My dear friends,

I am thrilled to welcome members and researchers of the U.S. Department of Energy and National Energy Technology Laboratory to Pittsburgh. I want to thank you for choosing The Westin Pittsburgh and our city as your host for the 2022 Carbon Management Project Review Meeting.

As I reviewed the agenda, I was energized to see our nation’s top minds converging on such important topics as carbon capture, storage and conversion. I think Pittsburgh is a fitting backdrop for these efforts, as our city has undergone a recent environmental renaissance that has positioned us as a world leader in the green building movement. While you’re in town, I invite you to explore the first LEED® Financial Institution, Convention Center and Smithsonian Property all within walking distance of the hotel.

I encourage you to embrace Pittsburgh innovation as you experience our city. Find inspiration on Robotics Row, home to some of the world’s biggest names in robotics, with companies on the cutting edge of self-driving cars, space travel and other verticals. See how we train our workforce, incubate businesses and support sustainable energy markets through collaboration at the Energy Innovation Center. This type of transformation starts with forward-thinking organizations like the U.S. Department of Energy and National Energy Technology Laboratory, which drive innovation and provide sustainable solutions for all Americans.

And, don’t forget to take advantage of our many Only in Pittsburgh experiences and attractions. From the Andy Warhol Museum and the August Wilson African American Cultural Center to the Duquesne Incline, the Roberto Clemente Museum and more, discover why Pittsburgh is a must-see travel destination.

I wish you all the best during your stay in Pittsburgh.

Sincerely,

Jerad Bachar
VisitPITTSBURGH President & CEO

Greetings and welcome to Pittsburgh!

On behalf of the National Energy Technology Laboratory (NETL), I take great pride in welcoming you to the city of Pittsburgh and the 2022 Carbon Management Project Review Meeting.

For the first time in two years, we are meeting in person to discuss and share updates about the cutting-edge research projects being conducted by NETL and our research partners to advance carbon management technologies and ensure a sustainable clean energy future for our nation.

Pittsburgh is a great setting for our event. Throughout its history, Pittsburgh has demonstrated resiliency. When this city lost heavy manufacturing, it rebuilt as a center for innovation where higher education and medicine became the drivers for economic recovery. Several years later, when it was discovered that this region is situated in the Marcellus Shale, the largest and one of the deepest natural gas plays in the United States, Pittsburgh area leaders seized the initiative and took steps to begin developing this tremendous resource.

As a member of the carbon capture, utilization and storage research and development community, you have demonstrated your own remarkable brand of resiliency. Despite the many challenges created by the pandemic, you have remained dedicated to advancing significant projects that will enable our country to achieve a carbon-free power sector by 2035 and a net-zero carbon emissions economy by 2050 and deliver clean, affordable and abundant energy to drive American economic growth and prosperity.

During this week’s sessions, I look forward to meeting you to express my gratitude for your perseverance and commitment that have seen us through these unprecedented times.

The 2022 Carbon Management Project Review Meeting brings together top research talent working to resolve some of our greatest energy challenges. For the next five days, scientists and researchers will discuss how their innovations will forge and enhance the nation’s energy foundation and protect the environment for future generations.

At NETL, our mission is to drive innovation and deliver solutions for an environmentally sustainable and prosperous energy future. During your stay in Pittsburgh, I invite you to take full advantage of this exciting opportunity to learn about the groundbreaking research and collaborative projects underway to fulfill that mission.

Once again, welcome to Pittsburgh! I hope you enjoy your time with us in this remarkable city.

Sincerely,

Dr. Brian J. Anderson, Ph.D.
Director
National Energy Technology Laboratory
MONDAY
AUGUST 15TH
8AM – 10AM

GENERAL PLENARY SESSION (ALL PROGRAM AREAS):
ALLEGHENY ROOM (ALL PROGRAM AREAS):

Launching the CCUS Industry of the Future

The plenary session will focus on FECM’s vision for a U.S. future with CCUS and ongoing support for R&D and infrastructure projects necessary to transition toward a net-zero carbon economy by 2050. The session will provide insight into the development of the CCUS industry from highly revered leaders in industry, professional associations, and other government stakeholders.

MONDAY
MORNING

ALLEGHENY ROOM FOYER

7:00 AM Meeting Registration/Continental Breakfast

ALLEGHENY ROOM
MODERATOR: NOAH DEICH
DEPUTY ASSISTANT SECRETARY FOR THE OFFICE OF CARBON MANAGEMENT, OFFICE OF FOSSIL ENERGY AND CARBON MANAGEMENT, U.S. DEPARTMENT OF ENERGY DOE

8:00 AM Welcome & Opening Remarks
- Brian Anderson, Director, National Energy Technology Laboratory

8:15 AM Fossil Energy and Carbon Management (FECM) Highlights
- Brad Crabtree, Assistant Secretary for the Office of Fossil Energy and Carbon Management, U.S. DOE

8:35 AM Office of Clean Energy Demonstrations (OCED) Overview
- Douglas Schultz, Chief Operating Officer, Office of Clean Energy Demonstrations, U.S. DOE

8:55 AM White House Perspectives
- Sally Benson, Deputy Director for Energy and Chief Strategist for the Energy Transition, Office of Science and Technology Policy (OSTP)

9:15 AM DOE Loan Programs Office
- Guido DeHoratiis, General Engineer, Loan Programs Office, U.S. DOE

9:35 AM International Energy Agency Greenhouse Gas (IEAGHG)
- Tim Dixon, Director and General Manager, IEA Greenhouse Gas R&D Programme

10:00 AM Break - Allegheny Foyer
POINT SOURCE CARBON CAPTURE
CAPTURE FROM INDUSTRIAL SOURCES
WESTMORELAND ROOM
Moderator: Jose Figueroa
10:30 AM
Cryogenic Carbon Capture from Cement Production (FE0032146)
• Christopher Hoeger, Sustainable Energy Solutions, LLC
10:55 AM
Industrial Carbon Capture from a Cement Facility Using the CRYOCAP FG Process (FE0032136)
• Hafz Salih, University of Illinois at Urbana, Champaign
11:20 AM
Engineering Design of a Polaris Membrane CO₂ Capture System at a Cement Plant (FE0031949)
• Tim Merkle, Membrane Technology and Research, Inc.
11:45 AM
Carbon Capture & Hydrogen Production from a Blast Furnace Using a Novel Reforming Scheme (FE0031937)
• Atanu Mukherjee, Dastur International, Inc.
12:10 - 1:10 PM
Lunch - Allegheny Room
• Lunchtime speaker: Societal Considerations and Impacts, Holly Buck, Office of Fossil Energy and Carbon Management, Division of Strategic Engagement, U.S. DOE

