As more countries commit to net zero by 2050, demand for the resources essential to carbon reduction continues to grow. Achieving net zero carbon emissions isn’t easy, but it’s resources like the copper and nickel produced by BHP that will help make both possible.

To discover how, visit bhp.com/betterworld

Resourcing the Green Transition
August 26–29, 2023 | Hilton London Metropole, United Kingdom
www.seg2023.org
The future of a better world is clear.
It’s happening now.

As more countries commit to net zero by 2050, demand for the resources essential to carbon reduction continues to grow. Achieving net zero carbon emissions while delivering responsible economic development isn’t easy, but it’s resources like the copper and nickel produced by BHP that will help make both possible.

The future is clear. It’s happening now.

To discover how, visit bhp.com/betterworld
# Conference Hotel
Hilton London Metropole
225 Edgware Road, London W2 1JU, United Kingdom
Tel. +44 20 7402 4141

**Wi-Fi Access**
Username: SEG 2023 Conference
Password: #SEG2023

**Mother’s room: Mezzanine 12**

**Speaker Ready Room:** West Wing Meeting Room 1
- **Friday:** 3:00pm-6:00pm
- **Saturday-Monday:** 7:00am-5:00pm
- **Tuesday:** 7:00am-3:00pm

**Registration:**
- **Friday:** 8:00am-6:00pm
- **Saturday-Monday:** 7:00am-6:00pm
- **Tuesday:** 7:00am-4:00pm

---

**The information in this program is current through August 4, 2023. Please refer to the conference app or the online schedule of events (www.seg2023.org) for updated information. All sessions held in the Kensington Suite at the conference hotel.**

<table>
<thead>
<tr>
<th>SATURDAY</th>
<th>SUNDAY</th>
<th>MONDAY</th>
<th>TUESDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9:30am-10:00am</strong></td>
<td><strong>8:30am-8:45am</strong></td>
<td><strong>8:30am-10:15am</strong></td>
<td><strong>8:30am-10:15am</strong></td>
</tr>
</tbody>
</table>
| Morning Networking Session – Student and Early Career Professionals | Welcome and Conference Chair Remarks
Bob Foster, SEG 2023 Conference Chair
Jennifer Craig, SEG Executive Director | SESSION 5: Copper – Red Metal for a Green Future I
SESSION 6: Battery Metals I | SESSION 11: Gold – Responsible Discovery and Mining in the 21st Century I |
| **10:00am-12:30pm** | **8:45am-10:15am** | **10:15am-11:00am** | **10:15am-11:00am** |
| Career Advice Showcase – Student and Early Career Professionals | Plenary Session 1
- Does the Energy Transition Start and End with Metals?
- Financing Sustainability
- The Wider Implications for Society at Large | Poster and Exhibitor-Only Access | Poster Viewing Session |
| **12:30pm-2:00pm** | **10:15am-11:00am** | **11:00am-12:45pm** | **11:00am-12:45pm** |
| Lunch and CV Talk – Student and Early Career Professionals | Morning Poster Session | SESSION 7: Europe’s Metals I
SESSION 8: Transformational Science I | SESSION 12: Advances in Geoscience II |
| **2:00pm-4:30pm** | **11:15am-12:45pm** | **12:45pm-1:45pm** | **12:45pm-1:45pm** |
| Round Table Event – Student and Early Career Professionals | Plenary Session 2
SESSION 1: Copper – Red Metal for a Green Future I
SESSION 2: Battery Metals I | Lunch | Lunch |
| **4:30pm-5:00pm** | **12:45pm-1:45 pm** | **2:00pm-3:30pm** | **2:00pm-3:30pm** |
| **5:00pm-5:30pm** | **3:30pm-4:00pm** | **3:30pm-4:00pm** | **3:30pm-4:00pm** |
| Global Challenges 1
Supply Chain Issues: Importing Metals and Minerals into Europe/UK in the Next 15 Years
Rebecca Major (Global Challenges Speaker) | Break | Break | Closing Ceremony and Concluding Remarks |
| **5:30pm-6:00pm** | **4:00pm-5:00pm** | **4:00pm-5:00pm** | **4:00pm-5:00pm** |
| Global Challenges 2
Managing and Benefiting from ESG Challenges in the Development of Critical Minerals in the UK
Kate Harcourt (Global Challenges Speaker) | SESSION 3 (continued): Copper – Red Metal for a Green Future II
SESSION 4: Battery Metals II | SESSION 9: Europe’s Metals II (continued)
SESSION 10: Transformational Science II | Closing Social |
| **6:00pm-6:30pm** | **5:00pm-7:00pm** | **5:00pm-7:00pm** | **5:00pm-7:00pm** |
| Presidential Address and Brian G.
Hoal Tribute
Stuart Simmons, SEG 2023 President | Exhibits and Poster Reception | Exhibits and Poster Reception | Exhibition and Poster Reception |
| **6:30pm-9:00pm** | **7:00pm-9:00pm** | **7:00pm-9:00pm** | **7:00pm-9:00pm** |
| Welcome Reception | SEG Awards Ceremony
(Admiral Ballroom, Ticket Required) | Industry Outlook Dinner
(Ross Beaty, Chair, Equinox Gold) | Awards Ceremony and Reception |

**Monday:**
- **9:00am-10:00am:** Poster and Exhibitor-Only Access
- **10:15am-11:00am:** Morning Poster Session
- **5:00pm-7:00pm:** Evening Reception, Exhibit and Poster Session
- **7:00pm-8:00pm:** Group A Poster Tear Down

*Note all posters from Group A must be removed by 8:00pm. Any remaining posters will be discarded.*

**Tuesday:**
- **9:00am-10:00am:** Poster and Exhibitor-Only Access
- **10:15am-11:00am:** Morning Poster Session
- **2:00pm-4:00pm:** Exhibits and Group B Poster Tear Down

*Note all posters from Group B must be removed by 4:00pm. Any remaining posters will be discarded.*

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*For additional information on conference events, please visit the conference website at www.seg2023.org.*
Welcome to the SEG 2023 Conference!

Thank you for joining us as we explore this year’s theme, Resourcing the Green Transition, which addresses the major challenges facing the energy transition and the demand for strategic metals. The conference theme also embraces the environmental, social, and governance (ESG) issues that are fundamental to responsible sourcing of these essential metals.

The technical program provides wide-ranging insights on the science and technology that are fundamental to meeting these challenges—reflecting the unique science-technology interface provided by the Society of Economic Geologists. We have a truly remarkable lineup of leading industry and academic speakers, supported by a wide range of contributions drawn from 45 countries—a global response to a global issue.

This in-person program of oral and poster presentations is accompanied by field trips to key resource areas and six workshops. A strong emphasis is placed on students and early career professionals. A new dimension is added with local financial and service organizations.

The venue is the Hilton London Metropole, located in London’s West End—an ideal location from which to see the sights of this amazing city and then follow up with excursions elsewhere in the United Kingdom and throughout Europe.

Thank you for joining us as we network with old friends and forge new relationships—especially so this year as we welcome the participation of members of multiple affiliated major geoscientific societies around the world that share our vision!

Bob Foster
Chair, SEG 2023
Organizing Committee
Table of Contents

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4 Conference Information
5 SEG Awardees
6 Pre-Conference Program
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8 Saturday
9 Sunday
13 Monday
18 Tuesday
23 Biographies of Invited Speakers
37 Post-Conference Program
38 Posters
73 Exhibitors

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Back Cover SEG 2024 Announcement
Conference Information

Conference Organizing Committee

• **Conference Chair:** Bob Foster
• **Steering Group:** Richard Sillitoe, Karen Hanghøj, Richard Herrington, Laurence Robb
• **Technical Program:** Jamie Wilkinson, Dan Smith
• **Poster Program:** Katie McFall
• **Students/Early Career Professionals:** Alex Gorman, Huw Richards
• **Workshops:** Frances Wall, Lynnette Greyling
• **Field Trips:** Graham Brown, John Clifford
• **Sponsorships and Exhibitors:** Richard Herrington
• **Advisory Panel:** Edith Newton Wilson
• **UK Advisory Panel:** John Meyer
• **Europe Advisory Panel:** Nick Arndt, Maria Boni, Jens Gutzmer, Pasi Eilu, Lorena Ortega

SEG Contact Information

7811 Shaffer Parkway
Littleton, CO 80127-3732
Tel. 1.720.981.7882
E-mail: seg@segweb.org

Conference Organizer

Etherio
organizer@seg2023.org

For updates and latest information, visit www.seg2023.org.

SEG Awardees for 2023

The SEG Awards ceremony will be Sunday, August 27th, at 7:00 pm. The event will be held at the Hilton London Metropole.

- **R.A.F. Penrose Gold Medal**
  - **RICHARD J. GOLDFARB**
  - (China University of Geosciences Beijing and Colorado School of Mines)

- **SEG Silver Medal**
  - **JONATHAN M.A. HRONSKY**
  - (Western Mining Services)

- **SEG Waldemar Lindgren Award**
  - **JOSEPH M. MAGNALL**
  - (GFZ German Research Centre for Geosciences)

- **Brian J. Skinner Award**
  - **JEFFREY W. HEDENQUIST**
  - (Hedenquist Consulting Inc.)

- **Antonio Arribas**
  - (University of Texas at El Paso)

- **Honorary Fellow**
  - **GERALD G. CARLSON**
  - (Pacific Ridge Exploration)

- **SEG Distinguished Lecturer**
  - **DAVID A. HOLWELL**
  - (University of Leicester)

- **International Exchange Lecturer**
  - **KATHY EHRRIG**
  - (BHP)

- **SEG Thayer Lindsley Lecturer**
  - **SALLY GOODMAN**
  - (Newmont)

- **Regional Vice President Lecturer**
  - **SHAO-YONG JIANG**
  - (China University of Geosciences)
Pre-Conference Program

Pre-Conference Social Events

**Friday, August 25**
1:30pm-6:00pm Geology of London Tour
6:00pm-8:00pm Flight Club Social Darts

Student and Early Career Program

**Saturday, August 26**
9:30am-10:00am Morning Networking Session
10:00am-12:30pm Career Advice Showcase
2:00pm-4:30pm Round Table Event
4:30pm-5:00pm Afternoon Networking Session

**Sunday, August 27**
1:45pm-2:45pm Careers Speed-Dating

Pre-Conference Field Trips

**August 18–24**
Iberian Pyrite Belt: VMS Geology and Mineralization
Leaders: William X Chávez Jr., Erich Petersen

**August 17–24**
The Ore Mountains ("Erzgebirge") of Saxony and Bohemia: Old District–New Opportunities—Sn, W, Li, Ag, Base Metals
Leaders: Jens Gutzmer, Mathias Burisch-Hassel, and Vojtech Sesulka

Pre-Conference Workshops

**August 25–26**
Structure and Diversity of Orogenic Gold Deposits
Presenters: Dave Rhys, Stephen Cox, Richard Goldfarb, and François Robert

**August 25**
Critical Minerals: Geological Perspectives for Discovery and Recovery
Presenters: Richard Herrington, Kathryn Goodenough, Robin Armstrong, Francesco Putzolu, Reimar Seltmann, Steve Roberts, Frances Wall, Maria Boni, and Anthony Williams-Jones

**August 26**
Environment, Social, and Governance (ESG) Across the Mining Industry
Presenters: Sarah Gordon and Rose Clarke
## Technical Program

### DAY 1 - SATURDAY, AUGUST 26, 2023

#### Global Challenges I

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:00 pm - 5:30 pm</td>
<td>Supply Chain Issues: Importing Metals and Minerals into Europe/UK in the Next 15 Years</td>
<td>Rebecca Major (Global Challenges Speaker)</td>
</tr>
</tbody>
</table>

#### Global Challenges II

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:30 pm - 6:00 pm</td>
<td>Managing and Benefiting from ESG Challenges in the Development of Critical Minerals in the UK</td>
<td>Kate Harcourt (Global Challenges Speaker)</td>
</tr>
</tbody>
</table>

#### Presidential Address

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 pm - 6:30 pm</td>
<td>Presidential Address and Brian G. Hoal Tribute</td>
<td>Stuart Simmons (SEG 2023 President)</td>
</tr>
</tbody>
</table>

#### Welcome Reception and Exhibit and Poster Viewing

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30 pm - 9:00 pm</td>
<td>Welcome Reception</td>
</tr>
</tbody>
</table>

### DAY 2 - SUNDAY, AUGUST 27, 2023

#### Opening Ceremony

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 am - 8:45 am</td>
<td>Welcome and Conference Chair Remarks</td>
<td>Bob Foster, SEG 2023 Conference Chair</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jennifer Craig, SEG Executive Director</td>
</tr>
</tbody>
</table>

