Good Afternoon

The Webinar is scheduled to start at 1:30 EST

NATIONAL ENERGY TECHNOLOGY LABORATORY

Solutions for Today | Options for Tomorrow

Welcome to the Webinar

NETL Webinar on FECM's Minority Serving Institutions Program

Maria Reidpath
Federal Project Manager

December 1, 2021
HBCU-OMI FECM Webinar

Welcome and Introductions

- The objective of this Webinar is to assist officials at Minority Serving Institutions (MSIs) by
  - Increasing awareness of NETL's **Historically Black Colleges and Universities, and, Other Minority Institutions (HBCU-OMI) Program** and its available opportunities
  - Presenting the context for these opportunities: NETL's Mission and Priorities in general and of Crosscutting Research in particular
  - Reviewing NETL's engagement with MSIs and its purpose
  - Briefing participants on the intricacies of doing business with the Federal Government and how to effectively respond to NETL Funding Opportunity Announcements (FOAs)

Welcome and Introductions

- This **Webinar is being recorded and will be posted** (in 7-10 days) on NETL Website: www.netl.doe.gov. Go to the "News and Events" tab on the upper right-hand side and click "Conference Proceedings".
- If you are using computer audio, you may experience audio issues depending on your internet connection speed. To avoid this, **we recommend the phone call option**.
- Your telephones are muted and we will not be able to hear your questions, so **please use the chat/question box that came up when you logged onto GoToWebinar for your questions**. All questions will be answered, time-permitting, after all the presentations have been made.
- Questions that are not answered during the Webinar will be posted, along with the answers, at the same location as the Webinar recording.

Goals of NETL's HBCU-OMI Program

- To reach U.S. minority students from underrepresented and structurally marginalized communities.
- For minority students to **benefit from and contribute to world-class research activities** by participating in key areas that impact the Nation and potentially, the World.
- For minority students to have the **opportunity to be involved in FECM mission goals for a sustainable and net-zero greenhouse gas future**.
- For minority students to **develop and hone cutting-edge and translatable skillsets**.

Agenda

1. **Welcome and Introductions**
   Maria Reidpath, Federal Project Manager, Crosscutting Team

2. **Overview of NETL's University Training & Research Program**
   - ***Bhima Sastri***, Director, Integrated Carbon Management, FECM
   - ***Bob Smith***, Program Manager, FECM
   - ***Sydni Credle***, Technology Manager, University Training & Research

3. **Overview of the Mickey Leland Energy Fellowship Program**
   Sandra Penaherrera, Program Manager Mickey Leland Energy Fellowship Program

4. **Doing Business with the Federal Government and Funding Opportunity Announcements (FOAs)**
   Mark Coonrad, Grants Management Specialist, Financial Assistance

5. **Responding to the Areas of Interest (or Topics)**
   Sarah Nathan, Federal Project Manager, Crosscutting Team

6. **Questions and Answers**

Questions?

VISIT US AT: **www.NETL.DOE.gov**

@NETL_DOE

@NETL_DOE

@NationalEnergyTechnologyLaboratory

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University Training and Research

NATIONAL ENERGY TECHNOLOGY LABORATORY

MISSION

Driving innovation and delivering solutions for an environmentally sustainable and prosperous energy future:

- Ensuring affordable, abundant and reliable energy that drives a robust economy and national security, while
- Developing technologies to manage carbon across the full life cycle, and
- Enabling Environmental Sustainability for all Americans

VISION

To be the nation's premier energy technology laboratory, delivering integrated solutions to enable transformation to a sustainable energy future.

Research Focus by Site

Multiple Sites Operating as One Lab System

- Materials Performance
- Multi-environment Materials Characterization
- Alloy Development/Manufacture
- Geospatial Data Analysis

- Process Systems Engineering
- Decision Science
- Functional Materials
- Environmental Sciences
- Energy Systems Optimization

- Energy Conversion Devices
- Simulation-Based Engineering
- *In-Situ* Materials Characterization
- Supercomputer Infrastructure
- Diagnostics, Sensors, and Controls

Oil and Gas Strategic Office

Oil and Gas Strategic Office

NETL Snapshot

NATIONAL ENERGY TECHNOLOGY LABORATORY

By the Numbers

3 labs across U.S.

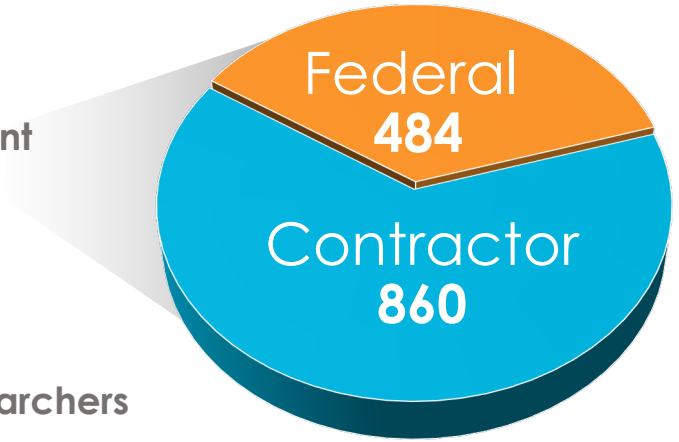
1000+ R&D projects in **50** states

$5.0B total award value

$1.1B FY21 budget

Workforce

1,344 Full Time Equivalent Employees (FTEs)



34 Joint Faculty

28 Postdoctoral Researchers

33 Graduate Students

33 Undergraduate Students

NETL manages & implements an array of activities for multifaceted R&D programs

- Program planning, development, and execution
- Legal, financial, procurement and Head of Contracting Authority (HCA)
- Project management expertise

NETL Budget

FY2021 Budget
$1.1B

Advanced Coal & Carbon Management Program

Carbon Capture	$126M
Carbon Utilization	$ 23M
Carbon Storage	$ 79M
Adv. Energy Systems	$122M
Crosscutting Research	$ 72M
STEP	$ 15M
Transform. Coal Pilots	$ 10M

Natural Gas & Oil Program

Natural Gas Tech.	$ 57M
Unconvent. FE Tech.	$ 46M

FE Program Support

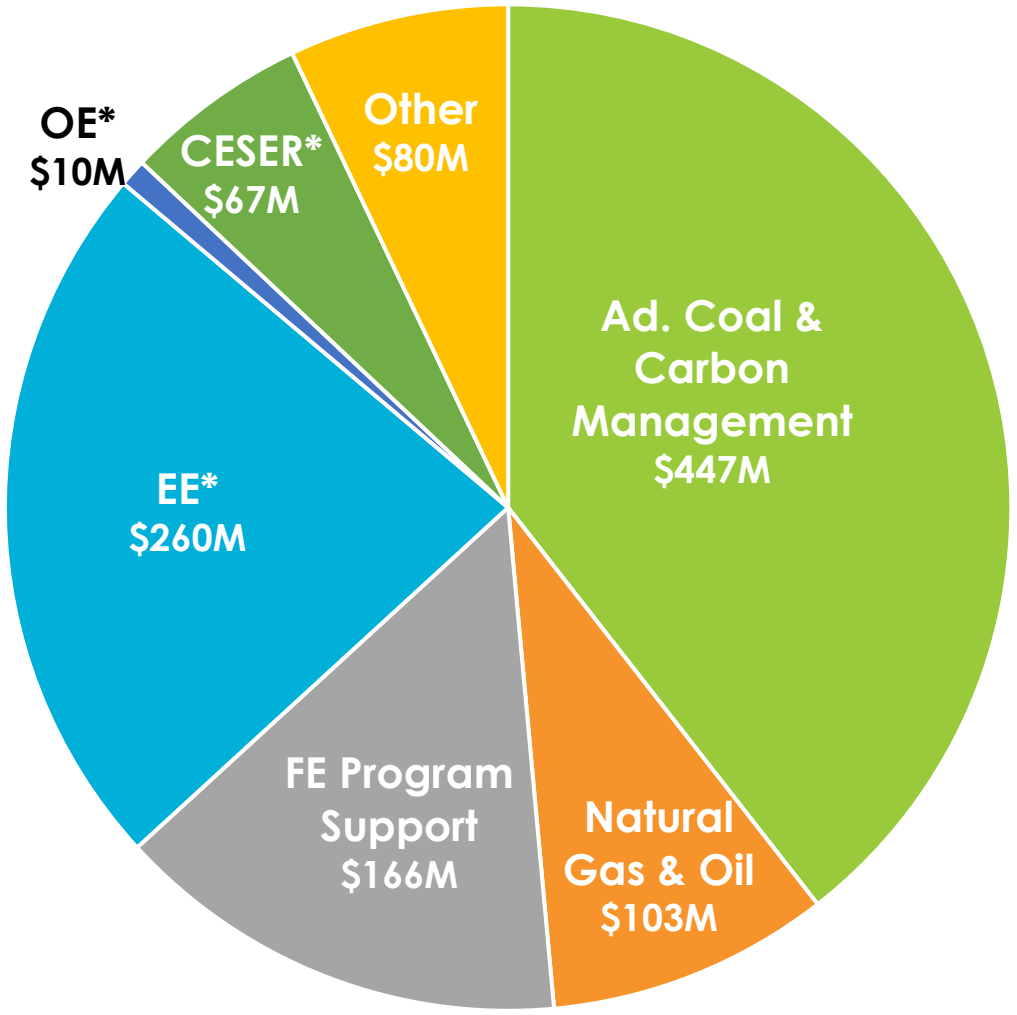
Program Direction	$ 28M
NETL Research & Ops.	$ 83M
NETL Infrastructure	$ 55M

Non-Fossil Programs*

EE	$260M
OE	$ 10M
CESER	$ 67M

Strategic Partnerships

Other	$ 80M



*estimated and subject to change

Advanced Coal & Carbon Technology R&D Thrusts

NATIONAL ENERGY TECHNOLOGY LABORATORY

Carbon Capture

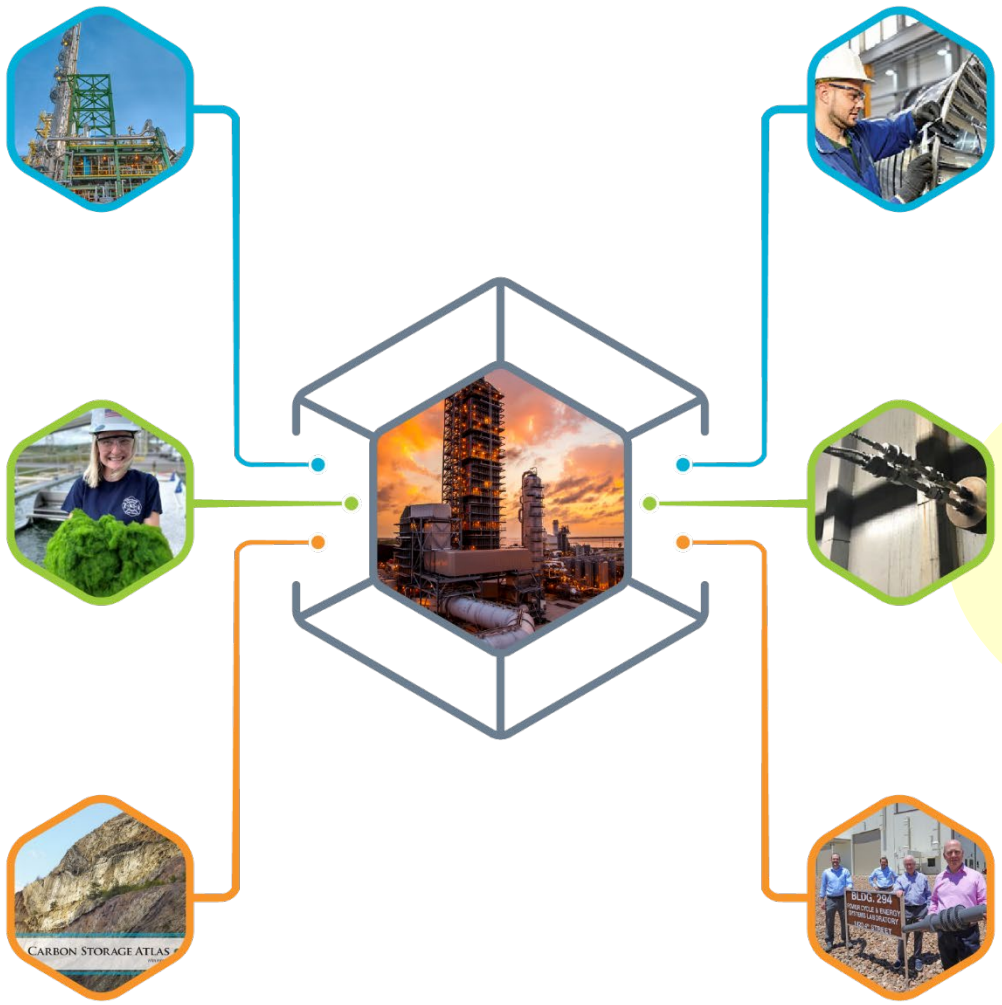
- Negative Emissions Technologies
- Direct Air Capture
- Natural Gas Sources
- Industrial Sources

Carbon Utilization

- Working Fluid
- Algae Systems
- Conversion to Fuels & Chemicals
- Mineralization into Inorganic Materials

Carbon Storage

- Monitoring, Verification, Accounting & Assessment of Long-Term Storage
- Storage Infrastructure Demonstration
- Regional Carbon Sequestration Partnerships
- CarbonSAFE



