

## AGS 2024 Speaker Series: November & December

Tues, 12 November Carson Richardson (Arizona Geological Survey), “Arizona's place in the green energy transition, strategic and critical minerals, and how they will be sourced”

Tues, 3 December Steve Reynolds (Arizona State University), “Untangling the stratigraphy of the Supai/Naco of the Mogollon Rim.

Both talks will be hosted at the Hexagon Mining offices at 40 E. Congress St. Social hour & dinner from 5:30 to 6:25 p.m. Presentation at 6:35 p.m. (MST). Registration pending.

*Arizona's place in the green energy transition, strategic and critical minerals, and how they will be sourced* by Carson Richardson.

Abstract: Critical and strategic minerals have been buzzy terms in the news in the last few years, but have an often-ignored history that stretches clearly back to World War I. Critical mineral topics have been receiving bipartisan support from Congress as sourcing them addresses multiple needs. For one, in the United States, we are dependent on imports of critical minerals from other countries to meet 50% to 100% of total domestic demand for almost all critical minerals. Thus, many of these supply chains are vulnerable to disruption from geopolitics, social upheaval, and other unexpected events. Additionally, the renewable (or green) energy transition away from fossil fuels to reduce carbon footprints and combat climate change will require huge amounts of metals compared to current levels. There are simply not enough active mines or emerging deposits of many of the critical minerals to meet projected global demand.

This talk will: 1) sift through the jargon around critical and strategic minerals and materials; 2) provide a survey of the history of critical and strategic minerals in the United States; 3) an overview of the known critical mineral deposits in Arizona with primary critical mineral ores and those with potential to produce byproduct critical mineral ores – see figure below; and 4) future demand scenarios and how the United States could work to meet these demands.

Carson Richardson Bio: Carson is a Senior Research Scientist with the Arizona Geological Survey at the University of Arizona, having started in January 2019. Carson grew up in the cornfields near Peru, Indiana – the circus capital of the world. He received his B.S. in anthropology and geology from Ball State University in 2012, and a M.S. and Ph.D. in geosciences from the University of Arizona in 2014 and 2019, respectively. Carson’s interests span economic, regional, and structural geology, with particular interest in the geometry and growth of normal faults, structural reconstructions of faulted ore deposits and extensional domains, the societal understanding of mineral resources, resource consumption, environmental impacts, and the intersectionality of science and public policy.

# Critical Minerals in Arizona