#### Plenary Session 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:45 am - 9:15 am</td>
<td>Does the Energy Transition Start and End with Metals?</td>
<td>Julian Kettle (Plenary Speaker)</td>
</tr>
<tr>
<td>9:15 am - 10:15 am</td>
<td>Financing Sustainability</td>
<td>Katya Gorbatiouk (Plenary Speaker)</td>
</tr>
<tr>
<td>9:45 am - 10:15 am</td>
<td>The Green Transition Squeezes As It Embraces</td>
<td>John Elkington (Plenary Speaker)</td>
</tr>
<tr>
<td>10:15 am - 11:00 am</td>
<td>Poster Viewing: Saturday and Sunday Posters</td>
<td></td>
</tr>
<tr>
<td>11:00 am - 11:15 am</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:15 am - 11:30 am</td>
<td>Oral Session 01: Copper - Red Metal for a Green Future I</td>
<td>Michael Daly (Keynote Speaker)</td>
</tr>
<tr>
<td>Time</td>
<td>Session Title</td>
<td>Speaker(s)</td>
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</tr>
<tr>
<td>11:30 am - 11:45 am</td>
<td>Central African Copper Belt, continued</td>
<td>Michael Daly (Keynote Speaker)</td>
</tr>
<tr>
<td>11:45 am - 12:00 pm</td>
<td>Copper-Hosting Basins at the Edge of Cratons - the Yeneena Basin in Western Australia as a Case Study</td>
<td>Weronika Gorczyk</td>
</tr>
<tr>
<td>12:00 pm - 12:15 pm</td>
<td>Numerical Modelling of Basin-Scale Fluid Flow and Cu Transport in the Katangan Basin, Central African Copperbelt</td>
<td>Meissam Bahlali</td>
</tr>
<tr>
<td>12:15 pm - 12:30 pm</td>
<td>Syntectonic Copper Mineralisation in a Back-Thrust Duplex at Pangeni, NW Zambia</td>
<td>John Wilton</td>
</tr>
<tr>
<td>12:30 pm - 12:45 pm</td>
<td>Experimental Insights Into the Mobility and Extraction of Metals in Sedimentary Basin-Hosted Copper Systems</td>
<td>Julia Woitischek</td>
</tr>
<tr>
<td>12:45 pm - 1:45 pm</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>1:45 pm - 2:00 pm</td>
<td>Oral Session 03 - Copper - Red Metal for a Green Future II</td>
<td></td>
</tr>
<tr>
<td>2:00 pm - 2:15 pm</td>
<td>Global Copper Screening for the Energy Transition - a Holistic Exploration Mindset</td>
<td>Graeme Nicoll</td>
</tr>
<tr>
<td>2:15 pm - 2:30 pm</td>
<td>The Role of Crustal Anatexis in Porphyry Copper Formation During Flat-Slab Subduction: Insights from the Laramide Belt, Southwest USA</td>
<td>Thomas Lamont</td>
</tr>
<tr>
<td>2:30 pm - 2:45 pm</td>
<td>Magma Fertility Evolution Trends: Lessons from the Kerman Porphyry Belt, SE Iran</td>
<td>Ali Sholeh</td>
</tr>
<tr>
<td>2:45 pm - 3:00 pm</td>
<td>Late Cretaceous Magnetism in the San Matias District, NW Colombia: Insights of a New Ca. 76 - 66 Ma Porphyry Copper Belt in the Northern Andes</td>
<td>Julian Manco (Student)</td>
</tr>
<tr>
<td>3:00 pm - 3:15 pm</td>
<td>Unraveling the Thermochemical State of the Whole Lithosphere in Space and Time: New Methods and Their Predictive Power for Exploration</td>
<td>Juan Afonso (Invited Speaker)</td>
</tr>
<tr>
<td>11:30 am - 12:45 pm</td>
<td>The Geological Setting of Vanadium Mineralisation in the Neuquén Basin of Central Argentina: An Opportunity for the Clean Energy and Energy Storage Sectors in South America</td>
<td>Martin Jackson</td>
</tr>
<tr>
<td>12:00 pm - 12:15 pm</td>
<td>Trace Element Deportment in Sphalerite Across the Bathurst Mining Camp, New Brunswick, Canada</td>
<td>Foteini Drakou</td>
</tr>
<tr>
<td>12:15 pm - 12:30 pm</td>
<td>From Rocks to Batteries: Insights Into Cobalt Mining, Mineralogy, and Sustainability</td>
<td>Quentin Dehaine (Invited Speaker)</td>
</tr>
<tr>
<td>12:30 pm - 12:45 pm</td>
<td>Occurrence and Spatial Distribution of Cobalt in Skarn Deposits: A Case Study from the Middle-Lower Yangtze River Valley Metallogenic Belt (MLYB) in East China</td>
<td>Taofa Zhou</td>
</tr>
<tr>
<td>2:00 pm - 2:15 pm</td>
<td>Global Copper Screening for the Energy Transition - a Holistic Exploration Mindset</td>
<td>Graeme Nicoll</td>
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<td>Unraveling the Thermochemical State of the Whole Lithosphere in Space and Time: New Methods and Their Predictive Power for Exploration</td>
<td>Juan Afonso (Invited Speaker)</td>
</tr>
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### DAY 2 - SUNDAY, AUGUST 27, 2023 (Continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:15 pm - 3:30 pm</td>
<td>Q&amp;A</td>
<td>The Bergby LCT-pegmatite Field, Central Sweden – a New Contender to Produce Swedish Lithium?</td>
<td>Karin Högdahl</td>
</tr>
<tr>
<td>3:30 pm - 4:00 pm</td>
<td>Break</td>
<td></td>
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</tr>
<tr>
<td>4:00 pm - 4:15 pm</td>
<td>A Rapid Transition to an Electrical Economy Based on Energy from Solar and Wind is Not Resource Viable</td>
<td>Cornish Lithium: Exploration for Geothermal Lithium Resources in Southwest England</td>
<td>Alistair Salisbury</td>
</tr>
<tr>
<td>4:15 pm - 4:30 pm</td>
<td>Copper Mining and Extraction in Cyprus - from Ancient Heritage to a Green Future</td>
<td>Unconventional Magmatic Sulfide Systems: Looking Outside of the Box for the Next New Ni-Cu-Co-PGE Discovery</td>
<td>David Holwell (2023 SEG Distinguished Lecturer)</td>
</tr>
<tr>
<td>4:30 pm - 4:45 pm</td>
<td>Unlocking the Full Potential of Metal Leaching in the Oceanic Crust: Assessing Permeability and Fluid Flow</td>
<td>Unconventional Magmatic Sulfide Systems, continued</td>
<td>David Holwell (2023 SEG Distinguished Lecturer)</td>
</tr>
<tr>
<td>4:45 pm - 5:00 pm</td>
<td>Accelerating Discovery through Cutting-Edge Research</td>
<td>ML Modeling of Multiparameter Data for Ni-Cu-PGE Targeting</td>
<td>Wilson Bonner</td>
</tr>
<tr>
<td>5:00 pm - 7:00 pm</td>
<td>Exhibit and Poster Reception: Saturday and Sunday Posters</td>
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### DAY 3 - MONDAY, AUGUST 28, 2023

**Oral Session 05**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 am - 8:45 am</td>
<td>High Grades in Hypogene Porphyry Copper Deposits</td>
<td>Dick Sillitoe (Keynote Speaker)</td>
</tr>
<tr>
<td>8:45 am - 9:00 am</td>
<td>High Grades in Hypogene Porphyry Copper Deposits, continued</td>
<td>Dick Sillitoe (Keynote Speaker)</td>
</tr>
<tr>
<td>9:00 am - 9:15 am</td>
<td>Alteration Geothermometry and Exploration Implications of the Gajah Tidur Porphyry System, One of Two Systems that Formed the Supergiant Grasberg Cu-Au-(Mo) Deposit</td>
<td>Reza Al Furqan (Student)</td>
</tr>
<tr>
<td>9:30 am - 9:45 am</td>
<td>Geology, Mineralisation and Hydrothermal Alteration of the Almalyk Porphyry Copper-Gold Deposit, Tien Shan Mountains, Eastern Uzbekistan</td>
<td>Peter Gleeson</td>
</tr>
</tbody>
</table>

**Oral Session 06**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 am - 9:45 am</td>
<td>Tracing Granite-Hosted Mineralization via Zircon Metal Anomalies</td>
<td>Laurence Robb</td>
</tr>
<tr>
<td>9:00 am - 9:15 am</td>
<td>Quantitative Mineralogy of the Beauvoir Granite and Rare-Metal-Bearing Minerals Characterization</td>
<td>Steven Kahou</td>
</tr>
<tr>
<td>9:15 am - 9:30 am</td>
<td>GREENPEG: New Toolsets to Explore for Pegmatites Hosting Rare Metals and High Purity Quartz to Feed the Energy Transition</td>
<td>Axel Müller</td>
</tr>
<tr>
<td>9:30 am - 9:45 am</td>
<td>Challenges Associated with the Future Supply of Battery Minerals and Black Mass</td>
<td>Laurance Donnelly (Keynote Speaker)</td>
</tr>
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**Oral Session 06**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>9:15 am - 9:30 am</td>
<td>Challenges Associated with the Future Supply of Battery Minerals and Black Mass, continued</td>
<td>Laurance Donnelly (Keynote Speaker)</td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td>Speaker</td>
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</tr>
<tr>
<td>9:45 am - 10:00 am</td>
<td>Applications of Multielement Epidote and Chlorite Mineral Chemistry to Locate Mineralized Centers: A Case Study from the Batu Hijau Porphyry Cu-Au District, Indonesia</td>
<td>David Cooke</td>
</tr>
<tr>
<td></td>
<td>Recovery of Critical Metals from Copper Mine Tailings Utilizing Microanalytical Characterisation for Improved Geometallurgical Outcomes</td>
<td>Loren Nicholls (Student)</td>
</tr>
<tr>
<td>10:00 am - 10:15 am</td>
<td>A Practical Predictive Targeting Model for Convergent Margin Gold and Copper Deposits</td>
<td>Jon Hronsky</td>
</tr>
<tr>
<td></td>
<td>Ti-Zr-REE Heavy Mineral Sand Transport Paths and Concentration Processes Revealed by High-Resolution Airborne Radiometric Data</td>
<td>Anjana Shah</td>
</tr>
<tr>
<td>10:15 am - 11:00 am</td>
<td>Poster Viewing Session: Monday and Tuesday Posters</td>
<td></td>
</tr>
<tr>
<td>11:00 am - 11:15 am</td>
<td>Metals and Minerals in Europe – Demand, Exploration, Mining and More</td>
<td>Karen Hanghøj (Keynote Speaker)</td>
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<td>From Planets to Protons - New Geoanalytical Workflows for Characterizing Rocks of Economic Importance</td>
<td>Alan Butcher</td>
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<tr>
<td>11:15 am - 11:30 am</td>
<td>Metals and Minerals in Europe – Demand, Exploration, Mining and More, continued</td>
<td>Karen Hanghøj (Keynote Speaker)</td>
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<td>Opportunities for Rapid, Field-Based Sulfide Deposition and Trace Element Chemistry Using Laser-Induced Breakdown Spectroscopy (LIBS)</td>
<td>Cassady Harraden</td>
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<tr>
<td>11:30 am - 11:45 am</td>
<td>Crystalline Basement of Latvia – An Undercover Opportunity</td>
<td>Matiss Brants (Student)</td>
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<td>Re-Assessing the Resource Potential of Seafloor Massive Sulfide Deposits</td>
<td>John Jamieson</td>
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<tr>
<td>11:45 am - 12:00 pm</td>
<td>An Alternative Formation Environment for Kiruna-Type Iron Deposits: An Example from the Per Geijer IOA Deposit, Northern Sweden</td>
<td>Amy-Jo Miles</td>
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<td>Machine Learning Algorithms as a Tool for Data-Driven Interpretation of Multiphysics Datasets in Underexplored Areas</td>
<td>Artem Gorbunov</td>
</tr>
<tr>
<td>12:00 pm - 12:15 pm</td>
<td>Critical Metal Potential of Historic Mining Districts in the Lesser Caucasus and the Eastern Pontides, Central Tethyan Orogenic Belt</td>
<td>Robert Moritz</td>
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<td>Unlocking the Potential of Predictive Geoscience Through the Adoption of GeoData Science</td>
<td>Glen Nwaila (Keynote Speaker)</td>
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<tr>
<td>12:15 pm - 12:30 pm</td>
<td>Ancient Mining, Recent Discoveries and Future Potential for Critical Raw Materials in the Apuseni-Carpathian-Balkan Area of Southeast Europe</td>
<td>Irena Peytcheva</td>
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<tr>
<td></td>
<td>Unlocking the Potential of Predictive Geoscience Through the Adoption of GeoData Science, continued</td>
<td>Glen Nwaila (Keynote Speaker)</td>
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<tr>
<td>12:30 pm - 12:45 pm</td>
<td>Q&amp;A</td>
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<td>12:45 pm - 1:45 pm</td>
<td>Lunch</td>
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<tr>
<td>2:00 pm - 2:15 pm</td>
<td><strong>Oral Session 09</strong>&lt;br&gt;Europe's Metals II</td>
<td>Seafloor Massive Sulfide Deposits on the Arctic Mid-Ocean Ridges: An Insight Into Ore-Forming Processes Along Ultraslow Spreading Ridges</td>
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<tr>
<td>2:15 pm - 2:30 pm</td>
<td><strong>Oral Session 10</strong>&lt;br&gt;Transformational Science II</td>
<td>ESG Valuation Model for the Mining Industry</td>
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<td>2:30 pm - 2:45 pm</td>
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<td>Gamification for Technology-Enhanced Education in the Mineral Value Chain: Mining Simulation Game for Teaching the Geometallurgy Concept</td>
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<tr>
<td>2:45 pm - 3:00 pm</td>
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<td>New Mineralogical Data on the Mineralizations and Hydrothermal Alteration Zones of the Allumiere-Tolfa Historic Mining District, Central Italy</td>
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<tr>
<td>3:00 pm - 3:15 pm</td>
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<td>Mantle Source Enrichment in the Evolution of One of Europe's Largest Rare Element Provinces - the Gardar Province, South Greenland</td>
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<tr>
<td>3:15 pm - 3:30 pm</td>
<td>The Iberian Pyrite Belt, a Premier Mining Jurisdiction</td>
<td>Influence of Mineralogy, Texture, and Grain Size on Density and Magnetic Susceptibility Within the Kiruna Mining District, Sweden</td>
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<td>3:30 pm - 4:00 pm</td>
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<td>Linking Sn-Li-(W-Cu) Mineralization to Post-Collapse Caldera Evolution Through Cassiterite LA-ICP-MS U-Pb Geochronology</td>
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<td>4:00 pm - 4:15 pm</td>
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<td>Integrated Geological, Geochronological and Geochemical Approach to Exploration in the Hod Gold District, Türkiye: Implications for the Origin of the Hod Maden Au-Cu Deposit</td>
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<td>4:15 pm - 4:30 pm</td>
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<td>Understanding Your Deposit Better Using Big Data: A Case Study from Kepez North, Balikesir, Turkey</td>
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<tr>
<td>4:30 pm - 4:45 pm</td>
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<td>New Investigations on the Geology and Mineralogy of the S'aliderru Bentonite Deposit (Sardinia, Italy)</td>
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<tr>
<td>4:45 pm - 5:00 pm</td>
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<td>The Ikkari Gold Discovery, Finnish Lapland</td>
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<td>5:00 pm - 7:00 pm</td>
<td>Exhibit and Poster Reception: Monday and Tuesday Posters</td>
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### DAY 4 - Tuesday, August 29, 2023