Advanced Energy Systems

- Hydrogen Fuel
- Transformative Power Generation
- Gasification
- Solid Oxide Fuel Cells & Gas Turbines
- Advanced Coal Processing

Crosscutting Research

- High-Performance Materials
- Sensors & Controls
- Rare Earth Elements & Critical Minerals
- Energy Storage
- Water Management
- Simulation-Based Engineering
- **University Training & Research**

STEP (Supercritical CO_2)

- STEP Pilot Plant
- Turbomachinery & Recuperators
- Advanced Concepts in Direct-Fired Cycles
- Systems Integration & Operation

NETL Crosscutting Research Program

Sydni Credle
Technology Manager

Sensors and Controls
Simulation-Based Engineering
University Training and Research

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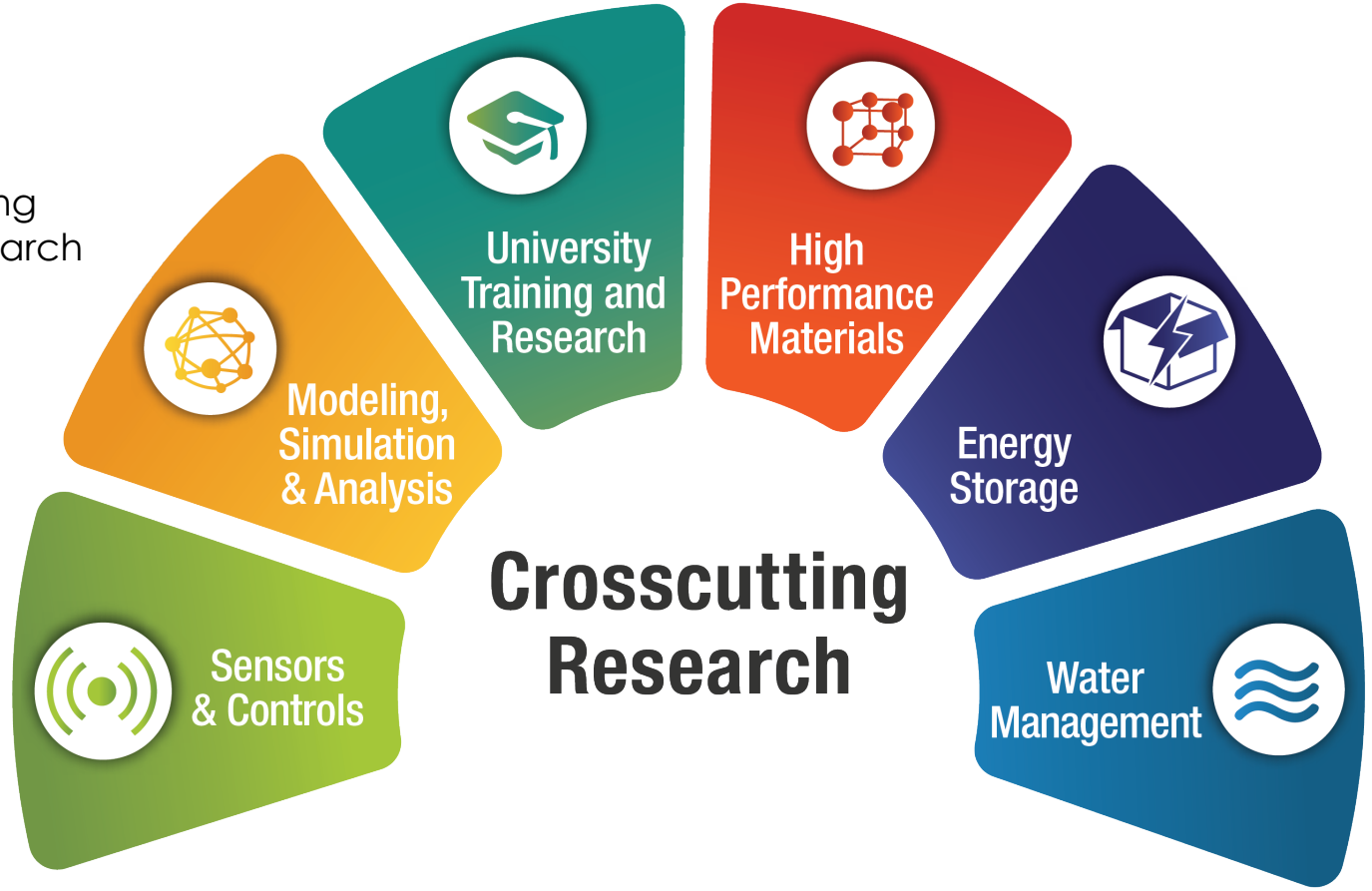

Anthony Zinn (Detail)
Technology Manager

High Performance Materials
Energy Storage
Water Management

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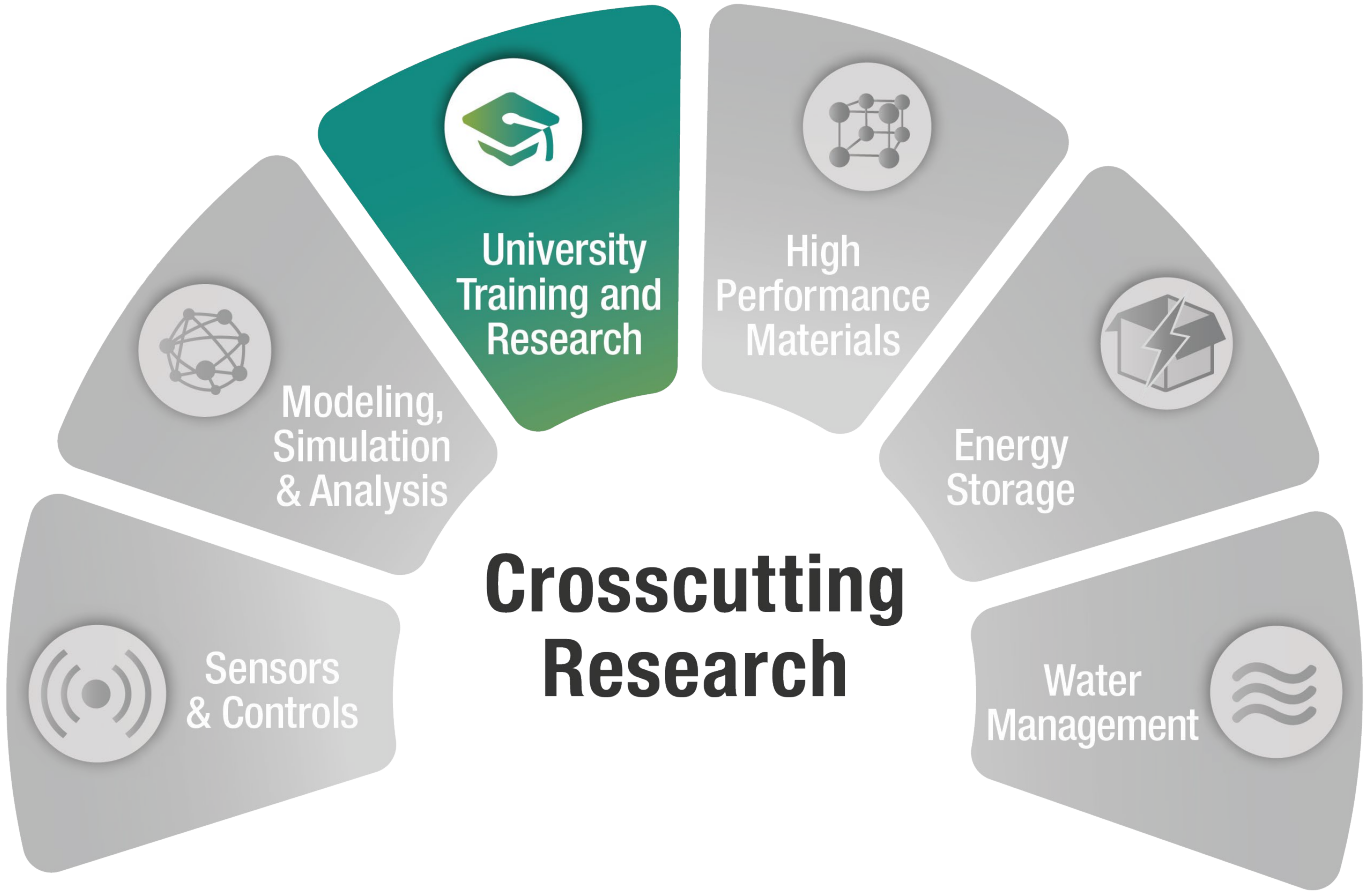
University Training and Research Program



University Training and Research Program

Historically Black Colleges & Universities (HBCU) and Other Minority Institutions (OMI)

University Coal Research (UCR)

Education and Training Program for Next Generation of Engineers and Scientists

UTR Program – Goals and Objectives

- To **educate and train the next generation of engineers and scientists** to help develop and contribute to a highly-skilled, inclusive, and competitive U.S. workforce and economy
- To support **novel, early-stage research at U.S. colleges and universities** that advances the Office of Fossil Energy & Carbon Management's mission of delivering integrated solutions related to fossil energy and carbon management and enable transformation to a sustainable, net-zero greenhouse gas future
- To **increase research & development opportunities for underrepresented and structurally marginalized communities** within the U.S. and tap into the innovative and diverse thinking of student researchers at minority-serving institutions of higher learning
- Ensure that students are being equipped with **cutting-edge, translatable skillsets** that will allow them to contribute to the U.S. workforce and greater economy over the course of a longstanding and enduring career

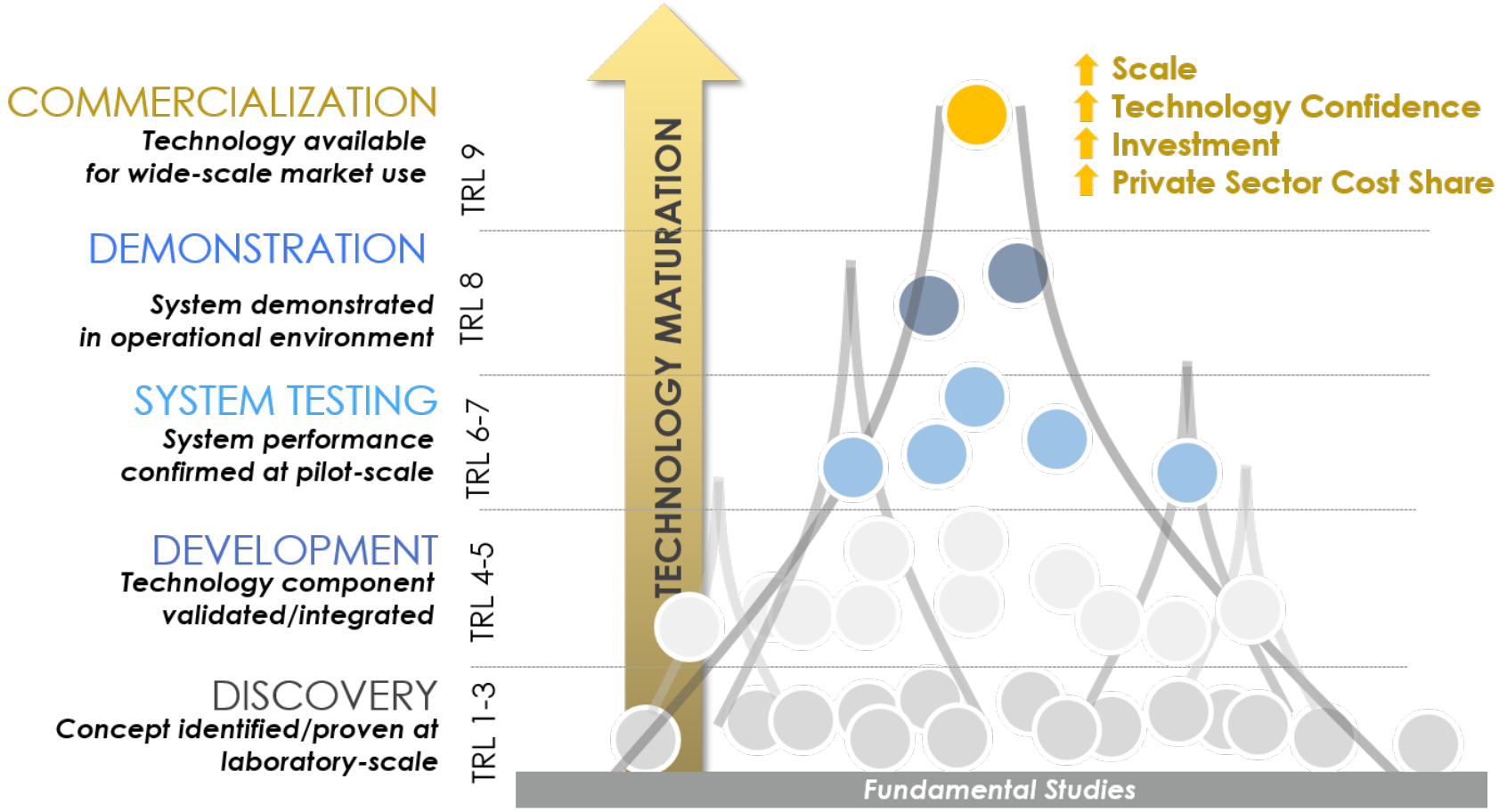
Challenges and Opportunities for Future Energy Systems

Decarbonization Goals

- **50% reduction in U.S. GHG pollution by 2030**
  - From a 4/22/21 White House Statement: Today, President Biden will announce a new target for the United States to **achieve a 50-52 percent reduction from 2005 levels in economy-wide net greenhouse gas pollution in 2030** – building on progress to-date and by positioning American workers and industry to tackle the climate crisis.
- **Carbon-neutral power sector by 2035**
  - From EO 14008, Sec 205: "The plan shall aim to use, as appropriate and consistent with applicable law, all available procurement authorities to achieve or facilitate: (i) **a carbon pollution-free electricity sector no later than 2035**"
- **Carbon-neutral economy by 2050**
  - From EO 14008, Sec 201: "Despite the peril that is already evident, there is promise in the solutions — opportunities to create well-paying union jobs to build a modern and sustainable infrastructure, deliver an equitable, clean energy future, and put the United States on a path to **achieve net-zero emissions, economy-wide, by no later than 2050**."

