary "Meeting the demand for metals: what needs to change?" - Bunker auditorium**	
	Petroleum Hall	**Hill Hall Room 202**
	New frontiers in analytical techniques for the explorationist *G. Graham; M. Doherty; A. Vymazalova*	**Discovery through geophysics, remote sensing, and hyperspectral techniques** *E. Anderson; J. Austin*
9:30 AM	**KEYNOTE:** Detecting nanoparticles with single particle ICP-MS: a new tool for exploration geochemistry ***Aaron Goodman*** *(CSM)*	Accurate Physics-based definition of magnetite resources: Inverting the magnetic moment to Fe wt% ***James Austin*** *(CSIRO Mineral Resources)*
9:45 AM		Vanadate prospecting through hyperspectral methods: case studies from Otavi Mountainland (Namibia) and Mibladen deposit (Morocco) ***Francesca Corrado*** *(Univ. of Naples)* **S**
10:00 AM	Copper: Breakthrough hydrogeochemical techniques for exploration, processing, and environmental monitoring ***Ryan Mathur*** *(Juniata College) (given by Adam Simon)*	Airborne radiometric data map alteration of porphyry copper systems in the Elkhorn district, *MT* ***Eric Anderson*** *(USGS)*
10:15 AM	Coffee Break	
10:45 AM	Modern Methods of Exploration—the Key Factor in Discovering the Northern Copper Belt, Poland ***Stanislaw Speczik*** *(Lumina Metals)*	Mineralogy and magnetic susceptibility of ore deposits in the Elkhorn 7.5' quadrangle, southwest Montana ***Jarred Zimmerman*** *(Montana Bureau of Mines and Geology)*
11:00 AM	Trace element compositions of micro inclusions extracted from mixed Laser Ablation Inductively Coupled Mass Spectrometry signals and their use in exploration: apatite inclusions in zircon ***Ivan Belousov*** *(CODES)*	Synergy Between Geology and Geophysics in Graphite Mineral Resource Assessment ***Patricia MacQueen*** *(USGS)*
11:15 AM	Development of in situ sulfur isotope analysis of apatite by LA-ICP-MS/MS to track ore-forming processes ***Luis Krampert*** *(Laval Univerisity)* **S**	Integrated Remote Sensing and Machine Learning for Copper Exploration in Copper Triangle, Arizona ***Zeynep Ankut*** *(CSM)* **S**

S denotes student

	Metals Hall	Bunker Auditorium
11:30 AM	The Role of Alkali Bicarbonate-sulfate Brines in the Genesis of Carbonatite REE Resources at the Bear Lodge Alkaline Complex, Wyoming ***Allen Andersen*** *(USGS)*	The epithermal-skarn transition at the La Colorada deposit, Zacatecas, Mexico ***Joshua Ebner*** *(CSM)* **S**
11:45 AM	Niobium-rich Minerals from the Sheep Creek Carbonatite-Related Deposits, Montana, USA ***Christopher Gammons*** *(Montana Tech University)*	Role of Magmas in Forming a Large Skarn System: A case study from La Colorada Deposit (Zacatecas, Mexico) ***Pedro Francisco*** *(CSM)* **S**
12:00 PM	Early magmatic history of the Cripple Creek complex: Insights from olivine-hosted melt inclusions and implications for ore formation ***Michael Schirra*** *(Univ. of Geneva)*	**KEYNOTE:** Finding a needle in a (noisy) haystack: discovery of the Artillery Road skarn in the brownfields Mt Chalmers VHMS camp, Queensland, Australia **Zoom presentation from Discovery through geophysics session** ***Nick Direen*** *(Consultant Geophysicist)*
12:15 PM	Lunch Mines Market	
12:30 PM	Lunch Mines Market	
1:30 PM	New Perspectives on Hydrothermal Mobilization of Rare Earth Elements (REE) in Carbonatites – Alkaline Systems in New Mexico, USA ***Alexander Gysi*** *(New Mexico Bur Geol & Mineral Resources)*	Skarn geometry and sectors, and their applications in exploration ***Zhaoshan Chang*** *(CSM)*
1:45 PM	Hydrothermal Veining and Fenitization as Vectors for Hydrothermal REE Mobilization in the Lemitar Mountains Carbonatite, New Mexico ***Willa Obringer*** *(New Mexico Bureau of Geology and Mineral Resources)* **S**	Skarn-related epithermal Pb-Zn mineralization: a new model for the Laki ore field (Central Rhodope, Bulgaria) ***Lison Moynier*** *(Univ. of Renne)* **S**
2:00 PM	Fluorite as a vector for hydrothermal REE mineralization in the Gallinas Mountains deposit, New Mexico ***Aadish Velmani*** *(New Mexico Bureau of Geology and Mineral Resources)* **S**	Skarn Zoning Patterns of the Large Zn-Pb-Ag La Colorada Deposit, Chalchihuites District, Zacatecas, Mexico ***Pedro Francisco*** *(CSM)* **S**