#### Oral Session 11
**Gold - Responsible Discovery and Mining in the 21st Century I**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker/Presenter</th>
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<tbody>
<tr>
<td>8:30 am - 8:45 am</td>
<td>Gold: Responsible Discovery and Mining in the 21st Century</td>
<td>Mark Bristow (Keynote Speaker)</td>
</tr>
<tr>
<td>8:45 am - 9:00 am</td>
<td>Gold: Responsible Discovery and Mining in the 21st Century, continued</td>
<td>Mark Bristow (Keynote Speaker)</td>
</tr>
<tr>
<td>9:00 am - 9:15 am</td>
<td>The Jibal Qutman Gold Project, Kingdom of Saudi Arabia. Deposit-Scale Structural Models in an Underexplored Terrane to Drive Discoveries</td>
<td>Nadia St-Jean</td>
</tr>
<tr>
<td>9:15 am - 9:30 am</td>
<td>The Valley Project, a New High-Grade Reduced Intrusion-Related System in the Tintina Gold Province, Yukon Territory</td>
<td>Andrew Turner</td>
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#### Oral Session 12
**Advances in Geoscience I**

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<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker/Presenter</th>
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<tbody>
<tr>
<td>8:45 am - 9:00 am</td>
<td>Trace Element Geochemistry of Pyrite and Marcasite as a Vector Towards Mineralization in Irish-Type Zn-Pb Deposits</td>
<td>Claire Geel</td>
</tr>
<tr>
<td>9:00 am - 9:15 am</td>
<td>Genesis of BIF-Hosted Martite-Goethite Ores: Concept and Application</td>
<td>Caroline Perring</td>
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<tr>
<td>9:15 am - 9:30 am</td>
<td>Hydrothermal Alteration and Volcanic Stratigraphy at the Paleoproterozoic Kay Mine Volcanogenic Massive Sulfide Deposit, Black Canyon City, Arizona, USA</td>
<td>Aaron Adsit (Student)</td>
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#### Oral Session 13
**Gold - Responsible Discovery and Mining in the 21st Century II**

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<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker/Presenter</th>
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<tbody>
<tr>
<td>9:30 am - 9:45 am</td>
<td>The Importance of Mineral System Analysis as Inputs to Data-Driven Gold Targeting Projects</td>
<td>Jean-Philippe Paiement</td>
</tr>
<tr>
<td>9:45 am - 10:00 am</td>
<td>Porphyry-Like Au-Cu System in Paleoproterozoic Greenstone Belts</td>
<td>Tramaine James (Student)</td>
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<tr>
<td>10:00 am - 10:15 am</td>
<td>Q&amp;A</td>
<td>Q&amp;A</td>
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<td>10:15 am - 11:00 am</td>
<td>Poster Viewing Session: Monday and Tuesday Posters</td>
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#### Oral Session 14
**Advances in Geoscience II**

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<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker/Presenter</th>
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<tbody>
<tr>
<td>11:00 am - 11:15 am</td>
<td>Muruntau, Uzbekistan: A Giant, Pluton-Related Auriferous System</td>
<td>Reimar Seltmann</td>
</tr>
<tr>
<td>11:15 am - 11:30 am</td>
<td>Hypozonal Orogenic Gold Mineralization Explained by Metamorphic Devolatilization of Komatiites</td>
<td>Richen Zhong</td>
</tr>
<tr>
<td>11:30 am - 12:15 am</td>
<td>The Fluids that Form Magnetite-Apatite Deposits, continued</td>
<td>Matthew Steele-MacInnis (Keynote Speaker)</td>
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<tr>
<th>Time</th>
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<th>Speaker/Presenter</th>
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<tr>
<td>12:15 pm - 12:30 pm</td>
<td>Q&amp;A</td>
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<td>12:30 pm - 2:00 pm</td>
<td>Poster Viewing Session: Wednesday Posters</td>
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<tr>
<td>2:00 pm - 3:00 pm</td>
<td>Lunch Break</td>
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<td>3:00 pm - 3:15 pm</td>
<td>Q&amp;A</td>
<td>Q&amp;A</td>
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<tr>
<td>3:15 pm - 4:00 pm</td>
<td>Poster Viewing Session: Thursday Posters</td>
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<td>Time</td>
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<td>11:30 am - 11:45 am</td>
<td>Structural Modelling of the Au Mineral System Using 2D Seismic, Yamarna Greenstone Belt, Eastern Goldfields, Western Australia</td>
<td>Fingerprinting Tools to Distinguish Magnetite Deposit Types</td>
</tr>
<tr>
<td>11:45 am - 12:00 pm</td>
<td>Using Edge Detection Techniques on Aeromagnetic Data to Delineate Structures Control Orogenic Gold Deposits in the Sefwi Granite-Greenstone Belt, Ghana</td>
<td>Tracing the Sources of Rare Earth Elements in IOCGs</td>
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<tr>
<td>12:00 pm - 12:15 pm</td>
<td>Characterization of Refractory Gold Behaviour in Witwatersrand Mine Tailings: Implications for Gold Recovery</td>
<td>Mineralogy and Paragenesis of the Boundary Zone Clastic-Dominated Zn Deposit (Macmillan Pass, Yukon)</td>
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<tr>
<td>12:15 pm - 12:30 pm</td>
<td>Application of U-Pb Detrital Zircon Geochronology to Delineate Regional Unconformities; Implications for Gold Mineralization in the Red Lake Mining Camp, Ontario, Canada</td>
<td>The Paleoproterozoic Amitsoq Graphite Deposit, South Greenland</td>
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<tr>
<td>12:30 pm - 1:05 pm (Q&amp;A ends 12:45 pm)</td>
<td>SEG's Role in a Global Society: Diversity, Equity and Inclusion</td>
<td>Q&amp;A</td>
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<tr>
<td>12:45 pm - 1:45 pm</td>
<td>Lunch</td>
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<tr>
<td>2:00 pm - 2:15 pm</td>
<td>Geological Features Common for Bonanza-Forming Epithermal Gold Deposits</td>
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<tr>
<td>2:15 pm - 2:30 pm</td>
<td>The Electrochemical Flocculation of Colloidal Gold by Semiconductive P-Type Pyrite: A Novel Ore Forming Mechanism for Gold</td>
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<tr>
<td>2:30 pm - 2:45 pm</td>
<td>LA-ICP-MS Analysis on Sulfide Minerals from the Higashi-Aogashima Knoll Caldera Hydrothermal Field to Understand the Host Phase of Gold</td>
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<td>2:45 pm - 3:00 pm</td>
<td>Gokona: An Archean Porphyry-Epithermal Au Deposit</td>
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<tr>
<td>3:00 pm - 3:15 pm</td>
<td>Sustainable Futures for Small-Scale Gold Mining Communities: Mapping the Socio-Economic, Environmental, and Geological Baseline for Peixoto De Azevedo, MT, Brazil</td>
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<td>Far Field Geochemistry and C-O Isotope Signatures of the Bingham Porphyry Cu-Au-Mo Deposit in Carbonate Wallrocks</td>
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<td>Mineral Petrography, Trace Element and Pb Isotope Geochemistry of the Black Butte Cu-Co District, Belt Basin, Montana, USA: Constraints on Ore Genesis</td>
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### DAY 4 – TUESDAY, AUGUST 29, 2023 (Continued)

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>3:15 pm - 3:30 pm</td>
<td>Q&amp;A</td>
<td>Kyanite Alteration as an Indicator for Saline Fluids and Metal Transport; Case Studies from the Central African Copperbelt Anna Bidgood (Invited Speaker)</td>
</tr>
<tr>
<td>3:30 pm - 4:00 pm</td>
<td>Closing Ceremony and Concluding Remarks</td>
<td>Bob Foster, SEG 2023 Conference Chair</td>
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<td>Steve Piercey, SEG 2024 President</td>
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<td></td>
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<td>Anna Nguno, SEG 2024 Conference Chair</td>
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</table>
Juan Afonso is an associate professor in computational geoscience and geo-data integration at the Faculty of Geo-Information Science and Earth Observation (ITC) at the University of Twente in the Netherlands. He also holds academic positions at Southern University of Science and Technology (China) and Macquarie University (Australia). His research focuses on the thermochemical structure and evolution of the lithosphere, the mechanical and geochemical interactions between tectonic plates and the sublithospheric upper mantle, and their effects on small- and large-scale tectonomagmatic processes and associated mineralization events. Juan is the developer of Multi-Observable Thermochemical Tomography (MTT), a technique that combines multiscale probabilistic inversion of multiple data sets, machine learning, and numerical modeling to address fundamental questions about the nature and evolution of the lithosphere, its mineral prospectivity, and geothermal potential.

Ross Beaty, Chair, Equinox Gold, founded Pan American Silver in 1994 and served as Chair until 2021; he was CEO of the company from its inception until 2004. Over 27 years, the company grew from a start-up to the world’s second largest primary silver producer with the world’s largest silver reserves and resources, while also becoming a significant gold producer.
Anna Bidgood is a Fulbright scholar at the Carnegie Institution for Science, where she is conducting phase equilibria experiments on cobalt sulfide minerals. This work is a continuation of her work at the Irish Centre for Research in Applied Geoscience, where her research focused on technology-critical elements in hydrothermal sediment-hosted mineral systems, with a particular focus on the Central African Copperbelt. Anna moved into the field of economic geology after completing her Ph.D. degree in metamorphic geology at the University of Oxford. Her work also takes her to the Arctic, including Greenland, where she has a particular interest in mineral deposits, mineral systems, and the environmental and social considerations of exploration and mining.

Mark Bristow is the president and chief executive of Barrick Gold Corporation (NYSE: GOLD, TSX: ABX). Formerly, he was the chief executive of Randgold Resources, the company he built from a small Africa-focused exploration business into one of the industry’s most profitable and best-managed gold miners. In January 2019, Barrick and Randgold merged. Bristow restructured and restructured Barrick, and within months he was the prime mover in the combination of the Nevada assets of Barrick and Newmont, creating the world’s single largest gold mining complex, Nevada Gold Mines, majority-owned and operated by Barrick. Bristow leads an organization with mines and projects in 18 countries, focused on long-life, high-margin gold and copper assets and containing six of the world’s tier-one gold mines. A geologist by profession, Bristow holds a doctorate in geology. His goal is to make Barrick the world’s most valued gold and copper producer, owning the best assets, managed by the best people, and delivering industry leading returns.

