



Whistler 2013: Geoscience for Discovery  
September 24-27, 2013 • Whistler, BC



resourcing the future

**BHP Billiton is proud to support 'Whistler 2013: Geoscience for Discovery' (SEG 2013), hosted by the Society of Economic Geologists and the SEG Canada Foundation.**

BHP Billiton is the world's leading diversified resources company. With a world-class portfolio of large, long-life, low-cost, expandable, upstream assets, excellence in geoscience is critical to our exploration and resource development activities.

People are the foundation of our business and underpin our success. With a global team of over 100,000 employees and contractors located at more than 100 locations across the world, we offer unparalleled opportunities to work across disciplines, geographies and cultures. We strive for excellence and are committed to working in ways that are true to *Our BHP Billiton Charter* values of Sustainability, Integrity, Respect, Simplicity, Accountability and Performance. This ensures our people start each day with a sense of purpose and end the day with a sense of accomplishment.

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resourcing the future

whistler



Photo: Brian Kornichuk



## Tuesday

### Welcome Reception

17:30 – 19:00  
Exhibit Hall, Upper Level

## REGISTRATION

### Grand Foyer, Upper Level

Tuesday: 14:00 – 19:00  
Wednesday: 07:00 – 16:30  
Thursday: 07:30 – 16:30  
Friday: 07:30 – 17:30

## EXHIBITION

### Ballrooms B/C & Grand Foyer, Upper Level (Exhibit Hall)

Tuesday: 17:30 – 19:00  
Wednesday: 09:00 – 18:00  
Thursday: 09:00 – 18:00  
Friday: 09:00 – 16:10

\*Visit BHP Billiton's Exhibit for a specialty coffee.

## POSTER VIEWING

### Exhibit Hall, Upper Level

Wednesday: 12:45 – 13:30  
16:30 – 18:00  
Thursday: 12:45 – 13:30  
16:30 – 18:00  
Friday: 12:45 – 13:30  
14:50 – 16:10

## SPEAKER READY ROOM

### Tantalus, Lower Level

Tuesday: 16:00 – 19:00  
Wednesday: 07:00 – 17:30  
Thursday: 07:30 – 17:30  
Friday: 07:30 – 14:00

## PHONE APP

Phone App: **SEG2013**

## INTERNET CAFE

### Valley Foyer, Lower Level

Wednesday–Friday:  
07:15 – 18:00



## WIFI

Network: SEG Network  
Password: **whistlercc**

All sessions are held at the Whistler Conference Centre unless noted otherwise.

## Wednesday

### Refreshments

07:15 – 07:45 | Exhibit Hall, Upper Level

### Welcome and Sessions O1

#### Tectonics, Terranes and Metallogeny – The Geoscience Building Blocks

*Session Chairs: Maurice Colpron & John Chapman*

07:45 – 11:50 | Ballroom A, Upper Level

See page 11 for session titles and speakers

### Refreshment Break

10:00 – 10:30 | Exhibit Hall, Upper Level

### Poster Introduction

11:50 – 12:00 | Ballroom A

### Lunch

12:00 – 12:45 | Exhibit Hall, Upper Level

### Poster Viewing with Authors present

12:45 – 13:30 | Exhibit Hall

### Concurrent Sessions O2

#### Russia – China – Mongolia

*Session Chairs: Peter Lewis & Nikolay Goryachev*

13:30 – 16:30 | Rainbow Theatre, Lower Level

See page 13 for session titles and speakers

### Concurrent Sessions O3

#### Arc Terranes: Cu-Mo-Au-Ag

*Session Chairs: Jim Lang & Mike Roberts*

13:30 – 16:30 | Ballroom A, Upper Level

See page 14 for session titles and speakers

### Refreshment Break

14:50 – 15:10 | Exhibit Hall, Upper Level

### Poster Viewing with Authors present & Happy Hour

16:30 – 18:00 | Exhibit Hall, Upper Level

### SEG Awards Reception & Dinner

19:00 – 22:00 | Ballroom A, Upper Level

## Thursday

### Refreshments

07:15 – 08:10 | Exhibit Hall, Upper Level

### Sessions O4

#### Metallogenic Provinces and Belts – Regional and Deposit Controls

*Session Chairs: Ross Sherlock & Paul Dobak*

08:10 – 11:50 | Ballroom A, Upper Level

See page 16 for session titles and speakers

### Refreshment Break

10:00 – 10:30 | Exhibit Hall, Upper Level

### Poster Introduction

11:50 – 12:00 | Ballroom A

### Lunch

12:00 – 12:45 | Exhibit Hall, Upper Level

### Poster Viewing with Authors present

12:45 – 13:30 | Exhibit Hall

### Concurrent Sessions O5

#### Western North America

*Session Chairs: Ron Britten & Ian Graham*

13:30 – 16:30 | Ballroom A, Upper Level

See page 18 for session titles and speakers

### Concurrent Sessions O6

#### Continental Margins: Zn-Pb-Ag-Au, U

*Session Chairs: Sarah Gleeson & Andrew Davies*

13:30 – 16:30 | Rainbow Theatre, Lower Level

See page 19 for session titles and speakers

### Refreshment Break

14:50 – 15:10 | Exhibit Hall, Upper Level

### Poster Viewing with Authors present & Happy Hour

16:30 – 18:00 | Exhibit Hall, Upper Level

### BHP Billiton Student Networking Event

17:30 – 19:00 | Garibaldi, Lower Level

### SEG Special Event

18:30 – 22:00 | Brewhouse (See map on pg 1)

## Friday

### Refreshments

07:15 – 08:10 | Exhibit Hall, Upper Level

### Sessions O7

#### Exploration, Discovery and Deposits

*Session Chairs: Dean McDonald & Diane Nicholson*

08:10 – 11:50 | Ballroom A, Upper Level

See page 22 for session titles and speakers

### Refreshment Break

10:00 – 10:30 | Exhibit Hall, Upper Level

### Poster Introduction

11:50 – 12:00 | Ballroom A

### Lunch

12:00 – 12:45 | Exhibit Hall, Upper Level

### Poster Viewing with Authors present

12:45 – 13:30 | Exhibit Hall

### Sessions O8

#### Exploration, Discovery and Deposits

*Session Chairs: Tim Beale & John Barr*

13:30 – 17:35 | Ballroom A, Upper Level

See page 23 for session titles and speakers

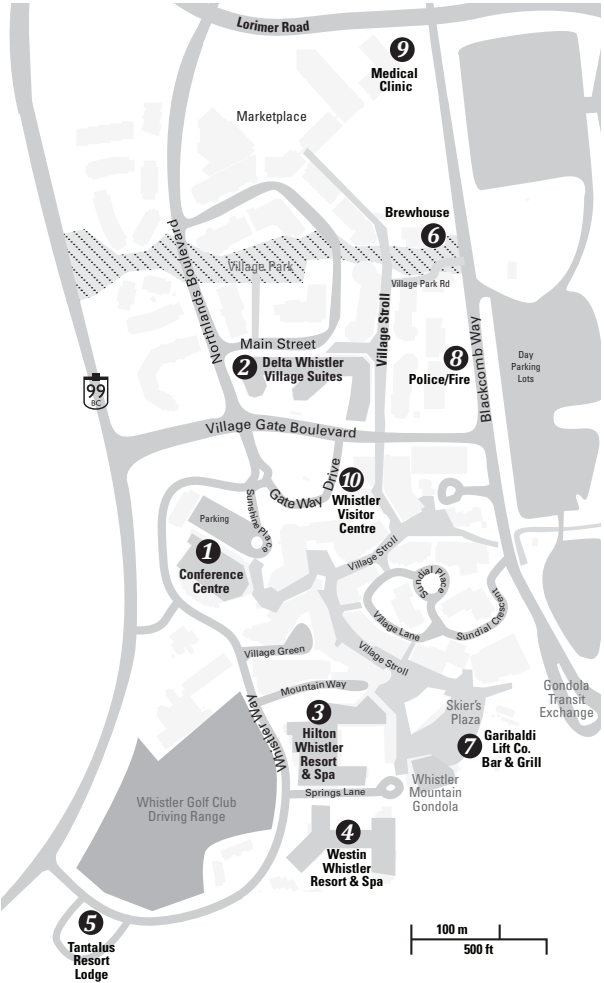
### Refreshment Break & Poster Viewing with Authors present

14:50 – 16:10 | Exhibit Hall, Upper Level

### Farewell Social Event & SEG Student Awards

17:35 – 20:00 | Garibaldi Lift Company  
(See map on pg 1)

# Whistler Village



- |   |   |
|---|---|
| <p><b>1. Whistler Conference Centre</b><br/>4010 Whistler Way<br/>604 932 3928</p> <p><b>2. Delta Whistler Village Suites</b><br/>4308 Main Street<br/>604 905 3987</p> <p><b>3. Hilton Whistler Resort &amp; Spa</b><br/>4050 Whistler Way<br/>604 932 1982</p> <p><b>4. Westin Whistler Resort &amp; Spa</b><br/>4090 Whistler Way<br/>866 412 2864</p> <p><b>5. Tantalus Resort Lodge</b><br/>4200 Whistler Way<br/>604 932 4146</p> | <p><b>6. Brewhouse</b><br/>4355 Blackcomb Way<br/>604 905 2739</p> <p><b>7. Garibaldi Lift Co. Bar &amp; Grill</b><br/>4165 Springs Lane<br/>604 905 2220</p> <p><b>8. Police/Fire Station</b><br/>4315 Blackcomb Way<br/>604 932 3044</p> <p><b>9. Medical Clinic</b><br/>4380 Lorimer Rd<br/>604 932 3977</p> <p><b>10. Whistler Visitor Centre</b><br/>4230 Gateway Drive<br/>604 935 3357</p> |
|---|---|



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*Photos courtesy of Tourism Whistler and SEG.*



## Welcome!

**We enthusiastically welcome you to the SEG / SEG Canada Foundation 2013 Conference in Whistler!**

The concept for this Conference has deep roots dating back to the 1998 “Pathways to Discovery” Conference in Vancouver. This was the first and only time that the SEG and AMEBC (formerly the BC and Yukon Chamber of Mines) collaborated, the result being an exceptional mix of research approaches for an industry-savvy and international audience, thus stimulating a new dialogue on mineral exploration strategies and techniques.