S denotes student

THURSDAY, AUGUST 7

	Petroleum Hall
11:30 AM	Combining Scanning Electron Microscopy, X-Ray Diffraction, and X-Ray Fluorescence to Characterize Shear Zones at the Pogo Gold Deposit, Alaska ***Katharina Pfaff*** *(USGS)*
11:45 AM	Leveraging geochronology, thermochronology and paleomagnetic data from iron oxides redefines BIFhosted ore genesis ***Liam Courtney-Davies*** *(Univ. of Colorado)*
12:00 PM	Cassiterite LA-ICP-MS U-Pb Dating: Practical Considerations and Quality Evaluation ***Shiqiang Huang*** *(CSM)*
12:15 PM	Enhancing Kimberlite Dating with Paired (U-Th)/He and U-Pb Chronology of Zircon Megacrysts ***Spencer Zeigler*** *(Univ. of Colorado)* **S**
12:30 PM	Lunch Mines Market
1:30 PM	Cathodoluminescence of quartz of the Duobuza porphyry Cu-Au deposit, central Tibet, China ***Jia Sun*** *(CAGS)*
1:45 PM	Multivariate Wavelet Tessellation and Unsupervised Machine Learning on XRF scan data for Domaining of Rock and Alteration Type: Example from the Rävliden North VMS deposit ***Filip Simán*** *(Luleå University)* **S**
2:00 PM	Anomaly detection for early-stage mineral exploration to detect potential orefields using variogram and unsupervised machine learning ***Felix Sihombing*** *(Univ. of Oxford)* **S**

THURSDAY, AUGUST 7

S denotes student

	Metals Hall	Petroleum Hall
2:15 PM	Hydrothermal Metasomatism Controlled REE Mineralization at Bayan Obo Revealed by Zircon Petrochronology ***Yan Yu*** *(CAS)* **S**	Gold from the ore to your hands: A manifold learning approach to trace gold through the production chain based on gold geochemistry ***Angel Verbel*** *(Univ. of Brazil)* **S**
2:30 PM	The Geochemistry of Magnetite from Bayan Obo Fe-REE-Nb Deposit, China: Implications for Ore Genesis ***Lan Yang*** *(CAS)* **S**	Ag-Isotope Ratios in Fluid Inclusions from Au-bearing Hydrothermal Fluids ***David Banks*** *(Univ. of Leeds) (given by G. Bozkaya*
2:45	Coffee Break	
3:15 PM	**Closing Ceremony - Bunker Auditorium**	