CARBON DIOXIDE REMOVAL
LAB/BENCH-SCALE RESEARCH
CAMBRIA ROOM
Moderator: Lei Hong
10:20 AM
MIL-101 (CR)-Amine Sorbents Evaluation Under Realistic Direct Air Capture Conditions (FE0031954)
• Christopher Jones, Georgia Institute of Technology
10:55 AM
Transformational Sorbent Materials for a Substantial Reduction in the Energy Requirement for Direct Air Capture of CO₂ (FE0031953)
• Ravi Jain, InnoSepra, LLC
11:20 AM
Development Of Advanced Solid Sorbents For Direct Air Capture (FE0031954)
• Mustapha Soukri, RTI International
11:45 AM
Low Regeneration Temperature Sorbents for Direct Air Capture of CO₂ (FE0031965)
• James Zhou, Susteon, Inc.
12:10 - 1:10 PM
Lunch - Allegheny Room
• Lunchtime speaker: Societal Considerations and Impacts, Holly Buck, Office of Fossil Energy and Carbon Management, Division of Strategic Engagement, U.S. DOE

CARBON CONVERSION
CARBON CONVERSION OVERVIEW
BUTLER ROOM
Moderator: Patricia Rawls
10:30 AM
Carbon Utilization Program Overview
• Joseph Stoffa, National Energy Technology Laboratory
10:50 AM
Carbon Conversion Program: Updates on Infrastructure Bill Impacts and International Collaborations
• Amishi Claros, Department of Energy Headquarters
11:10 AM
NCCC - Building a Successful Test Collaboration
• Frank Morton, Southern Company
11:30 AM
Overview of Carbon Utilization Life Cycle Analysis at NETL
• Michelle Krynock, National Energy Technology Laboratory
11:50 AM
Achieving Unprecedented Carbon Dioxide Utilization in CO₂Concrete™: System Design, Process Development and Demonstration (FE0031915)
• Dale Prentice, University of California - Los Angeles
12:10 - 1:10 PM
Lunch - Allegheny Room
• Lunchtime speaker: Societal Considerations and Impacts, Holly Buck, Office of Fossil Energy and Carbon Management, Division of Strategic Engagement, U.S. DOE

CARBON TRANSPORT AND STORAGE
REGIONAL INITIATIVES
PENNSYLVANIA ROOM
Moderator: William Aljoe
10:15 AM
Southeast Regional Carbon Utilization and Storage Partnership (SECARB-USA) (FE0031830)
• Ben Wernette, Southern States Energy Board
10:45 AM
Regional Initiative to Accelerate CCUS Deployment in Midwestern and Northeastern USA (FE0031836)
• Neeraj Gupta, Battelle Memorial Institute
• Sallie Greenberg, University of Illinois
11:15 AM
Plains CO₂ Reduction Partnership Initiative to Accelerate Carbon Capture, Utilization, and Storage Deployment (FE0031838)
• Kevin Connors, University of North Dakota Energy and Environmental Research Center
11:45 AM
Carbon Utilization and Storage Partnership of the Western United States (FE0031837)
• Robert Balch, New Mexico Institute of Mining & Technology
12:10 - 1:10 PM
Lunch - Allegheny Room
• Lunchtime speaker: Societal Considerations and Impacts, Holly Buck, Office of Fossil Energy and Carbon Management, Division of Strategic Engagement, U.S. DOE
## POINT SOURCE CARBON CAPTURE
### CAPTURE FROM INDUSTRIAL SOURCES

**WESTMORELAND ROOM**  
Moderator: Mariah Richardson  
10:00 AM  
Application of Transformational University of Kentucky 3 Tonne Per Day Carbon Dioxide Capture System at a Steel Process Plant (FE0032133)  
- Minnie Liu, University of Kentucky

11:00 AM  
Engineering Design of a Linde-BASF Advanced Amine Technology for CO₂ Capture from H₂ Plant Flue Gas (FE0031942)  
- Minshi M. Shah, Linde, Inc.

**BREAKOUT**  

**MONDAY**  

### CARBON DIOXIDE REMOVAL
#### LAB/BENCH-SCALE RESEARCH

**CAMBRIA ROOM**  
Moderator: Elliot Roth  
10:00 AM  
High Capacity Polymer Aerosol Sorbents for Direct Air Capture (FE0031951)  
- Mahati Chintapalli, PARC

11:00 AM  
Gradient Amine Sorbents for Low Vacuum Swing Carbon Dioxide Capture at Ambient Temperature (FE0031958)  
- Steven Chuang, University of Akron

12:00 PM  
Next Generation Fiber-Encapsulated Nanoscale Hybrid Materials for Direct Air Capture with Selective Water Rejection (FE0031963)  
- Sahiung Park, Columbia University

1:00 PM  
Direct Air Capture using Trapped Small Amines in Hierarchical Nanoporous Capsules on Porous Electrospun Fibers (FE0031969)  
- Miao Yu, University at Buffalo, SUNY

2:00 PM  
Membrane Adsorbents Comprising Self-Assembled Inorganic Nanocages (SNICs) for Super-Fast Direct Air Capture Enabled by Passive Cooling (FE0031960)  
- Haiqing Lin, University at Buffalo, SUNY

3:00 PM  
Improving the Cost-Effectiveness of Algal CO₂ Utilization by Synergistic Integration with Power Plant and Wastewater Treatment Operations (FE0032098)  
- Lance Schilderan, University of Illinois, Illinois Sustainable Technology Center

4:00 PM  
Novel Algae Technology to Utilize Carbon Dioxide for Value-Added Products (FE0031710)  
- Fred Harrington, Helios-NRG, LLC

**BREAKOUT**  

**MONDAY**  

### CARBON CONVERSION
#### BIOLOGICAL UPTAKE

**BUTLER ROOM**  
Moderator: Andy Aurelio  
10:00 AM  
A Highly Efficient Microalgae-Based Carbon Sequestration System to Reduce Carbon Dioxide Emission From Power Plant Flue Gas (FE0031914)  
- Feng Chen, University of Maryland, Center for Environmental Science

11:00 AM  
Continuous Algae-Based Carbon Capture and Utilization to Transform Economics and Environmental Impacts (FE0032108)  
- Susie Dai, Texas A&M Agrilife Research

12:00 PM  
Carbon Capture and Utilization for Protein and Fatty Acids (FE0032104)  
- David Hazebeck, Global Algae Innovation, Inc.