Whistler 2013 continues this tradition with its “Geoscience for Discovery” theme which emphasizes the importance of tectonic, regional and district scale geological approaches to mineral exploration. Cordilleran regions in particular have benefited from an explosion of research and understanding of terrane concepts and orogenic processes which are the underpinnings of regional metallogeny and the first layer of knowledge required for exploration decision making.

This Conference brings together industry, university and geological survey researchers and professionals in the minerals sector to explore their passion for Cordilleran tectonics and metallogeny, with an emphasis on the northern Pacific Rim.

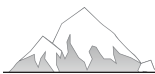
Our sincerest thanks go to our sponsors, who have been incredibly generous in ensuring the success of Whistler 2013. Because of their contributions, a large contingent of top international students in economic geology will participate in the Conference and many other students will benefit from ongoing programs run by the SEG and SEG Canada Foundation.

On behalf of the Organizing Committee and numerous volunteers, we welcome you to Whistler 2013 in the magnificent Canadian Cordillera.

—**Gerry Carlson**, *Conference Co Chair, President, SEG Canada Foundation; Vice President Exploration, Pacific Ridge Exploration Ltd.*

—**Craig Hart**, *Conference Co Chair, Director, Mineral Deposit Research Unit, University of British Columbia*

—**Brian Hoal**, *Executive Director, Society of Economic Geologists*



## SEG & SEG Canada Foundation

The Society of Economic Geologists (SEG) serves 6,500+ members worldwide who are committed to advancing the science and the discovery of mineral resources through research, publications, courses, and field trips.

SEG Canada Foundation was established in 2000 to facilitate charitable contributions by Canadians and Canadian corporations to support innovative research and education in economic geology by students at Canadian institutions.



### Thank You

Thank you to the Conference Executive Committee and the Conference Organizing Committee for planning Whistler 2013.

### Conference Executive Committee

- Gerry Carlson, Conference Co Chair, President, SEG Canada Foundation; Vice President Exploration, Pacific Ridge Exploration Ltd.
- Craig Hart, Conference Co Chair, Director, Mineral Deposit Research Unit, University of British Columbia
- Brian Hoal, SEG Representative, Executive Director, Society of Economic Geologists
- John Thompson, Technical Program Chair, PetraScience Consultants Inc.
- Murray Hitzman, Technical Program Associate Chair, Charles F. Fogarty Professor of Economic Geology, Colorado School of Mines
- Ian Walton, Treasurer, Executive VP & CFO, Aurizon Mines Ltd.

### Conference Organizing Committee

- Tim Beale, President, Iron Creek Capital Corporation
- Ron Britten, Vice President, First Point Minerals Corporation
- Maurice Colpron, Yukon Geological Survey
- Paul Dobak, Chief Geologist - North America, Barrick Gold Exploration Inc.
- Peter Lewis, Vice President, Exploration, Eldorado Gold Corporation
- Dan Marshall, Professor, Simon Fraser University
- Dean McDonald, Vice President, Exploration, Hecla Mining Company
- Steve Robertson, Vice President, Corporate Affairs, Imperial Metals Corporation
- Stephen Rowins, Chief Geologist & Executive Director, British Columbia Geological Survey
- Ross Sherlock, Explorations Manager, Gold Fields
- Kirstie Simpson, VP, Minerals Research, Geoscience BC

Whistler 2013 expresses its sincere appreciation to the many volunteers who have dedicated their time and support in helping host the Conference.

### Contact SEG

7811 Shaffer Parkway, Littleton, CO, USA 80127-3732

T: +1 720 981 7882

E: [seg@segweb.org](mailto:seg@segweb.org)

W: [segweb.org](http://segweb.org)

### Contact SEG Canada Foundation

P.O. Box 48113, Bentall Centre, 595 Burrard Street

Vancouver, B.C., Canada V7X 1N8

E: [segcanadafoundation@gmail.com](mailto:segcanadafoundation@gmail.com)

### Contact the Conference Organizer

Sea to Sky Meeting Management Inc.

Suite 206, 201 Bewicke Avenue

North Vancouver, B.C., Canada V7M 3M7

T: +1 604 984 6448

E: [seg2013@seatoskymeetings.com](mailto:seg2013@seatoskymeetings.com)

W: [seatoskymeetings.com](http://seatoskymeetings.com)



## Conference Information

### Internet Cafe

The Internet Cafe is located in the Valley Foyer, Lower Level. Six workstations are available for your use. Please limit your time on these computers if others are waiting. The Internet Cafe is open during the following hours:

Wednesday: 07:15 – 18:00

Thursday: 07:15 – 18:00

Friday: 07:15 – 18:00

### Networking Lounge

Garibaldi B on the Lower Level is available for informal meetings and networking. This is a quiet space where you can meet with other Conference participants throughout the Conference. The Networking Lounge is open during the following hours:

Wednesday: 08:00 – 16:30

Thursday: 08:10 – 15:30

Friday: 08:10 – 17:30

### Registration

The Registration Desk is located in the Grand Foyer, Upper Level and is open during the following hours:

Tuesday: 14:00 – 19:00

Wednesday: 07:00 – 16:30

Thursday: 07:30 – 16:30

Friday: 07:30 – 17:30

### Speaker Ready Room

The Speaker Ready Room is located in the Tantalus Room, Lower Level and is open during the following hours:

Tuesday: 16:00 – 19:00

Wednesday: 07:00 – 17:30

Thursday: 07:30 – 17:30

Friday: 07:30 – 14:00

Speakers need to submit their presentation on a memory stick to the Speaker Ready Room the day prior to their presentation. Memory sticks should be clearly labelled with the name of the speaker and a contact number in Whistler.

### Conference Evaluation Survey

We rely on your feedback to improve future SEG conferences. You will receive a link to an online evaluation survey via email following the Conference. Please take a few minutes to complete it.

### Liability

The liability of Whistler 2013 organizers, for whatever legal reason, shall be limited to intent and gross negligence. The liability of commissioned service providers shall remain unaffected by this. Conference Participants take part in Whistler 2013 at their own risk. Oral agreements shall not be binding if they have not been confirmed in writing by SEG or its agents.

### Name Badge

Your name badge is required for admission to all sessions and events.

### Phone App

The Phone App will allow you to plan and build a personalized schedule for the Conference. Simply search for **SEG2013** in your App store of choice.

### Student Awards

Student Awards will be presented during the Farewell Social Event on Friday evening. Presentations and Posters presented by students will be eligible for an award.

### Sponsored by:



### WiFi Internet

Free WiFi internet is offered in the Exhibit Hall and Grand Foyer, Upper Level.

Network: **SEG Network**

Password: **whistlercc**





# Pre-Conference Program

Friday, September 20 to Tuesday, September 24


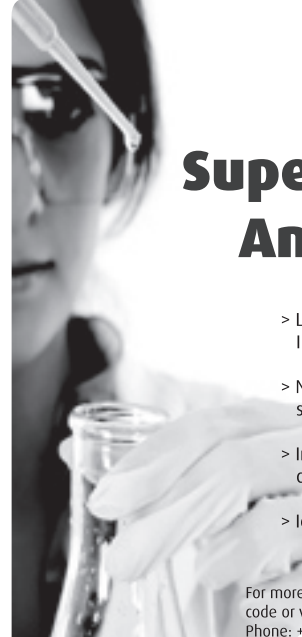
## Pre-Conference Field Trips

**Alaska: Tour of advanced and historic gold deposits in eastern Alaska** September 20 – 24

Guides: Curt Freeman, Tom Bundtzen

**Vancouver Island – Myra Falls: Mine tour of Myra Falls with field stops to visit local outcrops of interest in Sicker Group volcanics** September 21 – 24


Guides: Rick Sawyer, Tyler Ruks

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## Pre-Conference Short Courses

**Gold Deposits: Their Structure and Setting** September 23 – 24

David Rhys, Panterra Geoservices Inc.

*Sponsored by:*



**Understanding Alteration: Use in Exploration and Development** September 23 – 24

**Course Leaders:**

Anne Thompson, PetraScience Consultants Inc.

John Thompson, PetraScience Consultants Inc.

**Course Presenters:**

Bruce Gemmill, Centre of Excellence in Ore Deposits (CODES), University of Tasmania

James Lang, Hunter Dickinson Inc.

Melissa Gregory, Mineral Deposit Research Unit, University of British Columbia

Andrew Davies, Teck Resources Limited

*Sponsored by:*



**Exploration Geochemistry** September 23 – 24

Dave Heberlein, Heberlein Geoconsulting

Fred Blaine, ioGlobal

Pim VanGeffen, ioGlobal

Lynda Bloom, Analytical Solutions Ltd.

Barry Smee, Smee and Associates Consulting Ltd.

Chris Benn, Goldfields Canada

Colin Dunn, Colin Dunn Consulting Inc.

Peter Bradshaw, First Point Minerals Corp.

