



12th FENNOSCANDIAN EXPLORATION AND MINING

29 - 31 October 2019 • Levi • Lapland • Finland
Congress & Exhibition Centre Levi Summit • femconference.fi

FEM 2019 PROGRAMME

Speakers and session chairs have given FEM a permission to use personal data in this connection.

VENUE INFO

- Conference venue: Congress & Exhibition Centre Levi Summit & Hotel Levi Panorama
 - Technical sessions: Auditorium, Levi Summit (1st floor)
 - Trade show area A: Levi Summit (1st floor)
 - Trade show area B: Levi Summit (ground floor)
 - Trade show area C: Hotel Levi Panorama (1st floor)
 - Lunches: Restaurant Panorama (1st & 2nd floor)
- Pre-conference short course venue: Hotel Hullu Poro, Levi
- Fennoscandian Mining Night venue: Restaurant World, Levi Hotel Spa (1st floor)

MONDAY 28 OCTOBER 2019

FEM 2019 Pre-conference short courses

11:00 - 19:00 DRILL CORE-BASED APPRAISAL OF COMPLEX PRECAMBRIAN MINERAL SYSTEMS

Nick Oliver, PhD, Adjunct Professor of Economic Geology, James Cook University, Director, HCOV Global consultants

Nick Cook, PhD, President, Mawson Resources

James Cleverley, PhD, Global Product Manager - Geosciences, IMDEX Limited

14:30 - 18:00 ENHANCEMENT AND STRUCTURAL INTERPRETATION OF GRAVITY, AEROMAGNETIC AND SEISMIC TOMOGRAPHIC DATA AT THE PROSPECT TO LITHOSPHERIC SCALE: APPLICATIONS TO MINERAL EXPLORATION

Lyal Harris, Professor, Institut national de la recherche scientifique (INRS), Québec, Canada

14:30 - 18:00 CAPITAL MARKETS FOR GEOLOGISTS

Nicole Adshead-Bell, PhD, Director, Cupel Advisory Corp.

Neil Adshead, PhD, Portfolio Manager, Sprott Inc.

Dale Mah, VP Corporate Development, Endeavour Silver Corp.

Joe Mazumdar, Economic Geologist / Analyst, Exploration Insights

TUESDAY 29 OCTOBER 2019

FEM 2019 Pre-conference short courses cont.

09:00 - 16:30 DRILL CORE-BASED APPRAISAL OF COMPLEX PRECAMBRIAN MINERAL SYSTEMS

Nick Oliver, PhD, Adjunct Professor of Economic Geology, James Cook University, Director, HCOV Global consultants

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Neil Adshead, PhD, Portfolio Manager, Sprott Inc.
Dale Mah, VP Corporate Development, Endeavour Silver Corp.
Joe Mazumdar, Economic Geologist / Analyst, Exploration Insights

12:00 - Conference registration, Congress & Exhibition Centre Levi Summit (1st floor)

16:00 - 17:00 Welcome coffee/tea, trade show areas A, B & C

Chair Jani Lösönen, Managing Director, Agnico Eagle Finland Oy
Co-chair Mika Riipi, County Governor of Lapland, Regional Council of Lapland

17:00 - 17:10 WELCOMING WORDS
Mika Riipi, County Governor of Lapland, Regional Council of Lapland

17:10 - 17:30 GOVERNMENT ADDRESS
Petri Peltonen, Under-Secretary of State, Corporate Steering Unit, Ministry of Economic Affairs and Employment

17:30 - 17:50 MAIN SPONSOR'S ADDRESS
Jani Lösönen, Managing Director, Agnico Eagle Finland Oy

17:50 - 18:20 KEYNOTE: THE STATE OF THE GLOBAL MINERAL INDUSTRY - A CANADIAN PERSPECTIVE
Felix Lee, President, Prospectors & Developers Association of Canada (PDAC)

18:20 - 18:50 KEYNOTE: MSC EDUCATION FOR THE EUROPEAN EXPLORATION AND MINING INDUSTRY, AN UNIVERSITÉ DE LORRAINE AND EUROCORE PROJECT PERSPECTIVE
Anne-Sylvie André-Mayer, Professor, Université de Lorraine ENSG-GeoRessources

18:50 - 19:00 WOMEN IN MINING - HOW TO FIND THE MINE'S TRUE GOLD AND WHY IT MATTERS
Johanna Alitalo, Geologist & Data Manager, Nordic Gold / Women in Mining Finland
Emma Härdmark, Director of Communications, Svemin / Women in Mining Sweden

19:00 - 19:15 FENNOSCANDIAN MINING AWARD AND FEM SPECIAL AWARD

19:15 - 19:30 AGNICO EAGLE AWARD

19:30 - 22:00 Ice-breaker Party, trade show areas A, B & C



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WEDNESDAY 30 OCTOBER 2019

07:45 - 08:50 Mining & Financing -breakfast with Borenius Attorneys Ltd, Nasdaq Nordic and FEM
Restaurant Panorama (2nd floor), by invitation only

