



U.S. DEPARTMENT OF  
**ENERGY**

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Fossil Energy and  
Carbon Management

**DOE Alaska Workshop on  
Critical Minerals**

May 9, 2024

Workforce  
Opportunities

Caleb Woodall

# Critical Minerals & Materials Workforce Activities

## Workforce Needs

The industry's growth faces several workforce-related challenges (e.g., aging workforce, decrease in relevant university programs, negative social perceptions, foreign competition) (U.S. Dept of Commerce).

Unique challenges among two workforce tracks:

- Engineering & Research – bolster education, facilitate partnerships between industry/academia, improve public outreach
- Trades – embed strong labor standards competitive with similar industries; support for organized labor in regions where relevant (U.S. Dept of Energy)



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## Current Activities

### CORE-CM Initiative

Basinal assessments and supply chain development to produce REE, CM, and other products from unconventional and secondary feedstocks.

- Anticipated FOA may involve initiation of workforce development plans. (Notice of Intent released 1/24/2024)

### Rare Earth Element Demonstration Facility (BIL)

Developing first-of-a-kind REE/CM extraction and separation refinery.

- CBPs involve quantifying job benefits and stakeholder engagement.



# FECM Crosscutting Workforce Programs

## University Training and Research

*Education and Training*  
*Early-Stage R&D*  
*Building R&D Capacity*  
*Preparing the Future  
Workforce*

## Energy Asset Transformation

*Transforming legacy  
energy assets to clean  
energy applications*  
*Integrating Workforce,  
Environmental,  
Social Justice,  
and Safety  
Considerations*

## ORISE Internship Programs

*Hands-On Experience*  
*Mentorship*  
*Connecting Theory to  
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# University Training and Research (UTR)



Historically Black Colleges & Universities and  
Other Minority-Serving Institutions (HBCU-MSI)

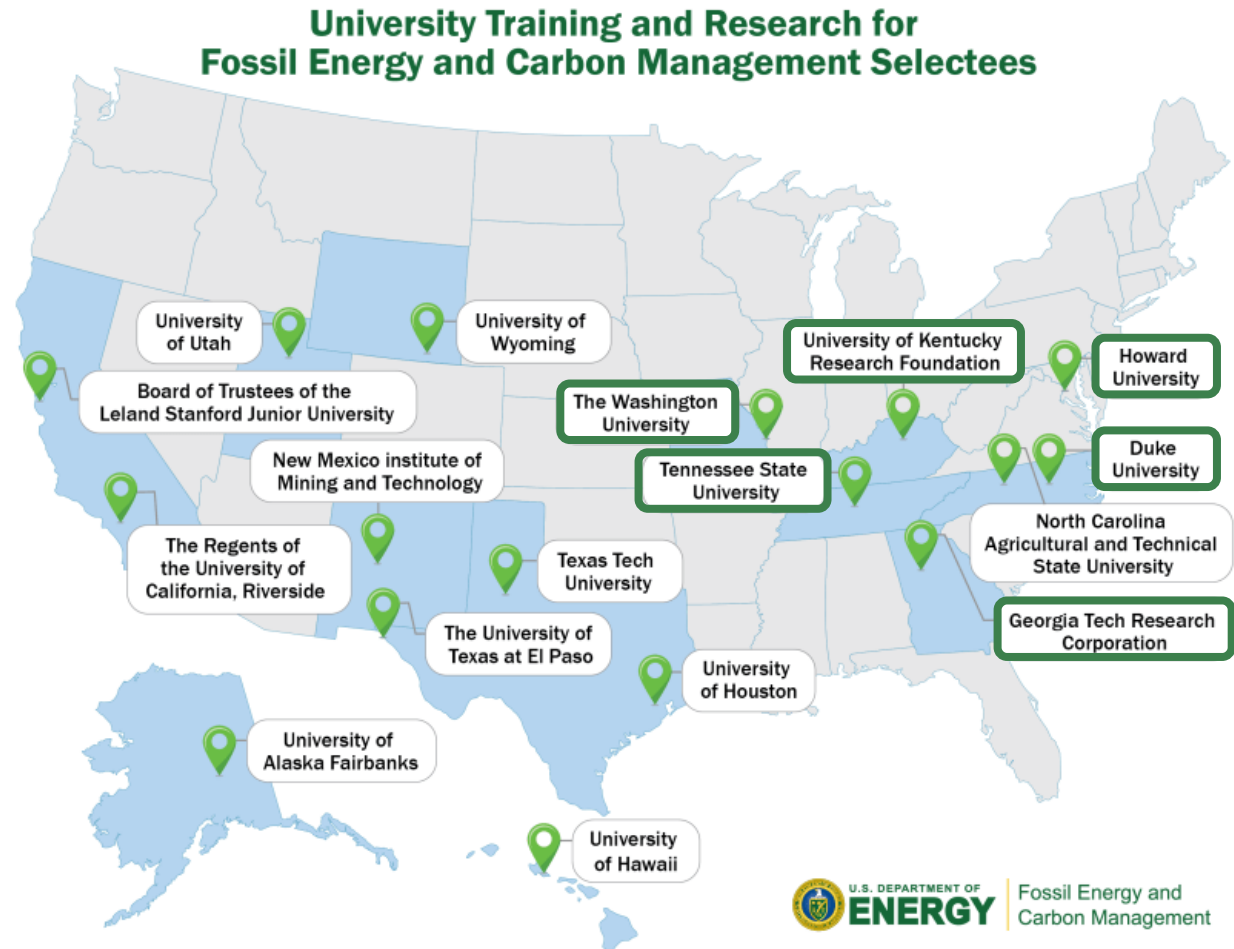
University Carbon Research (UCR)