**Exploration Geophysics** September 23 – 24

Peter Kowalczyk, Mira Geoscience

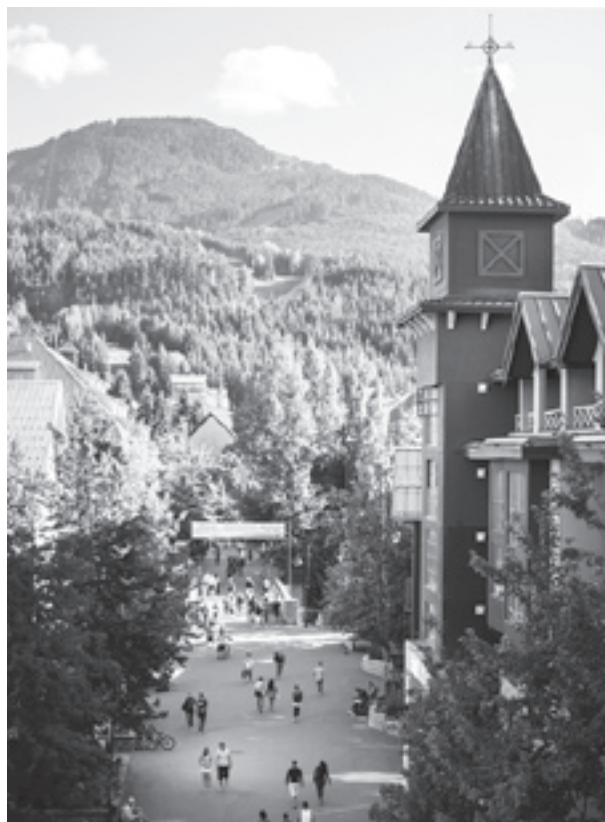
Nigel Phillips, Mira Geoscience

## Tuesday

**Welcome Reception** Exhibit Hall, Upper Level | 17:30 – 19:00

Conference Participants and their guests who have pre-registered are welcome to attend.

Sponsored by:



## Wednesday

*Notes: The Session # (e.g. O1.1) refers to the Abstract # online at [seg2013.org](http://seg2013.org).*

*Student presentations are indicated with an asterisk (\*) next to the session number.*

**Refreshments** Exhibit Hall, Upper Level | 07:15 – 07:45

**Introduction & Welcome** Ballroom A, Upper Level | 07:45 – 08:10

**Gerry Carlson**, Conference Co Chair, President, SEG Canada Foundation; Vice President Exploration, Pacific Ridge Exploration Ltd.

**Craig Hart**, Conference Co Chair, Director, Mineral Deposit Research Unit, University of British Columbia

**Alex Christopher**, Vice President, Exploration, Teck Resources Limited

**John Thompson**, Technical Program Chair, PetraScience Consultants Inc.

**Sessions O1** Ballroom A, Upper Level | 08:10 – 10:00

### Tectonics, Terranes and Metallogeny – The Geoscience Building Blocks

**Session Chairs:** Maurice Colpron, Yukon Geological Survey and John Chapman, Geological Survey of Canada (GSC)

Sponsored by:



08:10 – 08:40 01.1

#### KEYNOTE: Large Igneous Provinces (LIPs) and Metallogeny

Richard Ernst, Carleton University, Canada

08:40 – 09:05 01.2

#### Tectoids: From Columbia through Pangea to the Present

Alexander Yakubchuk, Orsu Metals Corporation, United Kingdom

*Sessions O1 cont'd*



09:05 – 09:30 01.3

**Tectonic and Metallogenic Styles of Late Mesozoic Orogenic Belts Along the North Asia Craton Margin (Eastern Russia and Mongolia)**

Nikolay Goryachev, North East Interdisciplinary Scientific Research Institute FEB RAS, Russia

09:30 – 10:00 01.4

**Keynote: Tectonics and Metallogeny: The Cordillera of British Columbia, Yukon and Alaska**

JoAnne Nelson, BC Geological Survey, Canada

**Refreshment Break** Exhibit Hall, Upper Level | 10:00 – 10:30*Sponsored by:***RioTinto****Sessions 01 (cont'd)** Ballroom A, Upper Level | 10:30 – 11:50

10:30 – 10:55 01.5

**Cretaceous to Tertiary Tectonic and Metallogenic Evolution of the Coast Belt in the Northern Cordillera**

Steve Israel, Yukon Geological Survey, Canada

10:55 – 11:20 01.6

**Tectonic Evolution and Cretaceous Gold Metallogensis in Southwestern Alaska – A Review**

Garth Graham, US Geological Survey, USA

11:20 – 11:50 01.7

**KEYNOTE: Exploration – Evolving to Meet Changing Environments**

Tom Albanese, Rio Tinto Exploration Pty Ltd, Australia

**Poster Introduction** Ballroom A, Upper Level | 11:50 – 12:00**Chair:** Dan Marshall, Simon Fraser University**Co Chairs:** Tim Baker, Eldorado Gold Corporation and Victoria Sterritt, Teck Resources Limited**Lunch** Exhibit Hall, Upper Level | 12:00 – 12:45*Sponsored by:***RioTinto****Poster Viewing with Authors present** Exhibit Hall, Upper Level  
12:45 – 13:30*Sponsored by:***Refreshment Break**

The O2 and O3 Concurrent Sessions will have a refreshment break at 14:50, located in the Exhibit Hall, Upper Level.

*Sponsored by:***CONCURRENT SESSIONS: 02 or 03** 13:30 – 16:30**Sessions 02** Rainbow Theatre, Lower Level**Russia – China – Mongolia****Session Chairs:** Peter Lewis, Eldorado Gold Corporation and Nikolay Goryachev, North East Interdisciplinary Scientific Research Institute FEB RAS, Russia*Sponsored by:*

13:30 – 14:00 02.1

**Construction of the Asian Continent and Evolution of Its Gold Provinces**

Richard Goldfarb, US Geological Survey, USA

*Sessions 02 cont'd*

14:00 – 14:25 02.2

**Tectonic and Metallogenic Development of Mongolia**

Rodney Graham, Ogallal Exploration LLC, USA

14:25 – 14:50 02.3

**The VMS Deposits of Rudny Altai**

Konstantin Lobanov, Orsu Metals Corp., United Kingdom

15:10 – 15:40 02.4

**KEYNOTE: Jurassic to Cretaceous Gold****Metallogeny of Northeastern China**

Gregory Collins, Eldorado Gold, China

15:40 – 16:05 02.5

**Major Types and Time-space Distribution of Mesozoic Ore Deposits in South China and Their Geodynamic Setting**

Jingwen Mao, Chinese Academy of Geological Sciences, China

16:05 – 16:30 \*02.6

**The Jiaodong Gold District and the Importance of Magmatic Exploration Geochemistry in an Orogenic Setting**

Stephanie Mills, Monash University, Australia

**Sessions 03****Ballroom A, Upper Level****Arc Terranes: Cu-Mo-Au-Ag****Session Chairs:** James Lang, Hunter Dickinson Inc. and Mike Roberts, Kiska Metals Corporation

13:30 – 14:00 03.1

**KEYNOTE: Lithospheric Fertilization and Mineralization by Arc Magmas: Genetic Links and Secular Differences Between Porphyry Copper±Molybdenum±Gold and Iron Oxide-Copper-Gold Deposits**

Jeremy Richards, University of Alberta, Canada

14:00 – 14:25 03.2

**Volcano Tectonic Setting of World-class Alkalic Porphyry and Epithermal Au ± Cu Deposits of the SW Pacific**

Anthony Harris, Newcrest Mining Ltd, Australia

14:25 – 14:50 \*03.3

**Magmatic Evolution During Flattened Subduction and High-sulfidation Epithermal Ore Deposition: Quimsacocha Volcanic Center, Azuay Province, Ecuador**

Peter MacDonald, Mineral Deposit Research Unit, University of British Columbia, Canada

15:10 – 15:40 03.4

**KEYNOTE: Tectonomagmatic Controls on Porphyry Mineralization: Geochemical Evidence from the Black Mountain Porphyry System, Philippines**

Pete Hollings, Lakehead University, Canada

15:40 – 16:05 03.5

**Exploring for Porphyry and High Sulfidation Epithermal Cu-Au Deposits beneath Lithocaps in the Philippines**

Ingemar Arellano, Freeport McMoRan Exploration Corp., Philippines

16:05 – 16:30 03.6

**Geology, Alteration, and Mineralisation of the Giant Wafi-Golpu Deposit, Morobe Province, Papua New Guinea**

Marc Rinne, University of Tasmania, Australia

**Poster Viewing with Exhibit Hall, Upper Level**  
**Authors present & Happy Hour 16:30 – 18:00**

Happy Hour is complimentary for Conference Participants.

*Sponsored by:*

**SEG Awards Reception & Dinner Ballroom A, Upper Level**  
**19:00 – 22:00**

The Awards Dinner is a ticketed event. Please bring your Awards Dinner ticket with you to the event for admission.

*Sponsored by:*

## Thursday

**Refreshments** Exhibit Hall, Upper Level | 07:15 – 08:10

**Sessions 04** Ballroom A, Upper Level | 08:10 – 10:00

### Metallogenic Provinces and Belts – Regional and Deposit Controls

**Session Chairs:** Ross Sherlock, Gold Fields and  
Paul Dobak, Barrick Gold Exploration Inc.

*Sponsored by:*



**BARRICK**  
EXPLORATION

08:10 – 08:40 04.1

#### KEYNOTE: Cretaceous-Cenozoic Geological Setting of Carlin Deposits in Nevada: Constraints from Patterns of Regional Exhumation and Advective Heat Flow

Kenneth Hickey, Mineral Deposit Research Unit,  
University of British Columbia, Canada

08:40 – 09:05 \*04.2

#### From the Outside Looking In: Vectoring Fluid Flow in Carlin-type Gold Deposits Using Light Stable Isotopes

Jeremy Vaughan, Barrick Gold Corp., USA

09:05 – 09:30 04.3

#### Close Time-spatial Relationships among Diverse Quartz- adularia Au+Ag Veins, Quartz-alunite Au+Ag+Cu Deposits and Alteration Zones and Stratiform S<sup>o</sup> Deposits in Miocene Volcanic Fields, CA-NV, USA

Peter Vikre, US Geological Survey, USA

09:30 – 10:00 04.4

#### KEYNOTE: Under Saturated Alkalic Porphyry Deposits of BC – Field Characteristics and Exploration Criteria et al: BC (Alkaline) Porphyry

Claire Chamberlain, Teck Resources Limited, Chile

**Refreshment Break** Exhibit Hall, Upper Level | 10:00 – 10:30

*Sponsored by:*

**Teck**

**Sessions 04 (cont'd)** Ballroom A, Upper Level | 10:30 – 11:50

10:30 – 10:55 04.5

#### Tectonic Preconditioning and the Formation of Giant Porphyry Deposits

Simon Richards, James Cook University, Australia

10:55 – 11:20 04.6

#### Metallogenic Provinces and Epochs of Mexico

Antoni Camprubi, Instituto de Geología, Universidad  
Nacional Autónoma de México, Mexico

11:20 – 11:50 04.7

#### The Silver Metallogeny of Mexico: Flotsam of the Perfect Tectonic Storm?

Peter Megaw, MAG Silver-IMDEC Inc., USA

**Poster Introduction** Ballroom A, Upper Level | 11:50 – 12:00

**Chair:** Dan Marshall, Simon Fraser University

**Co Chairs:** Suzanne Paradis, Geological Survey Canada and  
Ben Whiting, Orko Silver

**Lunch** Exhibit Hall, Upper Level | 12:00 – 12:45

*Sponsored by:*

**newgold**  
a clear direction

**Poster Viewing with  
Authors present** Exhibit Hall, Upper Level  
12:45 – 13:30

**Refreshment Break**

The 05 and 06 Concurrent Sessions will have a refreshment break at 14:50, located in the Exhibit Hall, Upper Level.