POSTER SCHEDULE

SUNDAY, AUGUST 3-TUESDAY, AUGUST 5

Poster No.	Abstract ID	Presentation Title
1	36	Flake graphite occurrences on Idjwi Island in Lake Kivu, DRC: Origin and economic potential in the Mesoproterozoic Karagwe-Ankole Belt **Anouk Borst** (Royal Museum for Central Africa)
2	67	The Mineralogy and REE budget in Syenites around Eastern Dharwar **P.V.S. Raju** (CSIR)
3	119	The Origin of the Bourbon Iron Ore Deposit in Southeast Missouri, USA **Regan Swain** (Univ. of Texas) **S**
4	164	Formation of germanium sulfides in the Black Angel district, West Greenland **Michael Eigler** (Karlsruhe Inst. Technology) **S**
5	213	Targeting Critical Raw Materials occurrences in Central Europe: a perspective of the Czech Geological Survey **Michal Poňavič** (Czech Geol Survey) Presented by M. Kubeš
6	248	Enrichment and mineral occurrence of Bi within cassiterite-sulphide stratiform mineralization from the Stara Kamienica schist belt (NE Bohemian Massif, SW Poland) **Rafał Małek** (Polish Geological Institute)
7	261	Minerals in the Cu-Sn-Se system, an experimental study **Jan Mráček** (Czech Geological Survey) **S**
8	269	Lithium ore mineralogy of LCT-pegmatite drill cores characterised by simultaneous X-ray CT-XRF scanning **Pablo Petri** (Uppsala University) **S**
9	267	Geochronology of Mount Begbie Pegmatites, British Columbia, Canada **Danny Hnatyshin** (Geological Survey of Canada)
10	288	Geochemical and isotopic fingerprints of rhyolites parental to volcano-sedimentary lithium brine and clay resources (western USA & central Andes) **Celestine Mercer** (USGS)
11	329	Critical Metals in Au-Se-Te Ores of Ozernovskoe Epithermal Deposit (Kamchatka, Russia) **V.V. Kozlov** (Russian Academy of Sciences) Presented by Anna Vymazalova
12	330	Assessment of Rare Earth Element Potential in Emerald Mine Waste from the Western Emerald Belt, Colombia **Laura Sofia Castro** (Univ. of Colombia) **S**
13	358	Polish strategy for mining waste exploration - current efforts and future perspective **Anna Januszewska** (Polish Geological Institute) **S**
14	361	Evaluation of concentration of critical metals in iron ore mining waste heaps from the Częstochowa area, Poland **Andrzej Chmielewski** (Polish Geological Institute)
15	417	The Puxiong Nb-REE deposit in SW China: A regolith-hosted deposit formed above an alkaline igneous complex **Min Wang** (CAS) Presented by Mei-Fu Zhou

POSTER SCHEDULE

SUNDAY, AUGUST 3-TUESDAY, AUGUST 5

Poster No.	Abstract ID	Presentation Title
17	286	A student-owned, student-operated, and student-led mineral exploration company **Joseph Biasi** (Univ. of Wyoming)
18	26	The Jbel N'Zourk carbonate-hosted copper deposit (central Anti-Atlas, Morocco): Structural, Mineralogy and Stable Isotopes constraints **Ismail Bouskri** (Ibn Zohr University) **S**
19	33	Geology, lithostratigraphy, geochemistry and deposit model of manganese in the Tizi-n-Isli Mine, Oumjen High Atlas, Morocco **Imad Attia** (Ibn Zohr University) **S**
20	55	Cambrian microbialites and copper mineralization aspects in Anti-Atlas, Morocco **Mouad Benssaou** (Ibnou Zohr University) **S**
21	133	Zinc, cadmium, sulfur isotopes and Zn/Cd ratios in sphalerite, Příbram district (Czech Republic) **Jan Pašava** (Czech Geological Survey)
22	199	The Contribution of the Northern Copper Belt of Poland to the European and Global Copper Resources **Krzysztof Zieliński** (Lumina Metals Corp.)
23	396	Berndlehmannite A new V-bearing sulfide mineral from the black shale-hosted Zhongcun vanadium deposit, South China **Xuerui Fu** (CUGB) **S**
25	74	Tourmaline chemistry of Au-Cu Lavra Velha deposit, Bahia, Brazil **Valentina Bocanegra-Olivera** (University of Brazil) **S**
26	151	Formation of rhabdophane group minerals in quartz pebble conglomerates in the Singhbhum Craton, India: implications for uranium mineralization **Smruti Prakash Mallick** (Indian Inst. of Technology) **S**
27	153	Geothermal Environment at Sulphur Bank Mercury Mine, Northern Coast Ranges, California **Alison Piasecki** (USGS)
28	231	Mechanisms of crystal grow in ore-forming environments **Marisa D. Acosta** (Univ. of Alaska)
29	271	Evolution of the Magnetite-Apatite & IOCG deposits of the Coastal Cordillera, Peru I**gnacio Ledesma** (Inst. of Geosciences, Madrid) **S**
30	282	Geochemistry and thermometry of magnetite veins and replacements in iron ore deposits from the Iron Springs district, SW Utah, USA: Relation to magmatic and hydrothermal processes **Corey Meighan** (USGS)

