

Academia-Industry(and DOE) Partnerships

Scott Quillinan, Senior Director, Research

An Opportunity to Facilitate Resilient Domestic Critical Material Supply Chains – Discussions on the Infrastructure, Investments and Jobs Act, Sections 41003c and 41003d

*July 14th, Colorado School of Mines
Golden, Colorado*

THE WORLD NEEDS MORE COWBOYS.

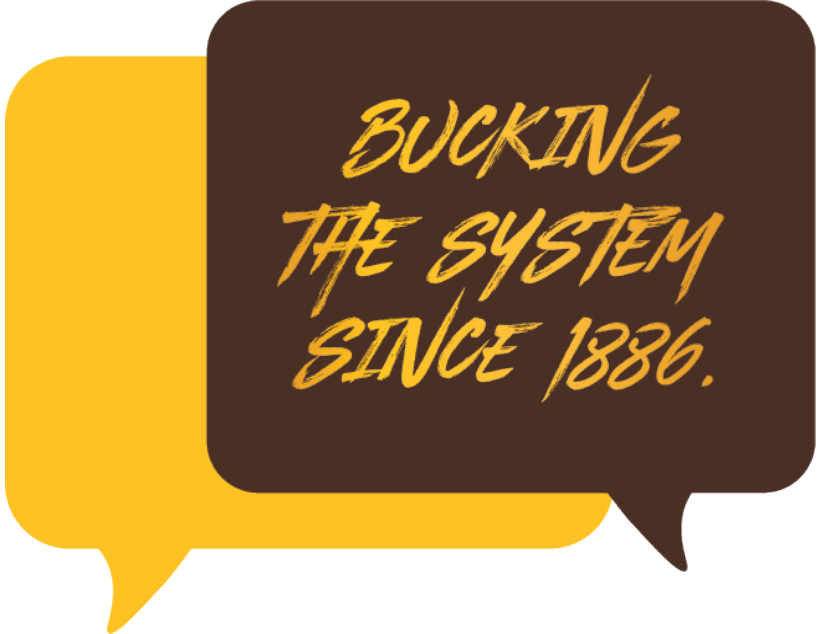


UNIVERSITY
OF WYOMING

School of
Energy Resources

SER's Mission:

Energy-driven economic
development for
Wyoming



*BUCKING
THE SYSTEM
SINCE 1886.*

Why Wyoming



UW Graduate Student Sophie Stewart REE sample collection with a mining partner.

University of Wyoming Critical Minerals Program

Guiding principles

1. Bring together a diverse group of stakeholders (communities, industry, government, academia) across the critical mineral value chain from (n=107 and growing)
2. Develop implementation strategies and programs to *kick start* a new domestic industry pertaining to rare earth elements, and critical minerals
3. Collaborate on RD&D and the commercialization of technologies
4. Develop workforce training programs, community engagement and technology transfer

Connecting Stakeholders

Critical minerals

WORKFORCE TRAINING & DEVELOPMENT | COMMUNITY ENGAGEMENT | OUTREACH | EDUCATION

- **Technology Roundtable Discussion**

The Technology Roundtable was an online forum that allowed industry partners and stakeholders to connect and discuss different topics across the REE/CM supply chain.



- **Webinars**

The webinar series has covered varying topics related to REE and CM; the webinars are open to the wider community and designed to educate and bring in more stakeholders and interested community members.



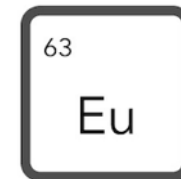
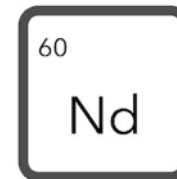
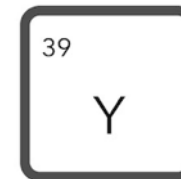
- **Annual Forum**

In-person events to provide updates on REE/CM program to allow industry partners and stakeholders to connect.



