



16th SGA BIENNIAL MEETING

Plenary Discussion Session

The future of the minerals industry; essential for modern lifestyles and climate change mitigation or environmentally and socially problematic?

Organized by **Simon Jowitt**¹ and **John F.H. Thompson**²

¹*Department of Geoscience, University of Nevada Las Vegas, Las Vegas, USA*

²*PetraScience Consultants, Vancouver, Canada*

Global metal and mineral production has increased significantly over the past century, enabling the development of modern standards of living as well as low-CO₂ energy and transport solutions. Indeed, hitting climate change mitigation-related CO₂ targets will require even higher levels of a range of base, precious and by-product metals compared to current levels of production. However, the global minerals industry is seemingly facing a conundrum where the positive aspects of mining, namely underpinning a low-CO₂ energy and transport future, are offset by environmental and social risk that may impede both current mining and exploration activities as well as future metal and mineral production. This panel discussion will focus on environmental and social performance, and the impacts on mineral exploration and mining. We will also discuss knowledge gaps relating to how we provide the mineral and metal resources needed for modern standards of living while mitigating climate change, and the development of new technologies, approaches and knowledge that can help produce these minerals and metals in a socially acceptable manner.

Format

One-hour duration, with a short introduction from the moderator Simon Jowitt followed by 30-40 minutes of panel discussion (4-5 panel members) based on questions relating to the topic, and lastly, 10-20 mins of open Q&A.

Date and time: Wednesday 30 March 14:00 – 15:00 New Zealand date and time

Further information: email Simon Jowitt at simon.jowitt@unlv.edu



16th SGA BIENNIAL MEETING

Plenary Discussion Session

Guest Panel:



Anita Parbhakar-Fox

Before completing her PhD in 2012 at the Centre for Ore Deposit and Earth Sciences (CODES), Dr Anita Parbhakar-Fox obtained a 1st class MSci (Hons) degree from the Royal School of Mines, Imperial College (University of London), in Environmental Geology (2005).

Currently, Anita is a Group Leader - Mine Waste Transformation through Characterisation (MiWaTCH) at the W.H. Bryan Mining and Geology Research Centre, within the Sustainable Minerals Institute. Anita and her team are undertaking research focussed on mine waste characterisation to improve mine planning and waste management practices. They are working with mining industry, METS sector and government stakeholders. Anita has developed new tests and protocols for improving waste

characterisation and is also involved in identifying remediation options for abandoned/ historical mine sites. Most recently, Anita has led industry and government funded projects focused on secondary prospectivity of mine waste to build business cases for economic rehabilitation.



Jocelyn Fraser

Dr. Fraser's research focus is on social risk and social responsibility in the mining sector. She is particularly interested in the potential to stimulate new opportunities for companies, civil society organizations, and governments to collaborate, reduce mining-community conflict, and advance the agenda of the United Nations Sustainable Development Goals. Currently appointed at the University of British Columbia, Jocelyn's professional experience includes more than 15 years working with extractive companies to enhance stakeholder engagement, create value, and earn social permission for local, national, and international extractive projects.



Sinead Kaufman - Chief Executive, Minerals

In March 2021, Sinead Kaufman was appointed Chief Executive, Minerals. In this role, Sinead has accountability for the minerals product group which comprises high grade iron ore from our Iron Ore Company of Canada operation, titanium dioxide from our Rio Tinto Fer et Titane (Canada), Richards Bay Minerals (South Africa) and QIT Madagascar Minerals (Madagascar) operations, borates and lithium from our Boron (California) operation, the Jadar project in Serbia, and diamonds from our Diavik Diamond Mines operation in Canada. Sinead brings to her current role strong operational expertise and asset leadership combined with a track record and commitment to sustainability and empowerment, advancing a culture of diversity and inclusion in the mining industry.

Sinead first joined Rio Tinto as a geologist in the United Kingdom in 1997 and has since gained international mining experience across a range of commodities including copper, aluminium, bauxite, diamonds, coal, salt, uranium and iron ore in both underground and open pit environments.

Sinead holds a Masters in Mineral Exploration from the University of Leicester and a Degree in Applied Geology with Honours from the University of Birmingham and has attended the Advanced Management Program at Insead through a Chief Executive Women scholarship.

16th SGA BIENNIAL MEETING

Plenary Discussion Session



Gavin Mudd

Gavin Mudd is a renowned global expert on the environmental sustainability of modern mining and brings together a unique set of multidisciplinary skills and knowledge to explore the challenges that the modern mining industry, governments, and communities are collectively facing. His mining research work includes environmental impacts, waste rock and tailings management, acid mine drainage, rehabilitation, mineral resource assessments, critical metals and minerals and sustainability metrics. The research always includes comprehensive and rich data sets. He is an associate professor of environmental engineering at RMIT University in Melbourne, Australia, where he has collaborated closely with assistant professor Simon Jowitt (UNLV) in recent years on the geologic

aspects underpinning the environmental issues facing modern mining.



Simon Jowitt - Moderator and co-organizer

Simon is currently Assistant Professor of Economic Geology at the University of Nevada, Las Vegas, Nevada, USA. His research focuses on the use of geochemistry to unravel geological processes in a variety of settings with direct application to understanding not only mineralizing systems but also igneous petrology, mineral exploration, global tectonics and the links between magmatism and metallogeny. Simon also undertakes research in mineral economics, critical metal resources and the security of supply of the critical elements, and the “economic” side of economic geology, as demonstrated by a number of recent publications on global Cu, Ni, Co, platinum group element, rare earth element and indium resources and the impact of COVID-19 on the global minerals

industry. He also studies the environmental impact of mining, the use of soil geochemistry in mineral exploration, and the potential uses of mining and other wastes for metal production and CO₂ sequestration. Simon has published more than 90 scientific papers and peer-reviewed book chapters since 2010, is currently the Vice-President for Student Affairs for the Society of Economic Geologists (SEG) and was awarded the SEG’s Waldemar Lindgren Award in 2014.



John Thompson – Co-organizer and panel member

Since 2012, John has partnered in a consulting business based in Vancouver, BC, focused on exploration, mining, innovation and sustainability. He is the Honorary Professor of Responsible Resources at the University Bristol, UK, and previously, was the Wold Professor of Environmental Balance for Human Sustainability at Cornell University. John has over 35 years in the mining industry and related research and has held diverse leadership roles in many organizations – Teck Resources, Genome BC, the World Economic Forum, Resources for Future Generations 2018, Society of Economic Geologists, Geoscience BC, Canada Mining Innovation Council, and MDRU-UBC. He is a director of KoBold Metals and MineSense, a founder of Regeneration,

and is an advisory board member for several exploration, technology, venture capital and research organizations.