Mike Daly is a visiting professor in tectonics and resources in the Earth Sciences Department at Oxford University. After a decade of field mapping and a doctorate in structural geology, Daly joined British Petroleum (BP) as a research exploration geologist. Almost 30 years later, he left BP having been Chief Geologist, Head of Exploration, and an executive vice president on BP’s group executive team. Daly then joined Oxford and leads a research group in modern basin analysis, integrating basic geologic principles with leading-edge geophysical and geodynamic tools. He is a principal investigator in the UK’s Copper Basin Exploration Science project and sits on the board of CGG, a geoscience technology company. He is a Harvard Business School alumnus and past president of the Geological Society of London.
Quentin Dehaine is a senior researcher at the Geological Survey of Finland (GTK) where he has been leading several national and EU research and innovation projects on ore geology, mineral processing, and traceability and geometallurgy of battery minerals (cobalt, lithium) and critical raw materials (CRMs) such as rare earth elements (REEs). After completing his Ph.D. at the University of Lorraine (Nancy, France), he worked as a postdoc researcher at the Camborne School of Mines, University of Exeter (UK), working on the geometallurgy of cobalt from the Democratic Republic of Congo (DRC). In 2019, Quentin joined the GTK with the objective of developing innovative integrated approaches to supporting mine value chain optimization, responsible sourcing, reducing technical risk, maximizing resource efficiency, and minimizing environmental impacts. Quentin is also the officer for Scandinavia within the International Union of Geological Sciences (IUGS) Initiative on Forensic Geology (IFG).

Laurance Donnelly is a professional Chartered Geologist and head of the technical department and Chief Geologist at AHK International, responsible for global inspection and associated sample preparation. He is also a Chartered Scientist, European Geologist, and elected fellow of the Geological Society of America. He holds a first-class honors degree (mineral exploration and mining geology) and a Ph.D. (fault reactivation and geological hazards) and has 34 years of international experience in mineral exploration, mineral resource evaluation, mining geology, forensic geology, engineering geology, geophysics, and geological hazards. He is the founder of the Forensic Geoscience Group of the Geological Society of London, and served as its first Chair. He is also the founder and current Chair of the International Union of Geological Sciences (IUGS) Initiative on Forensic Geology (IFG).

John Elkington, Founder and Chief Pollinator at Volans, is one of the founders of the global sustainability movement and has worked as a strategic advisor to businesses across the globe for more than 40 years. He has served on over 70 boards and advisory boards and currently chairs an advisory council on sustainability and new markets for Neste (Finland) and an impact valuation advisory council for Novartis (Switzerland). John is also a highly regarded keynote speaker and author; he has addressed over 1,000 conferences around the world and is the author or co-author of 20 books. In September 2021, John won the World Sustainability Award.

Katya Gorbatiouk has over 20 years of experience in international capital markets. As the head of investment funds in primary capital markets for the London Stock Exchange, Katya is responsible for driving the growth and liquidity of the London listed funds market—a conduit of capital into vital sectors of the economy, such as infrastructure, energy transition, and innovation. Katya is also a member of the Group Sustainability working group. Since February 2022 Katya has served on the Best Practice Committee of the Board of the Investor Relations Society. She is chair of its Sustainability Communications subcommittee and a member of its IR Communications and Engagement subcommittee. Her articles on the evolution of corporate communications were published in the recent issues of the IR Society Journal Informed. Katya has been a long-standing board member of organizations with high social impact, such as the Global Leaders Institute (Washington, D.C.) and London Music Fund.
Melissa Gregory is a geometallurgist and mineralogist working for Rio Tinto Exploration based at the Bundoora Technical Development Centre in Melbourne, Australia. She has a Ph.D. degree in economic geology plus over 18 years’ experience across various deposit types including porphyry and sediment-hosted copper, pegmatite-hosted lithium, orogenic gold, ultramafic-hosted nickel, and unconformity U deposits. Her current role focuses on the geometallurgical characterization of mineralization as part of the exploration process.

Karen Hanghøj is the director of the British Geological Survey. She is a geologist with extensive experience in research and innovation management and the minerals and metals industry. Karen is passionate about understanding the complexity of resource management, about environmental and social sustainability, and about the role of geoscience in finding solutions to societal challenges. Karen holds a Ph.D. in geology from the University of Copenhagen. She worked with research on geologic processes in the lower crust and mantle and their associated mineral deposits before taking senior leadership roles in research and innovation organizations. She is a member of a range of international committees and working groups.

Kate Harcourt is a sustainability professional with over 30 years of experience across the mining industry. She works as part of owner’s teams with leadership on sustainability issues and for Equator Principles financial institutions and engineering groups. She serves as Non-Executive Director to Condor Gold, Fortuna Silver (transitioning from Roxgold Inc), Orezone Gold Corporation, and Atalaya Mining. Kate works on projects mainly in Europe and Africa, developing policy and environmental management frameworks and navigating local and international ESIA processes, stakeholder engagement and permitting, lender liaison, annual reporting, and construction supervision. She has joined due diligence teams on high-profile new projects and has contributed to documentation on industry good practice. In 2018, she was nominated one of the Top 100 Global Inspirational Women in Mining.
David Holwell is an associate professor in applied geology in the Centre for Sustainable Resource Extraction at the University of Leicester, UK. He completed his Ph.D. research at Cardiff University on the Platreef deposit in the Bushveld Complex, and, after three years working as a consultant exploration geologist on a range of commodities across the globe for SRK Exploration Services, he joined Leicester in 2009. His main research areas focus on magmatic ore deposits, especially Ni-Cu-Co-platinum group element (PGE) sulfides, including PGE deposits in the Bushveld and Skaergaard Complexes, and a range of Ni-Cu sulfide systems across the globe, with a specialization in southern Africa. He has been involved in numerous projects that apply fundamental geoscience to exploration targeting and the understanding of orebodies and the crustal cycling and concentration of critical metals required for the energy transition. He is a Fellow of the SEG and an Associate Editor of *Economic Geology*.

Robert Kaemba is currently an M.Sc. economic geology candidate at the School of Geosciences, University of the Witwatersrand, South Africa, and an exploration geologist who has spent over 13 years working in the Central African Copperbelt at various levels of responsibility. His career has predominantly involved the operation and technical advancement of grassroots to advanced-stage projects of sediment-hosted copper (SHC-type) mineral deposits in Zambia. Robert takes a keen interest in matters surrounding fairness, diversity, equity, and inclusion (DEI) in geoscience. He also maintains an interest in initiatives that can improve stakeholder and local community engagement to foster win-win success in obtaining social license to operate. He is a Fellow of the Society of Economic Geologists and was elected to the SEG Council in 2022.

Julian Kettle is the Vice Chairman of Metals and Mining at Wood Mackenzie, having been with the company since 1989. He holds a degree in metallurgy and microstructural engineering and has over 30 years of experience in analysis of the metals and mining industry in relation to base metals, battery raw materials, and bulk commodities. Based in the U.K., he travels extensively and regularly presents to senior industry, government, and financial community stakeholders, leveraging his in-depth knowledge of the key factors influencing the industry and issues that stakeholders face to provide strategic advice to clients. Julian has been involved in market environment assessment, expert witness, raw materials sourcing, contract pricing, portfolio optimization, and strategic advisory relating to brownfield and greenfield investments across the value chain.

Rebecca Major is a corporate and projects partner at international law firm Herbert Smith Freehills LLP and head of the firm’s mining and energy practice in Paris. She has significant experience advising the firm’s clients on a broad range of legal matters arising from their planned investments and ongoing activities in the mining and energy sectors throughout the world. She has a particular focus on Africa but also works on matters in Europe, Asia, South America, and the Middle East. Rebecca is consistently singled out for her expertise in the energy and mining sectors by the leading independent benchmarking publications (Chambers Global, Legal 500 EMEA, Who’s Who Mining). She has been a lawyer for more than 25 years and a partner for over 17 years.
Catherine Mottram completed her undergraduate studies in geoscience at the University of St. Andrews before moving to The Open University to work on her Ph.D. in Himalayan tectonics. She spent time as a Fulbright postdoctoral scholar at the University of Santa Barbara, USA, and as a Killam postdoctoral fellow at Dalhousie University in Canada before moving to the University of Portsmouth in 2017, where she is currently a senior lecturer in structural geology and tectonics. Catherine is a passionate geology educator and science communicator. Catherine’s research focuses on directly dating deformation from the ductile to brittle crust using various geochronometers. She has been working on a major project, in collaboration with the Geological Survey of Canada and local exploration companies, focused on understanding structural controls on Au-Cu-Mo mineralization in the Yukon and northern British Columbia, Canada.

Lisa M.P. Munoz is the author of Women in Science Now: Stories and Strategies for Achieving Equity (Columbia University Press, 2023). She is the founder and president of SciComm Services, a science communications consulting firm. A former journalist, Munoz was a reporter and managing editor for Geotimes magazine and a press officer at the World Meteorological Organization in Geneva, Switzerland. She has more than twenty years of experience crafting science content for scientists and the public alike. Munoz holds an engineering degree from Cornell University with a major in science of the earth systems.

Glen Nwaila is the director of the Wits Mining Institute and an adjunct professor at the School of Geosciences, University of the Witwatersrand (Wits). Prior to joining Wits in 2017, he worked in the mining and consulting industries for 12 years, where he led teams of mining professionals and led audits in mineral resources and extractive metallurgy plants. In mining, Glen led the geology functions for various companies. He also served as manager at Deloitte. Glen has been an Erasmus Mundus Scholar at Uppsala University since 2018. He completed his Ph.D. magna cum laude at Würzburg University in Germany, an M.Sc. in chemical engineering at the University of Cape Town, and a geology degree at the University of Johannesburg. Glen is a professional natural scientist with the South African Council for Natural Scientific Professions and is a Fellow of the Geological Society of South Africa.

Sabina Strnic Palinkas is an associate professor in geochemistry and ore geology at UiT the Arctic University of Norway. She also holds an adjunct professor position at the University of Bergen, Norway. After receiving a Ph.D. degree in ore deposit geology from the University of Zagreb, Croatia, in 2009, she worked as a research fellow at the University of Auckland, New Zealand, and as an assistant professor at the University of Zagreb. In fall 2015, she joined UiT, where her main goal is to establish an internationally recognized research program in ore geology and mineral resources. Her area of expertise comprises aqueous and high-temperature geochemistry, geochemical and thermodynamic modeling, and applications of organic geochemistry and stable isotope systematics to ore-forming and environmental processes. Her recent research interest is focused on submarine hydrothermal systems, including recent systems along the Arctic mid-ocean ridges as well as ancient systems preserved along the Scandinavian Caledonides and within the Fennoscandian Shield.
Jim Royall has worked in the mining industry for over 20 years on early-stage and advanced exploration projects for a diverse range of commodities in Europe, Asia, Africa, and South America. This includes 10 years with Rio Tinto and senior management positions for various junior mining companies. Jim has lived in Spain for many years and has extensive experience throughout the Iberian Peninsula, where he has managed a number of important exploration and development projects. Jim has a bachelor of science degree in geology from Oxford Brookes University, is a member of the Australian Institute of Geoscientists (AIG) and a fellow of the Geological Society of London, and served as qualified person for several mineral exploration companies.

Kate Rubingh is a postdoctoral fellow with MDRU (Mineral Deposit Research Unit) at the University of British Columbia, having obtained an M.Sci. in geological sciences from Durham University, an M.Sc. in mineral exploration from Queen’s University, and a Ph.D. from Laurentian University. Kate is a field economic geologist with research experience in gold deposits of the Paleoproterozoic and Archean, focusing on the application of volcanic stratigraphy and structural analysis to refine the structural framework at both the deposit and regional scale. Kate’s current research in the Golden Triangle area of British Columbia will use new lithogeochemistry and geochronology to refine the paleovolcanic architecture of the Hazelton group stratigraphy and its controls on the distribution of mineral deposits to understand metal endowment in the Golden Triangle area.

Charlotte Seabrook has been Exploration Manager at Rupert Resources in Finnish Lapland since 2018 and led the exploration team to the greenfields discovery of the Ikkari gold deposit in 2020. Charlie has nearly 20 years’ experience in multicommodity exploration in various terranes including Australia and West and Central Africa. Her experience includes exploring the Central African Copperbelt and Birimian basin of West Africa, where she was integral to several discoveries on the Ivory Coast while working for Newcrest as the district geologist. She completed her Ph.D. at the University of the Witwatersrand, holds an M.Sc. in mineral resources from the University of Wales (Cardiff), and is currently based in Finland.