- **Community College and Local Partnerships**

The team has partnered with local entities such as the Wyoming Innovation Center, Economic Development, Mining, and Community Colleges and Community Groups



SOCIAL AND ENVIRONMENTAL JUSTICE

AN EXAMINATION OF CARBON ORE, RARE EARTH AND CRITICAL MINERAL (CORE-CM) COMMUNITIES



Savannah Rice
Science, Technology, and Policy Fellow, US Department of Energy



Matthew Henry
Assistant Instructional Professor, University of Wyoming Honors College



Bonnie Petersen
Executive Director, Associated Governments of Northwest Colorado (AGNC)



Daniel Cardenas
Chief Executive Officer, Knowledge River



Kipp Coddington
Senior Analyst, University of Wyoming School of Energy Resources



Selena Gerace
Associate Research Scientist, University of Wyoming School of Energy Resources

TUESDAY, APRIL 5, 2022

LIVE WEBINAR

RARE EARTH ELEMENT AND CRITICAL MINERAL DEVELOPMENT IN WYOMING

MONDAY, NOVEMBER 15, 2021
12:00 PM



Randy Scott
Rare Element Resources



Thomas Tarka
National Energy Technology Laboratory



Holly Krutka, SER Executive Director
presenting for Melissa Firestone
Center for Energy Regulation & Policy Analysis