University Training and Research Program

Nurture technologies from initial idea/concept through the various stages of development, including proof of feasibility, prototyping, field testing, etc.



UTR Program is traditionally TRL 2-5

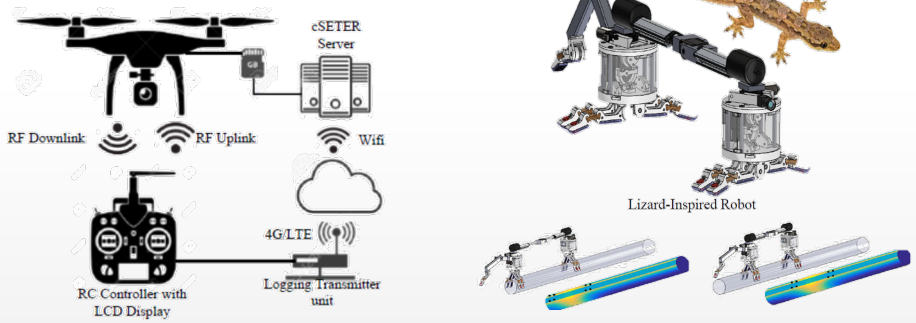
University Training and Research Program

Education and Training Program for Next Generation of Engineers and Scientists

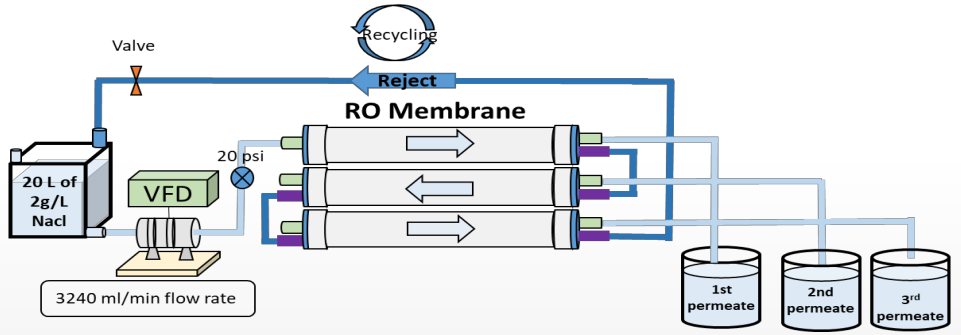
- Annual HBCU-OMI Funding Opportunity Announcement (FOA)
- Nationwide, competitive solicitation each year
- Research and development (R&D) projects awarded as Grants
- Typical duration of 2-3 years
- Award size: $400-500K
- Resources: https://netl.doe.gov/business/solicitations
  https://www.fedconnect.net/
  https://www.grants.gov/

UTR Portfolio Highlights

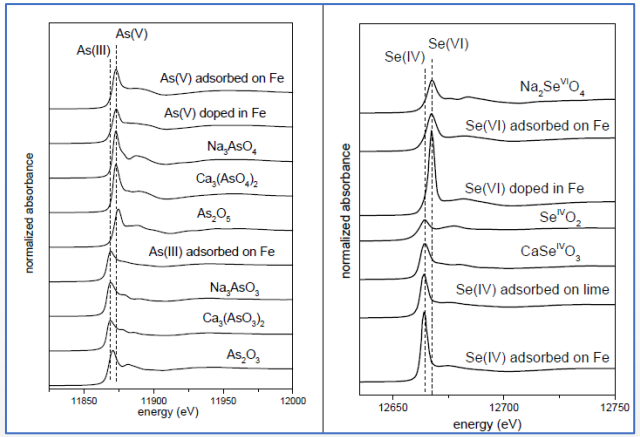
ROBOTICS FOR NON-DESTRUCTIVE EVALUATION



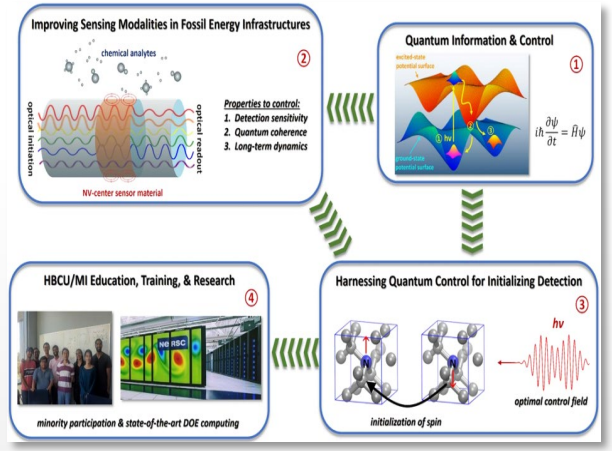
WATER TREATMENT



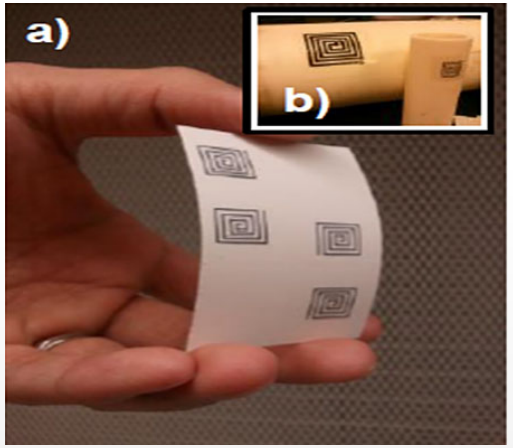
ARSENIC & SELENIUM IN COAL FLY ASH



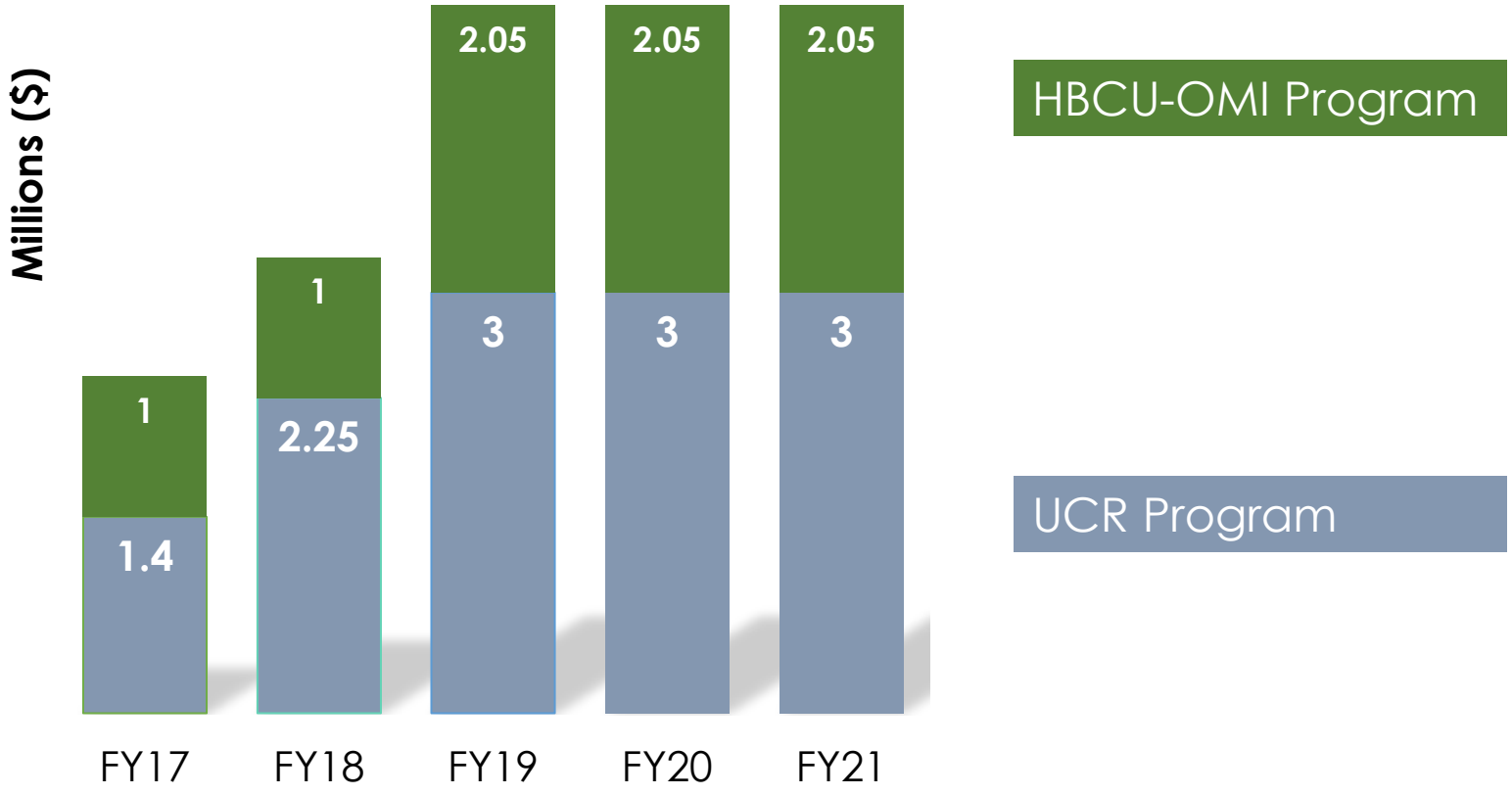
QUANTUM INFORMATION SCIENCES



PASSIVE WIRELESS SENSORS



UTR Program Budget History



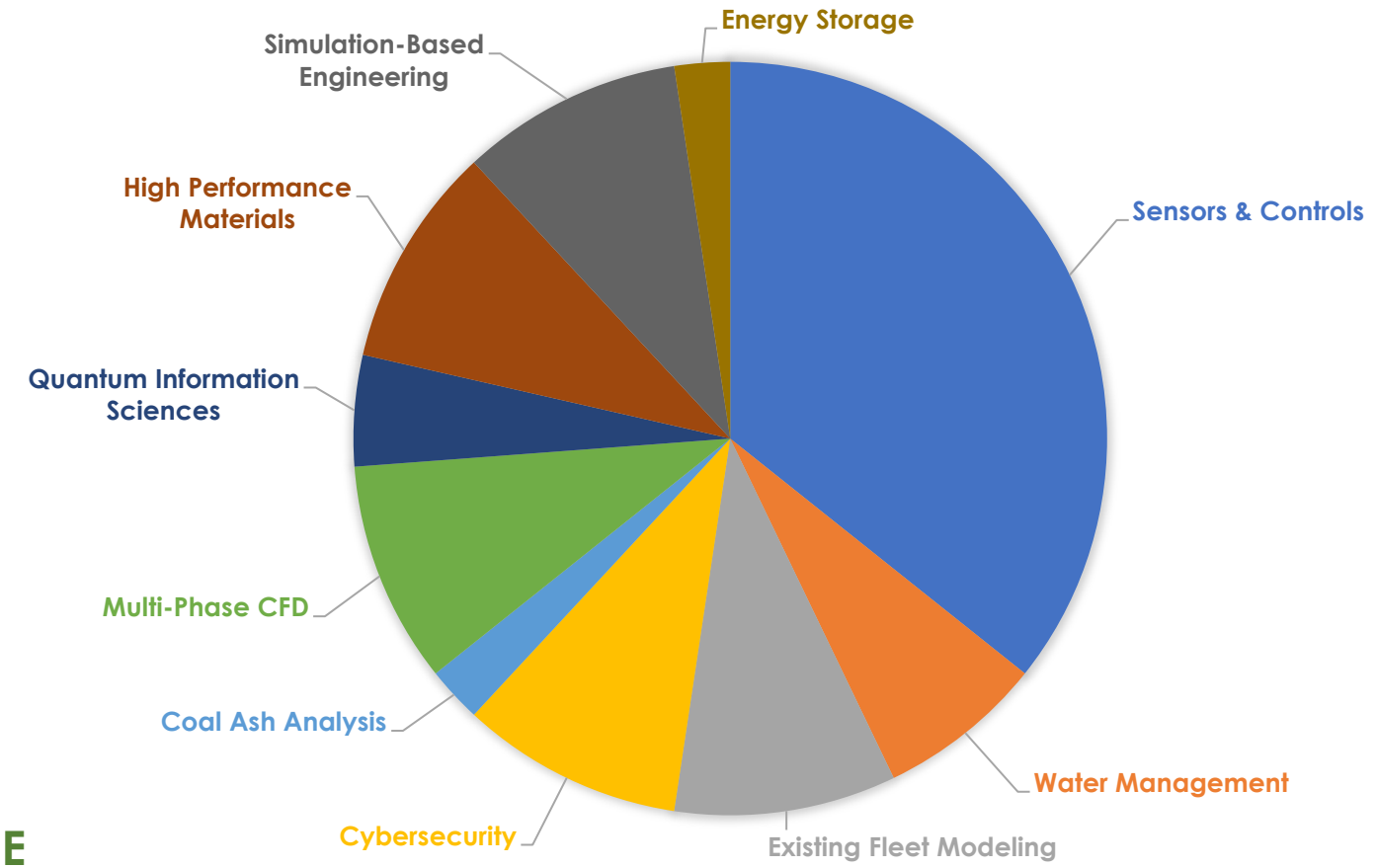
UTR Program – Project Summary

42 TOTAL PROJECTS (ACTIVE)

25 UNIVERSITY COAL RESEARCH (UCR)

17 HISTORICALLY BLACK COLLEGES AND UNIVERSITIES, AND OTHER MINORITY INSTITUTIONS (HBCU-OMI)

$18.3M TOTAL AWARD VALUE (ACTIVE)