*Sponsored by:*




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**CONCURRENT SESSIONS: 05 or 06** **13:30 – 16:30**


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**Sessions 05** **Ballroom A, Upper Level**
**Western North America**

**Session Chairs:** Ron Britten, First Point Minerals Corporation and Ian Graham, Discovery Harbour Resources Corporation

13:30 – 14:00 **05.1**

**KEYNOTE: Metallogenic Framework for the White Gold and Dawson Range Districts of West-central Yukon and Eastern Alaska**

Murray Allan, Mineral Deposit Research Unit,  
University of British Columbia, Canada

14:00 – 14:25 **05.2**

**The Flame Discovery, Keno Hill District, Yukon**

Alan McOnie, Alexco Resource Group, Canada

14:25 – 14:50 **\*05.3**

**Porphyry Cu-Mo Exploration of the Hualapai Mountains, Northwest Arizona, USA**

Kevin Meazell, University of Nevada, USA

15:10 – 15:40 **05.4**

**Geology, Geochemistry and Age of Intrusion-Related Mineralisation in Eastern Mexico**

Morgan Poloquin, Almaden Minerals Ltd., Canada

15:40 – 16:05 **\*05.6**

**Tracking the Source and Evolution of Gold-mineralizing Fluids in the Carlin and Battle Mountain – Eureka Trends, Great Basin, Nevada**

Edine Bakker, Institute of Geochemistry and Petrology, ETH Zurich, Switzerland

16:05 – 16:30 **05.7**

**Geology of the Morelos Skarn-hosted Gold and Gold-copper-silver Deposits, Guerrerro State, Mexico**

Alejandro Kakarieka, Torex Gold Resources Inc., Canada

**Sessions 06****Rainbow Theatre, Lower Level****Continental Margins: Zn-Pb-Ag-Au, U**

**Session Chairs:** Sarah Gleeson, University of Alberta and Andrew Davies, Teck Resources Limited

13:30 – 14:00 **06.1**

**KEYNOTE: SEDEX Deposits in the Northern Cordillera: Where Are We in the Basin, and What Role Does Water Column Euxinia Really Play?**

Sarah Gleeson, University of Alberta, Canada

14:00 – 14:25 **\*06.2**

**Genesis and Structural Architecture of the CSA Cu-Ag Mine, Cobar, NSW, Australia**

Roisin Kyne, University of Tasmania, Australia

14:25 – 14:50 **06.3**

**Revised Geologic and Metallogenic View of the Carbonate-hosted Nanisivik Zinc District, Nunavut, Canada**

Elizabeth Turner, Laurentian University, Canada

15:10 – 15:40 **06.4**

**An Overview of the Structure, Stratigraphy and Zn-Pb-Ag Deposits of the Red Dog District, Northwestern Alaska**

Scott Blevings, Teck Resources Limited, Canada

15:40 – 16:05 **\*06.5**

**Sedimentary Rock Hosted Stratiform Copper-silver Mineralization: Timing, Fluid-flow and Deposit Genesis in the Redstone Copperbelt, Northwest Territories, Canada**

Jack Milton, University of British Columbia, Canada

16:05 – 16:30 **06.6**

**Carbonatites in Western North America – Occurrences, Metallogeny and Exploration Strategies**

Leo Millonig, University of British Columbia, Canada

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**Poster Viewing with** **Exhibit Hall, Upper Level**  
**Authors present & Happy Hour** **16:30 – 18:00**


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Happy Hour is complimentary for Conference Participants.

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**BHP Billiton Student  
Networking Event**Garibaldi, Lower Level  
17:30 – 19:00

Registered Student Conference Participants are welcome to attend.

*Sponsored by:***SEG Special  
Event**Brewhouse, 4355 Blackcomb Way (map on pg.1)  
18:30 – 22:00

The SEG Special Event is a ticketed event. Please bring your SEG Special Event ticket with you to the event for admission.

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## Friday

**Refreshments** Exhibit Hall, Upper Level | 07:15 – 08:10

**Sessions 07** Ballroom A, Upper Level | 08:10 – 10:00

### Exploration, Discovery and Deposits

**Session Chairs:** Dean McDonald, Hecla Mining Company and Diane Nicholson, Hunter Dickinson Inc.

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## RioTinto

08:10 – 08:40 07.1

### KEYNOTE: Anglo American Exploration – A Decade of Discovery

Graham Brown, SEG, United Kingdom

08:40 – 09:05 07.2

### The Brucejack High-grade Gold Project

Warwick Board, Pretium Resources Inc., Canada

09:05 – 09:30 07.3

### Mapping the Hydrothermal Plume of Porphyry Cu Deposits Using Litho geochemistry and SWIR Mineralogy

Richard Tosdal, PicachoEx LLC, USA

09:30 – 10:00 07.4

### KEYNOTE: Goldrush – Discovery Details and Some Lessons Learned from the Latest Giant Gold Deposit Discovered in Nevada

Kevin Creel, Barrick Gold Corp., Chile

**Refreshment Break** Exhibit Hall, Upper Level | 10:00 – 10:30

**Sessions 07 (cont'd)** Ballroom A, Upper Level | 10:30 – 12:00

10:30 – 10:55 07.5

### Metallogeny of the Megashear Gold Belt, Sonora, Mexico: An Emerging World-Class Orogenic Gold Province

John-Mark Staude, Riverside Resources, Canada

10:55 – 11:20 07.6

### Discovery and Geology of the Resolution Porphyry Cu-Mo Deposit, Arizona

Hamish Martin, Resolution Copper Co., USA

11:20 – 11:50 07.7

### KEYNOTE: Exploration and Discovery of the White, Coffee and QV Gold Deposits: Opening New Gold Districts in West-central Yukon

Shawn Ryan, Ryanwood Exploration, Canada

**Poster Introduction** Ballroom A, Upper Level | 11:50 – 12:00

**Chair:** Dan Marshall, Simon Fraser University

**Co Chairs:** Christa Sluggett, Geoscience BC and

Murray Allen, Mineral Deposit Research Unit, University of British Columbia

**Lunch** Exhibit Hall, Upper Level | 12:00 – 12:45

*Sponsored by:*



**Poster Viewing with Authors present** Exhibit Hall, Upper Level  
12:45 – 13:30

**Sessions 08** Ballroom A, Upper Level | 13:30 – 14:00

### Exploration, Discovery and Deposits

**Session Chairs:** Tim Beale, Iron Creek Capital Corporation and John Barr, Anglo American Exploration (Canada) Ltd.

*Sponsored by:*



13:30 – 14:00 08.1

### KEYNOTE: A Comparison of Carlin-type Deposits in Nevada and Yukon

Greg Arehart, University of Nevada, Reno, USA

*Sessions 08 cont'd*



14:00 – 14:25 08.2

**Use of Stable Isotopes in Mineral Exploration:  
Teaching an Old Dog New Tricks**

Shaun Barker, University of Waikato, New Zealand

14:25 – 14:50 \*08.3

**Mineralization and Alteration of the Late Triassic Glacier Creek  
Cu-Zn VMS Deposit, Palmer Project, Alexander Terrane, Alaska**

Nathan Steeves, University of Ottawa, Canada

**Refreshment Break & Poster** Exhibit Hall, Upper Level  
**Viewing with Authors present** 14:50 – 16:10

**Sessions 08 (cont'd)** Ballroom A, Upper Level | 16:10 – 17:35

16:10 – 16:40 08.4

**Geology and Exploration of the Blackwater Gold-Silver Deposit**

Mark Petersen, New Gold Inc., USA

16:40 – 17:05 08.5

**Regional Metallogeny and Genesis of a New  
Deposit Type – Disseminated Awaruite (Ni-Fe Alloy)  
Mineralization Hosted in the Cache Creek Terrane**

Ron Britten, First Point Minerals Corp., Canada

17:05 – 17:35 08.6

**KEYNOTE: Metallogenic and Jurisdictional Inequalities Around  
the Northern Pacific Rim: Implications for Discovery**

Richard Sillitoe, Consultant, United Kingdom

**Farewell** Garibaldi Lift Co., 4165 Springs Lane (map on pg.1)  
**Social Event** 17:35 – 20:00

The Farewell Social Event is a ticketed event. Please bring your Farewell Social Event ticket with you to the event for admission.

The SEG Student Awards will be presented at this event.