WITHDRAWN

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Poster No.	Abstract ID	Presentation Title
31	287	Base and Precious Mineralization Associated with Tertiary Normal Faults at Wickenburg, Arizona: IOCG Deposit Formation at Shallow Crustal Conditions **Matthew Riley** (CSM) **S**
32	356	Copper isotope signatures as indicators of mineralizing fluid pathways in the Lubin-Sieroszowice Copper District, SW Poland **Sławomir Oszczepalski** (Polish Geological Institute)
33	382	Copper sulphides zonation in the Radwanice-Gaworzyce Cu-Ag deposit of SW Poland **Andrzej Chmielewski** (Polish Geological Institute)
34	381	Fluid evolution and timing of the Stibnite-Yellow Pine district, Idaho **Mitchell Bennett** (USGS)
35	90	Regional-scale Na-metasomatism in the Southern Province, Ontario, Canada **Johannes L. A. Göetz** (Univ. of Würzburg) **S**
36	195	New insights into the post-depositional tectonic setting of the Aggeneys-Gamsberg ore district, South Africa **Stefan Höhn** (Univ. of Würzburg)
37	95	Unravelling the Structural Evolution of the Kupferschiefer Cu-Ag Deposit in the Fore-Sudetic Homocline: Insights from 3-D Modelling and Seismic Interpretation **Maciej Jeż** (Polish Academy of Sciences) **S**
38	296	Multi-Scale Structural and Geochemical Analysis of Gold Mineralization at the REN Deposit, Carlin Trend, Nevada **Amber Prevallet** (Univ. of Nevada) **S**
39	350	Litho-Structural Mapping, Implications of the control of the Gold Mineralization of the Makosa Gold deposit Kédougou-Kéniéba Inlier, Eastern Senegal **Malick Faye** (African Star Resources) **S**
40	392	Deformation Mechanisms in Quartz Veins and Shear Zones Elucidate the Origin of Gold Mineralization at Pogo, Alaska **Jonathan Caine** (USGS)
41	23	Evolution of the Fluid Flow Regime at the Greenstone-Hosted Eagle Mountain Gold Deposit, Guyana: Constraints from Vein Textures and Fluid Inclusion Petrography **Ben M. Frieman** (CSM)
42	44	Paleoproterozoic vein graphite mineralization caused by decarbonation in the Ruby Range, Montana, USA **George Case** (USGS)
43	236	Alteration description and mineral chemistry at the Ormaque orogenic gold deposit, Val-d'Or, Canada **Valentin Drouillot** (Laval University) **S**
44	250	Hydrothermal alteration trends and gold mineralization along the Antimony Line, Murchison Greenstone Belt, South Africa **Thabo S. Kgarabjang** (Univ. of Limpopo) **S**
45	323	Structural and Geochemical Constraints on an Atypical Skarn-Orogenic Au-(Cu) System : The Ity District (Côte d'Ivoire), West African Craton **Valentine Charvet** (Univ. of Lorraine) **S**