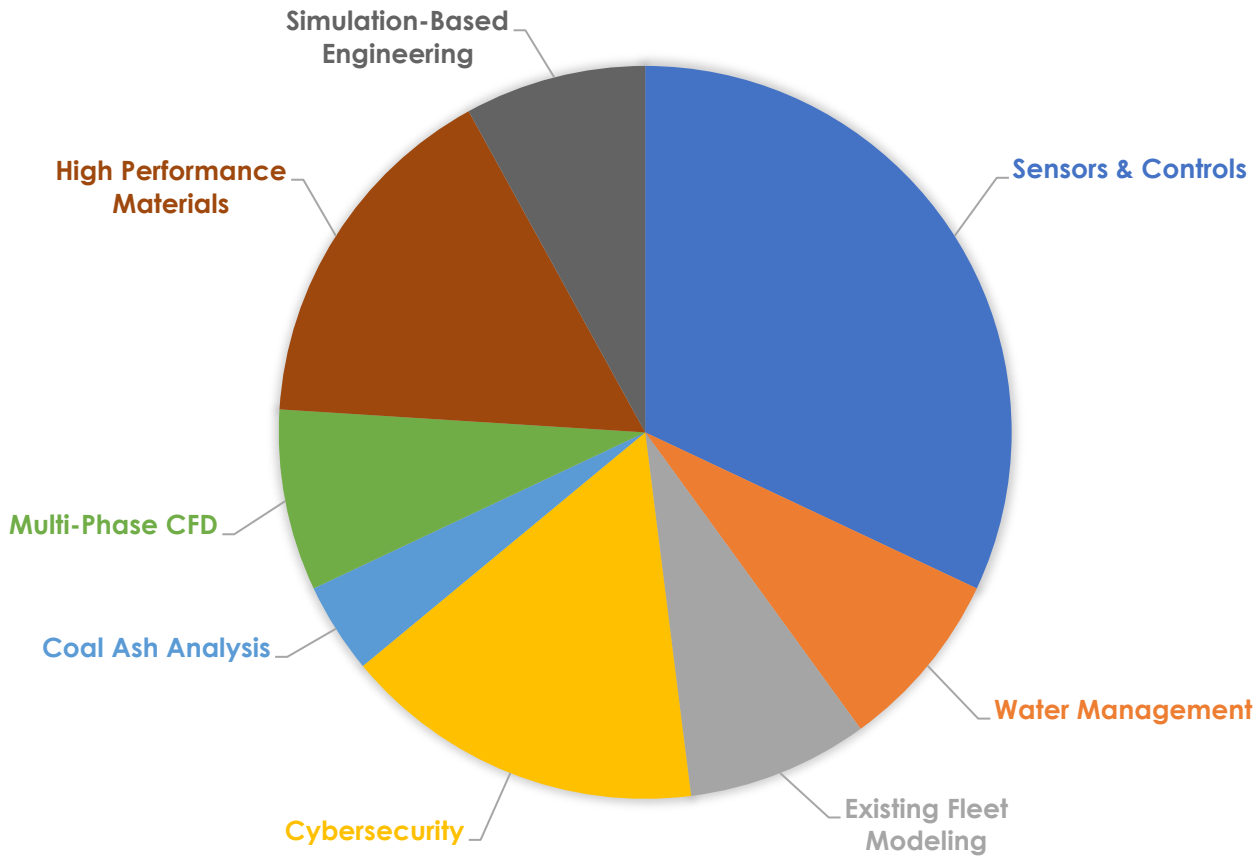
Last update: November 2021

UTR Program – Project Summary

25 UNIVERSITY COAL RESEARCH (UCR) ACTIVE PROJECTS

$10.9M TOTAL AWARD VALUE (ACTIVE)

58 CURRENT STUDENTS AFFILIATED W/PROGRAM (as of Nov 2021)



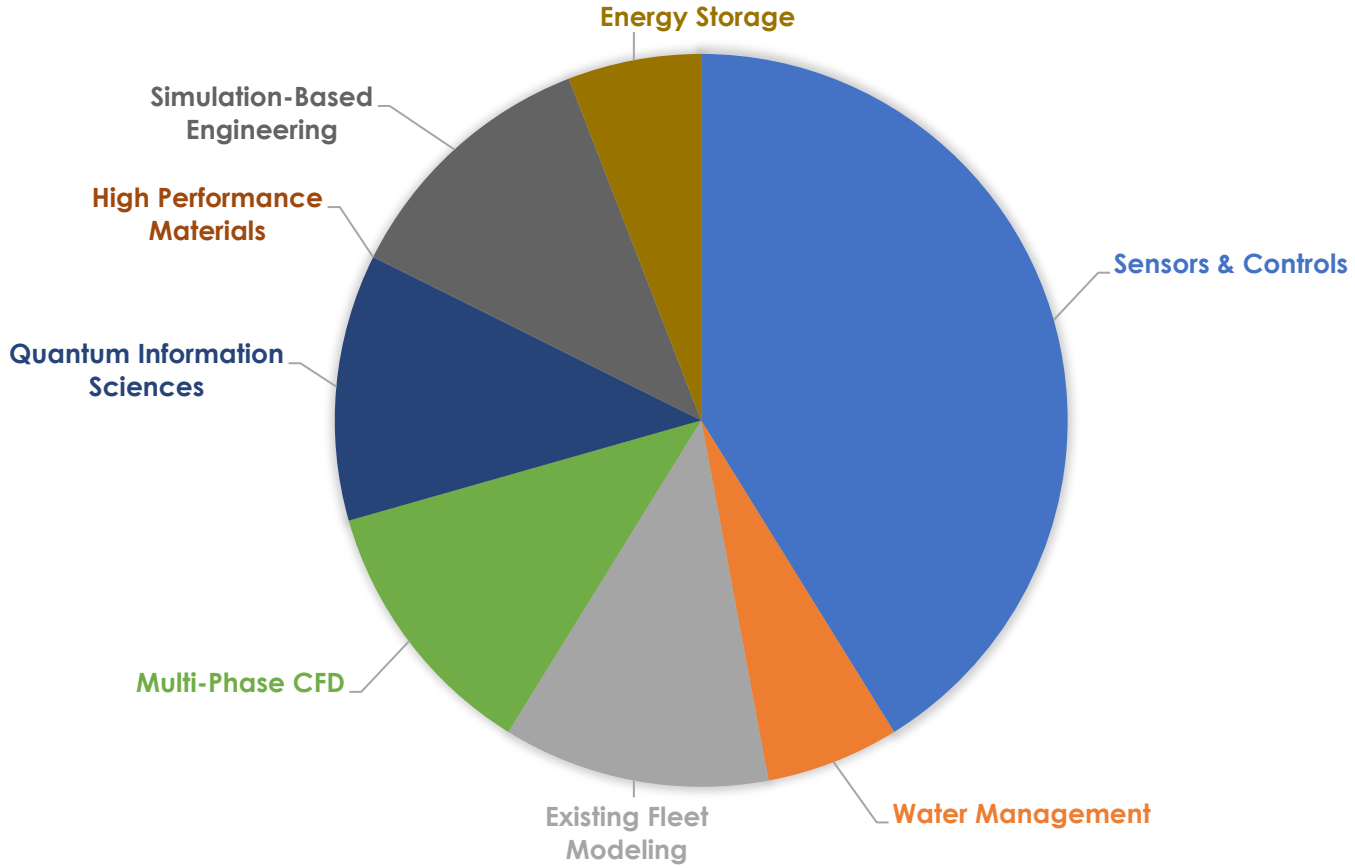
Last update: November 2021

UTR Program – Project Summary

17 HISTORICALLY BLACK COLLEGES AND UNIVERSITIES, AND OTHER MINORITY INSTITUTIONS (HBCU-OMI) ACTIVE PROJECTS

$7.4M TOTAL AWARD VALUE (ACTIVE)

44 CURRENT STUDENTS AFFILIATED W/PROGRAM (as of Nov 2021)



Last update: November 2021

UTR Program – University Partners

- Carnegie Mellon University**
- Colorado School of Mines
- Duke University
- Florida A&M University
- Florida International University**
- Georgia Tech Research Corporation**
- Howard University
- Johns Hopkins University
- Michigan State University
- Michigan Technological University
- Morgan State University
- New Mexico State University
- North Carolina A&T University
- Ohio State University
- Ohio University
- Old Dominion University
- Pennsylvania State University
- University of California – Riverside**
- University of Maryland
- University of Massachusetts
- University of Missouri
- University of North Carolina Charlotte
- University of North Dakota
- University of North Dakota Energy and Environmental Research Center (UNDEERC)**
- University of Texas at El Paso**
- University of Texas at San Antonio
- West Virginia University Research Corporation**

**Denotes multiple awards; Last updated: November 2021

UTR Program – University Partners (HBCU-OMI)

Historically Black Colleges and Universities, and, Other Minority Institutions

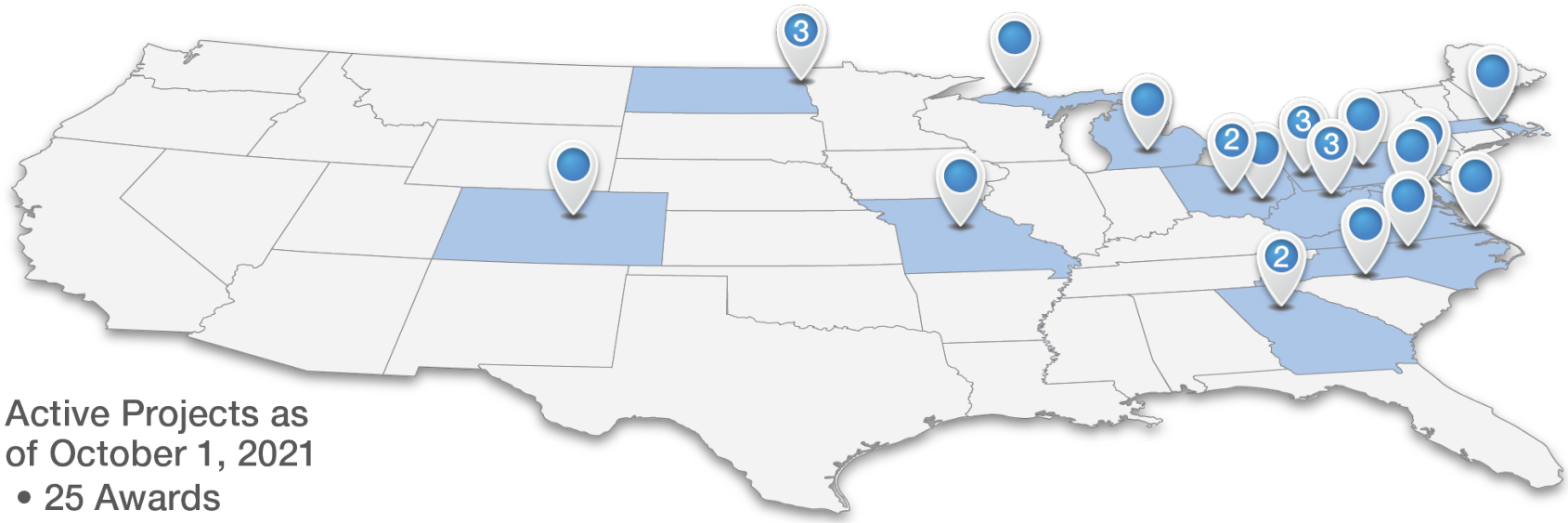
Active Projects as of October 1, 2021

- 17 Awards
- $7.36M
- 44 Students

Last updated: November 2021

UTR Program – University Partners (UCR)

University Coal Research Program



Active Projects as of October 1, 2021

- 25 Awards
- $10.89M
- 58 Students

Last updated: November 2021

FOA Awards in FY19 and FY20

FOA (FY19)	Title	Issuance Date	Closing Date	Topic	Details / DOE Funding
DE-FOA-0001842	Support of Fossil Energy Research at U.S. Colleges and Universities Including University Coal Research (UCR) and Research by Historically Black Colleges and Universities and Other Minority Institutions (HBCU/OMI)	01/31/2018	4/09/2018	Automated Plant Component Inspection, Analysis, and Repair Enabled by Robotics	5 projects / $2,083,169
				Coal Contaminant Partitioning in Power Plant Wastewater	2 projects / $800,000
DE-FOA-0001991	University Training and Research for Fossil Energy Applications	12/17/2018	02/25/2019	Cybersecure Sensors for Fossil Power Generation	4 projects / $1,600,000
				Modeling Existing Coal Plant Challenges using High Performance Computing	3 projects / $1,199,238
				Application of Novel Analytic Method(s) to Determine Arsenic and/or Selenium Concentrations in Fly Ash Waste Streams Generated from Coal Combustion	2 projects / $799,706
				Coal Plant Effluent Water Reuse	1 projects / $400,000