Jada Garofalo
Center for Energy Regulation & Policy Analysis



Erin Phillips
Center for Economic Geology Research



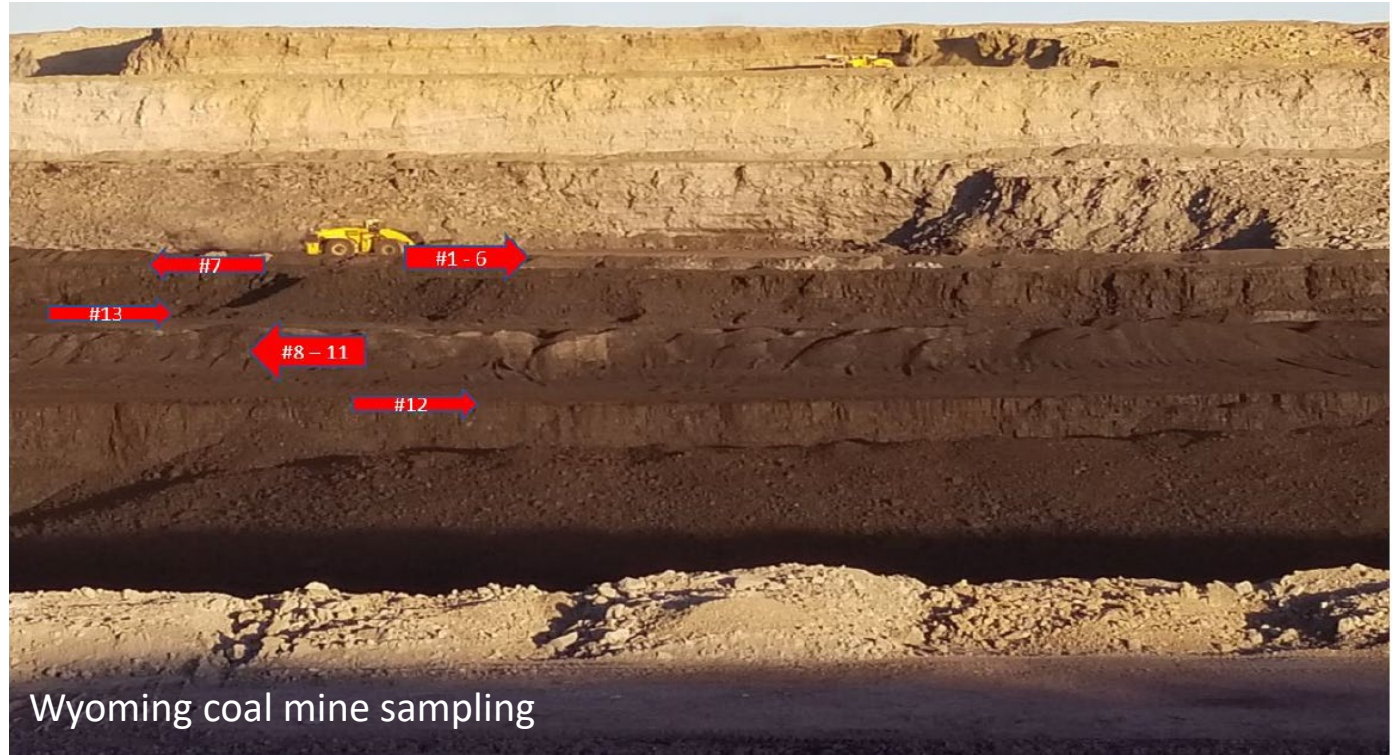
RD&D

Critical minerals

EARLY TRL RESEARCH | ATTRACTING RESEARCH DOLLARS | ACCES TO FACILITIES



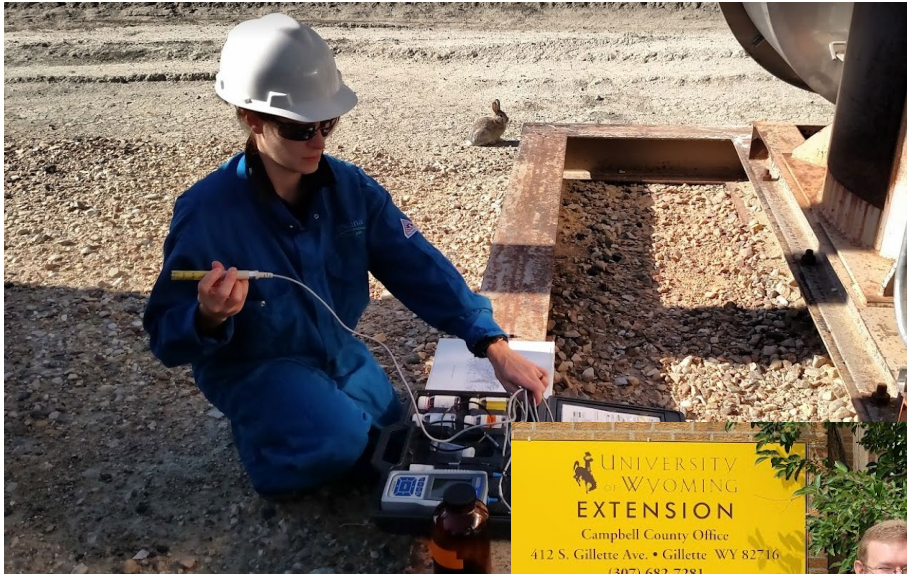
Advanced Clean Coal Lab, located at the School of Energy Resources



Wyoming coal mine sampling

RD&D

Critical minerals- Highlighted successful industry partnerships



Wyoming Innovation Center

Industry engagement key to workforce development

➤ Traditional disciplines

- Mining
- Metallurgy
- Process engineering
- Law/Policy/Economics
- Environmental sciences

➤ Key disciplines

- Non-humanoid robotics
- Internet of things
- Big data analytics (AI and Machine learning)
- Social science
- Etc.

➤ Role of the community colleges

BADGES

Whether you want to compete with friends to earn the most, or would rather complete the collection, the MAP badging system has something just for you.

Badges are what we use to track what you know. Having the badges is your passport to using the equipment at any participating MAP facility — meaning you won't need to be recertified on anything you've learned before. The badges are broken into series based on the group of machines or tools they cover; for example, all of the badges regarding the laser cutters are part of the LAS series. Pretty simple, eh?

There's a badge available for just about everything in the Innovation Wyrkshop, from the laser cutters to the handheld tools. Earning the badges will give you quick access to the tools you want, and can unlock great rewards like after-hours access and discounts on material. Try your hand at a badge that interests you — we promise you'll love it.