Libby Sharman is an exploration geologist working as the Technical Lead for BHP Xplor, having spent five years prior with BHP Metals Exploration contributing to global exploration strategy through project generation and prospectivity analysis. She completed her Ph.D. at McGill University and has since gained experience in different facets of the exploration and mining industry, including as a project geologist, researcher, and communications specialist. Libby has experience on varied deposit types across five continents, from project generation to resource drilling for companies of all sizes and scopes. Libby’s personal experiences have fostered an interest in improving the mining industry and making it a more inclusive and appealing sector in which to work. She pursues this through various volunteer roles in industry organizations including the Society of Economic Geologists.
Richard Sillitoe graduated from London University in England, where he went on to earn a Ph.D. degree in 1968. After three years with the Geological Survey of Chile and a Shell postdoctoral research fellowship at the Royal School of Mines in London, he has operated for five decades as an independent consultant to mining companies, international agencies, and foreign governments. He has worked on a wide variety of mineral deposits and prospects in 100 countries worldwide but focuses on the epithermal gold and porphyry copper environments. Published research has earned him awards in Europe, Australia, and North and South America, including the Robert M. Dreyer Award (Society for Mining, Metallurgy, and Exploration), the SGA-Newmont Gold Medal (Society for Geology Applied to Mineral Deposits), and the R.A.F. Penrose Gold Medal of the Society of Economic Geologists, of which he was President from 1999 to 2000.

Matthew Steele-MacInnis is a professor of geology at the University of Alberta whose research focuses on geologic processes that involve fluids, especially formation of mineral deposits. Originally from Newfoundland, Canada, he first studied geology at Memorial University of Newfoundland, then did a Ph.D. at Virginia Tech, after which he held a Marie Curie Postdoctoral Fellowship at ETH Zurich. Matthew has been a recipient of the Hisashi Kuno Award from the American Geophysical Union, a CAREER Award from the U.S. National Science Foundation, the Young Scientist Award from the Mineralogical Association of Canada, and the SGA Young Scientist Award from the Society for Geology Applied to Mineral Deposits.
Posters

Posters will be on display in two cohorts, with an “A” designation for Saturday and Sunday and “B” for Monday and Tuesday. Poster sessions are posted online. The presenting author’s name is underlined below.

Session A: Saturday and Sunday

Battery Metals - the Drivers of Future Energy Supply

A001 Potential Sources of Rare Earth Elements (REEs) in Loch Borralan, Northwest Highlands, Scotland: Geochemical and Mineralogical Controls on REE Distribution in Carbonatite (Student)  
Abdulkadir Mohamed Abdulkadir

A002 Mineralogy and Whole-Rock Geochemistry as Exploration Tools for Lithium Pegmatites in Ghana: Examples from the Biriwa-Ewowaa Pegmatite Fields (Student)  
Elizabeth Agyekum, Kofi Adomako-Ansah

A003 Structural-Chemical Vectors to LCT-pegmatites in the Varuträsk Area, Sweden  
Joel Andersson, Edward P. Lynch, Martiya Sadeghi, Samuel Lundsten, Tobias E. Bauer

A004 Molybdenite from the Palaeoproterozoic REE-line in Bergslagen, Sweden: Textural Relations, Trace Element Chemistry and Re-Os Age Data  
Stefan S. Andersson, Erik Jonsson, Thomas Zack, Martiya Sadeghi

A005 The Iberian Pyrite Belt as a Strategic Source of “Green” and Critical Minerals: The Co-Enrichment in VMS (Student)  
Gonzalo Ares, Carmen Conde, Fernando Tornos

A006 Reassessment of Rare-Metal Potential of the Karagaily-Aktas Deposit (Kazakhstan)  
Akmaral Baisalova, Yerlan Akbarov, Alla Dolgopolova, Reimar Seltmann

A007 Finding and Quantifying Li Bearing Mineralisations Using the GeoCore X10 Drill Core Scanner  
Mikael Bergqvist, Alexander Hansson, Mikael Kördel, Karin Högdahl, Erik Jonsson, Magnus Leijd, Jaroslav Majka, Pauline Jeanneret

A008 The Yin Deposit, A New REE Discovery in the Gifford Creek Carbonatite Complex, Gascoyne Province, Western Australia  
Luke Blais

A009 Investigating Aeration and Filtration as Pre-Treatment Methods for Flowback and Produced Water Prior to Ion-Exchange for Lithium Extraction (Student)  
Bennett Braun, Karthik R. Shivakumar, Daniel Alessi

A010 Battery Metal Exploration: Integrating Satellite, Airborne, Drone and Field Data with Machine Learning Outputs in Cornwall  
Mark Broadley

A011 Scientific Drilling at a REE-Mineralised Carbonatite  
Sam Broom-Fendley, Kathryn Goodenough, Michael Marks, John Spear

A012 Mineralogy and Composition of Vanadium-Bearing Shales at the Van Property, Mackenzie Mountains, Northwest Territories  
Stefanie M. Brueckner, Turner Green, Merilie A. Reynolds, Daniel Gregory

A013 The Mineralogy and Mineral Associations of Platinum-Group Elements and Base Metal Sulphides in the Down-Dip Critical Zone at Sandstool, Northern Bushveld Complex (Student)  
Kate R. Canham, David Holwell, Iain McDonald, Hannah Hughes, Andy Lloyd, Lara Du Preez, Kofi Acheampong

A014 Stream Sediments as an Exploration Tool for Spodumene Pegmatites  
Lawrence C. Carter, Julian Menuge, Ben J. Williamson, Teimoor Nazari Dehkordi, Gavyn K. Rollinson

George N. Case, Evgeniy Bastrakov, Garth Graham, Albert Hofstra, David Huston, Christopher Lawley, Vladimir Lisitsin, Bronwen Wang

A016 Cobalt Mineralization in the Central African Copperbelt: Preliminary Insights from Petrography and LA-ICP-MS Analyses (Student)  
Malena Cazorla Martinez, Lingli Zhou, Murray Hitzman
A017 REE Enriched Migmatites and Gneisses of Son Valley Crystalline Area Sonbhadra, Uttar Pradesh: Can It be a Potential REE Deposit in India? 
Sakthi S. Chinnasamy, Abhishek Verma

A018 Integration of Multiscale Hyperspectral Data, Geochemistry, and Mineralogy for Assisting Mineral Exploration: The Brownfield Punta Corna Co-Ni Vein-Type Deposit (Italy) (Student) 
Rita Chirico, Nicola Mondillo, Carsten Laukamp, Jens Najorka, Diego Di Martire

A019 Stratabound Cobalt Mineralization at Kinsevere, DRC (Student) 
Robert S. Collar, Herve Ilongo, Takalani Mandiwana, A.E. Williams-Jones

A020 Melt–Fluid and Fluid-Fluid Immiscibility in Na2SO4–SiO2–H2O System and Its Implications for the Formation of Rare Earth Deposits 
Hao Cui, Richen Zhong, Yuling Xie, Xiaolin Wang, Huan Chen

A021 Magma Mixing in the Huangshandong Ni-Cu Sulfide-Bearing Mafic-Ultramafic Complex, NW China 
Yu-Feng Deng, Sheng-Xuan Cao, Feng Yuan, Xie-Yan Song

A022 Textural and Mineralogical Characterization of One Lithium Deposit from the Barroso-Alvão Aplite-Pegmatite Field: Preliminary Study (Student) 
Filipa Dias, Alexandre Lima, Encarnación Roda-Robles, Tânia Martins

A023 Controls on the High-Grade Gold-Cobalt Mineralisation at Rajapalot, Finland (Student) 
Lily Dickson, Taija Torvela, Robert C. Chapman

A024 The Shavazsay Deposit (Uzbekistan) – a Large Caldera-Hosted Volcano-Sedimentary Lithium Deposit 
Alla Dolgopolova, Reimar Seltmann, Rustam Mirkamalov, Farid Divaev, Rustam Khalmatov

A025 The Successful Application of Stream Sediment Geochemistry as an Exploration Tool for As-Bi-Co-Cu-Fe-Ni Mineralisation in Volcano-Sedimentary Settings (Student) 
Adam Eskdale, Sean Johnson, Amy Gough

A026 LREEs, Zr and Th Enrichment of Autometasmatic Alkaline Dikes in Mamuju, West Sulawesi, Indonesia: Constraints from Petrology and Whole Rock Geochemistry (Student) 
Fadlin Fadlin, Shaban Godang, Arifudin Idrus, Hartaja M. Wicaksono, Wildan N. Hamzah, Rinaldi Ihkram

A027 Magmatic Glass as a Source of Lithium: A Case Study of the Cerro Galán Ignimbrite of Northwest Argentina 
Conor Farrell, Alison Rust, Edward Bunker, Stephen Edwards, Naomi Thompson, Joseph Emmings

A028 Hydrothermal Alteration and the Formation of an Iron-Oxide-Apatite (IOA)-Type Rare Earth Element (REE) Deposit at Kwyjibo, Québec, Canada (Student) 
Gary Fung, A.E. Williams-Jones, David Martin-eau

A029 Geochemical and Petrographic Effects of Halo Formation in Host Rocks of Spodumene Pegmatites in Southeast Ireland (Student) 
Elena J. Geiger, Teimoor Nazari-Dehkordi, Julian Menuge

A030 Mineralogy and Critical Metal Deportment of Fe-Ni-Co Laterite Ores from Sebuku Island, SE Kalimantan, Indonesia 
Michele Giorno, Alkiviadis Kontonikas-Charos, Doreen Ebert, Joachim Krause, Robert Möckel, Dirk Sandmann, Mathias Burisch, Ernowo Ernowo, Arifudin Idrus, Yoseph Swamidharma, Yudhi Krisnanto, Max Frenzel

A031 New Lithium Search Spaces – a Mineral Systems Approach 
Howard C. Golden, William Heins, Paul Jackson

A032 Lithium Pegmatites in Africa: Understanding Parageneses 
Kathryn Goodenough, Richard Shaw, Anouk Borst, Paul Nex, Judith Kinnaird, Marieke van Lichtervelde

A033 Battery Metals in Diverse Geological Environments of the Lesser Caucasus, Armenia: An Overview for Future Exploration 
Samvel Hovakimyan, Robert Moritz, Marianna Harutunyan, Karen Hambaryan, Kima Charatanyan
A034  A Fresh Look at the World-Class “Five-Element” Vein Deposit, Cobalt, ON, Canada: Constraints from Fluid Inclusion and Stable Isotope Systematics, and Mineral Paragenesis (Student) 
Joshua Jackman, Jacob Hanley, Daniel Kontak, Richard Stern, David Lewis

A035  Green Transition-Critical Metal and Mineral Resources in the European Nordics 
Erik Jonsson, Tuomo Törmänen, Jakob K. Keiding, Terje Bjerkgård, Pasi Eilu

A036  Project BATTRACE—Using Geo-Based Fingerprinting for Battery Raw Material Traceability 
Harri Kaikkonen, Quentin Dehaine, Mari Kivinen

A037  Market Drivers and Barriers for Battery Raw Material Traceability 
Harri Kaikkonen, Mari Kivinen

A038  Tellurium: Geometallurgy of a Critical Element at the Perseverance VMS Deposit, Quebec, Canada (Student) 
Filip Kasprowicz, Katharina Pfaff, Thomas Monecke, David Diekrup, Samuel Pierre, Mark Hannington

A039  “Multi-Step Distillation” Anatexis as a Mechanism for Generating LCT Pegmatites (Student) 
Lot Koopmans, Tania Martins, Robert Linnen, Richard M. Palin, Catriona Breasley, David Silva, Nicholas J. Gardiner, Lee A. Groat, Laurence J. Robb

A040  Exploration Model for REE Deposits Associated with Nepheline Syenite Occurrences in Tropical Areas: Case Study of the Eboundja Nepheline Syenite (Cameroon) (Student) 
Kenneth K. Kwanang, Louise Marie Ngo Bidjeck, Yannick Ngono Onana

A041  Source to Sink Modelling of Salar-Hosted Lithium Brine Systems 
Christopher Lambert, Jean-Jacques Ferguson, Esme Whitehouse, Edward Bunker, Alexandra Scarlet, Jorge Gines

A042  Eruption of Extremely Fractionated Magmas: Implications for Magmatic Versus Volatile Processes 
David R. Lentz, Reimar Seltmann, Nadia Mohammadi

A043  Critical Metal Occurrences in Historic Mining Waste in Sweden 
Alexander Lewerentz, Johan Camitz, Patrick Casey, Dick Claeson, Roger Hamberg, Erik Jonsson, Daniel Larsson, Stefan Persson, Gunnar Rausén, Helge Reginiussen, Johan Söderhielm, Björn Wiberg

A044  Petrogenesis and Ni-Cu Sulfide Mineralization of Early Permian Mafic-Ultramafic Complexes in the Beishan Area, Xinjiang (Student) 
Hao Lin, Dongyang Zhang

A045  A Mineral Systems Approach to the Classification of Lithium Deposits 
Robert Linnen, Wilson Bonner, Kurt House