FOA (FY20)	Title	Issuance Date	Closing Date	Topic	Details / DOE Funding
DE-FOA-0002193*	University Training and Research for Fossil Energy Applications	12/20/2019	03/02/2020	Quantum for Energy Systems and Technologies	Up to 13 projects Anticipated DOE Funding: $6,379,000
				Novel Sensors and Controls for Flexible Generation	
				Machine Learning for Computational Fluid Dynamics (CFD)	
				Fast, Efficient, And Reliable Fossil Power with Integrated Energy Storage	

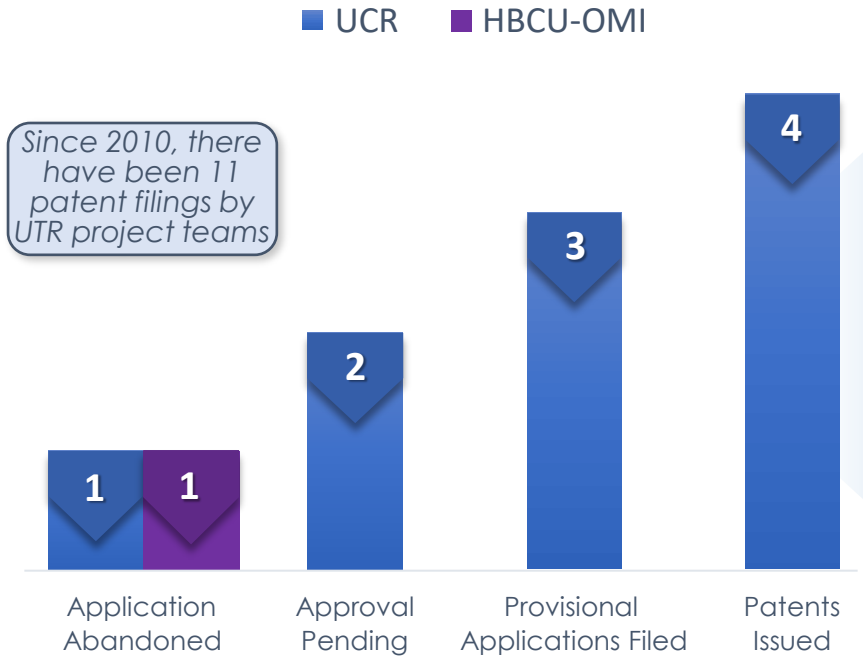
FOA Awards in FY21

FOA (FY21)	Title	Issuance Date	Closing Date	Topic	Details / DOE Funding
DE-FOA-0002398	University Training and Research for Fossil Energy Applications	12/11/2020	02/15/2021	Energy-water nexus implications and opportunities of a hydrogen economy	1 project / $399,943
				Electromagnetic energy-assisted approaches to convert fossil fuels to low-cost hydrogen	5 projects / $1,998,339
				Process and materials co-optimization for the production of blue hydrogen	1 project / $400,000
				Addressing high-temperature materials supply chain challenges	3 projects / $1,200,000
				5G wireless technologies for power generation	3 projects / $1,214,481

UTR Program Patent Summary

Education and Training Program for Next Generation of Engineers and Scientists

University Training and Research // Patents Status (2010-2020)



Summary of 4 Patents Issued (2010-2020)

1 University of Pittsburgh

TITLE: Method of making a distributed optical fiber sensor having enhanced Rayleigh scattering and enhanced temperature stability and monitoring systems employing same

PATENT #: US Patent 10,670,802

DESCRIPTION: Successfully enhanced Rayleigh scattering on silica optical fiber for distributed temperature sensing and low propagation loss in harsh environments

2 The University of Utah

TITLE: Ultrasonic temperature measurement device

PATENT #: US Patent 8,801,277

DESCRIPTION: Created a new ultrasonic thermometer that can be used to measure temperature across multiple cross-sections of containments, nozzles, and other components

3 University of Pittsburgh

TITLE: Fiber optical sensors employing a metal oxide material

PATENT #: US Patent 10,457,596

DESCRIPTION: Integrated functional sensory materials with optical guiding devices for making distributed sensing measurements (e.g., of temperature and/or chemical composition) in reactor systems, such as, solid oxide fuel cell (SOFC)-based power plant systems

4 UMass Lowell

TITLE: Distributed fiber sensing systems for temperature field monitoring using optically generated acoustic waves

PATENT #: US Patent 10,466,207

DESCRIPTION: Invented a low-cost distributed optical fiber sensing system for real-time monitoring of spatial and temporal distributions of high temperature profiles for harsh environments

Last updated: August 9, 2021

Crosscutting Research Program Information (Web Links)

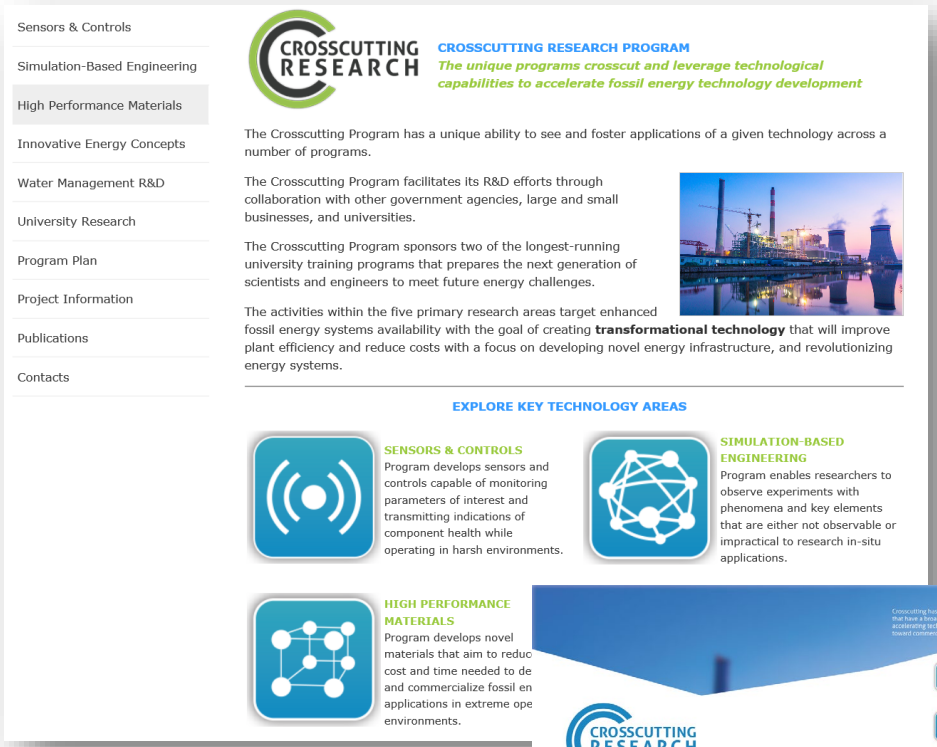
Crosscutting Research
www.netl.doe.gov/research/coal/crosscutting

University Training & Research
https://netl.doe.gov/coal/university-training

Project Information
www.netl.doe.gov/research/coal/crosscutting/project-information

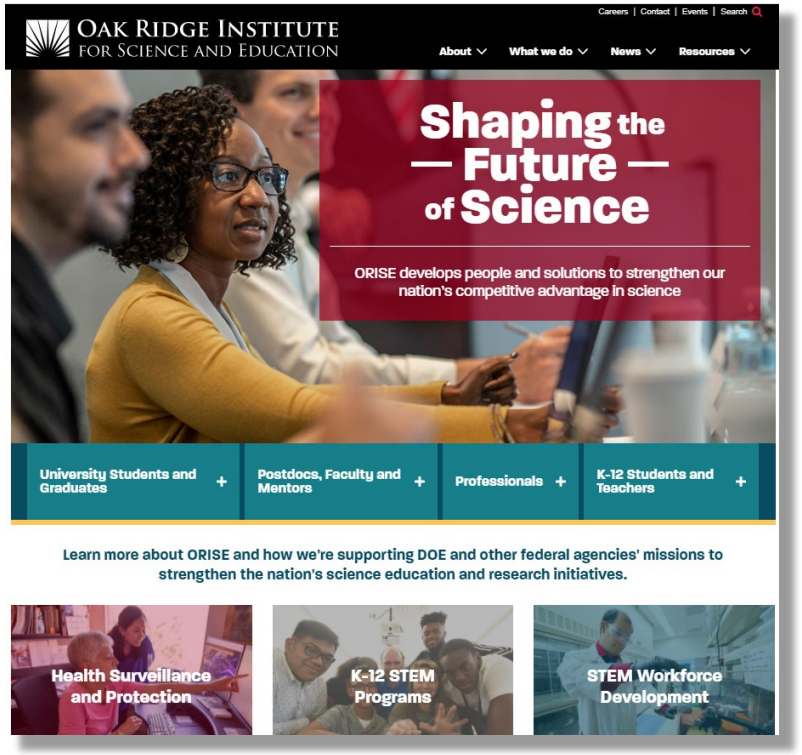
Project Portfolios/Publications
www.netl.doe.gov/research/coal/crosscutting/publications

Program Brochures
https://www.netl.doe.gov/research/coal/crosscutting/publications



Internship & Fellowship Opportunities

Oak Ridge Institute for Science and Education (ORISE)



https://orise.orau.gov/

Mickey Leland Energy Fellowship (MLEF) Program

https://netl.doe.gov/education/internships/MLEF

Questions?

VISIT US AT: **www.NETL.DOE.gov**

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University Training and Research

https://netl.doe.gov/coal/university-training

MICKEY LELAND
ENERGY FELLOWSHIP PROGRAM
U.S. DEPARTMENT OF ENERGY • OFFICE OF FOSSIL ENERGY AND CARBON MANAGEMENT

MICKEY LELAND ENERGY FELLOWSHIP (MLEF)

- A **10-week** summer research program for Science, Technology, Engineering, and Math (STEM) students
- 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

- Advanced Energy Systems
- Carbon Capture, Utilization & Storage
- De-Carbonization
- Modeling & Simulation
- Sensors & Controls
- Geochemical Analysis
- High-Performance Materials
- Gasification Systems
- Turbines
- Solid Oxide Fuel Cells
- Advanced Combustion
- Fuel Cells
- Rare Earth Elements & Critical Minerals
- Project Finance Models
- Oil & Natural Gas
- Machine Learning & AI
- Thin Film Materials
- Membrane Performance Testing

MLEF PROGRAM

Apply now at
www.energy.gov/fe/mlef

ELIGIBILITY

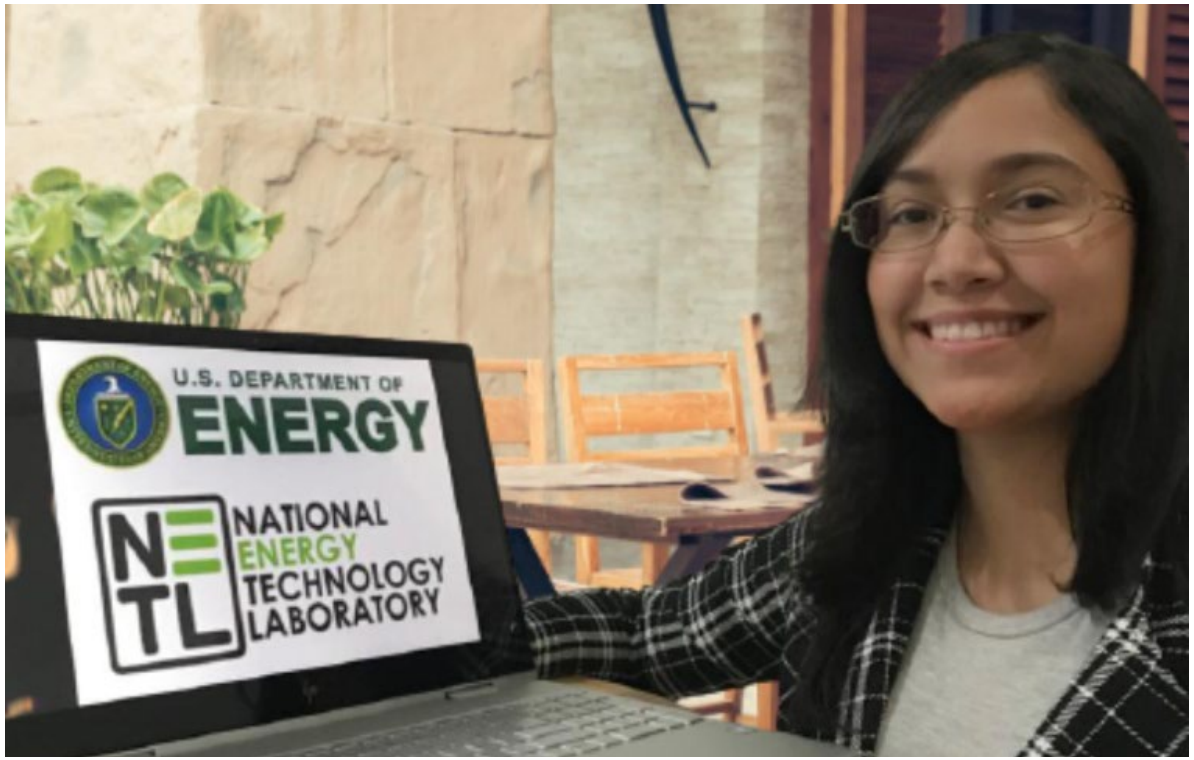
- Be at least age 18
- Be a U.S. Citizen
- Have a minimum 2.8 GPA
- Be enrolled full-time in a STEM degree program at the Associate, Bachelor's or Master's level at the time of application.
- Must be a college sophomore or higher

REQUIREMENTS

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

Deadline: January 10, 2022

MLEF PROGRAM



STIPEND*

- Undergraduate students: $650 per week
- Master's students : $750 per week

*Some participants may be eligible to receive a housing and travel allowance.