Education and Training Program for Next Generation of Engineers and Scientists



# UTR – FY23 Selections

- 19 projects selected to receive \$17.4 million
  - 17 different U.S. universities selected
- 6 projects related to critical minerals
  - Geoscience curriculum development at minority-serving institutions
    - Tennessee State University
  - Improving recovery of critical minerals and materials from coal-based resources
    - Duke University
    - Georgia Institute of Technology
    - Howard University
    - University of Kentucky Research Foundation
    - Washington University



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# Energy Asset Transformation Program

**Program Focus**: Leveraging and transforming legacy energy assets to clean energy applications.

## Capacity Building for Repurposing Energy Assets Initiative

Helping communities develop a workforce to repurpose energy assets slated for retirement (2009-2032).

## Skills Matching for an Equitable Energy Transition

Analysis by Resources for the Future to ultimately assist training of new graduates and fossil fuel workers to build skills in emerging energy sectors.



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# Mickey Leland Energy Fellowship Program



- A **10-week, paid** summer research program for Science, Technology, Engineering, and Math (STEM) students
  - Undergraduate student: \$750/week; Graduate student: \$850/week
- Receive **mentorship** from DOE scientists and engineers
- Provide **hands-on experience** complementing course of study and connect **theory to practice**
- Increase **confidence**, enhance **communications skills**, and promote **critical thinking** and **problem solving**



# MLEF Program



## ELIGIBILITY

- Be at least age 18
- Be a U.S. Citizen
- Have a minimum 2.8 GPA
- Be enrolled full-time in a STEM degree program at the Associate, Bachelor's or Master's level at the time of application.
- Must be a college sophomore or higher

## REQUIREMENTS

- Commit for the full 10-week program
- Attend orientation and present research findings at the Technical Forum

**Summer 2025 applications  
will open in September 2024**



# DOE STEM

## YOUR ONE-STOP SHOP FOR STEM-BASED OPPORTUNITIES FROM THE DOE

<https://www.energy.gov/doe-stem/doe-stem>

- Search opportunities by discipline, location, DOE office, & more
- Access resources across the DOE
- Read about past participants
- See our calendar of events



# DOE Faculty Research Opportunities



## NETL Faculty Research Program

- Opportunity for faculty to collaborate with principal investigators at **NETL facilities**.
- For full-time regular permanent faculty member at an accredited college/university with a research interest in NETL core R&D areas.

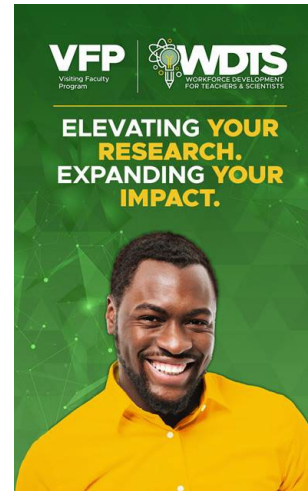


## Faculty-Applied Clean Energy Sciences Program

- Opportunity for faculty to collaborate with principal investigators at the **National Renewable Energy Laboratory**.
- For full-time regular permanent faculty member at Minority-Serving Institutions.
- Faculty will develop scalable education modules on topics like community engagement, human behavior, energy and environmental science, and artificial intelligence

## Office of Science Visiting Faculty Program

- Opportunity for faculty to collaborate at **one of 15 participating DOE National Labs** for (1) research or (2) teaching initiative.
- For full-time (U.S. citizen) faculty members from institutions historically marginalized in STEM research (non-R1/R2, except for R2 HBCUs).

