



Future Innovation Needs for Responsible Mining of Critical Minerals

January 25-26, 2024

Hampton Inn and Suites Denver Downtown-Convention Center
Denver, Colorado

Thursday, January 25, 2024

8:15 – 9:00 am	Registration
9:00 am	Welcome from USEA and Workshop Introduction from DOE <i>A/S Brad Crabtree, DOE-FECM</i>
9:30 – 10:30 am	Cutting Edge Now Mining Panel Moderator: <i>Emily King, Prospector</i> <i>Matt Johnson, Eagle Mine</i> <i>Jamey Jones, USGS</i> <i>Dawn Wellman, Rio Tinto</i>
10:30 – 10:45 am	Break
10:45 – 12:00 pm	Disrupting Mining Panel Moderator: <i>Satish Rao, Clareo</i> <i>Amelia Greig, Blue Origin</i> <i>Travis McLing, INL</i> <i>Bubba Davis, Crazy Horse Mining</i> <i>Elizabeth Holley, Colorado School of Mines</i>
12:00 – 1:15 pm	Lunch
1:15 – 2:30 pm	Breakout Session #1 <ol style="list-style-type: none">1) <i>Sensing and Characterization (e.g., logging while drilling, deep prospecting, rapid mineral characterization)</i>2) <i>Digital Subsurface Applications (e.g., autonomous systems, robotics, communications, AI)</i>3) <i>In-situ extraction (e.g., permeability enhancement, chemical leaching, biomining, thermal processes)</i>4) <i>Tailings management (e.g., waste minimization/zero waste, zero water)</i>
2:30 – 2:45 pm	Break

- 2:45 – 3:45 pm **Industry R&D Needs Panel**
Moderator: *Doug Hollett, MH Technology Partners*
Emily King, Prospector
John Swallow, Idaho Strategic Resources
Dawn Wellman, Rio Tinto
- 3:45 – 5:00 pm **SCI/EJ Panel (Recent American Mines)**
Moderator: *Joy Frank-Collins, Battelle*
Patricia McGrath, EPA
Jessica Smith, Colorado School of Mines
Matt Dannenberg, DOE
- 5:00 – 6:30pm **Open discussion with Govt. Agencies**

Friday, January 26, 2024

- 8:30 – 9:00 am **The DOE Perspective**
Grant Bromhal, DOE-FECM
- 9:00 – 10:15 am **Breakout Session #2**
1) *Test Facility Capabilities*
2) *Technology Wishlist*
3) *ESG/EJ/SCI*
4) *Mineral traceability (e.g., fingerprinting, chemical signatures, AI)*
- 10:15 – 10:30 am **Break**
- 10:30 – 10:45 am **Breakout Summary**
- 10:45 – 11:45 am **Financing & Investing**
Moderator: *Morgan Summers, DOE-FECM*
Christina Chang, Lowercarbon Capital
Tem Tumurbat, Nomadic Venture Partners
Geoff Elson, Orion Resource Partners
Garrett Winther, Newlab
- 11:45 – 12:00 pm **Wrap-up**
- 12:00 – 2pm **1-1s with DOE Officials (sign-ups onsite)**