CONTACT US

Sandra Peñaherrera

Email: mlef@hq.doe.gov

Website: www.energy.gov/fe/mlef

Doing Business with the Federal Government

Mark Coonrad

Grants Management Specialist, Finance & Acquisition Center

NATIONAL ENERGY TECHNOLOGY LABORATORY

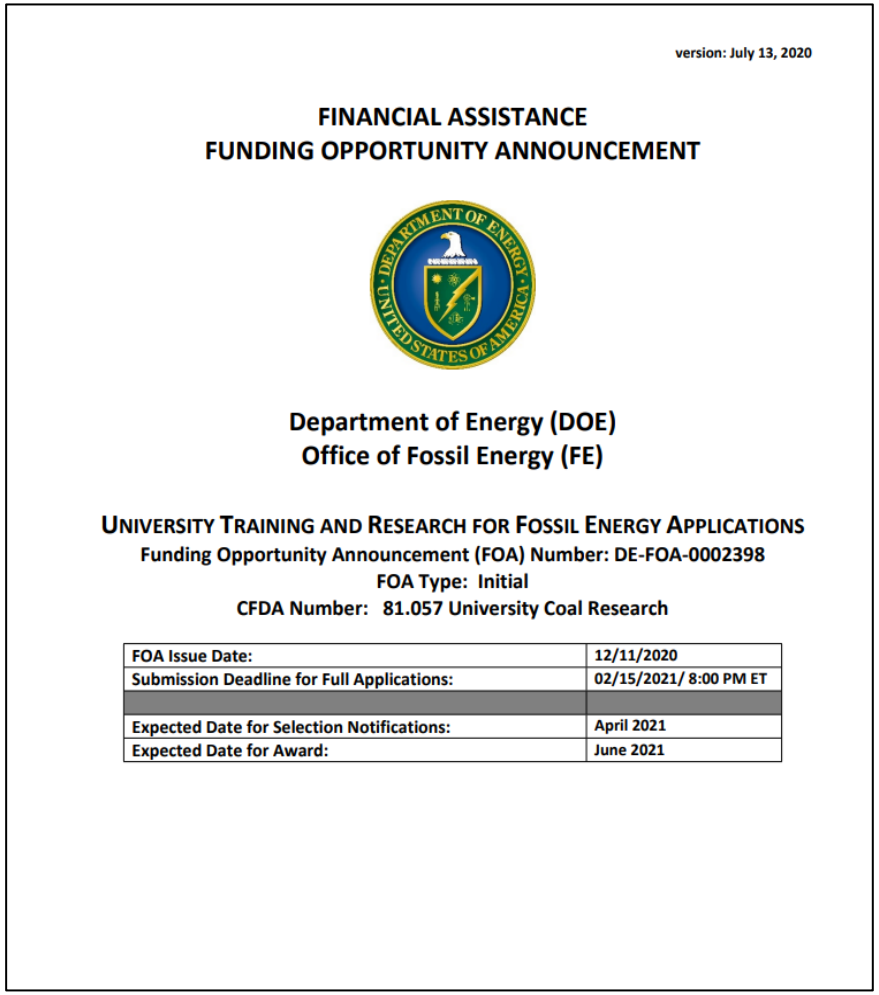
December 1, 2021
HBCU-OMI FECM Webinar

Steps to Apply for an NETL Grant

- Identify opportunity of interest through **Funding Opportunity Announcement (FOA)**
  - Discussed in detail later in presentation
- Meet registration requirements
- Prepare and submit application

The Funding Opportunity Announcement (FOA)

- A publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds
- May be known as **program announcements, requests for applications, notices of funding availability, solicitations, or other names** depending on the agency and type of program
- See recent DE-FOA-0002398
  - **FUNDING IS CLOSED; FOR EXAMPLE USE ONLY**
  - http://www.fedconnect.net/fedconnect/?doc=DE-FOA-0002398&agency=DOE



version: July 13, 2020

FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT

Department of Energy (DOE)
Office of Fossil Energy (FE)

UNIVERSITY TRAINING AND RESEARCH FOR FOSSIL ENERGY APPLICATIONS
Funding Opportunity Announcement (FOA) Number: DE-FOA-0002398
FOA Type: Initial
CFDA Number: 81.057 University Coal Research

FOA Issue Date:	12/11/2020
Submission Deadline for Full Applications:	02/15/2021/ 8:00 PM ET
Expected Date for Selection Notifications:	April 2021
Expected Date for Award:	June 2021

Registration/Submission Requirements

- Obtain a **Dun and Bradstreet Data Universal Numbering System (DUNS)** number (dnb.com/duns-number.html)
- Register with the **System for Award Management (SAM)** (sam.gov/SAM)
- Register with grants.gov
- Register with fedconnect.net

Registration Requirements: Grants.gov

- Register with Grants.gov
  - **There are 3 steps to this process:**
    1. The **Authorized Organizational Representative (AOR)** must register
    2. An email is sent to the **E-Business (E-Biz) POC listed in SAM**. The E-Biz POC must approve the AOR registration using their MPIN from their SAM registration
    3. **AOR verifies that registration was completed** at Grants.gov

- **Grants.gov is where you will submit your application package**

Registration Requirements: Fedconnect.net

- Applicants must register with FedConnect (fedconnect.net) to submit questions
- View and download announcement documents or amendments
- Communicate with Federal representatives managing the announcement
- **Allow at least 44 days to complete entire registration process**

Questions

- Questions related to the registration process, system requirements or how an application form works must be directed to grants.gov; 1-800-518-4726; or support@grants.gov
- Questions related to the content of the announcement must be submitted to the FedConnect portal
- Must be registered with FedConnect to submit questions and view responses

Application Preparation and Submission

- Applicants must download application package, forms and instructions at grants.gov
- Applications must be submitted through grants.gov only(this will be indicated in the solicitation document)
  - **Must register at Grants.gov!**
  - Update SAM annually
- Applications must be submitted through grants.gov by **a qualified HBCU/OMI (Minority Serving Institution) authorized representative**

Accessing NETL FOAs in FedConnect

- In an internet browser, enter the FedConnect URL fedconnect.net
- On the Main Page, click on **Search Public Opportunities Only**

Accessing NETL FOAs in FedConnect (cont.)

- Under **Search Criteria**, select **Issuing Office**, type "**National Energy Technology Lab**", and click on **Search**

public opportunities

This is a list of publicly posted opportunities. To view a particular opportunity, click the hyperlink under the title. For more details on using this page, click Help.

Search Criteria | Advanced Options

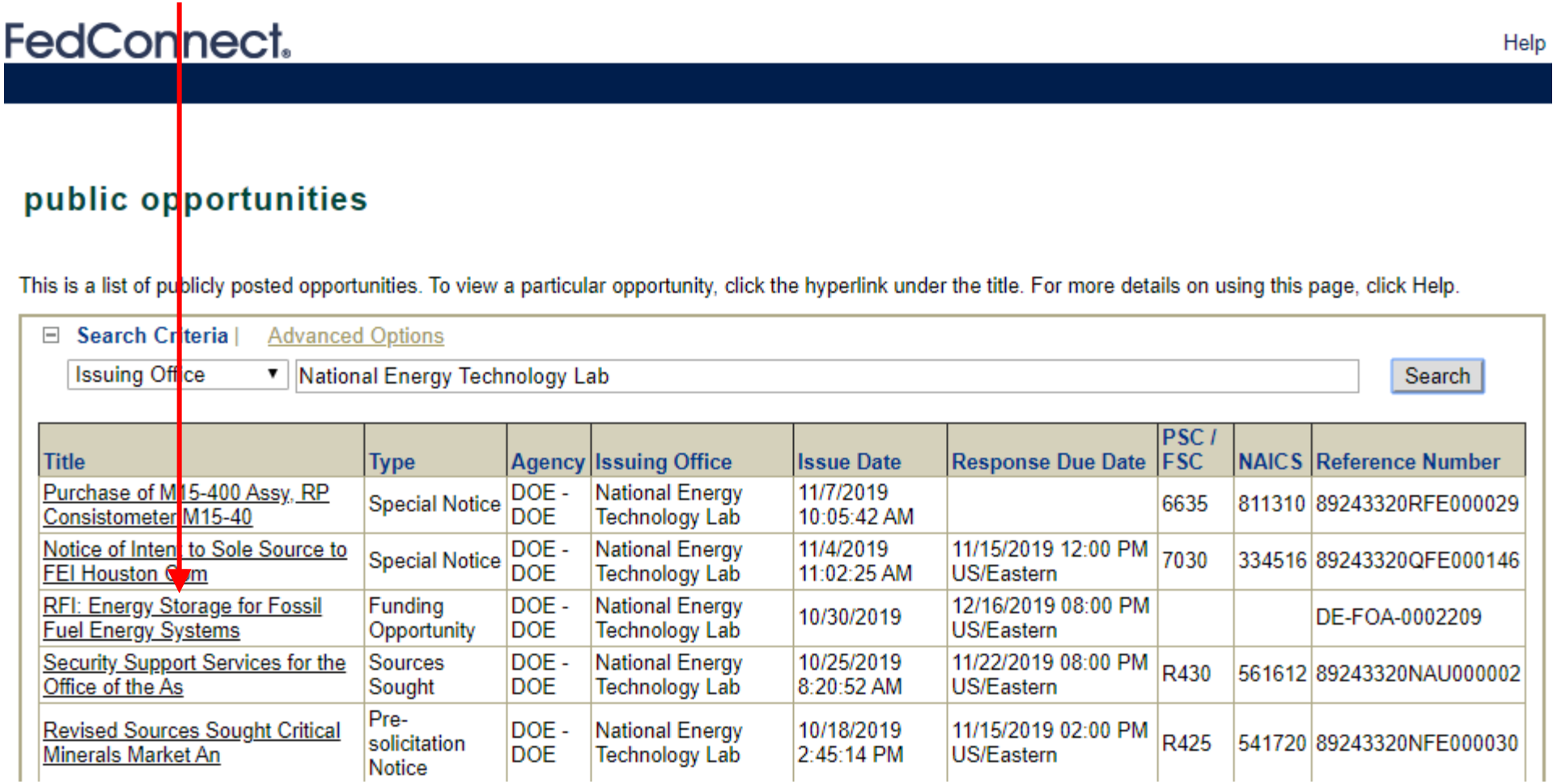
Issuing Office | National Energy Technology Lab | Search

Title	Type	Agency	Issuing Office	Issue Date	Response Due Date	PSC / FSC	NAICS	Reference Number
Vacuum Induction Melting (VIM) and Casting Furnace	Solicitation	DOE - DOE	National Energy Technology Lab	11/9/2020	12/01/2020 04:00 PM US/Eastern	4430	333994	89243321QFE000206
Notice of Intent to Sole Source to FEI Houston Company for FEI PerGeos 1.0 soft	Special Notice	DOE - DOE	National Energy Technology Lab	11/24/2020 1:27:09 PM	11/30/2020 12:00 PM US/Eastern	7A20	511210	89243321QFE000209
Notice of Intent to Sole Source to EPRI Technology	Special Notice	DOE - DOE	National Energy Technology Lab	11/20/2020 1:17:28 PM		R415	541690	89243321RFE000048
Emerging CO2 Storage Technologies: Optimizing Performance Through Minimization of Seismicity Risks and Monitoring Caprock Integrity	Funding Opportunity	DOE - DOE	National Energy Technology Lab	11/16/2020	12/11/2020 08:00 PM US/Eastern			DE-FOA-0002401
Notice of Intent to issue DE-FOA-0002438 titled Design, R&D, Validation, and Fabrication of a Prototype Carbon-Based Building	Funding Opportunity	DOE - DOE	National Energy Technology Lab	11/12/2020	12/07/2020 08:00 PM US/Eastern			DE-FOA-0002442
Broughton Volunteer Fire Department (BVFD) Services	Special Notice	DOE - DOE	National Energy Technology Lab	11/10/2020 11:56:01 AM	11/25/2020 05:00 PM US/Eastern	J012	922160	89243321QFE000207
Notice of Intent to issue a Funding Opportunity Announcement (FOA) on behalf of DOE's Office of Fossil Energy (FE) entitled "Water Management For Thermal Power Generation".	Funding Opportunity	DOE - DOE	National Energy Technology Lab	10/30/2020	12/15/2020 08:00 PM US/Eastern			DE-FOA-0002430
Enabling Gasification of Blended Coal, Biomass and Plastic Wastes to Produce Hydrogen with Potential for Net Negative Carbon Dioxide Emissions.	Funding Opportunity	DOE - DOE	National Energy Technology Lab	10/23/2020	11/19/2020 11:59 AM US/Eastern			DE-FOA-0002376
Bottled Water and Dispenser Service for NETL	Solicitation	DOE - DOE	National Energy Technology Lab	10/9/2020	10/23/2020 02:00 PM US/Eastern	S299	454390	89243320QFE000205
Research Needs Related to Enhanced Weathering as a Mechanism for Carbon Dioxide Removal	Funding Opportunity	DOE - DOE	National Energy Technology Lab	10/14/2020	11/06/2020 08:00 PM US/Eastern			DE-FOA-0002427

1 2 3 4 5 6 7 8 9 10 ...