A046  Using Scanning Electron Microscope-Based Automated Mineralogy to Better Understand Magnetic and Conductive Anomalies in Ni-Cu-Co-PGE Exploration Targets in W-Greenland 
Stefanie Lode, Björn H. Heincke, Nynke Keulen, Bo Møller Stensgaard

A047  Geology of the Paleoproterozoic Järkvissle Li-Sn-Ta Pegmatite System, Central Sweden 
Edward P. Lynch, Joel B. Andersson, Maritza Sadeghi, Irma Bečelytė, Peter Hedin, Tobias E. Bauer

A048  Emplacement Mechanisms of Rare Element Pegmatites, Separation Lake Greenstone Belt, Northwest Superior Province (Student) 
James A. Macdonald, Alfredo Camacho, Garnet J. Ching
A049 Origin of Alkaline-Carbonatite Rocks and Related Mineral Deposits at the NW Margin of the West African Craton: Inferences from Field and Petro-Geochemistry (Student) Cheikh Elwali Malainine, Muhammad Ouabid, Otmane Raji, Jean-Louis Bodinier

A050 Lithium in Manitoba: Production and Exploration Potential Tania Martins

A051 The REDOX Setting of the Stratabound V Mineralization at the Van Property, Northwest Territories (Student) Chelsey C. Merrick

A052 Timing and Linkage of the Mesoproterozoic REE-Y-Zr-Nb Mineralized Strange Lake and Flowers River Deposits to the Neoarchean Nekuashu-Aucoin Magmatic Event, Northern Canada Nadia Mohammadi, Anne-Aurélie Sappin, David Corrigan, Neil Rogers, Nicole Rayner

A053 Battery Minerals in the Democratic Republic of Congo: Overcoming Challenges to Discover a New World-Class Lithium Deposit in the Kasese-Lulingu Pegmatitic Belts (KLP) (Student) Rubson H. N’nahano, Huan Li, Mohammed A. Ibrahim

A054 Application of Soil Geochemistry for Pegmatite Exploration: Spodumene Pegmatites in Ireland and Austria, and High-Purity Quartz-Bearing NYF Pegmatites in Norway Teimoor Nazari-Dehkordi, Julian Menuge, Lawrence Carter, Ben Williamson, Axel Müller

A055 Implications of the Magma-Mush Concept for Lithium Enrichment Processes in LCT Pegmatites (Student) Louis R. G. Penfound-Marks, Ben J. Williamson, Julian F. Menuge, Lawrence C. Carter

A056 The McDermitt Deposit (Oregon, US): Preliminary Results from a Li-Clay Volcano-Sedimentary System Francesco Putzolu, Robin Armstrong, Rebecca Ball, Paul Meyer, Richard Herrington

A057 Relationship Between Granitic Intrusions and the Hydrothermal Veins in the Argemela Tin and Lithium Mine (Student) Ricardo Ribeiro, Rui Moura, Alexandre Lima, Charles Giumiax

A058 Structural Controls on the Origin of Regolith-Hosted Rare Earth Element Deposits at the Coastal Cordillera, Central-Southern Andes (35°-37°S) Tomás Roquer, Paulina Vergara, Nicolás Bustos, Carlos Marquardt

A059 Occurrence and Geological Features of LCT Pegmatite in Kalba-Narym Belt, East Kazakhstan (Student) Gleb Smirnov, Azam S. Dehnavi, Reimar Seltmann

A060 Rare Earth Element Recovery from Apatite (Student) Julia Sordyl, Jarosław Majka, Karin Högdahl, Maciej Manecki

A061 Geological Analysis of Graphite Deposits in Capim Grosso (BA), Brazil (Student) Thales F. Tandel

A062 Assessing Vanadium Speciation in Hyper-Riched Black Shales to Identify the Geochemical Controls Involved: Insights from X-Ray Absorption Near-Edge Spectroscopy (Student) Ozgur Can Tekin, Daniel D. Gregory, Anthony Chappaz, Danielle McGill, Daryll B. Concepcion, Merilie A. Reynolds, Chelsey Merrick, Daisy Zhang, Stefanie M. Brueckner

A063 The Deeper Platreef at Sandsloot: New Insights Into Controls on Ni-Cu-PGE Mineralisation in the Bushveld Complex (Student) Erin Thompson, David Holwell, Iain McDonald, Marc Reichow, Thomas Blenkinsop, Lara Du Preez, Kofi Acheampong, Andy Lloyd

A064 Multi-Scale Insights Into the High-Grade Mt Weld REE Deposit from 2D and 3D Active Seismic Survey Data Greg Turner, Tom Bell, Mohamed Megebry, Ganesh Bhat, Brad Knell, Nigel Miller

A065 Controlling Factors in Regolith-Hosted Rare Earth Elements Deposits Formation at the Coastal Cordillera, Central-Southern Andes of Chile (Student) Paulina Vergara, Tomás Roquer, Nicolás Bustos, Carlos Marquardt

A067 Characteristics and Origin of the Li-Rich Hydrothermal Altered Granite: A New Type of Clay Li Deposits?  
Zhiqiang Wang, Feng Yuan

A068 Ewoyaa Lithium Project—Rediscovery to Resource  
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Copper - Red Metal for a Green Future

A070 Timing of Cu-Mo Mineralization in the Deep Extension of the Giant Chuquicamata Deposit, Northern Chile (Student)  
Claudio A. Araya, Antonio Arribas

A071 Geology, Mineralization, Geochemistry, Geo-chronology, and Ore Potential of Cu Deposits, Central African Copperbelt: A Review  
Kevin Igor Azeuda Ndonfack, Jilin Zhang, Zhiming Yang

A072 Tectonic Controls on Porphyry Copper Formation in the Northern Great Basin (Nevada-Utah-Idaho), Western USA (Student)  
Hero Bain, Thomas Lamont, Dan Bevan, Frances Cooper, Tim Elliott, Adam Gorecki

A073 Alteration Products of Seafloor Massive Sulphides: A New Source of Copper? (Student)  
Christian S. Bishop, Bramley J. Murton, Stephen Roberts, Anna Lichtschlag

A074 Application of Alteration and Geochemical Vectors for Blind Porphyry Cu-Au-Ag-Mo Exploration: An Example from Camp Creek, Thorn District, British Columbia, Canada  
Farhad Bouzari, Shaun Barker, Robert G. Lee, Cassady Harraden, Gary Thompson, Christina Anstey, Brock Riedell

A075 The Potential Porphyry Cu-Mo Deposit on the Patacual Claim, El Limon-La Cuesta Locations, Municipality of Tecpan De Galeana, Guerrero State, Southern Mexico (Student)  
Lizbeth G. Carrillo-Marrodan, Jesus Castro-Mora

A076 Magmatic-Hydrothermal Crystal Mush within the Porphyry-Forming Environment—Spatial and Temporal Constraints  
Lawrence C. Carter, Ben J. Williamson, Simon Tapster, Gavyn K. Rollinson

A077 The Orion Cu-Au-Ag-Co-Zn Discovery in the West Kimberley Region, Western Australia - A New Mineralisation Style in a Greenfields Terrane  
Nicholas Chapman

A078 The Role of Exhumation in Generating High-Grade Copper Deposits: Insights from the Central Andes, Northern Chile  
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A079 Rapid Cu-Porphyry Indicator Mineral Characterization by μXRF: Automated Detrital Indicator Mineral Analysis of British Columbian Cu-Porphyry Exploration Properties (Student)  
Ben M. Eaton, Shaun L. Barker, Lindsey J. Heagy

A080 Petrology and Geochronology of Pre- to Post-Ore Igneous Rocks from Asarel Porphyry Cu (±Au±Mo) Deposit, Central Sredna Gora Zone, Bulgaria  
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Matthew P. Hales, Judith Kinnaird, Paul Nex

A082 Porphyry Cu Fertility of Late Mesozoic-Cenozoic Magmatism Along the East Anatolian Magmatic Belt Based on Zircon Trace Element Compositions  
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A083 Copper in the Guiana Shield  
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A084 Improving the Sustainability of Copper Mining Through XRF Sensing, Machine Learning, and Bulk Ore Sorting  
Hannah Lang, Karim Halaseh, Giovanni Pamparana

A085 Deciphering Fluid Origins in the Paleozoic Iron Oxide-Cu-Au (IOCG) Deposits, NW China: Constraints from Noble Gases and Halogens  
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A086 Implementation of a Tectonic and Magmatic GIS-Based Database for Porphyry Copper Deposits Across the Southwest USA (Student)
Roseanne Marshall, Thomas Lamont, Frances Cooper, Robert Loucks, Adam Gorecki

A087 Understanding Climate and Weather-Drivers of Tailings Risk in Chile: A Complex Multi-Hazard Challenge
Linda Jakschies, Blake O’Sullivan, John Coll, Stephen Edwards, Katie McFall

A088 Contrasting Tectonomagmatic Conditions for Porphyry Cu and Iron-Oxide-Apatite Deposits in Phanerozoic Arcs
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A089 Isotopic Microanalysis of Calcite in the Permian Kupferschiefer System (Saale Subbasin, Eastern Germany) (Student)
Mohammed S. Mohammedyasin, Joseph M. Magnall, Sarah A. Gleeson, Hans-Martin Schulz, Maria R. Scicchitano, Michael Wiedenbeck

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A090 The Use of Phlogopite as an Indicator of Magmatic Cu-Ni Mineralisation in the Curaçá Valley, Brazil (Student)
Ellen Oliver, David Holwell, Daryl Blanks, Dongyang Zhang, Fillipe Porto, Taila Sant’ana

A091 Lithostratigraphy, Mineralogy, and Structural Controls of the Late Ediacaran Tizi N’ousatour Cu-Ag Deposit, Northwestern Anti-Atlas, Morocco (Student)
Mehd Ousbih, Mohamed Charroud, Mourad Essalhi, Moha ikenne, Askkour Fatiha, Salih Amarir, Hassan Essaidi

A092 Application of Facies Analysis and Sequence Stratigraphy in the Zambian Copperbelt and Its Implications for the Tectonostratigraphic Evolution Katangan Basin (Student)
Martin Purkiss, Bruce K. Levell, Michael C. Daly

A093 Integrated Re–Os, Ar/Ar, and U–Pb Geochronology Directly Dates the Timing of Mineralization at the Mina Justa and Marcona Deposits, Peru (Student)
Maria Alejandra Rodriguez Mustafa, Adam Simon, Robert Holder, Holly Stein, Andrew Kylander-Clark, Brian Jicha, Daniel Blakemore, Edson Machado

A094 3D Mineralogical Analysis Using X-Ray Attenuation Computed Tomography (CT) and XRF to Determine Geoenvironmental Reactivity of Future Non-Ore Material (Student)
Enrique Saez Salgado, Anita Parbhakar-Fox, Nathan Fox, Regina Baumgartner

A095 Insights into the Origin of Sedimentary-Hosted Copper Mineralization in Kazakhstan
Azam Soltani Dehnavi, Reimar Seltmann, Fereshteh Shabani-Seifidhasht

A096 Hydrothermal Apatite: A Distal Proxy for Potassic Alteration in Porphyry-Cu Systems? (Student)
George Stonadge, Andrew Miles, Daniel Smith, Philip Bird

A097 Detrital Zircon Indicators of Metallogenic Magma Fertility: A Potential Tool for Exploration Targeting for Porphyry Copper (Student)
Eliana Toro Paz, Frances Cooper, Byron Adams, Thomas Lamont, Anthony Kemp, Robert Loucks, Catherine Belgarde

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A098 Mineralogical Characterization of Potential Source, Aquifer and Trap Rocks in the Central African Copperbelt Using the TESCAN TIMA® Automated SEM Mapping System
Veronica G. Trevisan, Jamie J. Wilkinson, Martin Purkiss, Mike Daly

A099 Alteration Assemblages in the Southern Congolese Copperbelt. A Comparison of Background Stratigraphy with Cu-Vein Hosted Mineralisation and Salt Dissolution Alteration (Student)
Helen Twigg, Murray W. Hitzman

A100 Rhenium – Potential as Proxy for Mineralization: Insights from the Altar Porphyry Cu-(Au-Mo) Deposit (Student)
Martin G. Vallejos, Laura Maydagán, David Selby, Kevin B. Heather, Mariano Poodts

A101 Greenfield Porphyry Copper Prospects in Peru
César E. Vidal

A102 Mineralization Timing and Characteristics of the Heavy Sulfide Zone at the Grasberg Porphyry Cu-Au Deposit, Papua, Indonesia
Kotaro Yonezu, Shunnosuke Omachi, Thomas Tindell, Adrian Boyce, Euis Yuningsih, Mega Rosana

Transformational Science, Engineering, and Governance in Economic Geology

A104 A Trace Element and C-O Isotope Study of Sb-Au Vein-Hosting Carbonate-Talc Schists of the Murchison Greenstone Belt, South Africa
Andrea Agangi, Axel Hofmann, Robert Bolhar

