



UNESCO Lecture Series

# Earth Materials for a Sustainable and Thriving Society

Organised in collaboration with IUGS and iCRAG

## PROGRAMME



Minerals and other Earth materials are a key component in the development of a sustainable global society, providing essential raw materials for technologies and economic growth while respecting the natural world. This programme of lectures, designed for a global audience, will provide diverse perspectives on Earth materials and their role in society. Leading natural scientists, social scientists, and educators will look at how Earth materials are critical to a sustainable future and how the minerals sector, adhering to best practices, can contribute to society in a socially and environmentally positive way.



The lectures will be delivered in webinar format by recognized global experts who will frame their presentations in the context of the United Nations Sustainable Development Goals. The Series will boost knowledge of Earth materials and contribute to better informed local, regional, and international discussions. The lectures will be freely accessible and will be archived for later online access.

The Lecture Series is sponsored by UNESCO, the only United Nations organization with a mandate to support research and capacity building in the Earth Sciences. The Series supports the vision of UNESCO's International Geoscience Programme for efficient, safe, sustainable and renewable natural resources exploration and extraction.



- **UNESCO** is the only United Nations organization with a mandate to support research and capacity building in the Earth Sciences.
- The UNESCO **International Geoscience Programme (IGCP)** serves as a knowledge hub of UNESCO to facilitate international scientific cooperation in the geosciences.
- The **International Union of Geological Sciences (IUGS)** encourages international co-operation and participation in the Earth Sciences in relation to human welfare.
- **iCRAG**, the Science Foundation Ireland Research Centre for Applied Geosciences, is a team of researchers creating solutions for a sustainable society.

## Organising Partners



The lecture series will commence 26 January 2021.

To register, visit: <https://bit.ly/UNESCOlectures>

For more information, please email: [unescolectures@icrag-centre.org](mailto:unescolectures@icrag-centre.org)

All sessions will be conducted in English with live captioning in French, Spanish, Portuguese, Arabic, Swahili, and Hindi.

All sessions will include a live public question and answer period with the presenters immediately following the lecture presentations.



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International  
Geoscience  
Programme

## Organising Partners



## EARTH MATERIALS: THE FOUNDATION FOR DEVELOPMENT

26 January 2021

05.00 (Vancouver) \* 08.00 (Toronto, Lima) \* 13.00 (London) \* 14.00 (Paris, Lagos) \*  
15.00 (Johannesburg) \* 16.00 (Nairobi) \* 18.30 (Mumbai) \* 19.00 (Dhaka) \* 21.00 (Beijing) \*  
22.00 (Tokyo) \* 00.00+1 (Sydney)

- Introductory remarks from **Dr. Shamila Nair-Bedouelle**, Assistant Director-General for Natural Sciences, UNESCO, and **Dr. John Ludden CBE**, Bicentennial Research Professor, Environmental Governance and Diplomacy, Heriot-Watt University, UK

### Review of historical and present-day mineral demand and its connections to the economy, technology, and society

- Historical context globally — why Earth materials are important
- Technological evolution and climate neutrality are creating demand for new mineral portfolios
- Mineral wealth and the SDGs, including wealth and social justice

**Dr. Larry Meinert**, Meinert Consulting LLC, Delaware, USA.

**Dr. Nellie Mutemeri**, Mining Practice Lead, Mutemeri Consulting and Associate Professor, University of Witwatersrand, South Africa.

## CLIMATE NEUTRALITY, THE CIRCULAR ECONOMY, AND EARTH MATERIALS

2 February 2021

07.00 (Vancouver) \* 10.00 (Toronto, Lima) \* 15.00 (London) \* 16.00 (Paris, Lagos) \*  
17.00 (Johannesburg) \* 18.00 (Nairobi) \* 20.30 (Mumbai) \* 21.00 (Dhaka) \* 23.00 (Beijing) \*  
00.00+1 (Tokyo) \* 02.00+1 (Sydney)

### Reimagining metal supply to meet demand and societal expectations

- Current and emerging demand drivers
- Circular economy — importance and challenges
- Moving to efficient and responsible primary extraction
- Joining up the value chain

**Prof. John Thompson**, PetraScience Consultants, Vancouver, Canada and Honorary Professor of Sustainable Resources, University of Bristol, UK.