Accessing NETL FOAs in FedConnect (cont.)

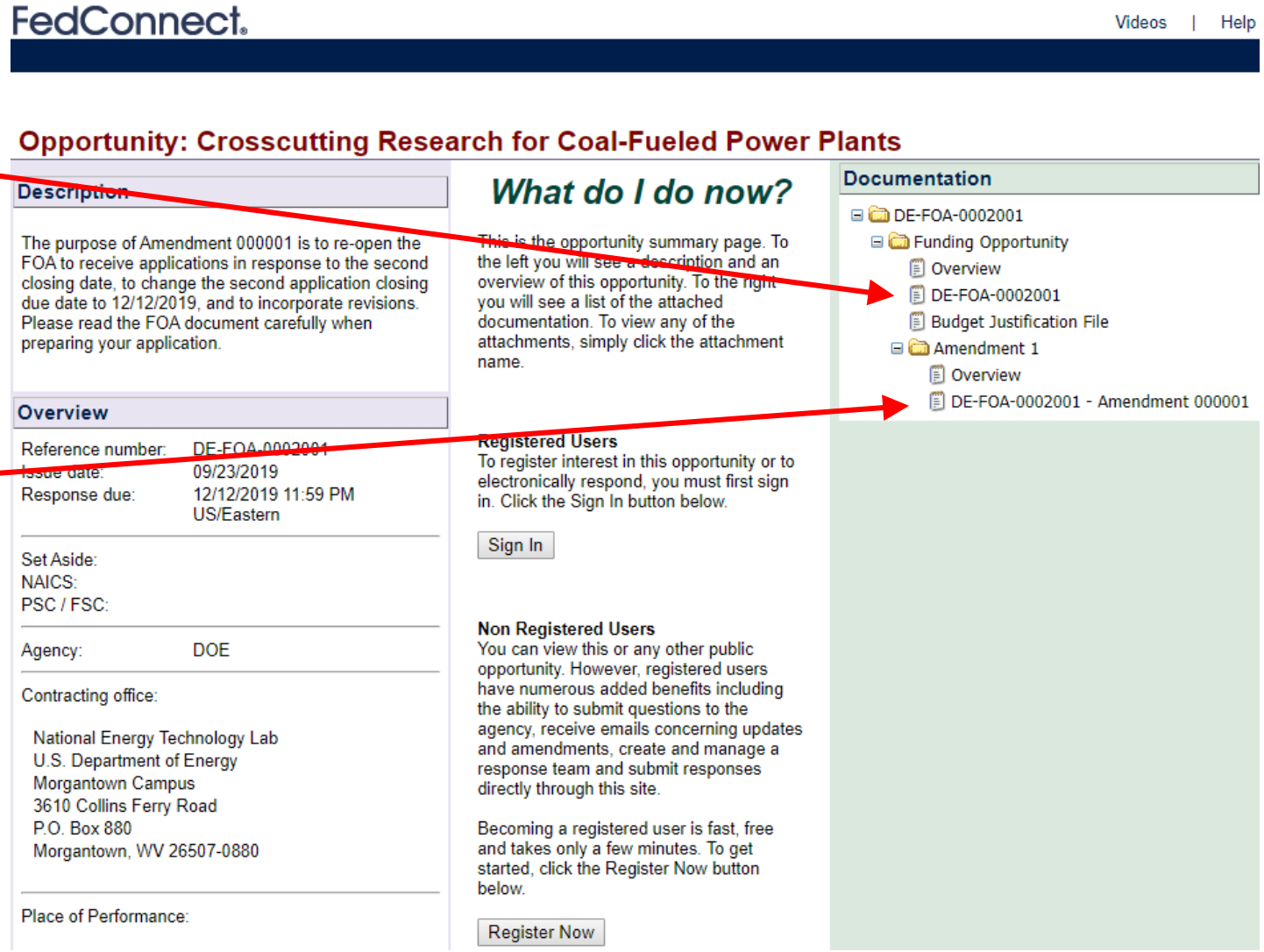
- Click the **hyperlink** under the title to view



Title	Type	Agency	Issuing Office	Issue Date	Response Due Date	PSC / FSC	NAICS	Reference Number
Purchase of M15-400 Assy, RP Consistometer M15-40	Special Notice	DOE - DOE	National Energy Technology Lab	11/7/2019 10:05:42 AM		6635	811310	89243320RFE000029
Notice of Intent to Sole Source to FEI Houston Gym	Special Notice	DOE - DOE	National Energy Technology Lab	11/4/2019 11:02:25 AM	11/15/2019 12:00 PM US/Eastern	7030	334516	89243320QFE000146
RFI: Energy Storage for Fossil Fuel Energy Systems	Funding Opportunity	DOE - DOE	National Energy Technology Lab	10/30/2019	12/16/2019 08:00 PM US/Eastern			DE-FOA-0002209
Security Support Services for the Office of the As	Sources Sought	DOE - DOE	National Energy Technology Lab	10/25/2019 8:20:52 AM	11/22/2019 08:00 PM US/Eastern	R430	561612	89243320NAU000002
Revised Sources Sought Critical Minerals Market An	Pre-solicitation Notice	DOE - DOE	National Energy Technology Lab	10/18/2019 2:45:14 PM	11/15/2019 02:00 PM US/Eastern	R425	541720	89243320NFE000030

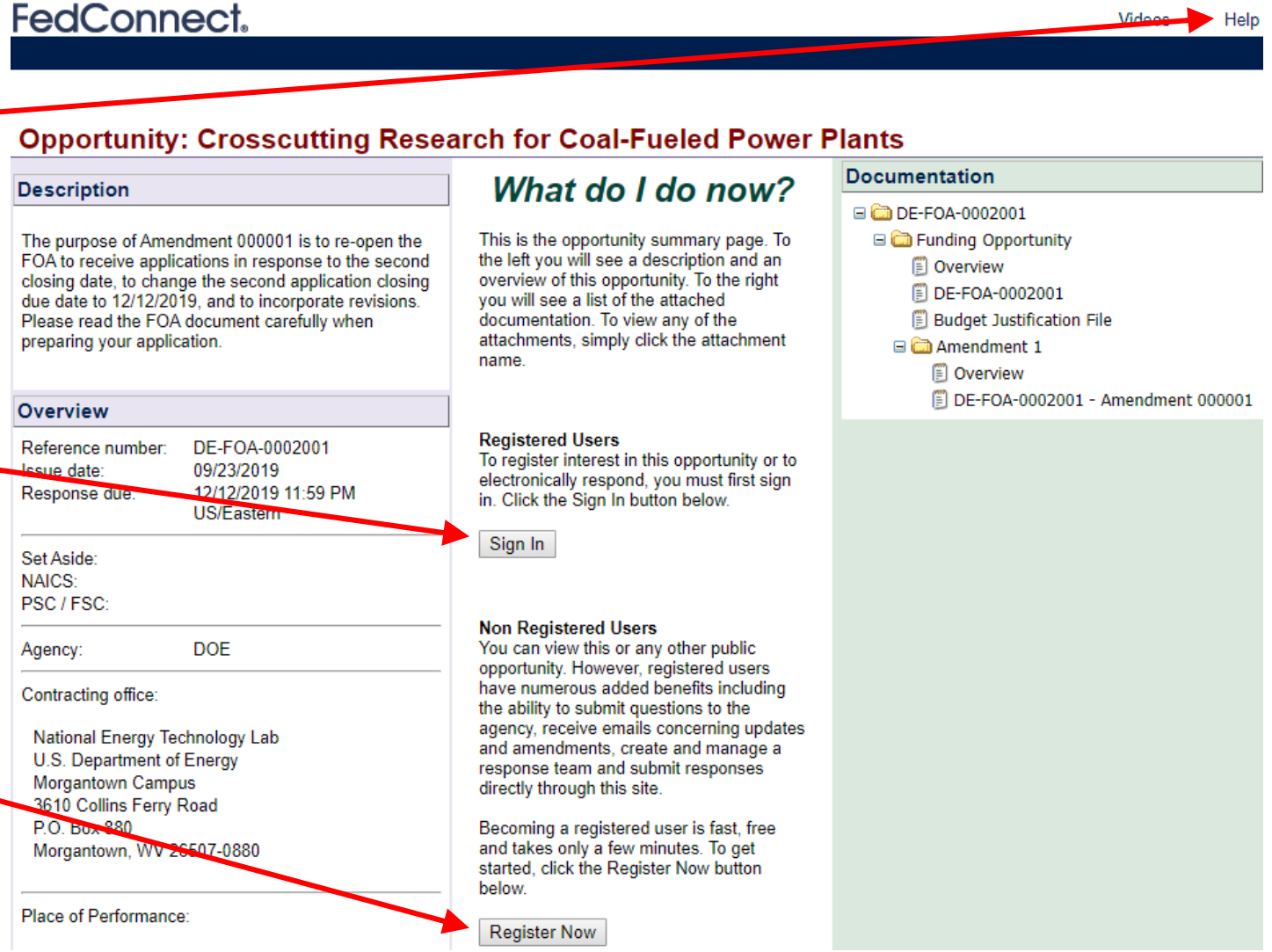
Accessing NETL FOAs in FedConnect (cont.)

- Click on the **FOA Reference Number** under **Funding Opportunity** to view the FOA instructions
- To view Amendments to the FOA, click on the **FOA Reference Number** under **Amendment 1**



Accessing NETL FOAs in FedConnect (cont.)

- **Help** buttons are available on each page to assist you navigate FedConnect
- To submit questions about this FOA or submit an application, Registered Users click on **Sign In**
- Click on **Register Now** to receive notifications and agency alerts, and view the message center



Opportunities for Work with NETL

- NETL Research Programs use the websites below to post solicitations/funding opportunity announcements, receive proposals/applications, and disseminate other information for competitive awards. **Entities wishing to participate in these solicitations must register at these websites**.
  - Fedconnect https://www.fedconnect.net/
  - Grants.gov https://grants.gov/
- **Proposals will only be accepted through Grants.gov only**(this will be indicated in the solicitation document).
- Additional information can also be found at NETL Business website: https://netl.doe.gov/business/solicitations

Questions?

VISIT US AT: **www.NETL.DOE.gov**

@NETL_DOE

@NETL_DOE

@NationalEnergyTechnologyLaboratory

CONTACT:

Mark Coonrad
Grants Management Specialist, Finance & Acquisition Center
mark.coonrad@netl.doe.gov

Historically Black Colleges & Universities and Other Minority Institutions Announcement (FOA)

NATIONAL ENERGY TECHNOLOGY LABORATORY

Mark Coonrad
Grants Management Specialist, Finance & Acquisition Center

December 1, 2021
HBCU-OMI FECM Webinar

General Information

Where to start?

- A typical Funding Opportunity Announcement (FOA) follows a standard format.

- **The Funding Opportunity contains 8 main sections** (with multiple sub-sections) laid out in the table of contents and focusing on the complete life cycle of the opportunity.

- It is important to familiarize yourself with the entire FOA and **pay close attention to this section to avoid submitting a "technically" non-responsive application.**

TABLE OF CONTENTS MAIN SECTIONS

I. Funding Opportunity Description

Where to start?

Table Of Contents

Noteworthy Items

- **ii. Background/Description**
  - Provides information on what technology programs are funding the solicitation and introduction to the purpose of the announcement.
- **iii. Objectives/Area of Interests**
  - Provides important information on the technological objectives and research being sought, as well as the description of the Areas of Interest (AOIs).
  - **You will be applying to a specific AOI and understanding the FOA requirements for that AOI is critical to crafting a responsive application.**

    (Will be discussed in detail in upcoming presentation)
- **iv. Applications Specifically Not of Interest**
  - **Pay close attention to this section to avoid submitting a non-responsive application.**

II. Award Information

Where to start?

Table Of Contents

Noteworthy Items

- **C. Award Overview**

I. Estimated Funding, Number of Awards, Anticipated Award Size, and Maximum DOE Share

- Details anticipated number of awards, anticipated size (in funding) of each award, **and maximum amount in funding that DOE will contribute for any one award.**

II. Estimated Period of Performance per Area of Interest

- Includes the anticipated period of performance for projects awarded under each Area of Interest of the FOA.

III. Eligibility Information

Where to start?

Table Of Contents

Noteworthy Items

- **B. Eligible Applicants**
  - **Will specify whether HBCU-OMI eligible applicants will be funded under awards**
    - **Other types of sub-recipients are permitted**
  - **FFRDC & National Labs are permitted to apply as subrecipients but not as a prime**
    - **National Labs are typically fully funded at project start. Please keep this in mind when creating budgets for the full project period.**

- **C. Cost Sharing**

  I. Cost Share Requirements

  - Will detail the required cost share for Applicants. Typically, HBCU-OMI FOAs do **not require cost share**, but it is allowable

- **D&E. Compliance Criteria, and Responsiveness Criteria**
  - These sections will detail **what is considered compliant, and responsive**, to the FOA. Only compliant and responsive applicants will be eligible to review.

Make sure to read EACH section for compliance purposes.

IV. Application and Submission Information

Where to start?

Table Of Contents

Noteworthy Items

- **A. Form and Content Requirements**
  - Applicants will have to meet each of the specified form requirements under this section
- **B. Full Applications**

  ii. Content and Form of Full Application

  - Will detail the documents required in the Application.