1:00 PM  
Novel Algae Technology to Utilize Carbon Dioxide for Value-Added Products (FE0031710)  
- Fred Harrington, Helios-NRG, LLC

2:00 PM  
Development of Thermal Breakout Technology for Determining In Situ Stress (FE0031688)  
- San Vangeli, RESPEC Company, LLC

3:00 PM  
Monitoring of Geological CO₂ Sequestration Using Isotopes and PF Tracers (FWP-FEA045)  
- David Graham, Oak Ridge National Laboratory

4:00 PM  
Break - 2nd Floor Foyer and the Allegheny Foyer

**BREAKOUT**  

**MONDAY**  

### CARBON TRANSPORT AND STORAGE
#### SUBSURFACE STRESS

**PENNSYLVANIA ROOM**  
Moderator: Natalie Iannacchione  
11:00 AM  
Advanced Characterization of Faults through Deployment of Novel Geophysical, Geochemical and Geomechanical Technologies at the San Juan Basin CarbontSAFE Site (FE0032064)  
- William Appomah, New Mexico Tech

12:00 PM  
Refined Principal Stress Estimates from Induced Seismicity in Southern Kansas and Oklahoma Based on Seismological Tools and Laboratory Experiments (FE0031687)  
- Laura Chiaramonte, Electric Power Research Institute

1:00 PM  
Task K Critical Stress State (FWP-FE-112-19-FY19)  
- Ting Chen, Los Alamos National Laboratory

2:00 PM  
Development of Thermal Breakout Technology for Determining In Situ Stress (FE0031688)  
- San Vangeli, RESPEC Company, LLC

3:00 PM  
Break - 2nd Floor Foyer and the Allegheny Foyer

**BREAKOUT**  

**MONDAY**  

### CARBON TRANSPORT AND STORAGE
#### STORAGE RESOURCES MANAGEMENT SYSTEM TRAINING SESSION 1

**CRAWFORD ROOM**  
11:00 AM  - 1:15 PM  
Storage Resources Management System Training Session (Limited number of attendees due to social distancing, prior registration required)

3:15 - 3:45 PM  
Break - 2nd Floor Foyer and the Allegheny Foyer
CARBON CONVERSION

BUTLER ROOM
Moderator: Andy Aurelio

3:45 PM
Inorganic Membrane-based Reactive Separation and Reactant Recycle for Direct Synthesis of Dimethyl Carbonate (SC0019556)
• Richard Ciora, Media and Process Technology Inc.

4:05 PM
Dehydration Membrane Reactor for Direct Production of Dimethyl Carbonate (DMC) from CO₂ and H₂ (FE0031909)
• Shiguang Li, GTI Energy

4:25 PM
Intensified Catalytic Conversion of Carbon Dioxide into High-Value Chemicals (FE0031920)
• Jesse Thompson, University of Kentucky

4:45 PM
Carbon Dioxide (CO₂) Mineralization and Utilization using Industrial Wastes (FE0031705)
• Ru Wang, University of Wisconsin - Madison

5:05 PM
A Novel Molten Salt System for CO₂-Based Oxidative Dehydrogenation with Integrated Carbon Capture (FE0031918)
• Fanxing Li, North Carolina State University

5:25 PM
End of Day

CARBON TRANSPORT AND STORAGE

PENNSYLVANIA ROOM
Moderator: Dawn Deel

3:45 PM
New Imaging and CO₂ Storage Technologies for Unconventional Subsurface Reservoirs (FWP-70066)
• Quin Miller, Pacific Northwest National Laboratory

4:10 PM
SOV/DAS Part 1 - Monitoring a CO₂ injection in real-time using permanent seismic sources and fiber-optics sensing (FWP-ESD14095)
• Julia Correa, Lawrence Berkeley National Laboratory

4:35 PM
CCSMR Task 2: SOV/DAS Part 2 - High-precision seismicity tracking for augmenting the active CO₂ plume monitoring (FWP-ESD14095)
• Stanislav Glubokovskikh, Lawrence Berkeley National Laboratory

5:00 PM
CCSMR Task 3: Joint crosswell seismic and EM monitoring of a shallow subsurface CO₂ injection (FWP-ESD14095)
• David Alumbaugh, Lawrence Berkeley National Laboratory

5:25 PM
CCSMR Task 4: Resilient high-sensitivity seismometers - optical monitoring technology for deep CO₂ injections (FWP-ESD14095)
• Stanislav Glubokovskikh, Lawrence Berkeley National Laboratory

5:45 PM
End of Day
Transitioning Energy Infrastructure For Mid-Century Decarbonization

The plenary session will focus on a promising pathway to transition into a net-zero energy environment – co-located H₂ production and CCUS with transport to constitute “Hubs.” The session will provide a brief status update and an overview of select international CCUS hub projects and U.S. national-scale studies of infrastructure buildout. Presentations will describe hub concepts and development strategies, with focus on getting commitment among all the relevant parties in a timely manner, business strategy and financing, highly revered leaders in industry, professional associations, and other government stakeholders.
10:30 AM

10:55 AM

11:20 AM
Pilot Testing of a Highly Effective Pre-Combustion Sorbent-Based Carbon Capture System (FWP-00031305) • Gokhan Alptekin, TDA Research, Inc.

11:45 AM
Large Pilot Testing of Linde-BASF Advanced Post-Combustion Carbon Dioxide Capture Technology at a Coal-Fired Power Plant (FWP-00031301) • Stephanie Brownstein, University of Illinois

10:30 AM
DAC Test Center Overview • Ronald Breaux, National Energy Technology Laboratory

10:55 AM
Processible Porous Polymeric Fiber Adsorbents for Low-Concentrated Carbon Dioxide Capture • Ali Sekizkardes, National Energy Technology Laboratory

11:20 AM
Computational Screening of MOFs for Carbon Capture • Samir Budhathoki, National Energy Technology Laboratory (LRST)

11:45 AM
Demonstration of a Continuous-Motion Direct Air Capture (DAC) System (FWP-00031957) • Miles Saliva-Novak, Global Thermostat

12:10 - 1:10 PM
Lunch - Allegheny Room
• Lunchtime speaker: TCM - 10 Years Demonstrating Carbon Capture Technologies, Muhammad Ismail Shah, Managing Director, Technology Centre Mongstad

10:30 AM
Porous Catalytic Polymers for Simultaneous CO₂ Capture and Conversion to Value-Added Chemicals (FWP-FEA4-21-FY22) • Michelle Kidder, Oak Ridge National Laboratory