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# Post-Conference Program

Friday, September 27 to Thursday, October 3

## Post-Conference Field Trips

**Porphyry Systems of Central and Southern BC: Tour of Central BC porphyry deposits from Prince George to Princeton** September 27 – October 2

Guides: Jim Logan, Tom Schroeter

**Bralorne: One day tour of BC's most prolific and recently reactivated gold mine** September 28

Guide: Matt Ball

**Nevada – Carlin Trend: Tour of Northern Nevada with a mix of classic Carlin deposits and recent discoveries** September 28 – October 3

Guides: Moira Smith, Dave Rhys, Marcus Johnston

## Post-Conference Short Courses

**Mineral Exploration Applications of Stable Isotopes** September 28  
Garibaldi A, Lower Level

Shaun Barker, University of Waikato and MDRU-UBC  
Larry Cathles, Cornell University  
David Cooke, University of Tasmania  
Kurt Kyser, Queens University  
Greg Dipple, MDRU-UBC

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**Exploration Targeting Best Practice Using Geofacets** September 28  
Garibaldi B, Lower Level

Peter Kowalczyk, Mira Geoscience  
Dianne Mitchinson, Mira Geoscience  
Clinton Smyth, Georeference Online Ltd



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# Posters

Network with Poster Presenters and Conference Participants in an informal setting while perusing the Posters on display. *Posters are only on display for one day each at the Conference.*

**Location:** Exhibit Hall, Upper Level  
**Hours** Wednesday: 12:45 – 13:30, 16:30 – 18:00  
Thursday: 12:45 – 13:30, 16:30 – 18:00  
Friday: 12:45 – 13:30, 14:50 – 16:10

## Digital Posters

Posters are also available in digital format via the Digital Poster stations. The Digital Posters provide an opportunity to search posters by author or title and see all posters throughout the Conference if you miss a poster on the day it was displayed. Three Digital Poster stations are located in the Exhibit Hall (labelled DP-1, 2 & 3 on the Floor Plan).

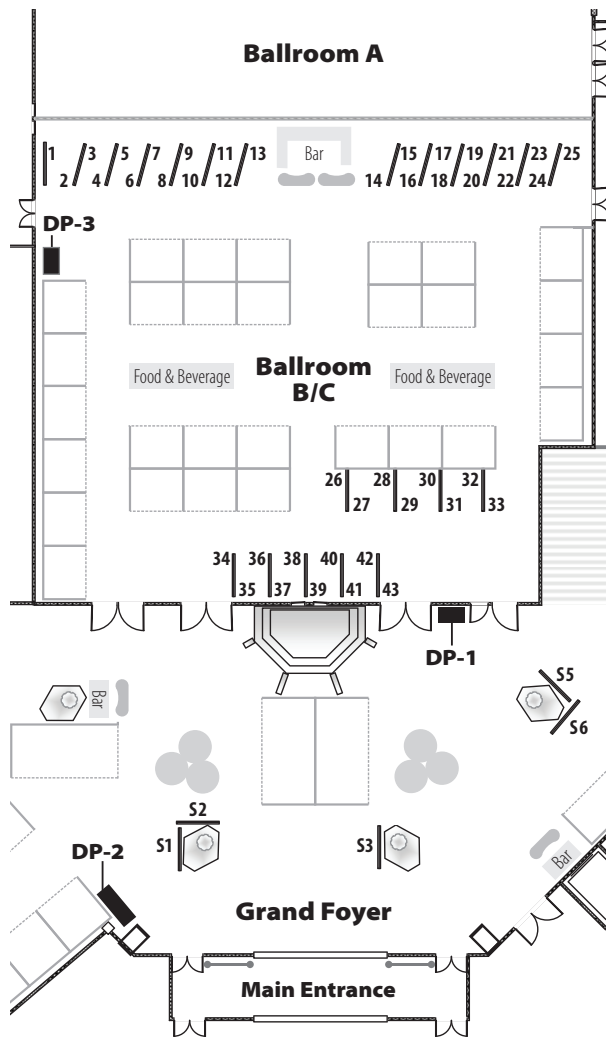
## Poster Authors

Set up of Posters will take place on the morning your Poster is on display between 07:15 and 07:45. If your Poster is scheduled to be on display on Wednesday, you may set up your Poster on Tuesday between 14:00 and 17:00.

Posters must be removed at the end of each day. Posters on display on Friday should be removed no later than 16:15. Any Poster not removed will be discarded.



## Poster Floor Plan



DP-1, 2, 3 = Digital Poster Stations  
S1, 2, 3, 4, 5, 6 = Student Chapter Posters, see page 46 for details

## Listing of Posters by Day

NOTES: The Reference Number for the poster indicates the day it is on display, and its poster board location.

P1 – Wednesday Posters; P2 – Thursday Posters; P3 – Friday Posters

Example: P1.01 = A poster presented on Wednesday, on Poster Board #1.

### WEDNESDAY: POSTER SESSION P1

Exhibit Hall, Upper Level

12:45–13:30, 16:30–18:00

**Chair:** Dan Marshall, Simon Fraser University

**Co Chairs:** Tim Baker, Eldorado Gold Corporation and Victoria Sterritt, Teck Resources Limited

**P1.01\*** Modern Stratiform Volcanogenic Ore Formation in the Atlantis II Deep – The Red Sea

Tea E. Laurila, University of Ottawa, Canada

**P1.02\*** The Archean Coté Gold Deposit, Ontario, Canada: A Large Tonnage, Low-Grade Deposit Centred on a 2740 Ma Magmatic-Hydrothermal Diorite Breccia Complex

Laura R. Katz, Laurentian University, Canada

**P1.03\*** Variations in Whole Rock and Mineral Chemistry around the VHMS Deposits of the Que-Hellyer Volcanics, Tasmania, Australia

Selina W. Wu, University of Tasmania, Australia

**P1.04** Quartz Paragenesis at the Veladero Deposit, Argentina: New Insights into Lithocap Alteration in the High-Sulfidation Epithermal Environment

Elizabeth A. Holley, Colorado School of Mines, USA

**P1.05\*** Stable Te Isotope Variability in Ore-forming Systems: Causes and Magnitude

Andrew P. Fornadel, Iowa State University, USA

**P1.06\*** Major Ore Types of the Lalor Gold-Rich Massive Sulfide Deposit, Snow Lake, Manitoba

Shamus Duff, University of Ottawa, Canada

**P1.07** Geochemistry and Geodynamic Setting of the 2.7 Ga Yilgarn Heterogeneous Plume and its Interaction with Continental Lithosphere: Evidence from Komatiitic-Basalt and Basalt Geochemistry of the Kambalda Sequence, Eastern Yilgarn Craton

Nuru M. Said, University of Western Australia, Australia

**P1.08\*** Magma Fertility and Mineralization Potential based on Ferromagnesian Phase Compositions in Devonian Granites from New Brunswick, Canada: EPMA and Laser Ablation ICP-MS Composition Systematics

Zeinab Azadbakht, University of New Brunswick, Canada

**P1.09\*** The Cosmos Volcanic Arc Succession and its Relation to Mineralized Komatiites

Alexandra de Joux, Edinburgh University, United Kingdom

**P1.10\*** A Geophysically Constrained Litho-structural Analysis of the Trans-Tanami Fault, Granites-Tanami Orogen, Western Australia

David B. Stevenson, Centre for Exploration Targeting, Australia

**P1.11** Carbonatite Host REE Deposit Model: Mianning-Dechang Ree Belt in West Sichuan Province, China

Yuling Xie, University of Science and Technology Beijing, China

**P1.12** Physical Transport and Localization of Magmatic Fe-Ni-Cu Sulfide Melts

Michael Lesher, Laurentian University, Canada

**P1.13\*** Evolution of the Hydrothermal Alteration and Mineralization at the Giant Reko Diq Porphyry Cu-Au Deposit, District Chagai, Balochistan-Pakistan

Abdul Razique, Mineral Deposit Research Unit, University of British Columbia, Canada

**P1.14** Trace Element Partitioning Between Gahnite, Garnet, and Biotite in Gahnite-Bearing Rocks: Implications for Metamorphic Processes and Exploration for Pb-Zn-Ag Mineralization

Joshua J. O'Brien, Iowa State University, USA

**P1.15** Revealing the Tectonic Setting of the Formation of the Guelb El Foulet Cr Occurrence, Mauritania, with Major Element Chemistry

Erin E. Marsh, U.S. Geological Survey, USA

**P1.16\*** Neoproterozoic Mo-U Mineralization in Pan-African Granites in Southwestern Cameroon

Confidence K. Mosoh, Laboratory of Petrology and Structural Geology, Faculty of Science, Department of Earth Sciences University of Yaounde I, Yaounde, Cameroon

**P1.17** Spatial and Temporal Distributions and Tectonic Setting of Mesozoic Granite-related Copper Systems in SE China

Xiaofeng Li, Chinese Academy of Sciences, China

**P1.18\*** Formation and Exhumation of the Mid-Jurassic Porphyry Copper Systems in Dexing, SE China: Insights from Geo-/Thermo-Chronological Studies

Xuan Liu, Institute of Geology and Geophysics, Chinese Academy of Sciences, China