IV. Application and Submission Information

Application Files

SF-424 | **Project / Performance Site Location(s)** | Project Narrative | Summary for Public Release | Project Management Plan | Resume | SF424A Budget Justification | Budget Justification | Environmental Questionnaire | **HBCU/OMI-eligible Document, if applicable**

- **The SF 424 online form is the principal form for submitting an application.**
- This form contains **all of the basic information regarding your organization and your proposed project** (project title, costs, etc.).
- Please make sure this form is filled out as completely as possible.
- Some areas of the form may not apply to your organization.

- **Form to indicate the primary site where the work will be performed.**
- If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided
- **Note that the Project/Performance Site Congressional District is entered using a 2-digit state code followed by a dash and a 3-digit Congressional district code.** For example "VA-001"

- **In this document, please state how your educational entity claims HBCU/OMI eligibility and provide a copy of that certification.**

IV. Application and Submission Information

Project Narrative

SF-424 | Project / Performance Site Location(s) | **Project Narrative** | Summary for Public Release | Project Management Plan | Resume | SF424A Budget Justification | Budget Justification | Environmental Questionnaire | HBCU/OMI-eligible Document, if applicable

— **The project narrative is the core item in the application package, where the concept, technology background, research plan, and potential improvement to the state of the art are presented.**

Project Narratives Can Include:

- Project Objectives
- Merit Review Criterion Discussion
- Relevance and Outcomes/Impacts
- Roles & Responsibilities of Participants
- Decision-making and Communication Strategy
- Management Capabilities
- Multiple Principal Investigators
- Facilities And Other Resources
- Equipment
- Bibliography And References
- Statement of Project Objectives (SOPO)

Pay close attention to formatting requirements:

- The Project Narrative File must be submitted in **Adobe PDF format.**
- For example: the project narrative **must not exceed twenty-five (25) pages,** including footnotes/endnotes, charts, graphs, maps, photographs, and other pictorial presentations, **when printed using standard 8.5" by 11" paper with 1-inch margins (top, bottom, left, and right) double spaced.**
- Cover Page, Table of Contents, Bibliography and References, Current and Pending Support, and Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers sections **are NOT included in the Project Narrative page limitation.** The font **must be Times New Roman typeface, a black font color, and a font size of 11-point or larger (except in figures or tables, which may be 10-point font).**
- **Applicants tend to repeat themselves within an application. Please note that each file is a stand-alone document. Do not refer to another document within the current one.**

IV. Application and Submission Information

Project Narrative Sections

SF-424 | Project / Performance Site Location(s) | **Project Narrative** | Summary for Public Release | Project Management Plan | Resume | SF424A Budget Justification | Budget Justification | Environmental Questionnaire | HBCU/OMI-eligible Document, if applicable

Narrative Section	Intent/Helpful Information
Project Objectives	Should provide a **clear, concise statement of the specific objectives/aims of the proposed project**
MRC Discussion	Applications are evaluated and scored in accordance with the **merit review criteria and weights provided in the FOA**
Relevance & Outcomes/Impacts	Justification for the proposed project should **include a clear statement of the importance in terms of the utility of the outcomes and the target community of beneficiaries**
Roles & Responsibilities of Participants	**Describe the roles and the work to be performed** by each participant/investigator, business agreements between the applicant and participants, and how the various efforts will be integrated and managed
Decision-making and Communication Strategy	Emphasis **on scientific/technical direction and mechanisms for controlling project scope, cost, and schedule.**
Management Capabilities	Provide information **relevant to the capabilities and experience of the PI and project team in managing technical projects of similar nature and complexity.**
Facilities & Other Resources	If appropriate, **indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project**
Equipment	If you are proposing to acquire equipment, **describe comparable equipment, if any, already at your organization and explain why it cannot be used**
Bibliography & References	This section is not typically included in the page limitation of the project narrative
Statement of Project Objectives (SOPO)	The SOPO should contain a **clear, concise description of all activities to be completed** during project performance and follow the structure discussed below

IV. Application and Submission Information

Application Files

SF-424	Project / Performance Site Location(s)	Project Narrative	**Summary for Public Release**	**Project Management Plan**	Resume	SF424A Budget Justification	Budget Justification	**Environmental Questionnaire**	HBCU/OMI-eligible Document, if applicable

- **A key item to remember with the Project Summary file is that it can be publicly distributed, do not include ANY proprietary or business sensitive information.**
- Self-contained, one (1) page document
- **Identifies: name of the applicant; project director/principal investigator(s); project title; objectives of the project; description of the project; methods to be employed; potential impact (i.e., benefits, outcomes); major participants**

- **This plan typically includes the following sections:**
  - Executive Summary
  - Risk Management
  - Milestone Log
  - Funding and Costing Profile
  - Project Timeline
  - Success Criteria at Decision Points

PMP is generally 6-8 pages when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) single-spaced with font no smaller than 11- point.

- Environmental questionnaire for each geographic site where project activities will take place must be completed
- **The form is located at** https://www.netl.doe.gov/sites/default/files/2018-02/451_1-1-3_0.pdf

IV. Application and Submission Information

Application Files

SF-424 | Project / Performance Site Location(s) | Project Narrative | Summary for Public Release | Project Management Plan | **Resume** | SF424A Budget Justification | Budget Justification | Environmental Questionnaire | HBCU/OMI-eligible Document, if applicable

- **Each key person proposed on the project, including sub-awardees and consultants, need to submit a 2-page resume with the application.**
- A key person is any individual **who contributes in a substantive, measurable way to the execution of the project.**
- This document should highlight education and training, professional experiences, publications **(you may list up to 10 and they should be those that are most closely related to the proposed project),** patents/copyrights/software systems developed, and synergistic activities **(no more than 5).** All resumes should be compiled into a single file.
- **Each resume should not exceed 2 pages including (if applicable):**
  - **Education and Training:** provide institution, major/area, degree, and year (Undergraduate, graduate, and postdoctoral training)
  - **Professional Experience:** Beginning with the current position, list in chronological order, include brief description of professional/academic positions
  - **Publications:** Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address (if available).
    - Patents, copyrights, and software systems developed may be provided in addition to or substituted for publications
  - **Synergistic Activities:** List no more than 5 professional and scholarly activities related to the effort proposed

IV. Application and Submission Information

Application Files

SF-424	Project / Performance Site Location(s)	Project Narrative	Summary for Public Release	Project Management Plan	Resume	SF424A Budget Justification	Budget Justification	Environmental Questionnaire	HBCU/OMI-eligible Document, if applicable

- A separate budget for each year of support requested and a cumulative budget for the total project period are usually required
- **Use the SF 424A Excel, "Budget Information - Non-Construction Programs" form on the DOE Financial Assistance Forms Page at** https://www.energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms **under DOE budget forms**

- Justify the costs proposed in each Object Class Category/Cost Classification category.
- **For example:**
  - Identify key persons and personnel categories and the estimated costs for each person or category
  - Provide a list and cost of equipment
  - Identify proposed subaward/consultant work and cost of each subaward/consultant
  - Describe purpose of proposed travel, number of travelers, and number of travel days
  - List general categories of supplies and cost for each category

Please note that if you are selected for award, you may be asked to break down these sections into more specific charges.

V. Application Review Information

Where to start?

Table Of Contents

Noteworthy Items

- **A. Review Criteria**

  ii. Full Application Merit Review Criteria

  - **This section will detail the merit review criteria that the application will be judged by. Each merit review criteria should be addressed via information within the application**

Additional Sections (VI,VII, VIII, & IX)

- **VI Award Administration Notice-** Provides information on DOE's award administration processes
- **VII Questions/Agency Contacts** – Provides information on where to submit questions and lists appropriate agency contacts
- **VIII Other Information** – Provides information on additional requirements and templates
- **IX Appendices** – **Provides important templates to follow while developing your application**

Questions?

VISIT US AT: **www.NETL.DOE.gov**

@NETL_DOE

@NETL_DOE

@NationalEnergyTechnologyLaboratory

CONTACT:

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Grants Mangement Specialist, Finance & Acquisition Center
mark.coonrad@netl.doe.gov

Responding to Areas of Interest (AOIs)

NATIONAL ENERGY TECHNOLOGY LABORATORY

Sarah Nathan
Project Manager, Crosscutting Team

December 1, 2021
HBCU-OMI FECM Webinar

HBCU-OMI Program Role

- R&D that supports program goals of fossil energy and carbon management while **educating and training next generation highly-skilled scientists and engineers** in advanced technology systems with knowledge of, and sensitivity for, cultural diversity

- For minority students to have the **opportunity to be involved in FECM mission goals for a sustainable and net-zero greenhouse gas future**.

- For minority students to **develop and hone cutting-edge and translatable skillsets**.

- **Research crosscuts many different technology areas** (sensors, materials, simulation, water management, energy storage, etc.)

Areas of Interest

NATIONAL ENERGY TECHNOLOGY LABORATORY

The FOA provides background materials regarding the topics often called "Areas of Interest" (AOIs)

Areas of Interest	Describe in detail each area of research where NETL is seeking proposals
	Should be carefully considered as a potential topic for research proposals
	Number/types of areas of interest are dependent on funding in particular areas, DOE mission goals, and technology maturity
	Areas of Interest change annually
	May also include descriptions of research that are NOT being sought in the FOA

Previous Areas of Interest

FY 2021
DE-FOA-0002398

AOI 1A: Energy-Water Nexus Implications and Opportunities of a Hydrogen Economy
AOI 1B: Electromagnetic Energy-Assisted Approaches to Convert Fossil Fuels to Low Cost Hydrogen
AOI 1C: Process and Materials Co-Optimization for the Production of Blue Hydrogen
AOI 2: Addressing High-Temperature Materials Supply Chain Challenges
AOI 3: 5G for Coal-Fired Power Generation

FY 2020
DE-FOA-0002193

AOI 1: Quantum for Energy Systems and Technologies
AOI 2: Novel Sensors and Controls for Flexible Generation
AOI 3: Machine Learning for Computational Fluid Dynamics
AOI 4: Fast, Efficient, And Reliable Fossil Power with Integrated Energy Storage

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FY 2019
DE-FOA-0001991

AOI 1: Application of Novel Analytic Method(s) to Determine Arsenic and/or Selenium Concentrations in Fly Ash Waste Streams Generated from Coal Combustion
AOI 2: Cybersecure Sensors for Fossil Power Generation
AOI 3: Modeling Existing Coal Plant Challenges using High Performance Computing
AOI 4: Coal Plant Effluent Water Reuse

Example Area of Interest

FY 2021 AOI 1B: Electromagnetic Energy-Assisted Approaches to Convert Fossil Fuels to Low Cost Hydrogen (DE-FOA-0002398)

Not an Active Area of Interest

DOE seeks innovation in the use of alternative energy processes including microwave, radio frequency (RF), plasma, and other electromagnetic inputs for low cost hydrogen production from fossil fuels. Projects can be experimental, computational, or, a combination of the two. Experimental based studies should be focused on the development of an efficient catalyst material that interacts with electromagnetic fields with high single pass conversion of hydrocarbons with high selectivity to hydrogen. Studies can include combining reactions and separations steps within the same alternative energy system. The experimental projects should also include energy efficiency calculations of their process and comparison to traditional thermal methods. Economic advantages of an alternative energy are not exclusive to the chemical reaction, but can also include downstream energy gains and process simplifications from higher reaction selectivity.

Success metrics are (1) supporting technology transfer by publishing project work within a journal or conference proceeding, (2) demonstrating quantum chemistry techniques for hydrogen generation using an alternative energy source, and (3) demonstrating use of alternative energy for hydrogen generation with projected low costs.

Responding to FOAs

Read the FOA Carefully

- Understand the Background/Description
- Understand the specific Objectives
- Understand the topics NETL is interested in funding

Read AOI Language Closely

- Understand where your research strengths best fit with NETL AOIs
- Look for specific thresholds or requirements
- Determine items that are not of interest within that topic area/area of interest

Recycling Applications is Generally NOT a Successful Approach

Responding to FOAs

Get Organized Early

- Create a Proposal Team
- Identify key research team members
- Consider teaming with other institutions
  - Provide letters of support
  - Financial investment if applicable
  - Be as specific as possible
- Develop an Application Preparation Schedule and Key Submittal Dates

Ask Questions

- Use FedConnect to ask questions while FOA is open
  - **Can be used for technical, administrative, or FOA clarification** (differences between milestones, success criteria, deliverables, etc.)
- See if your questions have already been asked/answered on the server

Responding to FOAs

Identify Required Submittals

- SF-424, Narrative, Abstract, Project Management Plan, Budget Justifications etc.
- Address **ALL** Areas
  - Follow the review criteria and ensure that all aspects are clearly addressed by your application

Address the "Cake" prior to the "Icing"

Submit All Documentation

- Ensure that all required documentation is submitted
- **Failure to do so can result in a non-responsive application**
- Ensure Page limits, margins, spacing, font size (all specified within the FOA)
- Ensure cohesiveness and consistency between documentation (budgets, narrative, SOPO, PMP, etc.)

Verify that the final application complies with ALL FOA requirements

Questions?

VISIT US AT: **www.NETL.DOE.gov**

@NETL_DOE

@NETL_DOE

@NationalEnergyTechnologyLaboratory

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Thank you for attending the 2021 HBCU-OMI FECM Webinar

Any Questions?

Solutions for Today | Options for Tomorrow

Solutions for Today | Options for Tomorrow