10:50 AM
Direct Air Reactive Capture and Conversion for Utility-Scale Energy Storage (FWP-FEU0277) • Simon Pang, Lawrence Livermore National Laboratory

11:10 AM
A Pressure-Swing Process for Reactive CO₂ Capture and Conversion to Methanol (FWP-FY21-RCC-LAB-CALL) • Daniel Rudy, National Renewable Energy Laboratory

11:30 AM
Integrated Capture and Conversion of CO₂ to Materials: Pathways for Producing CO₂-Negative Building Composites (FWP-78404) • David Heldebrant, Pacific Northwest National Laboratory

11:50 AM
Integrating CO₂-Selective Polymer Layers and Electrocatalytic Conversion (FWP-1024822) • Douglas Kaufman, National Energy Technology Laboratory

12:10 - 1:10 PM
Lunch - Allegheny Room
• Lunchtime speaker: TCM - 10 Years Demonstrating Carbon Capture Technologies, Muhammad Ismail Shah, Managing Director, Technology Centre Mongstad
**TUESDAY BREAKOUT**

### POINT SOURCE CARBON CAPTURE
**CAPTURE FROM POWER GENERATION/Pilot-Scale Research**

**Moderator:** Carl Laird

- **10:40 AM**
  - Large Pilot Testing of the MTR Membrane Post-Combustion CO₂ Capture Process (FE0031587)
    - Brice Freeman, Membrane Technology and Research, Inc.

- **1:35 PM**
  - National Carbon Capture Center (FE0022596)
    - Tony Wu, Southern Company

- **2:00 PM**
  - Engineering-Scale Demonstration of the Mixed-Salt Process for CO₂ Capture (FE0031588)
    - Indira Jayaweera, SRI International

**WESTMORELAND ROOM**

#### CARBON DIOXIDE REMOVAL
**LAB/Bench-Scale Research**

**CAMBRIA ROOM**

- **1:00 PM**
  - A Combined Water and CO₂ Direct Air Capture System (FE0031970)
    - Will Kain, IVV, LLC

- **1:35 PM**
  - Direct Air Capture Using Novel Structured Adsorbents (FE0031959)
    - Adelaide Calby-Muzika, Climeworks

- **2:00 PM**
  - Direct Air Capture of Energy for Carbon Capture, Utilization, and Storage (CCUS) Partnership (DAC RE (TFS-21-24815))
    - Matthew Atwood, AirCapture

- **2:25 PM**
  - Bench-Scale Testing of Monolithic Poly Propyleneimine Structured Contactors for Direct Air Capture of Carbon Dioxide (FE0032099)
    - Christopher Bertole, Cormetech, Inc.

- **2:50 PM**
  - Accelerated Life Cycle Testing of Advanced Structured Material Systems for Direct Air Capture (FE0032099)
    - Mustapha Soukri, TDA Research, Inc.

- **3:15 - 3:45 PM**
  - Break - 2nd Floor Foyer and Allegheny Foyer

**CAMBRIA ROOM**

#### CARBON CONVERSION
**ELECTROCHEMICAL CONVERSION**

**BUTLER ROOM**

- **1:00 PM**
  - An Overview of NETL’s In-House CO₂ Conversion Efforts (PWP-1022426)
    - Douglas Kaufman, National Energy Technology Laboratory

- **1:30 PM**
  - Electrochemical Reduction of Flue Gas Carbon Dioxide to Commercially-Viable C₂-C₄ Products (FE0031916)
    - Joshua Spurgeon, University of Louisville

- **1:50 PM**
  - Selective and Efficient Electrochemical Production of neat Formic Acid from Carbon Dioxide Using Novel Platinum Group Metals-Free Catalysts (FE0031704)
    - Syed Mubeen, University of Iowa

- **2:10 PM**
  - Electrochemical Production of Highly Valuable Carbon Nanotubes from Flue-Gas Sourced CO₂ (FE0031913)
    - Anna Douglas, SkyNano, LLC

- **2:30 PM**
  - High-Efficiency Electrochemical Conversion of CO₂ to Ethylene (FE0031919)
    - Jingjie Wu, University of Cincinnati

- **2:50 PM**
  - Highly Efficient Electrocatalysts for Direct Conversion of CO₂ to Chemicals (TFS-21-24815)
    - Di-Jia Liu, Argonne National Laboratory

- **3:10 PM**
  - Unique Nanotechnology Converts Carbon Dioxide to Valuable Products (FE0031707)
    - Bingyan Li, West Virginia University Research Corporation

- **3:30 - 3:45 PM**
  - Break - 2nd Floor Foyer and Allegheny Foyer

**BUTLER ROOM**

#### CARBON TRANSPORT AND STORAGE
**CARBONSAFE PHASE III**

**PENNSYLVANIA ROOM**

- **1:00 PM**
  - North Dakota CarbonSAFE Phase III: Site Characterization and Permitting (FE0031889)
    - Wesley Peck, University of North Dakota Energy and Environmental Research Center

- **1:40 PM**
  - Wyoming CarbonSAFE: Accelerating CCUS Commercialization and Deployment at Dry Fork Power Station and the Wyoming Integrated Test Center (FE0031891)
    - J. Fred McLaughlin, University of Wyoming

#### INTELLIGENT MONITORING SYSTEMS

**PENNSYLVANIA ROOM**

- **1:30 PM**
  - Developing and Validating Pressure Management and Plume Control Strategies in the Williston Basin Through a Brine Extraction and Storage Test (BEST) (FE0026160)
    - Robert Trautz, Electric Power Research Center

- **2:35 PM**
  - Phase II Field Demonstration at Plant Smith Generating Station Assessment of Opportunities for Optimal Reservoir Pressure Control, Plume Management and Produced Water Strategies (FE0026140)

**CRAWFORD ROOM**

- **3:30 - 3:45 PM**
  - Break - 2nd Floor Foyer and Allegheny Foyer

**CRAWFORD ROOM**

#### CARBON TRANSPORT AND STORAGE:
**BEST/ROZ/ASSOCIATED STORAGE**

- **2:10 PM**
  - Automated Data Collection and Compression System for CO₂ Monitoring Data (SC0021954)
    - Named Sorouh, Petroleums, LLC

- **2:35 PM**
  - Interface and Workflow Design and Implementation for Geological Carbon Storage Modeling, Simulation, and Risk Management (SC0020734)
    - Mark Brandyberry, Illinois Rocstar

- **3:30 - 3:45 PM**
  - Break - 2nd Floor Foyer and Allegheny Foyer
**TUESDAY**

**BREAKOUT**

**POINT SOURCE CARBON CAPTURE**

**CAPTURE FROM POWER GENERATION/PILOT-SCALE RESEARCH**

**WESTMORELAND ROOM**

Moderator: Mariah Richardson

3:45 PM
- Scale Up and Testing of Polaris Capture Management at TCM (FE0031591)
  - Tim Merkel, Membrane Technology and Research, Inc.