A105 Ambient Noise Seismic Interferometry Applied to Tailings Dam Monitoring in Minas Gerais State, Brazil (Student)
Amanda M. Bezerra

A106 Data Capture from Geoscience Documents Using Transformers
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A107 3D Deep Electrical Resistivity Tomography Study of the Calamita Distal Fe-Skarn Deposit, Elba Island (Italy): New Perspectives for Mineral Exploration (Student)
Damian Braize, Julien Sfalcin, Matteo Lupi, Kalin Kouzmanov, Andrea Dini, Gianfranco Morelli, Federico Fischanger

A108 Petrography and Economical Potential of Banded Iron Formations of the Neoproterozoic-Age Buem Formation, Ghana (Student)
Ernest Braković

A109 A Shift to Natural Gas, Nuclear, and Ocean Mining Could Initiate an Adequate and Resource-Viable Green Transition
Lawrence Cathles, Adam C. Simon

A110 A Multi-Approach Hyperspectral Analysis for the Mineralogical Characterization of Zn-Cu-Pb Vanadate Ores in the Otavi Mountainland (Namibia) (Student)
Francesca Corrado, Anna Sorrentino, Rita Chirico, Matteo Massironi, Sabrina Ferrari, Nicola Mondillo

A111 How to Empower the Geologist's Expert Knowledge with Machine Learning in Drill Core Logging? (Student)
Christian Günther, Filip Siman, Nils Jansson, Foteini Simistira-Liwicki, Marcus Liwicki, Tobias Hermansson, Paul McDonnell

A112 Exploration and Utilization Prospects of Coastal Placer Deposits
Min Liu

A113 Determining the Lowest Quantity of Variables Required for Geometallurgical Machine Learning-Based Modelling: A Review (Student)
Ethan E. Mack, Bjorn von der Heyden, Margreth Tadie, Tobias Louw

A114 Deriving Plate Boundary Information from Deep-Time Palaeo-Reconstruction Models and Implications for Regional Mineral Exploration Targeting (Student)
Hoang Anh Tu Nguyen, Dène Tarkyth, Bruce Eglinton, Jean-Christophe Wrobel-Daveau, Graeme Nicoll, David Evans, Drew Heasman, Samuel Butler

A115 Unconventional Mineral Resource Potential in a Low-Temperature Geothermal System (Student)
Valeria S. Nogales Herrera, Sean A. Fulcher, Karin E. Olson Hoal

A116 Differentiation Between Endoskarn and Exoskarn Using Portable X-Ray Fluorescence (pXRF) at Antakori Cu-Au-Ag Project, Northern Peru
Luis Paredes Santa Cruz, David Portocarrero
A117 TRIM4Post-Mining: Artificial Intelligence and Virtual Reality for Decision-Making in Remediation for Mining Companies
*Luis Pizano, Jörg Bendorf, Andreas Knobloch, Diego Restrepo*

A118 Quantitative Evidence of a Rift Origin for the Katangan Basin from Subsidence Analysis in the Zambian Copperbelt (*Student*)
*Martin Purkiss, Michael C. Daly*

*Mana Rahimi*

A120 A Novel Approach for Delineation and Mapping of K-Rich Igneous Rocks and their K₂O Content to Support Unconventional Potash Exploration
*Otmane Raji, Muhammad Ouabid, Cheikh Elwali Malainine, Yousef Ahechach, Aaron Herve Mbissik, Hicham El Messbah, Jean-Louis Bodinier*

A121 Automated Multi-Sensors Core Logging and Analysis for the Assessment of Sn-W Mineralization Pattern and Distribution – Hemerdon Deposit, Devon, UK
*Reza Ramdhan, Gavin Hunt, James Shreeve, Briony Shreeve*

A122 Prospects for Byproduct Critical Mineral Recovery from Mine Waste
*Robert R. Seal, Nadine M. Piatak, Sarah Jane O. White, Sarah M. Hayes*

A123 Environmentally Friendly Low Impact, Low Carbon Footprint, Low Power Electromagnetic Technique for Mineral Exploration Undercover
*Gordon Stove*

A124 Geometallurgy of a Complex Ore: Lappberget Zn-Pb-Ag-(Cu-Au) Deposit, Garpenberg Mine, Sweden
*Glacialle Tiu, Christina Wanhainen, Nils Jansson, Yousef Ghorbani*

A125 Can Gold Mining Provide Critical Metals as By-Products Using Novel Solutions? A Case Study at Björkdal Gold Mine, Sweden (*Student*)
*Lara Tritton, Gawen Jenkin, Dan Smith, Helena Moosberg-Bustnes*

A126 The Green Transition Resource and Supply Chain Model: A Recipe for Global Energy Equity
*Edith Newton Wilson*

**Session B: Monday and Tuesday**

**Advances in Mineral Deposit Geoscience**

B001 Geological Settings and Future Ore Potential of the Ordubad Region, Nakhchivan (Naxçıvan), Azerbaijan, Lesser Caucasus
*Stephen J. Westhead, Robin N. Armstrong, Anar Valiyev, Rustam Abdullayev, Araz Orujov*

B002 Trace Element Composition and Cathodoluminescence of Quartz in the Tsunhag Tungsten Deposit in Western Mongolia (*Student*)
*Amitan Baatar, Jamsran Erdenebayar, Takeyuki Ogata, Takeyuki Ogata, Yondon Majigsuren*

B003 An Insight into the Southern Extension of the Egyptian Golden Triangle and Its Potentiality for Mineral Occurrences Related to Shear Activity (*Student*)
*Mohamed Badawi*

B004 Using Chemistry of REE-Bearing Phosphates for ISCG Exploration (*Student*)
*Travis D. Batch, Caroline Tiddy, Adrienne Bro-todewo, David Giles*

B005 Assessing the Petrogenesis and Magmatic Sulphide Prospectivity of the Southwestern Laurentia Large Igneous Province (SWLLIP) (*Student*)
*Thomas J. Boes, Simon M. Jowitt*

B006 Enhancing Exploration of Green Energy Transition Metals: Directly Dating Carbonate Vein-Hosted Cu-Au Mineralization (*Student*)
*Sarah Bowie, Catherine Mottram, Dawn Kellett, James Darling*

B007 The Santa Maria Pb-Zn-Cu-(Au, Ag) Deposit, Camaquã Basin, Brazil: Geology, Geochemistry, and Geothermometry (*Student*)
*Lucas F. Brito, Caetano Juliani*

B008 Hydrothermal Alteration Zones Estimated by ASTER Satellite Image and ASD Terraspec on the Eastern Zone of Cerro de Pasco, Perú (*Student*)
*Evelyn Caiza*
B009  The Al:Ti Geochemical Classifier: Distinguishing Between Granites of Similar Characteristics Under Different Degrees of Alteration (Student)
Andrés Canales, Diego Guido, Julietta Zamora

B010  Study on Sedimentary Environments and Implications for Shale Reservoirs in the Permian Longtan Formation, Southeast Sichuan Basin
Yana Chen

B011  Identification of Ore-Finding Targets Using the Anomaly Components of Ore-Forming Element Group Extracted by SVD and PCA in the Giant Gejiu Sn-Cu Ore Field, Southwestern China
Yongqing Chen, Aoyue Zheng

B012  Carbonatite Melt as a Travel Agent for Magma-Sediment Interactions: Nature vs. Experiments (Student)
Maria Cherdantseva, Michael Anenburg, Marco Fiorentini, John Mavrogenes

B013  Investigating Metamorphosed VMS Mineralization from the Archean Yilgarn Craton, Western Australia: Preliminary Results from the King Zn Deposit (Student)
Cendi Dana, Steven Hollis, Darryl Podmore, Megan James, Ian Butler, Florian Fusseis, Adrian Boyce

B014  São Félix do Xingu's Hydrothermal Gold and Base Metal Mineralization: Using Aerogeophysical Data to Find High Favourable Prospective Areas (Student)
Bruna de Freitas, Caetano Julião

B015  The Epithermal-Skarn Transition at the La Colorada Deposit, Chalchihuites District, Zacatecas, Mexico (Student)
Joshua Ebner, Zhaoshan Chang, Pedro Francisco, Dante Juarez, Patricio Perez, Chris Emerson, Shiqiang Huang, Sidney Hemming, Richard Wendlandt

B016  The Natural Enrichment of Phosphatic Sediments: Insights from the Moroccan High Atlas Phosphate Series
Radouan El Bamiki, Michel Séranne, Fleurice Parat, Jérémie Aubineau, El Hassane Chellai, Mohamed Marzoqi, Jean-Louis Bodinier

B017  Geochemical and Mineralogical Characterisation of the Dulaan Khar Uul Pb-Zn-Ag Deposit in Western Mongolia
Jamsran Erdenebayar, Takeyuki Ogata, Batkhuluug Baldorj

B018  Interpreting Machine Learning Neural Network Patterns of an Orogenic Gold Deposit, Yilgarn Craton, Western Australia
David M. First, Yush H. Rajcoomar, Daniel Mogilny, Ilia Sucholutsky, Farzi Yusufali

B019  UV Fluorescence as an Exploration Tool in Carbonate Replacement Deposits (Student)
Spyridon Fragkou, Andrew Steiner, Shaun Barker, Tim Baker, Janja Mihajlovic

B020  Unravelling the Genesis of the La Colorada Skarn Deposit, Chalchihuites District, Zacatecas, Mexico (Student)
Pedro Francisco, Zhaoshan Chang, Joshua Ebner, Dante Juarez, Patricio Perez, Chris Emerson, Shiqiang Huang

B021  Lagoa Salgada VMS: Geochemistry Applied to Deposit Domaining, Geometallurgy and Exploration
Sergio Gelcich, Vitor Arezes, Luis Lima, Joao Barros, Avelihno Pinheiro

B022  On the Development of a Microstructural Signature During Alluvial Gold Transport
Juan Gomez-Barreiro, Santos Barrios Sánchez, Juan Morales Sánchez-Migallón, Jose Manuel Compañía Prieto, Kelvin Dos Santos Alves, Vanessa Leonor Escobar Duche, Inés Puente Orench

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B023 Applications of Hyperspectral Analysis to VMS and Orogenic Gold Exploration in the Yilgarn Craton, Western Australia
Steven P. Hollis, Cendi D. Dana, Conal Rodgers, Jack Richardson, Darryl Podmore, Megan James, Allan Kneeshaw, Riquan Azri

B024 Tourmaline: A Fertility Assessment and Vectoring Tool for Magmatic-Hydrothermal Systems
Wei Hong, Francisco Testa, David R. Cooke, Nathan Fox, Lejun Zhang, Michael Baker, Evan Orovan, Ayesha Ahmed, Pete Hollings, Ivan Belousov, Anthony Harris

B025 Melt Inclusions and Chemistry of Detrital Titanomagnetites at Orokolo Bay, Papua New Guinea: Evidence for Genesis by Magmatic Immiscibility (Student)
Leeysmon Hulijeli, Yasushi Watanabe, Osamu Nishikawa, Carmela A. Tupaz

B026 Paragenesis of Alteration and Silver Mineralization of the Pomperia Veins Hosted in the Tacaza Formation, Southern Peru (Student)
Jhoan C. Humpiri Chavez, Milagros Apaza Aquino

B027 Stratiform Potash Mineral Systems Prospectivity Analysis in an Andean Setting
Christopher Lambert, Jean-Jacques Ferguson, Esme Whitehouse, Edward Bunker, Alexandra Scarlet, Jorge Gines

B028 3D Mineral Prospectivity Modeling for Targeting Concealed Mineralization Within Chating Area, Middle-Lower Yangtze River Metallogenic Belt, China
Xiaohui Li, Feng Yuan, Chen Xue, Yuheng Chen

B030 What Lies Beneath? Sub-Seafloor Drilling of the Inactive Ultramafic-Hosted Semenov-1 Sea-floor Massive Sulfide Deposit, 13°30'N on the Mid-Atlantic Ridge
Andrew J. Martin, Katie A. McFall, Bramley J. Murton, John W. Jamieson, Sven Petersen, Isobel Yeo, Christopher J. MacLeod, Anna Lichtschlag, Simon Allerton, Christian Bishop, Acer Figueroa, Szu-Ying Lai, Paul Lusty

B031 Recognizing Intrusive Phases at the Red Chris Au-Cu Porphyry Deposit Using Integrated Chemical and Geological Drill Core Data Sets
Brian A. McNulty, Shaun Barker, Anthony Harris, Nicholas Fitzpatrick, Alan Wilson

B032 Bridging the Gap: Rapid Geochemical and Mineralogical Characterization at the Hand-Specimen Scale
Andrew H. Menzies, Nigel M. Kelly, Alan R. Butcher, Falk Reinhardt, Roald Tagle

B033 Cerro Manomó: Carbonatites and BIFs with Rare Earth and Radioactive Mineral Anomalies (Student)
Pablo D. Michel, German Uzquiano