- P1.19 New Insights on West African Tectonics and Iron Mineralization Based on Zircon U-Pb SHRIMP Geochronology and Structural Mapping**  
Bert De Waele, SRK Consulting, Australia
- P1.20\* Resolving the Timing of Fluid Flow within Metamorphosed Terranes: U-Pb Age Depth-Profiles of Zircon from the North Caribou Greenstone Belt, Canada**  
Colter J. Kelly, University of Ottawa, Canada
- P1.21 The Izok Volcanic-hosted Massive Sulphide Deposit, Nunavut, Canada: A New Interpretation of the Rhyolitic Stratigraphy and Implications for Exploration**  
Kimberley Bailey, MMG Limited, Canada
- P1.22\* Tracing S and Fe Isotope Variations at the Hart Komatiite-hosted Ni-Deposit, Abitibi Greenstone Belt, Ontario, Canada**  
Russel S. Hiebert, University of Manitoba, Canada
- P1.23 Kupol LSE Vein District, Russian Federation: Integration of Exploration Datasets to Understand Post-Mineral Disruption of the Vein-Alteration System**  
Peter S. Fischl, Kinross Gold Corp., Canada
- P1.24 Ag-Pb-Bi Minerals of the Pingüino In-bearing Polymetallic Epithermal Deposit, Deseado Massif, Patagonia, Argentina**  
Sebastian M. Jovic, Instituto de Recursos Minerales - Universidad Nacional de La Plata - CONICET, Argentina
- P1.25\* Zonation and Paragenesis of Alteration and Mineralization in the Gecko Corridor, Tennant Creek Mineral Field, Northern Territory, Australia**  
Lauren Burley, EGRU, School of Earth and Environmental Sciences, James Cook University, Australia
- P1.26\* Litho geochemistry and Sulfur Isotopic Composition of Hydrothermal Exhalites Associated with the Lemarchant Volcanogenic Massive Sulfide (VMS) Deposit, Tally Pond Belt, Central Newfoundland**  
Stefanie Lode, Memorial University Newfoundland, Canada
- P1.27 Pre-Metamorphic Re-Os Isochron Ages from Low Concentration Au Rich Sulfides and Native Au From Obuasi, Navachab, and Geita, Africa**  
Ryan Mathur, Juniata College, USA
- P1.28 The Porphyry Cu-Au Deposit at Kiseljak, Tulare District, Serbia**  
Dragan Dragic, Dunav Minerals, Serbia
- P1.29\* Mineralogical, Stable Isotope, and Fluid Inclusion Studies of the Oganchinskoe Au-Ag Epithermal Deposit, Kamchatka Peninsula, Far East of Russia**  
Daria Bukhanova, Kamchatka State University, Russia

- P1.32\* Integrated Studies on Collision-related Sharang Porphyry Mo Deposit in Tibet, China: Geology, Geochronology and Geochemistry**  
Junxing Zhao, Institute of Geology and Geophysics, Chinese Academy of Sciences, China
- P1.34 Evaluation of Soil Gas Hydrocarbon (SGH Analysis of Lake Sediments for Mineral Exploration: A Case Study Over the "Ring of Fire" Deposit Area, Ontario, Canada**  
Richard Dyer, Ontario Geological Survey, Canada
- P1.35 Late Variscan Magmatic Activity in Southern Daxinganling, China: Use of the Daitongshan Copper Deposit and Lamahanshan Polymetallic-Silver Deposit as Example**  
Zhenhua Zhou, Institute of Mineral Resources, Chinese Academy of Geological Sciences, China
- P1.36\* In situ LA-ICP-MS of Sulfide Minerals in VMS Deposits throughout the Bathurst Mining Camp, New Brunswick, Canada: Volatile Trace Element Concentrations and Distribution with Implications for their Syngenetic to Polyphase Metamorphic History**  
Azam Soltani Dehnavi, University of New Brunswick, Canada
- P1.37\* Exploring Organic Content as a Potential Vector for Gold Mineralization in the Ankerite Horizon at the Dome Mine, Timmins, Ontario, Canada**  
Neil R. Banerjee, Western University, Canada
- P1.38 Copper Isotopic Vectors to Supergene Enrichment: Leached-cap Iron Oxides From the Quellaveco Porphyry Copper Deposit, Peru**  
Ryan Mathur, Anglo American, Chile
- P1.40\* Hydrothermal Fluid Evolution at the Lagunas Norte High-Sulfidation Au Deposit, Peru**  
Harry Hanneman, Colorado School of Mines, USA
- P1.41\* Structural Controls on the Formation of the El Limon Au Vein Associated to the Major Otu Shear Zone Fault System, Zaragoza - Antioquia, Colombia**  
Fabio A. Mendoza Villero, Universidad Nacional de Colombia, Colombia
- P1.42 Isotope Systematics of the Hugo Dummett Cu-Au Porphyry Deposit (Oyu Tolgoi, Mongolia)**  
Reimar Seltmann, CERCAMS, Natural History Museum, United Kingdom
- P1.43\* The Yanque-Dolores Polymetallic District: A Key for Exploration in the Andahuaylas-Yauri Region (Cuzco, Peru)**  
Nicola Mondillo, Dipartimento Scienze della Terra, dell'Ambiente e delle Risorse, Italy

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## THURSDAY: POSTER SESSION P2

Exhibit Hall, Upper Level

12:45–13:30, 16:30–18:00

**Chair:** Dan Marshall, Simon Fraser University

**Co Chairs:** Suzanne Paradis, Geological Survey Canada and Ben Whiting, Orko Silver

- P2.01 Copper and REE-Th Metallogeny in Lemhi County, Idaho: Magmatism and Repeated Hydrothermal Activity along a Paleozoic Continental Margin**  
Virginia S. Gillerman, Idaho Geological Survey (University of Idaho), USA
- P2.02 A New Sedimentary Rock-Hosted Gold Belt, Western Timok, Eastern Serbia**  
Richard Tosdal, PicachoEx LLC, USA
- P2.03\* The Jurueña Gold Deposit, Northwestern Sector of the Alta Floresta Gold Province, (MT), Brazil: An Example of Paleoproterozoic Gold-Rich Porphyry System?**  
Andersson Acevedo Serrato, Universidade Estadual de Campinas, Brazil
- P2.04 SEDEX Targeted Geoscience Initiative-4 – Developing New Exploration Concepts and Methodologies**  
Suzanne Paradis, NRCAN-Geological Survey of Canada, Canada
- P2.05 A Mother Lode in the Silver State: Designation of the Argentoro Mineral Belt in Central and Western Nevada, USA**  
Marcus K. Johnston, Renaissance Gold Inc., USA
- P2.06\* Trace Fossils in the Red Dog Zn-Pb-Ag Deposits: A New Tool for Understanding the Timing Between Sedimentary Deposition, Diagenesis, and Mineralization**  
Merlie A. Reynolds, Department of Earth and Atmospheric Sciences, University of Alberta, Canada
- P2.07 Carbonate-hosted Nonsulphide Zn-Pb Mineralization in Glaciated Regions of British Columbia, Canada**  
Suzanne Paradis, NRCAN-Geological Survey of Canada, Canada
- P2.08\* A Stratigraphic Framework for Late Cretaceous and Eocene Au-Ag Mineralization in Central British Columbia**  
Esther-Jeanne Bordet, University of British Columbia Mineral Deposit Research Unit, Canada
- P2.09\* Middle to Late Jurassic Metamorphic Fluid Source for Orogenic Gold in the Klondike-White Gold District, West-central Yukon, Canada**  
Reid Staples, Simon Fraser University, Canada
- P2.10\* Regional Metamorphism and Deformation of the North Caribou Belt (W. Superior Province) and the Relationship with the Lode Gold Mineralization at Musselwhite Mine**  
Émilie Gagnon, University of Ottawa, Canada



- P2.11 Geological, Geochemical, and Geophysical Characterization of the Pebble Porphyry Cu-Au-Mo Deposit, Southwestern Alaska, USA: Implications for Regional Exploration**  
Karen D. Kelley, U.S. Geological Survey, USA
- P2.12\* Characterization of Carbon in Archean Graphitic Argillites of the Abitibi Greenstone Belt, Timmins – Kirkland Lake, ON**  
Julia Pickering, University of Ottawa, Canada
- P2.13 Geology and Age Relationships of Contrasting Styles of Cu-Mo-Au Porphyry Mineralization at the Woodjam Project, Horsefly, British Columbia**  
Amelia Rainbow, Gold Fields Canada, Canada
- P2.14 Alkaline Ultramafic Rocks of Southeastern Illinois and Western Kentucky and their relation to REE Mineralization at Hicks Dome (IL) and Related Diatremes**  
Richard H. Ficarek, Southern Illinois University, USA
- P2.15\* Metallogeny and Gold Distribution of the Potato Hills Trend, Dublin Gulch, YT**  
Fraser A. Kirk, Memorial University, Canada
- P2.16 Slab Breaks and Early Mesozoic Paired Alkaline Porphyry Deposit Belts (Cu-Au ± Ag-Pt-Pd-Mo) in the Canadian Cordillera**  
James M. Logan, BC Geological Survey, Canada
- P2.17 Regional Metallogeny Patterns as Revealed by the Distribution of Heavy Mineral Concentrates and Silt Chemistry in Stream Sediments from the Mackenzie Mountains, NWT**  
Hendrik Falck, NWT Geoscience Office, Canada
- P2.18\* Post-Mineralization Exhumation, Weathering, Denudation, and Burial of Carlin-Type Au-Mineralization in the Cortez Hills District, Nevada: Implications for Depth of Formation**  
Trenton T. Newkirk, University of British Columbia, Canada
- P2.19\* The Chromite-Bearing Ultramafic-Mafic Complexes of the Vizcaino Peninsula (Baja California Sur, Mexico): Re-Visited for Platinum-Group Minerals**  
Luis A. Jiménez Galindo, Facultad de Ingeniería, Universidad Nacional Autónoma de México, Mexico
- P2.20\* MacMillan Pass SEDEX Mineralization: The Geochemical Characterization of a Vent Complex**  
Joseph Magnall, University of Alberta, Canada
- P2.21\* The Potential for Ni-PGE Sulphide Mineralization in Palaeogene Lavas and Magma Conduits of Western Scotland, UK: A Noril'sk Analogue?**  
Hannah S. Hughes, Cardiff University, United Kingdom