4:00 PM
- ROTA/CAP: An Intensified Carbon Capture System Using Rotating Packed Beds (FE0031630)
  - Osman Akpolat, Gas Technology Institute

4:30 PM
- Safeguarding Amines from Oxidation by Enabling Technologies (FE0031630)
  - Fred Closman, University of Texas at Austin

5:00 PM
- Rotating Packed Beds (FE0031861)
  - Scott McLemore, Chevron U.S.A., Inc.

5:45 PM
- Chevron Natural Gas Carbon Capture Technology Testing Project
  - Fred Cismon, University of Texas at Austin

6:00 PM
- Questions and Answers Session

5:45 PM - End of Day

**CARBON DIOXIDE REMOVAL**

**CARBON DIOXIDE REMOVAL INNOVATION PANEL**

**CAMBRIA ROOM**

Moderator: Phil Kim

2:45 PM
  - Robert Dagle, Pacific Northwest National Laboratory

3:00 PM
- CO2 to Methanol Using Plasma Catalysis at Atmospheric Pressure (SC0019939)
  - Mahendra K. Sunkara, Advanced Energy Materials, LLC

3:45 PM
- Atmospheric Microwave Plasma for CO2 Sequestration for Jet-fuel Synthesis (SC0019791)
  - Leslie Bromberg, MAAT Energy Company

4:30 PM
- Plasma-Assisted Catalytic Conversion of Carbon Dioxide and Propylene to Propylene and Carbon Monoxide (FE0031917)
  - James Zhou, Susteen, Inc.

4:45 PM
- Plasma-Assisted Methane Reforming and Catalyst Decoking (SC0019664)
  - Yue Xiao, Advanced Cooling and Energy Materials, LLC

5:05 PM
- A Tandem Electrolysers Process for Multi-Carbon Chemical Production from Carbon Dioxide (FE0031910)
  - Feng Jiao, University of Delaware

5:30 PM
- Questions and Answers Session

6:00 PM
- CCUS Demo Session - Allegheny Room - 3rd Floor

6:00 PM - End of Day

**CARBON DIOXIDE CONVERSION**

**CATALYTIC CONVERSION**

**BUTLER ROOM**

Moderator: Kristina Vrouwenvelder

2:45 PM
  - Robert Dagle, Pacific Northwest National Laboratory

3:00 PM
- CO2 to Methanol Using Plasma Catalysis at Atmospheric Pressure (SC0019939)
  - Mahendra K. Sunkara, Advanced Energy Materials, LLC

3:45 PM
- Atmospheric Microwave Plasma for CO2 Sequestration for Jet-fuel Synthesis (SC0019791)
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  - Feng Jiao, University of Delaware

5:30 PM
- Questions and Answers Session

6:00 PM
- CCUS Demo Session - Allegheny Room - 3rd Floor

6:00 PM - End of Day

**CARBON TRANSPORT AND STORAGE**

**TOWARD STORAGE DEPLOYMENT**

**CRAWFORD ROOM**

Moderator: Dawn Deel

3:45 PM
- Regional Considerations for Accelerated Deployment in the Intermountain West (I-WEST)
  - George Guthrie, Los Alamos National Laboratory

4:10 PM
- RECCO: Reusing Existing Oil & Gas Infrastructure for CO2 Storage.
  - Rajesh Pavar, Los Alamos National Laboratory

4:35 PM
- SimCCS3.0: An Open-source Toolset for Regional CCS Infrastructure Decision Support
  - Bailian Chen, Los Alamos National Laboratory

5:00 PM
- Wireless Microsensors System for Monitoring Decoupled Subsurface Operations (FE0031850)
  - Joel Smíchal, Battelle Memorial Institute

5:30 PM
- Questions and Answers Session

6:00 PM
- CCUS Demo Session - Allegheny Room - 3rd Floor

6:00 PM - End of Day

**CARBON TRANSPORT AND STORAGE**

**WELLBORE INTEGRITY**

**PENNSYLVANIA ROOM**

Moderator: Kyle Smith

2:45 PM
- Multi-Carbon Chemical Production from Atmospheric Microwave Plasmas (SC0019939)
  - Charles Bryan, National Technology and Engineering Solutions of Sandia, LLC

3:00 PM
- Plasma-Assisted Catalytic Conversion of Carbon Dioxide and Propylene to Propylene and Carbon Monoxide (FE0031917)
  - James Zhou, Susteen, Inc.

3:45 PM
- Plasma-Assisted Methane Reforming and Catalyst Decoking (SC0019664)
  - Yue Xiao, Advanced Cooling and Energy Materials, LLC

4:30 PM
- A Tandem Electrolysers Process for Multi-Carbon Chemical Production from Carbon Dioxide (FE0031910)
  - Feng Jiao, University of Delaware

4:45 PM
- Questions and Answers Session

5:05 PM
- CCUS Demo Session - Allegheny Room - 3rd Floor

5:05 PM - End of Day

**CARBON TRANSPORT AND STORAGE**

**DATA RESOURCES**

**CRAWFORD ROOM**

Moderator: Joshua Hull

3:45 PM
- Regional Considerations for Accelerated Deployment in the Intermountain West (I-WEST)
  - George Guthrie, Los Alamos National Laboratory

4:10 PM
- RECCO: Reusing Existing Oil & Gas Infrastructure for CO2 Storage.
  - Rajesh Pavar, Los Alamos National Laboratory

4:35 PM
- SimCCS3.0: An Open-source Toolset for Regional CCS Infrastructure Decision Support
  - Bailian Chen, Los Alamos National Laboratory

5:00 PM
- Wireless Microsensors System for Monitoring Decoupled Subsurface Operations (FE0031850)
  - Joel Smíchal, Battelle Memorial Institute

5:30 PM
- Questions and Answers Session

6:00 PM
- CCUS Demo Session - Allegheny Room - 3rd Floor

6:00 PM - End of Day

**CARBON TRANSPORT AND STORAGE**

**DEPLOYMENT**

**OCEAN AND STORAGE**

**CRAWFORD ROOM**

Moderator: Joshua Hull

3:45 PM
- Regional Considerations for Accelerated Deployment in the Intermountain West (I-WEST)
  - George Guthrie, Los Alamos National Laboratory