[Check out how it works](#)



UW's CM workforce development program

Academia/Industry areas of overlap

- Workforce training
- Community engagement
- Building networks and consortiums
- Early TRL research to commercialization of technologies
- Attracting and collaborating on R&D funding.



Plug for CORE-CM

Carbon-Ore, rare earth elements, and critical minerals

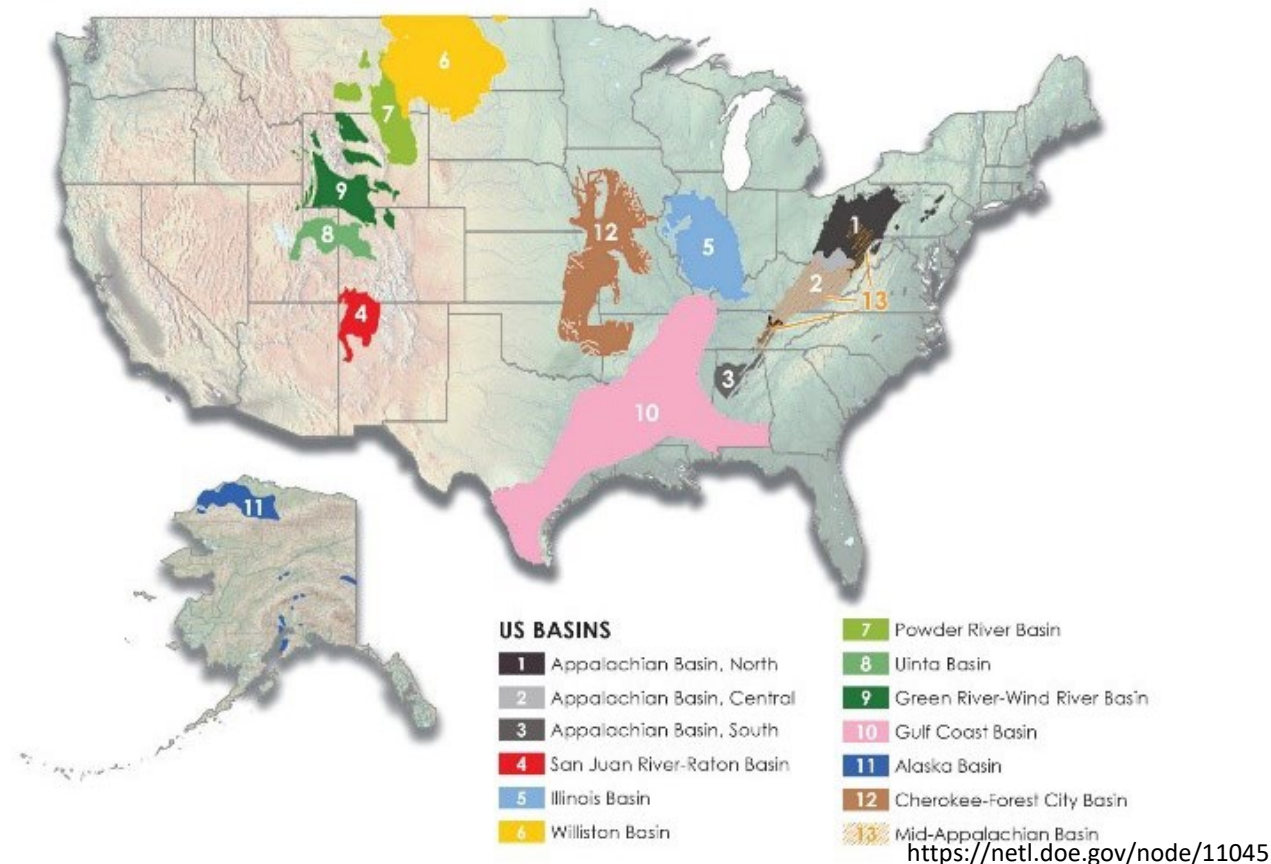


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CORE-CM INITIATIVE



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