B034 Mineralogy and Petrology of the Tsagaantolgoi Fe-Pb-Zn Skarn Deposit in South Mongolia (Student)
Otgonbayar Munkhtsol, Jamsran Erdenebayar

B035 Presence of Vanadium in Epithermal Systems of Patagonia, Argentina (Student)
Morena L. Pagola, Sebastián M. Jovic, Diego S. Palma, Daniel Hughes, Diego Guido

B036 The West Desert Zinc-Copper-Silver-Indium Deposit, Juab County, Utah, USA
Mark I. Pfau

B037 Crosscutting Relations in Advanced Argillic Environment Revealed by Hyperspectral Core Imaging: Antakori Cu-Au-Ag Project Case Study (Student)
David G. Portocarrero
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| B039 | Role of Hydrothermal Solution in Base Metal Enrichment in Alwar Basin, Rajasthan, India  
Sajeev R, Dinesh Pandit, Mallickarjun Joshi, Sanjay Das |
| B040 | Petrographic Study of Zinc Ore and Subordinate Veins and Veinlets in the North Sucuri Region, Vazante Mine, Minas Gerais - Brazil  
Poliana Vidal Salgado, Carolina Penteado Natividade Moreto, Fernando Lucas dos Santos Peixoto de Villanova |
| B041 | Geological Modelling of the North Sucuri Region, Vazante Mine, Minas Gerais - Brazil  
Poliana Vidal Salgado, Carolina Penteado Natividade Moreto, Fernando Lucas dos Santos Peixoto de Villanova |
| B042 | Geochemistry of Apatite and Biotite in Tin-Mineralized Late Triassic Granites in Bangka Island, Indonesia (Student)  
Enrico Gilrandy W. Suharjo, Ryohei Takahashi, Andrea Agangi, Syafrizal Syafrizal, Pearlyn Manalo |
| B043 | Generation of Paired Cu-Au Mineral Systems Within a Suprasubduction Zone Setting in Eastern Proterozoic Australia  
Caroline Tiddy, David Giles |
| B044 | Anglesite-Bearing Polymetallic Hydrothermal-Shear Breccia in the Paja Formation, Eastern Cordillera of Colombia (Student)  
Nicolás Tique-Ladino, María Alejandra González-Cepeda, Ariel Cadena-Sánchez, Juan Carlos Molano-Mendoza |
| B045 | Element Fluxes During Alteration in High-Sulfidation Epithermal Systems: A Case Study from the Pueblo Viejo Au-Ag(-Cu) Deposit, Dominican Republic (Student)  
Ethan R. Tonks, Jamie J. Wilkinson, Robin N. Armstrong, Yannick Buret, Andrew T. Wurst |
| B046 | IOCG Systems: Are They Just a Problem of Ore Traps?  
Fernando Tornos, Tobias Bauer, John M. Hanchar |
| B047 | Advances in Knowledge: High-Grade Cu-Au Mineralization Hosted in Tourmaline Breccias at Soledad, Peru (Student)  
Víctor J. Torres Pacheco, David R. Cooke, Lejun Zhang, Julie Hunt, Jerry Blackwell, David L. Kelley |
| B048 | Dating and Trace-Element Characterisation of Sn-W Skarn-, Greisen- and Vein-Type Occurrences from East-Greenland  
Nynke Keulen, Benjamin Heredia, Sebastian N. Malkki, Tonny B. Thomsen, Diogo R. Rosa, David Whitehead |
| B049 | The Genesis of the Zhijin REE-Phosphorite Deposit in Guizhou Province, China  
Yuling Xie, Yunwei Qu, Ziwei Li, Pei Liang |
| B050 | A New High-Precision SEM–LA-ICP-MS Sample Coordinate Integration Method  
Sebastian N. Malkki, Benjamin Heredia, Nynke Keulen, Tonny B. Thomsen |

Europe’s Metals - Historic Districts - New Opportunities

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Balázs B. Boglárka, Árpád Ádámczik, István Márton, Szabolcs Orbán

B053 Re-Assessing the Controls on Magmatic-Hydrothermal W-Sn-Cu-As-Zn-Pb Mineralisation and Zonation Associated with the Cornubian Batholith, SW England (Student)
Kiara C. Brooksby, Robin K. Shail, Jens C. Andersen, Jamie J. Wilkinson

B054 Discovery, Geology and Timing of the Nautanen North Cu-Au-Ag-(Mo) Deposit, Norrbotten, Sweden
David Drejing-Carroll, Dave Coller, Murray Hitzman, Danny Hnatyshin, Sean Johnson, Franziska D. Wilke, Robert Creaser, Adrian Boyce

B055 The Newly-Discovered Ikkari Gold Deposit: Geology and Initial Insights into the Complex Controls on a Major Orogenic Gold Deposit in The Central Lapland Belt, Finland
Craig Hartshorne, Charlotte Seabrook, Kalle-Pekka Kotiaho

B056 Developing New Soil-Based Mineralogical and Geochemical Exploration Tools for Sn, W and Li in SW England (Student)
Edward Hill, Ben Williamson, Benedikt Steiner

B057 Geological Characteristics of Özyurt Gold Deposit: The Discovery of a Shear-Hosted Orogenic Gold Deposit in the Niğde Massif, Central Türkiye
Tuna Kaskatı, Hakan Yalçıntaş, Burak Gürel, Eray Yurtseven

B058 Exploration for REEs in Historic Iron Mining Districts – a Focus on Sweden
Aiden J. Lavelle

B059 Genetic Study of the Sphalerite from Rudabánya (Student)
Kristóf Lipp, János Földessy, Gabriella B. Kiss, Attila Kasó

B060 Petrology and Geochemistry of c. 1.8 Ga Granites Linked to Skarn W-F-Mo ± Cu Mineralisation, Bergslagen District, Sweden
Edward P. Lynch, Stefan Bergman

B061 Geometallurgical Characterisation of Sediment-Hosted Cu-(Ag) Ore from the Spremburg-Graustein-Schleife Kupferschiefer Deposit, Germany (Student)
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B063 Isotope Geochemistry of Native Sulfur, a Tracer of Microbial Activity in Secondary Ore Deposits (Student)
Jesús J. Rey-Samper, César Menor-Salván, Fernando Tornos

B064 New Insights to the Characterization of the Kiruna Deposit – Contributions from Deeper Exploration
Carlos Santana, Orsolya Katali, Liz Lobo

B065 Proximal Hyperspectral Sensing for the Characterization of High-Sulfidation Epithermal Deposits: The Allumiere Quarry Test Site (Central Italy) (Student)
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B067 Piani Resinelli District: Preliminary Data on Ore Precipitation and Multiphase Diagenetic Evolution (Student)
Luca Summino, Michele Giorno, Luca Barale, Carlo Bertok, Max Frenzel, Marta Gasparri, Luca Martire

B068 How Fluids Make or Break Critical Metal Deposits: The Ivigtut Cryolite Body, SW Greenland (Student)
Anna Szreter, Adrian A. Finch, Henrik Friis, Xiaoming Liu, Finlay M. Stuart

B069 Sulfide Mineralogy and Cobalt Deportment at the Viscaria Cu-Fe Deposit, Kiruna District, Northern Sweden (Student)
Koray Tasbicen, Marcello Imaña, William X. Chávez, Jr.

B070 The Origin of Stratabound Scheelite: The Future Resource for Europe?
Iñigo Borrajo, Fernando Tornos

**Gold - Responsible Discovery and Mining in the 21st Century**

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Kelvin d. Alves, Juan G. Barreiro, Santos B. Sánchez, Lorena O. Menor, José M. Marchena

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Santos Barrios Sánchez, Rafael Pablo Lozano Fernández, Juan Gómez Barreiro, Raul Merine-ro Palomares, Mercedes Suárez Barrios, Kelvin dos Santos Alves

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Andrés Canales, Juan Pablo Radic, Diego Guido

B077 Geochronology of the Tocota Pluton and Au-Cu-Ag Mineralization of the San Francisco de Los Andes Quartz-Tourmaline Breccia, SW San Juan, Argentina (Student)
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B082 Scheelite and Zircon U-Pb Dating Reveals Two Discrete Gold Mineralization Events at the Zaozigou Deposit, West Qinling Orogen, China (Student)
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Anar Valiyev, Stephen J. Westhead, Javid Ibrahimov, Aydin Bayramov, Sabuhi Mammadov, ərzuman Rizvanoğlu

B085 Characteristics of Geology, Mineralization and Alteration of Khan Altai Gold Deposit, Mongolia (Student)
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B086 Polymetallic Au-Rich Melts in Hydrothermal Systems and Their Roles in Gold Enrichment
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B087 Geology of the Golddigger Intrusion-Related Gold Deposit in British Columbia, Canada (Student)
Randall Karcher, Thomas Monecke, James Reynolds, Russell Ashton, manuele Lazzarotto, Bill Chornobay

B088 Trace Element Compositions of Placer Gold Samples: Implication for Gold Exploration in Northern Cameroon
Yanick Blaise Ketchaya, Taofa Zhou

B089 Ore-Forming Process of Basalt-Hosted Carlin-Type Gold Deposits, Western Guizhou Province, China
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B090 Structural Controls and Timing of Orogenic Gold Mineralisation in the Baie Verte Peninsula of Newfoundland, Canada (Student)
Georgian Manuc, Taija Torvela, Rob Chapman, Nick Roberts, David Copeland, Simon Tapster

B091 Fluid Evolution and Carbon-Gold Systematics at the Fairview Mine, Barberton Greenstone Belt, South Africa (Student)
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B093 Chromium- and Vanadium-Bearing Phyllosilicates at the Kerr-Addison Gold Deposit, Virginia town, ON: Implications for the Sources and Mobilities of Cr and V in Gold Deposits (Student)
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B094 Gold Source and Ore-Forming Process of the Linglong Gold Deposit, Jiaodong Gold Province, China
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Carlos Marquardt, Tomás Roquer, Felipe del Valle, José Joaquínara Jara

B096 Compositional Characterization of Placer and Lode Gold Grains from Eastern Interior Alaska, USA
Erin E. Marsh, Robert J. Chapman, Renee Pillers, Heather Lowers, Ryan D. Taylor

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William Miguel, Stephen Hughes

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Raul Montesinos, Zhaoshan Chang, Juan Carlos Castelli

B101 Gold Targeting at the Kalimva Deposit, Kibali Gold District: Hydrothermal Alteration Vectors Interpreted from Multi-Approach Analyses (Student)
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B104 Structural Controls of Gold Mineralization in Southwest Ghana: The Iduapriem Gold Mine (Pit 5) (Student) 
Newman T. Odonkor

B105 The Formation of Auriferous Jasperoid Under the Control of Multi-Stage Tectonism at Tavsan, Kutahya, Western Turkey (Student) 
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Renata A. Paes, Maria J. Mesquita, Thomas Blenkinsop, Guilherme M. Primo

B107 Temporal and Genetic Relationships Between Gold Mineralization, Magmatism, and Deformation: The Neoarchean Windfall Gold Deposit, Northern Abitibi, Canada 
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Maxwell L. Porter, Iain McDonald, Tristan English

B109 Evaluation of the Potential Intrusion-Related Gold System (IRGS) of the Urcos-Sicuani-Ayaviri Structural Corridor System in Santiago de Pupuja, Puno, Peru (Student) 
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B110 Ore Mineralogy and U-Pb and Re-Os Geochronology in the Ikkari Gold Camp, Central Lapland Belt, Northern Finland 
Jukka-Pekka Ranta, Wäinö Wacklin, Charlotte Seabrook, Holly Stein, Ramiro Lenarduzzi, Matti Kurhila

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B112 Gold Exploration Through Integrating Machine Learning, Remote Sensing, Aeromagnetic, and Spectrometric Gamma-Ray Data. A Case Study from the Egyptian Eastern Desert (Student) 
Ali Shebl, Árpád Csámer

B113 Disseminated Orogenic Gold Mineralization in High-Grade Metamorphic Turbidites of the Central Zone of the Damara Belt, Namibia: Controls and Characteristics (Student) 
Josia Shilunga, Alexander Kisters

B114 Geochemistry of Felsic Rocks in the Yanıklı Prospect, Artvin District, Eastern Pontides, Turkey: Fertility and Implications for Mineral Exploration (Student) 
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B115  Geology and Gold Mineralization of the La Debo Permit, Southwestern Côte D’ivoire, West Africa
*G. Doma Sorho, Sarah F. Pein, Vagne Kouakou, Sihle Gqoboka, Geoffrey Howarth, Robert Kiefer, Lynnette Greyling*

B116  Measure Twice - Rochford-Homestake Gold, South Dakota, USA
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*Anar Valiyev, Stephen J. Westhead, Aydin Bayramov, Sabuhi Mammadov, Javid Ibrahimov, Shakir Gadimov, Samir Mursalov*

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*Lauren R. Zeeck, Thomas Monecke, T. J. Reynolds, Katharina Pfaff, Nigel M. Kelly*
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