4:10 PM
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- Questions and Answers Session

6:00 PM
- CCUS Demo Session - Allegheny Room - 3rd Floor

6:00 PM - End of Day
SPECIAL PANEL SESSION:
PENNSYLVANIA ROOM

Technical Challenges for Leasing and Regulating Government Lands (Offshore and Onshore) CO₂ Storage

The aim of this panel session is to identify the technical leasing and regulatory challenges associated with offshore CCS projects, especially the greatest technical challenges related to development of draft regulations and leasing rules. Focus will be given to repurposing infrastructure (pipelines, platforms, wells, fields), leasing block issues (size, shape, valuation, pressure interference), monitoring for brine and CO₂ leakage, maximizing use of pore space, and reservoir fluid pressure management.
### POINT SOURCE CARBON CAPTURE

**CAPTURE FROM POWER GENERATION/PILOT-SCALE RESEARCH**

**WESTMORELAND ROOM**

Moderator: Andrew O’Palko

- **8:00 AM**
  Engineering-Scale Test of a Water-Lean Solvent for Post-Combustion Capture (FE0031945)
  - Abhout Bhown, Electric Power Research Institute

- **8:25 AM**
  Engineering Scale Design and Testing of Transformational Membrane Technology for CO$_2$ Capture (FE0031946)
  - Shiquang Li, GTI Energy
  - Yang Han, The Ohio State University

- **8:50 AM**
  Engineering-Scale Demonstration of Transformational Solvent on NGCC Flue Gas (FE0031950)
  - Andrew Awtry, ION Clean Energy, Inc.

### CAPTURE FROM POWER GENERATION/ENGINEERING DESIGN/FEED STUDIES

**WESTMORELAND ROOM**

Moderator: Andrew O’Palko

- **9:15 AM**
  Large-Scale Commercial Carbon Capture Retrofit of the San Juan Generating Station (FE0031848)
  - Cindy Crane, Enchant Energy, LLC

- **9:40 AM**
  Retrofittable Advanced Combined Cycle Integration for Flexible Decarbonized Generation (FE0032131)
  - John Sholes, General Electric Company

- **10:05 - 10:35 AM**
  Break - Allegheny Foyer and the 2nd Floor Foyer

### CARBON DIOXIDE REMOVAL

**LAB/BENCH-SCALE RESEARCH**

**CAMBRIA ROOM**

Moderator: Kristina Vrouwenvelder

- **8:00 AM**
  Bench Scale Development of a Novel Direct Air Capture Technology using High Capacity Structured Sorbents (FE0032118)
  - Cory Sanderson, Susteon, Inc.

- **8:25 AM**
  Advanced Integrated Reticular Sorbent-Coated System to Capture Carbon Dioxide (CO$_2$) Using an Additively-Manufactured Contactor (AIR2CO$_2$ Contactor) (FE0032126)
  - David Moore, GE Research

- **8:50 AM**
  Hybridizing Heat-Integrated 3D Printed Modules with Mass Manufacturable, Low Pressure Drop Fiber Sorbents (FE0032129)
  - Ryan Lively, Georgia Institute of Technology

- **9:15 AM**
  King City Asbestos Corporation (KCAC) Mine Carbon Mineralization Field Test (FWP-FEW0278)
  - Briana Mordick Schmidt, Lawrence Livermore National Laboratory

- **9:40 AM**
  Energy-Efficient Direct Air Capture System for High Purity CO$_2$ Separation
  - Joo-Youp Lee, University of Cincinnati

- **10:05 - 10:35 AM**
  Break - Allegheny Foyer and the 2nd Floor Foyer
BREAKOUT

WEDNESDAY

POINT SOURCE CARBON CAPTURE
CAPTURE FROM POWER GENERATION/ENGINEERING DESIGN/FEED STUDIES
WESTMORELAND ROOM
Moderator: Nicole Shamitko-Klingensmith

10:35 AM
Deer Park Energy Center Natural Gas Combined Cycle Carbon Capture System Front-End Engineering Design Study (FE0032137)
• Carl Herman, Calpine Texas CCUS Holdings, LLC

11:20 AM
Front-End Engineering and Design for a CO2 Capture System at Calpine’s Delta Energy Center (FE0032149)
• Andrew Axtry, ION Clean Energy, Inc.

11:50 AM
A Comparison of FEED Results from Mustang Station and Panda Power
• Jorge L. Martorell, University of Texas at Austin

CARBON DIOXIDE REMOVAL
LAB/BENCH-SCALE RESEARCH
CAMBRIA ROOM
Moderator: Kristina Vrouwenvelder

10:35 AM
Electrochemically Regenerated Solvent for Direct Air Capture with Cogeneration of Hydrogen at Bench-Scale (FE0032125)
• Kunlei Liu, University of Kentucky

ENGINEERING DESIGN/FEED STUDIES
CAMBRIA ROOM
Moderator: Kristina Vrouwenvelder

11:00 AM
Spatiotemporal Adaptive Passive Direct Air Capture (FE0032097)
• Mike Austell, Carbon Collect, Inc.

11:25 AM
Direct Air Capture-Based Carbon Dioxide Removal with United States Low-Carbon Energy and Sinks (FE0032100)
• Jason Dietsch, University of Illinois

11:50 AM
Scaleup and Site-Specific Engineering Design for Global Thermostat Direct Air Capture Technology (FE0032101)
• Mark Steutermann, Black and Veatch Corporation
• Justin Federici, ExxonMobil
• Eric Ping and Miles Sakwa-Novak, Global Thermostat

CARBON TRANSPORT AND STORAGE
DATA RESOURCES
PENNSYLVANIA ROOM
Moderator: Ashley Urosek

10:35 AM
SmartSearch, scalable data search and aggregation in the Cloud for CCS and beyond
• Vic Baker, National Energy Technology Laboratory

SUBSURFACE STRESS
PENNSYLVANIA ROOM
Moderator: Ashley Urosek

11:00 AM
Seismic Elastic Double-Beam Characterization of Faults and Fractures for CO2 Storage Site Selection (FE0032063)
• Yingcai Zheng, University of Houston

11:25 AM
Identification of Faults Susceptible to Induced Seismicity (FE0031685)
• Scott Frailey, University of Illinois Urbana-Champaign

11:50 AM
Improving Subsurface Stress Characterization for Carbon Dioxide Storage Projects by Incorporating Machine Learning Techniques (FE0031684)
• William Ampomah, New Mexico Tech