- P2.22\* Orebody Characterization and the Structural Features that Govern Copper and Cobalt Mineralization in the Eastern Limb of the Lufilian Arc, Democratic Republic of Congo**  
Russell D. Johnson, University of the Witwatersrand, South Africa
- P2.23 Geology of the Epithermal and Porphyry Mineralization in Taviche Mining District, Central Oaxaca, Mexico: Geochemical, Geochronological and Isotopic Contribution**  
Jesús Castro, Geoconsulting Ingenieros, SC, Mexico
- P2.24 Chemical and Physical Variations in the Late Triassic Nicola Group, Quesnel Terrane, British Columbia and Implications for Porphyry Cu-Au Exploration**  
Thomas Bissig, Mineral Deposit Research Unit, Canada
- P2.25 Metallogenic Evolution of the Archean Slave Craton with a Focus on Under-Evaluated VMS Deposit Potential**  
Luke Ootes, Northwest Territories Geoscience Office, Canada
- P2.26 Deep Magnetic Imaging near the Pebble Porphyry Cu-Au-Mo Deposit in Southwestern Alaska: Implications for Exploration**  
Eric D. Anderson, US Geological Survey, USA
- P2.27 Structural Control of Mineralization Recognized by Magnetite-Destructive Faults of the Western Yukon and Eastern Alaska Cordilleran Hinterland**  
Matias G. Sanchez, Mineral Deposit Research Unit, Canada
- P2.28\* Characterization of the Nonsulfide Zinc Prospects in the Reef Ridge-Type (Alaska): A Possible New Genetic Model?**  
Licia Santoro, Dipartimento Scienze della Terra, dell'Ambiente e delle Risorse, Università di Napoli Federico II, Italy
- P2.29 The Source of Metals in Sedimentary Rock Hosted Stratiform Copper-Silver Deposits**  
Jack E. Milton, University of British Columbia, Canada
- P2.30\* Geology and Mineralogical Features of the Archean Au-Sb Engenho D'água Mineralization, Rio Das Velhas Greenstone Belt, Quadrilátero Ferrífero, Brazil**  
Andreia C. Beleque, Universidade de São Paulo, Brazil
- P2.31 Widespread Cretaceous Tectonism and Mineralization of the Northern Canadian Cordillera: Results From Zircon (U-Th)/He Thermochronology**  
David Schneider, University of Ottawa, Canada
- P2.32 Mesozoic Tectonics and Geochronology of Orogenic Gold Metallogeny in California**  
Ryan D. Taylor, US Geological Survey, USA

- P2.33 Petrogenesis and Metal Budget of Eocene Igneous Rocks from Magmatic Systems Concurrent with Carlin-Type Gold Deposition in Nevada, USA: A Melt Inclusion Study**  
Celestine N. Mercer, U.S. Geological Survey, USA
- P2.34\* Trace Element Characteristics and Pb Isotopic Compositions of Pyrite in the Howard's Pass Zn-Pb District, Selwyn Basin, Yukon**  
Michael Gadd, Queen's University, Canada
- P2.35 Geological Setting of Carlin-Type Gold Mineralization in the Rackla Belt of East-Central Yukon**  
David Moynihan, Yukon Geological Survey, Canada
- P2.36 Regional Exploration Using the Jurassic - Triassic Unconformity**  
Jeff W. Kyba, Regional Geologist, Canada
- P2.37 Polymetallic Veins at Port Radium, Great Bear Continental Arc, Northwest Canadian Shield: Genetic Implications of Age Constraints from the Diabase Swarms Emplaced at 1740 and 1590 Ma**  
Sunil Gandhi, Sunil Gandhi Consulting, Canada
- P2.38\* Trends in Metal Enrichment in Framboids from a Metal-Rich and a Metal-Poor Estuary**  
Daniel D. Gregory, University of Tasmania, Australia
- P2.39 Effects of Oxidation and Weathering on Pyrite Chemistry, and Implications for Evaluating Regional Gold Fertility of the Selwyn Basin, Yukon**  
Patrick J. Sack, Yukon Geological Survey, Canada
- P2.40 Lateritization Neglected as a Gold Metallotect for the Past Fifteen Years: Bridging a Generational Knowledge Gap in Tropical Gold Geochemistry**  
Danae A. Voormeij, Mynah Exploration Inc., Canada
- P2.41\* REE-Be-U-Enriched Fluorite Mineralization of the Round Top Laccolith, Sierra Blanca Peaks, Trans-Pecos Texas**  
L. Christine O'Neill, The University of Texas at Austin, USA
- P2.42 Magmatic-Hydrothermal Origin of the Carlin-Type Gold Deposits in Nadaleen Trend, Yukon**  
Morgan G. Li, Kinkarso Tech Ltd, Canada
- P2.43\* Regional Mineral Exploration in Porphyry Systems Using ASTER: An Inexpensive and Reliable Methodology for Targeting Alunite**  
Doug L. Standart, University of Texas at El Paso, USA

**FRIDAY: POSTER SESSION P3**

Exhibit Hall, Upper Level

12:45–13:30, 14:50–16:10

**Chair:** Dan Marshall, Simon Fraser University**Co Chairs:** Christa Sluggett, Geoscience BC and

Murray Allen, Mineral Deposit Research Unit, University of British Columbia

- P3.01 The KSM Project – A Cluster of Porphyry Related, Deformed and Dismembered Au-Cu Deposits Displaying a Transition from Deep Porphyry to Shallow Vein Environments**  
William Threlkeld, Seabridge Gold Inc., Canada
- P3.02 Porphyry Indicator Minerals (PIMS) for Exploration of Concealed Deposits**  
Farhad Bouzari, Mineral Deposit Research Unit, Canada
- P3.03 Trace Element Analysis in Minerals via LA-ICP-MS: Insights Into Ore Genesis and Exploration**  
Brian G. Rusk, Western Washington University, USA
- P3.04 Columbite-Tantalite Series and Pyrochlore Supergroup Minerals– Potential Indicators in Exploration for Specialty Metal Deposits**  
Duncan A. Mackay, School of Earth and Ocean Sciences, University of Victoria, Canada
- P3.05\* Geology of the Blackwater Au-Ag Epithermal Deposit, Central British Columbia**  
Erin Looby, MDRU, Canada
- P3.06 Pervasive Intermediate Argillic Alteration of the Red Chris Cu-Au Porphyry Deposit East Zone, British Columbia, Canada**  
Richard Tosdal, MDRU - University of British Columbia, Canada
- P3.07 Golden Meadows Project, Stibnite-Yellow Pine District, Idaho – An Emerging Giant**  
Christopher Dail, SEG Member, USA
- P3.08 Geology, Alteration and Mineralization of the Carlin-type Conrad Zone, Yukon**  
Michael J. Tucker, Mineral Deposits Research Unit - University of British Columbia, Canada
- P3.09 Geologic Framework and Metallogeny of the Whistler Porphyry Corridor, Alaskan Range, USA**  
Benjamin P. Hames, Mineral Deposit Research Unit, Canada
- P3.10\* Sulfide Mineral, Fluid Inclusion, and Vein Characterization of the Estelle Property in the South-Central Alaska Range**  
Ember M. Flagg, University of Nevada, Las Vegas, USA

- P3.11 Application of Visible-Near Infrared and Short Wave Infrared Spectroscopy to SEDEX Deposit Exploration in the Selwyn Basin, Yukon**  
Jan M. Peter, Geological Survey of Canada, Canada
- P3.12\* Au Mineralization at 3Ace, Southeast Yukon**  
Shaunaugh C. Whelan, University of Alberta, Canada
- P3.13 Mapping Hydrothermal Fluid Flow With High Density Sampling of Oxygen and Carbon Isotope Ratios in Carbonate Rocks of the Long Canyon Au Deposit, NE, Nevada**  
Shaun L. Barker, University of Waikato, New Zealand
- P3.14 Structural Evolution of the Sisson W-Mo Deposit, New Brunswick, Canada**  
Robert J. Duncan, Mineral Deposit Research Unit, Canada
- P3.15 Copper Isotope Systematics of the Red Chris and Casino Porphyry Deposits: Contrasting Response to Secondary Modification Processes in Two Cordilleran Mineral Systems**  
John B. Chapman, Geological Survey of Canada - Natural Resources Canada, Canada
- P3.16\* Platinum Group Element Mineralization in the DJ/DB Zone of the Turnagain Alaskan-type Ultramafic Intrusion, North-central British Columbia**  
Sarah Jackson-Brown, University of British Columbia, Canada
- P3.17 New Technology for Imaging Key Vectoring Parameters Between Boreholes**  
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- P3.19 Rapid Mineralogical Analysis in Support of Mineral Exploration**  
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- P3.20 The Kiyuk Lake Deposit – A New Style of Gold Mineralization in the Western Churchill Province of Southern Nunavut, Canada**  
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- P3.21 Application of Mass-Dependent and Mass-Independent S Isotopes in the Exploration for Magmatic Ni-Cu-PGE Deposits**  
Michael Leshner, Laurentian University, Canada
- P3.22 A Practical Method to Enhance Discovery in Geochemical Data Using Statistically Derived Relative Values (R), and Geologically Conceived Discrimination Factors (D)**  
Colin I. Godwin, Dept Earth, Ocean & Atmospheric Sciences, University of British Columbia, Canada
- P3.23 Geology of the Kwanika Porphyry Deposits in British Columbia with Emphasis on the Alteration, Sulfide and Geochemical Zonation Patterns**  
Myron Osatenko, Micron Geological, Canada

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Lindsay McClenaghan, Mineral Deposit Research Unit, University of British Columbia, Canada
- P3.25 Geology and Discovery History of the Large “La Preciosa” Epithermal Silver-Gold Deposit in Durango, Mexico**  
Ben Whiting, Belcarra Group, Canada
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Leonardo L. Subang, Freeport-McMoRan, Philippines
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Leif Bailey, University of British Columbia, Canada
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Irene del Real Contreras, University of British Columbia, Canada
- P3.29\* Allanite and Apatite Compositional Variations and Implications for the Magmatic-Hydrothermal Evolution of the Mineralized Veins in the Hoidas Lake REE Deposit, Saskatchewan**  
Krisztina Pandur, University of Saskatchewan, Canada
- P3.30\* Magmatic Controls on the Formation of the Nechalacho Rare Metal Deposit (Thor Lake, NWT, Canada)**  
Volker Möller, McGill University, Canada
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Christopher Lawley, Natural Resources Canada, Canada
- P3.32 Portable X-Ray Fluorescence – an Integral Part of Specialty Metals Exploration Strategies**  
George J. Simandl, British Columbia Geological Survey, Canada
- P3.33 Platinum Group Element Geochemistry and Platinum Group Minerals within Ultramafic Arc Magmas: The Giant Mascot Ni-Cu (-PGE) Deposit, Hope, B.C.**  
Matthew J. Manor, University of British Columbia, Canada
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K. Brock Riedell, Consulting Geologist, Canada
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Trish Toole, MMG Limited, Canada