POSTER SCHEDULE

SUNDAY, AUGUST 3-TUESDAY, AUGUST 5

Poster No.	Abstract ID	Presentation Title
46	337	Sulfur isotopes in (BIF)-hosted gold mineralization at the Kalahari Goldridge deposit, Kraaipan greenstone belt, South Africa: Implication for the source of gold and sulfur **Anastasia Nailana** (Univ. of Limpopo) **S**
47	354	Mineral systems in the SE of Guyana Shield, Amapá region **Rosaline C. Figueiredo e Silva** (Univ. of Brazil)
48	354	Insights from hydrothermal foot- to fingerprints for exploration of Paleoproterozoic Au-(Cu) mineralization at the Odienné project, southern West African Craton **Hugo Ceinturet** (Univ. of Lorraine) **S**
49	391	Mappable criteria for Li-mineralized pegmatites in the Appalachian orogen (utilizing the mineral systems approach) **Christopher Holm-Denoma** (USGS)
50	404	Mineralogical and Geostatistical Study of the Zone C Birimian Gold Prospect, Kofi, Mali **Niakalé Camara** (Front Range Community College**)** **S**
51	315	Hydrothermal alteration zones estimated by ASTER satellite image and ASD TerraSpec on the eastern zone of Cerro de Pasco, Peru **Evelyn Caiza** (Central Univ. of Ecuador) **S**
52	400	Remote sensing for bauxite mapping in the Philippines: Insights from Paranas, Samar Island **Jillian Aira Gabo-Ratio** (Univ. of the Phillipines)
53	401	Regional geologic interpretation of aeromagnetic data, Idaho cobalt belt **Liam Knudsen** (Idaho Geological Survey)
54	273	Proximal hyperspectral sensing of mineralized outcrops in open pit mines: the Allumiere-Tolfa epithermal system (Central Italy) case study **Anna Sorrentino** (Univ. of Naples) **S** Presented by Francesca Corrado
55	131	Taca Taca Bajo: An Early Halo-Type Porphyry Copper Deposit in Salta, Argentina **Federica Cermuschi** (Eclectic Rock)
56	95	Enhancing Mineral Systems Exploration through Geochronology, Thermochronology, and Isotope Analysis: USGS Geochron and USGS Isotope Databases **Amy Gilmer** (USGS)

POSTER SCHEDULE

TUESDAY, AUGUST 5 - THURSDAY, AUGUST 7

Poster No.	Abstract ID	Presentation Title
1	73	40Ar/39Ar Geochronology Supporting Mineral Resources Research at USGS Denver **Leah E. Morgan** (USGS)
2	118	X-ray CT scans of over 50 000 meters of drill core with a voxel size of 200x200x200 µm **Alexander Hansson** (Orexplore Systems AB)
3	136	In-Situ geochronology using LA-ICP-MS/MS: Application of the Lu-Hf system in carbonate, apatite and fluorite **Jay M. Thompson** (USGS)
4	150	Geologic map database for the intermountain West, US: A Dataset for Systems Analysis **Amy K. Gilmer** (USGS)
5	212	LA-ICP-MS garnet U-Pb dating and its application to Tertiary skarn deposits, eastern Basin and Range, USA **Shiqiang Huang** (CSM)
6	228	Re-Os geochronology of molybdenite by LA-ICP-MS/MSA. **Kate Souders** (USGS)
7	289	Trace elements composition of tetrahedrite group minerals from the Mútnik magnesite–talc deposit, Hnúšťa, Slovakia: Microprobe and LA-ICP-MS studies **Konrad Kluza** (Univ. of Krakow) **S**
8	292	USGS Addresses Needs for Lithium Calibration and Quality Control Materials for pLIBS Analysis **A Rae Ann Orkild-Norton** (USGS)
9	321	Scheelite LA-ICP-MS U-Pb dating Status and Directions **Feiyi Liao** (CSM) **S**
10	402	Comparative Analysis of Multivariate Outlier Detection Models for Geochemical Data **Tyler Howe** (MinersAI)
11	423	Multi-Element Footprint Characterisation of the World-Class Yalea Au Deposit, Loulo District, Mali - West Africa **Thomas Stapley** (Barrick Gold)
12	113	Rare Earth Element Redistribution in Ultramafic Lamprophyres of Western Kentucky: Insights from Petrography and Geochemistry **Georgina Lukoczki** (Univ. of Kentucky)
13	145	Scandium-rich mineralization at the Crystal Mountain fluorspar mine, Montana, USA **Natalie Kilanowski-Doroh** (Montana Technological University) Presented by Chris Gammons
14	216	Distribution and genesis of REE-Nb-Ta deposits associated with carbonatites and alkaline complexes in Canada **Anne-Aurélie Sappin** (Geological Survey of Canada)