12:15 - 1:15 PM
Lunch - Allegheny Room
• Lunchtime Speaker - U.S. EPA Underground Injection Control (UIC) Class VI Update, William Bates, Chief, Underground Injection Control Branch, Drinking Water Infrastructure Development Division, Office of Ground Water & Drinking Water, U.S. Environmental Protection Agency

12:15 - 1:15 PM
Lunch - Allegheny Room
• Lunchtime Speaker - U.S. EPA Underground Injection Control (UIC) Class VI Update, William Bates, Chief, Underground Injection Control Branch, Drinking Water Infrastructure Development Division, Office of Ground Water & Drinking Water, U.S. Environmental Protection Agency
**Breakout: Carbon Transport and Storage**

**Pennsylvania Room**
Moderator: Natalie Iannacchione

1:15 PM
Southeast Regional Carbon Storage Partnership: Offshore Gulf of Mexico (FE0031557)
- Ben Wernette, Southern States Energy Board

1:40 PM
GoMCarb Partnership 2021-22 Research Highlights (GOMCarb) (FE0031558)
- Ramon Trevino, University of Texas at Austin

2:05 PM
Site Selection and Cost Estimation of Pilot-Scale CO₂ Saline Storage Study in the Gulf of Mexico
- Nur Wijaya, National Energy Technology Laboratory

2:30 PM
DOE Offshore Carbon Storage Saline Calculator Methodology and Tool
- Lucy Romeo and Andrew Bean, National Energy Technology Laboratory

2:55 PM
Offshore Risk Modeling (ORM) Suite and the DOE DOI Offshore CCS Coordination Efforts
- Kelly Rose and Jen Bauer, National Energy Technology Laboratory

3:20 - 3:50 PM
Break - Allegheny Foyer and the 2nd Floor Foyer

**Breakout: Carbon Capture Simulation for Industry Impact (CCSI)**

**Westmoreland Room**
Moderator: Katharina Daniels

1:15 PM
The Role of Chemical Alteration in Arkosic Reservoirs (FWP-FEW0271)
- Megan Smith, Lawrence Livermore National Laboratory

1:40 PM
Towards CASSM Measurements Using DAS for GCS
- Jonathan Ajo-Franklin, Rice University

2:05 PM
Changes in Seal Integrity Induced by CO₂ Injection and Leakage in a Hydromechanically Reactivated Fault (FWP-FP00013650)
- Jen Birkholzer, Lawrence Berkeley National Laboratory

2:30 PM
Acoustic Emissions Sensing for Tracing Carbon Dioxide Movement in Caprock of a Carbon Capture Utilization and Storage System (CCUS) (FE0032062)
- Amber Conner, Battelle Memorial Institute

2:55 PM
Numerical Simulation of Commercial-Scale CO₂ Storage in a Saline Formation Evaluating Basin-Scale Pressure Interference and CO₂ Plume Commingling (FWP-1022464)
- Nur Wijaya, National Energy Technology Laboratory

3:20 - 3:50 PM
Break - Allegheny Foyer and the 2nd Floor Foyer

**Breakout: Point Source Carbon Capture Systems Analysis**

**Westmoreland Room**
Moderator: Katharina Daniels

1:15 PM
Recent Point Source Capture Techno-economic Analysis
- Sally Homy, National Energy Technology Laboratory

1:40 PM
Overview of NETL Tools Available for Performing LCA
- Derrick Carlson, KeyLogic, Inc.

2:05 PM
Development of a Tool to Calculate the System Cost of Replacement Energy
- Amanda Harker Steele, National Energy Technology Laboratory

**Breakout: Carbon Dioxide Removal Engineering Design/Feed Studies**

**Cambria Room**
Moderator: Zachary Roberts

1:15 PM
Nuclear Powered DAC project in Illinois (FE0032156)
- Sean Tanton, Constellation

1:35 PM
Low Carbon Intensity Formic Acid Chemical Synthesis from Direct Air Captured CO₂ Utilizing Chemical Plant Waste Heat (ChemFADAC) (FE0032157)
- Matthew Atwood, AirCapture

1:55 PM
FEED Study for Climeworks Direct Air Capture at a California Geothermal Facility with Long-Term Storage (FE0032159)
- Kevin O'Brien, Illinois Sustainable Technology Center/University of Illinois

2:15 PM
NuDACCS (Nuclear-powered Direct Air Carbon Capture Storage) (FE0032160)
- Brandon Webster, Battelle Memorial Institute

2:35 PM
FEED Study of Carbon Capture Inc DAC and CarbonCure Utilization Technologies Using United States Steel’s Gary Works Plant Waste Heat (FE0032154)
- Kevin O’Brien, Illinois Sustainable Technology Center/University of Illinois

**Breakout: Bioenergy with Carbon Capture and Storage (BECCS)**

**Cambria Room**
Moderator: Zachary Roberts

2:55 PM
Net Carbon Negative Capture Technology Evaluation of the Impact of Coal and Biomass Blends on Pre- and Post Combustion Carbon Capture Solvents
- Joshua Stanislowski, University of North Dakota Energy and Environmental Research Center

3:20 - 3:50 PM
Break - Allegheny Foyer and the 2nd Floor Foyer

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WED AUG 17

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WED AUG 17
BREAKOUT

POINT SOURCE CARBON CAPTURE
CARBON CAPTURE SIMULATION FOR INDUSTRY IMPACT (CCSI)
WESTMORELAND ROOM
Moderator: Dustin Brown

3:50 PM
ML Based CFD Model Reduction for Rapid Computational Screening
• Phan Nguyen and Brian Bartoldson, Lawrence Livermore National Laboratory

4:15 PM
Computational Design and Process Intensification of CO₂ Absorbers
• Charles Finney, Oak Ridge National Laboratory

4:40 PM
Solvent Model Validation for Advanced Solvent and Contactor Design
• Zhijie Xu, Pacific Northwest National Laboratory

5:05 PM
CCS/PQUS/Toolset Capabilities
• Anuja Deshpande, National Energy Technology Laboratory

5:30 PM
End of Day

CARBON DIOXIDE REMOVAL
CARBON DIOXIDE REMOVAL INDUSTRY ENGAGEMENT PANEL
CAMBRIA ROOM
Moderator: Andrew Jones

3:45 PM
ML Based CFD Model Reduction for Rapid Computational Screening
• Phan Nguyen and Brian Bartoldson, Lawrence Livermore National Laboratory

4:15 PM
Computational Design and Process Intensification of CO₂ Absorbers
• Charles Finney, Oak Ridge National Laboratory

