AEG Carolinas Chapter Dinner Meeting in Greenville

The Carolinas Chapter of the Association of Environmental & Engineering Geologists

Guest Speaker:

Tristan Morgan Childress, Ph.D., P.G., Economic Geologist
National Energy Technology Laboratory, Critical Mineral and Materials Program

PRESENTATION

The Challenges of Critical-Mineral Development in the United States

MEETING DETAILS

Place: Fireforge Crafted Beer, 311 East Washington Street in Greenville, South Carolina

Date: Thursday, October 15, 2026

Time: 6:00 PM socializing begins, 7:00 buffet dinner, 8:00 Tristan's presentation

Cost: AEG and SCAEP members $40, non-members $55, AEG Student Members **free**

Reservations: Please make reservations with Rick Kolb by 6:00 PM on Monday, October 12th on the AEG Carolinas website: www.aegcarolinas.org/news. AEG Student Members can make reservations on the website for $1 or (for free) by sending an email to Rick at rick.kolb1@gmail.com.

Tristan's Presentation

The United States faces critical mineral challenges across four major domains: demand drivers, domestic resource potential, policy barriers, and federal programs. Growing deployment of renewable energy and advanced technology is projected to drive critical mineral demand upward by as much as 40-fold by 2040, yet the U.S. averages nearly 29 years from mineral discovery to mine production, roughly double the global average, due to fragmented permitting authority, litigation risk, and chronic underinvestment in exploration. Domestic resources span both conventional hard-rock deposits and unconventional feedstocks including coal waste streams, acid-mine drainage solids, and oil-field produced waters, though market volatility and a projected shortage of 130,000 geoscientists compound the difficulty of developing them. Recent executive orders and trade measures, including a 50% copper tariff and expedited permitting directives, reflect the current administration's supply-side focus, though contradictory messaging on renewable energy, the primary driver of critical mineral demand, creates significant policy tension. Federal programs including the USGS Earth Mapping Resources Initiative, DOD Defense Production Act Title III investments, and DOE initiatives such as METALLIC and the CORE-CM Initiative represent the primary vehicles for translating policy intent into domestic supply chain development.

Tristan's Bio

Tristan is an economic geologist specializing in critical mineral resources, exploration geology, and ore deposit geochemistry. He currently supports the U.S. Department of Energy's National Energy Technology Laboratory (NETL), focusing on critical mineral sustainability and carbon storage. Tristan has been heavily involved in NETL's Carbon Ore, Rare Earth, and Critical Minerals (CORE-CM) Initiative, leading multiple working groups and contributing to national strategies for resource development. His experience spans academia, government, and industry, including extensive fieldwork in North and South America and multiple peer-reviewed publications on iron oxide and critical mineral systems. Tristan received his bachelors in geology from the University of South Carolina, his doctorate degree in economic geology from the University of Michigan, and is a Licensed Geologist in the state of Wyoming.