- P3.36 Technology Platforms Supporting Future Mineral Exploration**  
James S. Cleverley, CSIRO Minerals Down Under, Australia
- P3.37\* Gravity Model of a Cu-Mo Porphyry Deposit at Copper Flat, Hillsboro New Mexico**  
Adrian E. Gutierrez, University of Texas at El Paso, USA
- P3.38 SEM-Based Quantitative Mineralogy in Economic Geology – The Black Butte Cu-Co Deposit as an Example**  
Garth E. Graham, U.S. Geological Survey, USA
- P3.39\* Rapid Oxidation and Secondary Mineral Growth on Drill Core from the Goldrush Complex Carlin-type Gold Deposit, Eureka County, Nevada**  
Devon L. Smith, University of Nevada, Las Vegas, USA
- P3.40 Fire Assay or Aqua Regia Digestion: Choosing the Optimal Method for Au Analyses in Geological Materials**  
Matthew I. Leybourne, ALS Geochemistry, Canada
- P3.41 Promontorio Ag, Pb, Zn, Au Diatreme Breccias**  
Tom Richards, Society of Economic Geologists, Canada



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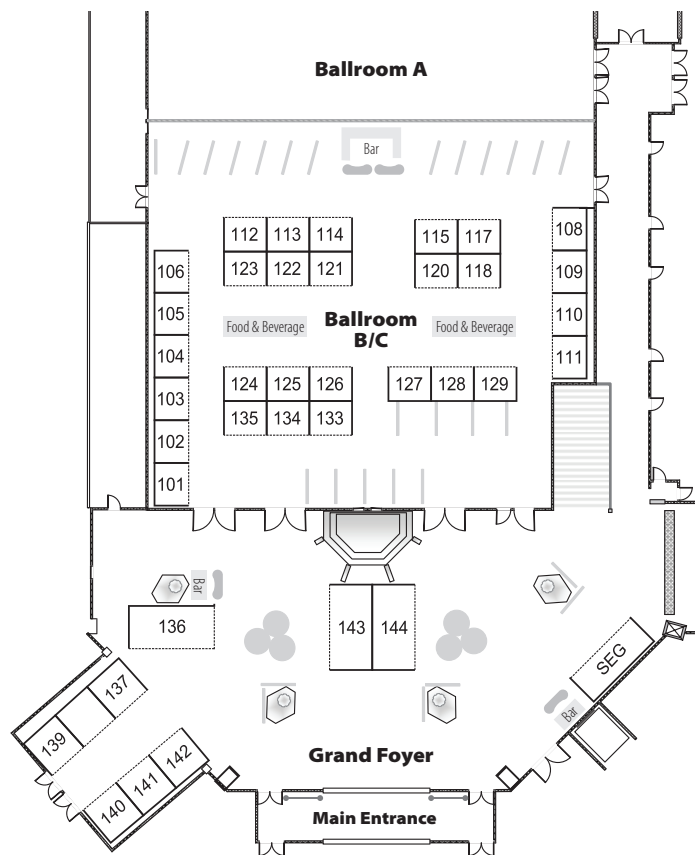
**Hours** Tuesday: 17:30 – 19:00

Wednesday: 09:00 – 18:00

Thursday: 09:00 – 18:00

Friday: 09:00 – 16:10

### Exhibition Floor Plan



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133	AcmeLabs	www.acmelab.com
114	Activation Laboratories Ltd.	www.actlabs.com
134	Almaden Minerals Ltd.	www.almadenminerals.com
123	ALS Minerals	www.alsglobal.com/en/Our-Services/Minerals
117	Analytical Solutions Ltd.	www.explorationgeochem.com
142	Anglo American plc	www.angloamerican.com
121	ASD Inc.	www.asdi.com
129	Association for Mineral Exploration British Columbia (AME BC)	www.amebc.ca
120	British Columbia Geological Survey	www.empr.gov.bc.ca/mining/geoscience
143	BHP Billiton Ltd. <i>*Visit BHP Billiton's Exhibit for a specialty coffee</i>	www.bhpbilliton.com
125	Canada Mining Innovation Council – Exploration Innovation Consortium	www.cmhc.laurentian.ca
124	CGG Airborne	www.cgg.com
112	CODES - ARC Centre of Excellence in Ore Deposits	www.utas.edu.au/codes
108	Colorado School of Mines	www.mines.edu
104	Condor Consulting, Inc.	www.condorconsult.com
105	CoreScan Pty Ltd.	www.corescan.com.au
126	Eurasian Minerals Inc.	www.eurasianminerals.com
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135	Yukon Geological Survey	www.geology.gov.yk.ca

**SEG Student Chapters**

SEG Student Chapters will be displaying their programs during the Conference. Visit booths and poster displays in the Grand Foyer, Upper Level.

**Booth # Chapter**

139 University of Nevada, Las Vegas

140 Universidade Estadual de Campinas

141 University of British Columbia

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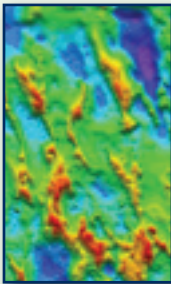
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- **Fundamental Advances in Economic Geology** – including relevant science not necessarily considered traditional economic geology
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- **Deposit Footprints** – emphasizing how these can be expanded and discriminated from false positives
- **Innovations in Exploration Technology** – finding new tools and smarter ways of applying old tools
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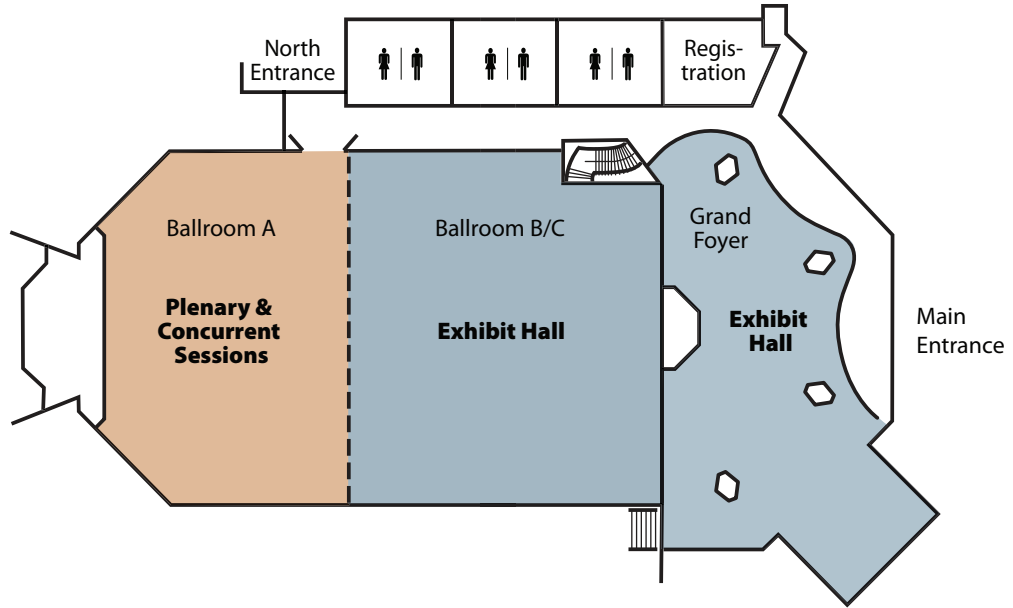
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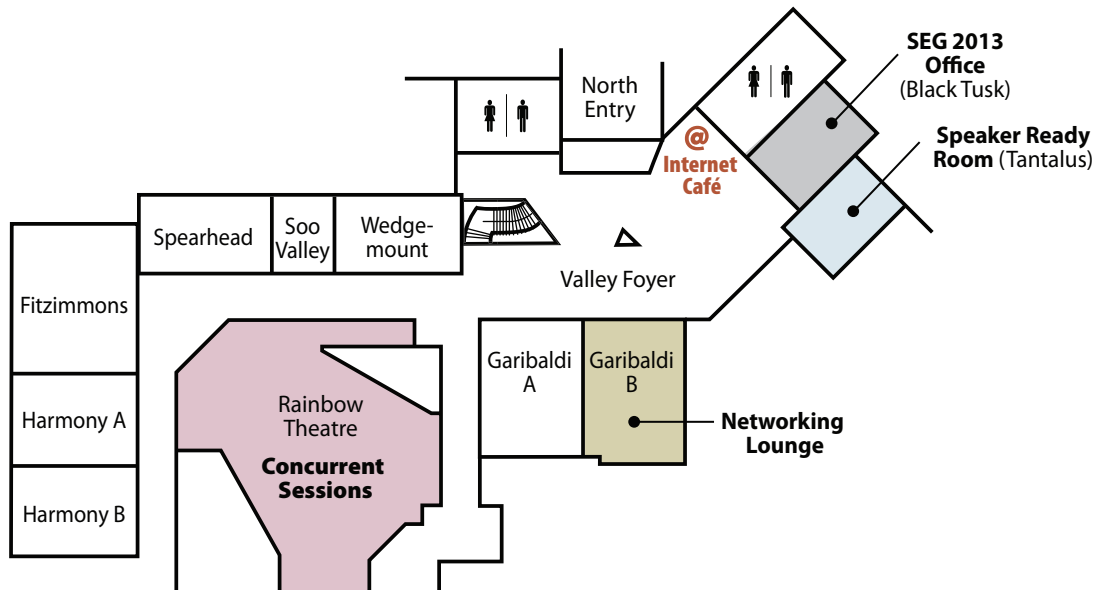
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