**Prof. Frances Wall**, Professor of Applied Mineralogy, University of Exeter, UK.

## THE NEGLECTED MINERALS AND MATERIALS OF DEVELOPMENT

9 February 2021

01.00 (Vancouver) \* 04.00 (Toronto, Lima) \* 09.00 (London) \* 10.00 (Paris, Lagos) \*  
11.00 (Johannesburg) \* 12.00 (Nairobi) \* 14.30 (Mumbai) \* 15.00 (Dhaka) \* 17.00 (Beijing) \*  
18.00 (Tokyo) \* 20.00 (Sydney)

### Materials produced and consumed locally (in both developing and developed countries)

- Bulk materials, generally for nearby use
- Role in construction, infrastructure, agriculture, water treatment, etc.
- Environmental, social, and economic dimensions

**Prof. Daniel Franks**, Program Leader, Sustainable Minerals Institute, University of Queensland, Australia.





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## MINERAL EXTRACTION AND COMMUNITIES

16 February 2021

06.00 (Vancouver) \* 09.00 (Toronto, Lima) \* 14.00 (London) \* 15.00 (Paris, Lagos) \*  
16.00 (Johannesburg) \* 17.00 (Nairobi) \* 19.30 (Mumbai) \* 20.00 (Dhaka) \* 22.00 (Beijing) \*  
23.00 (Tokyo) \* 01.00+1 (Sydney)

### Regulation of the mining sector; mining and local communities in the context of Latin America and Africa

- Social justice and sustainability: the challenge of social acceptance and license
- The importance of governance: Regulation and oversight of mining operations
- Case studies and best practices

**Dr. Rajiv Maher**, Research Professor, EGADE Business School del Tecnológico de Monterrey, Mexico.

**Dr. Melba Kapesa Wasunna**, External Affairs Manager, Base Titanium Ltd., Kenya.

## SUPPLIERS, CONSUMERS, AND THE GLOBAL MINERALS SUPPLY CHAIN

2 March 2021

02.00 (Vancouver) \* 05.00 (Toronto, Lima) \* 10.00 (London) \* 11.00 (Paris, Lagos) \*  
12.00 (Johannesburg) \* 13.00 (Nairobi) \* 15.30 (Mumbai) \* 16.00 (Dhaka) \* 18.00 (Beijing) \*  
19.00 (Tokyo) \* 21.00 (Sydney)

### Technical, environmental, business, and social aspects of different scales of mining operations; links between consumers and source

- How supply chains work from source to use
- Differentiating large-scale, high-tech small-scale, and artisanal mining sectors
- Processing, refining, manufacturing sectors
- Stakeholders, responsible sourcing programmes, and their impacts

**Dr. Kathryn Moore**, Senior Lecturer in Critical and Green Technology Metals, University of Exeter, UK.

**Dr. Judy Muthuri**, Associate Professor of Corporate Social Responsibility, Nottingham University Business School, UK, and Project Lead, Sustainable Artisanal and Small-scale Mining Project (Kenya).

## EARTH MATERIALS AND A SUSTAINABLE FUTURE

9 March 2021

04.00 (Vancouver) \* 07.00 (Toronto, Lima) \* 12.00 (London) \* 13.00 (Paris, Lagos) \*  
14.00 (Johannesburg) \* 15.00 (Nairobi) \* 17.30 (Mumbai) \* 18.00 (Dhaka) \* 20.00 (Beijing) \*  
21.00 (Tokyo) \* 23.00 (Sydney)

### A reliable, affordable, and just supply of earth materials can be the foundation for a sustainable future and young professionals are the key to that future.

- Earth materials and the UN Sustainable Development Goals
- Technical, workforce, and social challenges must be addressed at all scales in both developing and developed countries
- A vision for the future

**Prof. Murray Hitzman**, Director of iCRAG and Science Foundation Ireland Research Professor, University College Dublin, Ireland.

**Ms. Halleluya Naantu Ekandjo**, research student, iCRAG, Dublin, studying the Rosh Pinah zinc-lead deposit, Namibia.

- Closing remarks by **UNESCO representative**

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