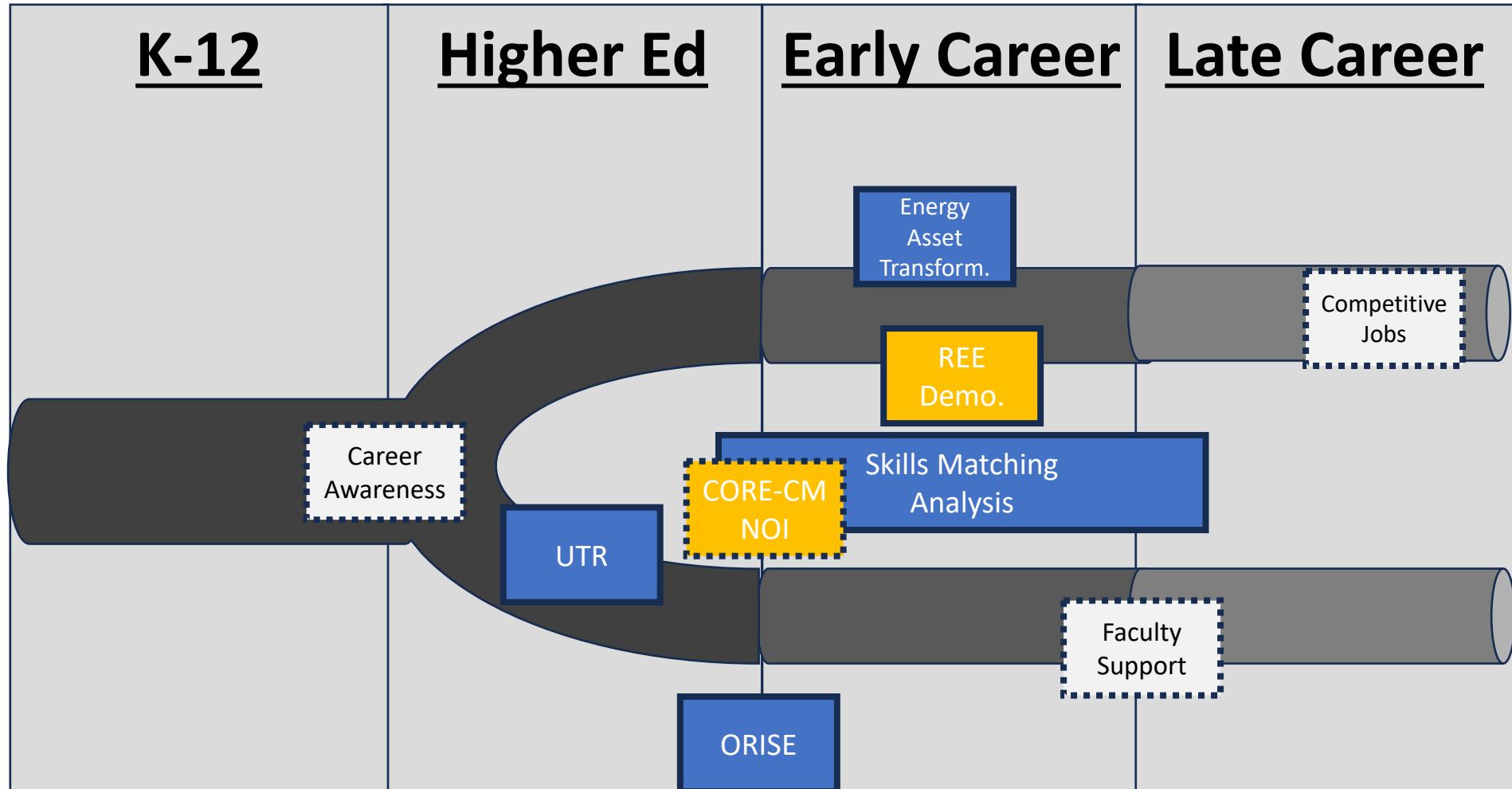


# Carbon Management Workforce Efforts

Critical Minerals

Cross-cutting

Potential Need?



# Questions & Follow Ups



**Questions?**



**Caleb Woodall**

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University Training and Research  
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## FECM – Workforce Programs:

<https://www.energy.gov/fecm/fecm-workforce-programs>

## NETL – University Training & Research:

<https://netl.doe.gov/carbon-management/university-training>

## FECM – Email Updates (including UTR)

<https://public.govdelivery.com/accounts/usdoeofe/subscriber/new>



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CBP Template: <https://eere-exchange.energy.gov/FileContent.aspx?FileID=9848d718-ddc3-4b79-ba9c-3d0b0f155844>