Chair **Mika Nykänen**, Director General, Geological Survey of Finland

Co-chair **Henrik Schiellerup**, PhD, Director for Geological Resources and Environment, Geological Survey of Norway

09:00 - 09:30 KEYNOTE: BATTERY RAW MATERIALS. A GLOBAL AND EUROPEAN PERSPECTIVE.
Evi Petavratzi, PhD, Senior Mineral Commodity Geologist, British Geological Survey

09:30 - 09:50 SMART MINING FOR THE 21st CENTURY - THE CASE OF BATTERY MATERIALS
Anna Utsi, General Manager, Talga Graphene AB

09:50 - 10:10 WHAT HAPPENS WHEN A MINE IS CLOSED?
Nils Eriksson, Engineer, HR & Sustainability, Boliden Mines, Sweden

10:10 - 10:40 Coffee/tea, trade show areas A, B & C

Chair **Eric Jensen**, PhD, General Manager of Exploration, EMX Royalty Corp.

Co-chair **Pasi Heino**, Head of Unit, Ore and Industrial Minerals, Geological Survey of Finland

10:40 - 11:00 AMBASSADOR'S ADDRESS: INNOVATING TOWARD SUSTAINABLE MINING: CANADIAN PROSPECTS AND ECONOMIC DEVELOPMENTS IN CIRCULATION.
Jason Tolland, Ambassador to Finland, Embassy of Canada

11:00 - 11:20 MODERN MINERAL MANAGEMENT - DIGITALIZATION AND USER ORIENTED SERVICES
Randi Skirstad Grini, Director, Directorate of Mining with Commissioner of Mines at Svalbard (DMF)

11:20 - 11:40 SIMS - A EUROPEAN PROJECT ABOUT SUSTAINABLE INTELLIGENT MINING SYSTEM
Niclas Dahlström, Senior Project Manager, LTU Business, Sweden

11:40 - 12:00 MOVING TOWARDS CONSTRUCTION AT NUSSIR
Øystein Rushfeldt, CEO, Nussir ASA

12:00 - 12:20 USING HYPERSPECTRAL IMAGING AND GEOCHEMISTRY TO ASSESS THE DISTRIBUTION OF REE MINERALIZATIONS IN THE FE-RICH DOLOMITE CARBONATITE FROM THE FEN ALKALINE COMPLEX, SOUTHERN NORWAY
Nolwenn Coint, PhD, Geologist, Geological Survey of Norway

12:20 - 14:00 Lunch, Restaurant Panorama (1st & 2nd floor)

12:20 - 14:00 Student - Industry Networking luncheon
Gold Digger Bar, Hotel Levi Panorama (7th floor), by invitation only



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Chair Laura S. Lauri, PhD, Specialist, LKAB

Co-chair Jukka Jokela, Sakatti Project Manager, Anglo American (AA Sakatti Mining Oy),
Representative of FinnMin

14:00 - 15:00 PANEL SESSION: CAPITAL MARKETS FOR GEOLOGISTS, BY GEOLOGISTS

Moderator: Joe Mazumdar, Economic Geologist / Analyst, Exploration Insights

Nicole Adshead-Bell, PhD, Director, Cupel Advisory Corp.

Neil Adshead, PhD, Portfolio Manager, Sprott Inc

Dale Mah, VP Corporate Development, Endeavour Silver Corp.

15:00 - 15:30 PANEL SESSION: NORDIC FINANCING

Moderator: Joe Mazumdar, Economic Geologist / Analyst, Exploration Insights

Nicole Adshead-Bell, PhD, Director, Cupel Advisory Corp.

Michael Hudson, Chairman & CEO, Mawson Resources Ltd

Pertti Lamberg, PhD, CEO, Keliber Oy

Saila Miettinen-Lähde, Chairman of the Board, The Mining Finland Association

15:30 - 16:00 Coffee/tea, trade show areas A, B & C

Chair Olli Salmi, PhD, Managing Director, EIT RawMaterials Baltic Sea Innovation Hub CLC

Co-chair Sabina Strmic Palinkas, PhD, Associate Professor, UIT the Arctic University of Norway

16:00 - 16:10 FINNISH NETWORK FOR SUSTAINABLE MINING THROUGH REINDEER HERDER'S EYES

Marja Anttonen, Finnish Reindeer Herders' Association, Member of the Finnish Network for Sustainable Mining

16:10 - 16:20 ONEGEOLOGY GLOBAL MINERAL RESOURCE SERVICES - FINNISH, AUSTRALIAN, BRITISH/EUROPEAN AND CANADIAN SURVEYS

James Passmore, GIS & WWW Specialist, British Geological Survey, Co-chair of the OneGeology Technical Implementation Group (TIG)

16:20 - 16:40 THE ROLE OF FINNISH MINING INDUSTRY IN DEVELOPING THE ELECTRIC VEHICLE BATTERY VALUE CHAIN

Matti Hietanen, CEO, Finnish Minerals Group

16:40 - 17:00 A SUSTAINABLE MINING INDUSTRY IN SWEDEN - CHALLENGES AND OPPORTUNITIES

Lena Söderberg, Director General, Geological Survey of Sweden

17:00 - 18:00 Trade show areas A, B & C

19:00 - Fennoscandian Mining Night, Restaurant World, Levi Hotel Spa (1st floor)



