

5-6 December 2024



Natural History Museum, London, UK

Bio-based processes have an important role to play in devising sustainability solutions for critical material (CM) supply chains. At present, the most common practices for processing rare earth elements, for example, are chemically intensive and frequently detrimental to the environment. Bioprocessing could unlock new methods of CM extraction from primary ores, low-grade ores and waste streams, providing opportunities to improve the sustainability and security of CM supply chains.

The UK and US have invested in R&D programmes to advance the development of bio-based approaches for metal recovery and remediation, and platforms such as the Joint Committee Meeting (JCM), set up under the UK-US Atlantic Declaration, highlight the need for cooperation to enhance economic security, particularly in developing robust international supply chains for critical technology metals.

**Our Vision: The UK-US Workshop on Bioengineering Solutions for Critical Minerals will convene the UK and US R&D communities to foster new collaborations to ensure that our bilateral science and innovation partnership provides a strong underpinning for our shared goals for CM supply chain.**

Themes covered during the workshop will include:

- Bioleaching
- Bio-separations
- Novel approaches to bio-enabled CM recovery

In addition, there will be platforms for discussions and knowledge exchange on workforce development, barriers to commercialisation, economic analysis (TEA/LCA) and best practices in responsible research and innovation.

Attendees will include representatives from UK Government, US Department of Energy, US Defense Advanced Research Projects Agency (DARPA), UK Research and Innovation, and leading figures from academia, national labs and industry. The workshop will be a blend of technical talks and panel discussions, where each technical session will feature short framing presentations by UK and US speakers.

## Outputs

- Internal report, identifying key strengths and priorities in UK and US R&D efforts and opportunity spaces for collaboration
- Perspectives paper for publication in an academic journal
- Preliminary list of potential UK-US project areas for seed funding (subject to identification of funding streams), incorporating a range of TRLs and sectors (academic, national labs, industry)

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