POSTER SCHEDULE

TUESDAY, AUGUST 5 - THURSDAY, AUGUST 7

Poster No.	Abstract ID	Presentation Title
15	218	Zr-U-Th-phases in clinohumite-spinel-bearing marbles as potential tracers of HFSE-fertile granitic rocks **Šárka Kučerová** (Masaryk University) **S**
16	242	Crystallization Age and Evolution of Calcite Melteigite-Calcium Carbonatite: a Study of Zircon Systematics from the Fen Complex, Southern Norway **Nolwenn Coint** (Geological Survey of Norway)
17	371	Cambro-Ordovician Alkaline Intrusions in Idaho: Examining a segment of North America's western Interior Alkaline REE belt **Cody Steven** (Idaho Geological Survey)
18	103	The rare earth element and fluorite deposit at Monte Muambe, Northwest Mozambique **A. Jamie Church** (Cambourne School of Mines) **S**
19	407	Mineralogical and Geochemical Variation of Porphyritic Dikes within the North Stock Gold Prospect, Rattlesnake Hills Alkaline Complex, Central Wyoming, USA **Brandi Lawler** (Univ. of Wyoming) **S**
20	259	Age and Isotopic Data from Mafic/Ultramafic Intrusions in the Karasjok Greenstone Belt, Northern Fennoscandia; Implications for Ni-Cu-PGE Prospectivity **Trond Slagstad** (Geological Survey of Norway)
21	281	The role of alterations to Ni-Cu mineralization at Great Dyke of Zimbabwe **Ema Vokić** (Univ. of Zagreb) **S**
22	408	Magmatic and Metasomatic Controls on PGE Mineralization in Chromitites of the Tróia-Pedra Branca Mafic-Ultramafic Complex, Borborema Province, Brazil **Adriana V Jacomini** (Univ. of Brazil) **S**
23	409	Mantle Oxidation and its impact in sulfur speciation: Insights from the Cretaceous Komatiites in Gorgona island **Camilo Andrés Conde Carvajal** (Univ. of Geneva) **S**
24	56	Episodic Epithermal Ore Formation During Late Cretaceous Rifting and Felsic Magmatism in the Cu-Au Bolnisi Mining District, SW Georgia **Şafak Utku Sönmez** (Univ. of Geneva) **S**
25	57	Reassessing the Schultze granite, Arizona, USA: A new temporal framework for the Globe-Miami magmatic-hydrothermal system **Lawrence C. Carter** (LC Geoscience Ltd)
26	58	Chronological framework for the magmatic-hydrothermal transition and mineralisation in the Yerington porphyry system, Nevada: A re-evaluation **Lawrence C. Carter** (LC Geoscience Ltd)
27	76	Clementine porphyry copper prospect, Montana, USA **Benjamin P. Magnin** (USGS)
29	127	Effects of hydrothermal alteration on K-feldspar of the syenite-hosted Quemalde-ro porphyry Cu prospect in Cordon, Isabela, Philippines **Pearlyn Manalo** (Akita University)
30	137	Magmatic Input in the Formation of Epithermal Au-Ag Deposits of the Hauraki Goldfield, New Zealand **Anthony B Christie** (GNS Science)
31	159	Ore deposits and prospects in the Bolnisi mining district: General overview and future exploration prospectivity, Lesser Caucasus, Georgia **Nino Popkhadze** (Tbilisi State University)
33	247	Trace elements in sulfides, the porphyry Mo-Cu-W Myszków deposit (Poland): petrogenetic significance, prospecting application, and importance for the raw materials challenges **Beata Naglik** (Polish Geological Survey) Given by Magdalena Dumańska-Słowik
34	284	Exploring the role of volcanic activity in porphyry copper systems in Yerington, NV **Anna Ellen Freudenstein** (ETH Zürich) **S**
35	327	Aranzazu Skarn: Zoning Patterns and Geological Controls **Oscar Solis** (CSM) **S**
36	331	Understanding Overprinting Mineralizing Systems of the Ruby Hill Deposit, Eureka, NV **Alyssa Lindsey** (Univ. of Nevada) **S**
37	338	Tracing fluid evolution during batholith and deposit formation: In-situ and bulk rock Mo isotopes from the Questa porphyry Mo deposit, New Mexico, USA **Sean P. Gaynor** (USGS)
38	346	Copper Creek, Arizona: Laramide, Early Halo Style Porphyry, Cupola and Breccia Hosted Mineralization **Dante Padilla** (Faraday Copper Corp)
39	355	Distribution of mineralization in different lithologies of the Ochtiná – Rochovce W-Mo porphyry deposit (Western Carphatians, Slovakia) **Jana Brčeková** (Comenius Univ. in Bratslava)
40	367	Porphyry Cu-Au Related Hydrothermal Alteration in the Radersburg District, Elkhorn Mountains, Montana **Joseph J. Clevenger** (Oregon State University) **S**
41	389	Magmatic fluids in the Chuquicamata porphyry copper deposit, revealed by fluid inclusions analyses **Isaac Rodríguez** (Univ. of Chile) **S**
42	411	Alunite characterization of high sulfidation deposits in the Vicuña District, Argentina-Chile **Leticia González Castellote** (CSM) **S**
43	237	Quantitative Prediction Methods and Applications of Digital Ore Deposit Models **Keyan Xiao** (CAGS)
44	264	Zircon and cassiterite U-Pb dating of the Taucane Project: New horizons for tin exploration in Peru **Pablo Valverde** (Pontifical Catholic University of Peru) **S**
45	280	Ore minerals on the flanks of the Deputatskiy Sn-Ag cluster – Bulatskoye, Jubileyniy and Kaleo Ag-Au-Zn-Pb ore occurrences, Republic of Sakha (Yakutia), Russia **Polina N. Leibham** (Central Research Unit, Russia) **S**