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THURSDAY 31 OCTOBER 2019

Chair Matthew Rovardi, Exploration Manager, Kinross Gold Corporation
Co-chair Tommi Lehtilä, Head of Section, Boliden Exploration, Finland, Representative of FinnMin

09:30 - 10:00 KEYNOTE: BUILDING FUTURE MINES THROUGH COLLABORATION
André van Wageningen, Engineering Manager - Shaft Project, Agnico Eagle Finland Oy

**10:00 - 10:20 DISCOVERING AN EMERGING NEW GOLD CAMP USING BASIC EXPLORATION TOOLS -
BOOTS AND HAMMERS - AURION RESOURCES OY**
Mathias Forss, Exploration Manager, Aurion Resources Ltd., Founder & CEO, Ab
Scandinavian GeoPool Ltd.

10:20 - 10:40 A NEW APPROACH TO EXPLORATION AT THE PAHTAVAARA GOLD MINE
James Withall, CEO, Rupert Resources

**10:40 - 11:00 APPLYING S2'S GREENFIELDS EXPLORATION APPROACH TO THE CENTRAL LAPLAND
GREENSTONE BELT**
Mark Bennett, Managing Director & CEO, S2 Resources Ltd

11:00 - 12:30 Lunch, Restaurant Panorama (1st & 2nd floor)

Chair Sam Roffey, Principal II Geoscientist, Rio Tinto Exploration
Co-chair Tobias Bauer, PhD, Associate Professor, Luleå University of Technology, Sweden

**12:30 - 13:00 KEYNOTE: THE GEOLOGY OF METAL REWORKING VERSUS MULTIPLE METAL SOURCES IN
THE FENNOSCANDIAN AND GLOBAL CONTEXT, WITH EXPLORATION IMPLICATIONS**
Nick Oliver, PhD, Adjunct Professor of Economic Geology, James Cook University, Director,
HCOV Global consultants

**13:00 - 13:20 HELICOPTER-BORNE REMOTE SENSING FOR GEOLOGICAL MAPPING IN THE ARCTIC
TERRAIN**
Sara Salehi, PhD, Researcher, Geological Survey of Denmark and Greenland, Denmark

**13:20 - 13:40 DEEP CRUSTAL AND UPPER MANTLE STRUCTURAL CONTROLS ON MINERALIZATION,
SUPERIOR AND YILGARN CRATONS**
Lyal Harris, Professor, Institut national de la recherche scientifique (INRS), Québec, Canada

13:40 - 14:00 ACTIVE HYPERSPECTRAL SENSOR FOR REAL-TIME ORE CLASSIFICATION
Timo Dönsberg, Senior Scientist, VTT Technical Research Centre of Finland Ltd

**14:00 - 14:20 RADIATION PROTECTION FROM EXPOSURE TO NATURAL RADIATION - NEW LEGISLATION
CONCERNS ALSO THE MINERAL INDUSTRIES**
Pia Vesterbacka, PhD, Director, Environmental radiation surveillance and emergency
preparedness, STUK - Radiation and Nuclear Safety Authority

14:20 - 14:50 Coffee/tea, trade show areas A, B & C



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Chair Jaana Koivumaa, Manager, Hannukainen Mining Oy
Co-chair Kaisa Saarijärvi, Senior HR Manager, Europe, Agnico Eagle Mines Limited, Representative of FinnMin

14:50 - 15:10 KAUNIS IRON - A LOCAL MINE WITH A WORLD CLASS PRODUCT - THE RESUMPTION OF MINING IN NORTHERN SWEDEN

Åsa Allan, Site Manager, Kaunis Iron

15:10 - 15:30 LKAB'S INTENSIFIED EXPLORATION PROGRAMS - PLANS AND RESULTS

Pierre Heeroma, SVP Exploration, Strategy and Business Development, Luossavaara-Kirunavaara AB, LKAB

15:30 - 15:50 THE CHALLENGE OF SUSTAINABILITY AND SUSTAINABLE MINING PRACTICES IN EUROPE

Michael Hitch, PhD, Professor of Mining, Tallinn University of Technology, Estonia

15:50 - 16:10 MUSTAJÄRVI AND JEESIÖ GOLD PROJECTS: NEW PERSPECTIVES ON EXPLORATION IN THE CENTRAL LAPLAND GREENSTONE BELT

Petri Peltonen, PhD, Exploration Manager, FireFox Gold Corp.

16:10 - 16:20 CLOSING REMARKS

Juhani Ojala, PhD, Chief Geoscientist, Ab Scandinavian GeoPool Ltd. & Aurion Resources Ltd.

FRIDAY 1 NOVEMBER 2019

FEM 2019 Post-conference excursions

07:45 - 16:15 AGNICO EAGLE FINLAND OY KITTILÄ MINE

07:45 - 17:15 BOLIDEN KEVITSA MINE