POSTER SCHEDULE

TUESDAY, AUGUST 5 - THURSDAY, AUGUST 7

Poster No.	Abstract ID	Presentation Title
46	184	Unraveling the genesis of critical minerals: Petrogenetic and hydrothermal controls on cassiterite mineralization in the Mayo-Darlé region, Cameroon **Jonas Didero Wambo** (Lamar University)
47	180	Relationship between Fe-Cu and polyelement Co-Ni-Pb-Bi-Sb-As-S mineralization at the Tisová deposit (Bohemian Massif) **Jan Kamenský** (Czech Geological Survey) **S**
48	299	Lithogeochemistry of the La Mina VMS deposit in the Macuchi Unit (Western Cordillera, Ecuador): metalogenetic implications **Darío Fuentes** (Univ. of Barcelona) **S**
49	308	Petrogenesis and VMS Prospectivity of 1.8 Ga Magmatism within the Archean Marshfield Terrane, Penokean Orogen, USA **Lyndsie Vickers** (Univ. of Wisconsin) **S**
50	320	Multi-scale hydrothermal mobilization of Ca, Al and Cu during serpentinization: new insights from the Ronda Massif (Spain) **Bastien Audran** (Univ. of Lorraine) **S**
51	413	Polymetallic Quartz Veins at the Hod Maden Cu-Au Deposit, Turkey **Bader Bilgin** (CSM) **S**
52	390	Hydrothermal alteration overprinted by contact metamorphism: Balducho VMS prospect, central Peru **Emily Mora** (Pontifical Catholic University of Peru) **S** Presented by L. Fontboté
53	54	The epithermal deposits of Chatkal-Kurama (Uzbekistan): micro-nanomineralogy of gold, silver, and associated elements **Danis Filimon** (Univ. of Pisa)

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