4:40 PM
Solvent Model Validation for Advanced Solvent and Contactor Design
• Zhijie Xu, Pacific Northwest National Laboratory

5:05 PM
CCS/PQUS/Toolset Capabilities
• Anuja Deshpande, National Energy Technology Laboratory

5:30 PM
End of Day

CARBON TRANSPORT AND STORAGE
DATA RESOURCES
PENNSYLVANIA ROOM
Moderator: Dawn Deel

3:50 PM
The DisCO2ver Platform, Building a Virtual Carbon Storage Data Laboratory and Infrastructure for the Future
• Kelly Rose, National Energy Technology Laboratory

4:15 PM
Geo-data science driven insights into CCS EJ/SJ opportunities in support of energy community transitions
• Jen Bauer, National Energy Technology Laboratory

4:40 PM
Advanced Data Extraction to Support a Living Database
• Michael Sabatino, National Energy Technology Laboratory

5:05 PM
An Updated Carbon Storage Open Database - Geospatial Data Aggregation to Support Scaling up CCS
• Paige Morkner, National Energy Technology Laboratory

5:30 PM
End of Day

CARBON TRANSPORT AND STORAGE
BEST/ROZ/ASSOCIATED STORAGE
CRAWFORD ROOM
Moderator: Andrea McNemar

3:50 PM
Developing CO₂-EOR and Associated Storage within the Residual Oil Zone Fairways of the Powder River Basin, Wyoming (FE0031738)
• George Koperna, Advanced Resources International

4:15 PM
Williston Basin Associated CO₂ Storage Field Laboratory (FE0031694)
• Steven Smith, University of North Dakota Energy and Environmental Research Center

4:40 PM
Stacked Greenfield and Brownfield Roz Fairways in the Illinois Basin Geo-Laboratory: Co-Optimization of EOR and Associated CO₂ Storage (FE0031700)
• Nathan Webb, Illinois State Geological Survey

5:05 PM
End of Day
THURSDAY
AUGUST 18TH

THURSDAY MORNING

ALLEGHENY ROOM FOYER

7:00 AM
Meeting Registration/Continental Breakfast
**Point Source Carbon Capture**

**Capture from Power Generation/Lab/Bench-Scale Research**

**Westmoreland Room**

Moderator: Andrew O'Paliko

- **8:00 AM**
  - Development of Transformational Membranes (FE0031596)
    - Hans Wijnans, Membrane Technology and Research, Inc.

- **8:25 AM**
  - Bench-Scale Development of a Transformational Graphene Oxide-Based Membrane Process for Post-Combustion CO₂ Capture (FE0031598)
    - Shiquang Li, GTI Energy

- **8:50 AM**
  - Highly Permeable Thin Film Composite Membranes of Rubbery Polymer Blends for CO₂ Capture
    - Lingxiang Zhu, National Energy Technology Laboratory

**9:15 AM**

- Novel Transformational Membranes and Process for CO₂ Capture from Flue Gas (FE0031731)
  - Yang Han and Winston Ho, The Ohio State University

**9:40 AM**

- Rational Development of Novel Metal-Organic Polyhedra-Based Membranes for CO₂ Capture (FE0031736)
  - Haixing Lin, University at Buffalo, SUNY

**10:05 - 10:35 AM**

- Break - 2nd Floor Foyer

**Carbon Dioxide Removal**

**Engineering Design/Feed Studies**

**Cambria Room**

- **8:00 AM-10:05 AM**
  - Direct Air Capture Test Center Workshop

**Carbon Transport and Storage**

**National Risk Assessment Partnership (NRAP)**

**Pennsylvania Room**

Moderator: Slava Romanov

- **8:00 AM**
  - National Risk Assessment Partnership: Phase II Key Accomplishments and Phase III Introduction
    - Robert Dilmore, National Energy Technology Laboratory

- **8:30 AM**
  - National Risk Assessment Partnership: Tools and Recommended Practices for Induced Seismicity Risk Management
    - Joshua White, Lawrence Livermore National Laboratory

- **8:55 AM**
    - Dina Bacon, Pacific Northwest National Laboratory

**NETL Research & Innovation Center (RIC)**

**Pennsylvania Room**

Moderator: Slava Romanov

- **9:20 AM**
  - NETL RIC CarbonSAFE Assistance (FWP-1022403)
    - Dustin Crandall, National Energy Technology Laboratory

- **9:45 AM**
  - Flow-Through Experiments: A Look at Foamed and CO₂ Resistant Cements
    - Richard Spaulding, National Energy Technology Laboratory

**10:05 - 10:35 AM**

- Break - 2nd Floor Foyer
THURSDAY

POINT SOURCE CARBON CAPTURE
CAPTURE FROM POWER GENERATION/LAB/BENCH-SCALE RESEARCH
WESTMORELAND ROOM
Moderator: Dustin Brown

10:35 AM
Mixed-Salt-Based Transformational Solvent Technology for CO₂ Capture (FE0031597)
• Palitha Jayaweera, SRI International

11:00 AM
Development and Bench-Scale Testing of a Novel Biphasic Solvent-Enabled Absorption Process for Post-Combustion Carbon Capture (FE0031600)
• Yongqi Lu, University of Illinois

11:25 AM
Fog and Froth-Based Post Combustion CO₂ Capture in Fossil Fuel Power Plants (FE0031733)
• Heather Nilotic, University of Kentucky

11:50 AM
Highly Efficient Regeneration Module for Carbon Capture Systems in Natural Gas Combined Cycle (NGCC) Applications (FE0032133)
• Indira Jayaweera, SRI International

12:15 - 1:15 PM
Lunch - Allegheny Room
• Lunchtime speaker - Update on Ongoing FLECCS at ARPA-E Efforts, Jack Lewnard, Program Director at the Advanced Research Projects Agency-Energy

THURSDAY

CARBON DIOXIDE REMOVAL
ENGINEERING DESIGN/FEED STUDIES
CAMBRIA ROOM

10:35 AM - 12:15 PM
Direct Air Capture Test Center Workshop

12:15 - 1:15 PM
Lunch - Allegheny Room
• Lunchtime speaker - Update on Ongoing FLECCS at ARPA-E Efforts, Jack Lewnard, Program Director at the Advanced Research Projects Agency-Energy

THURSDAY

CARBON TRANSPORT AND STORAGE
SCIENCE-INFORMED MACHINE LEARNING FOR ACCELERATING REAL-TIME DECISIONS IN SUBSURFACE APPLICATIONS (SMART)
PENNSYLVANIA ROOM
Moderator: Brian Dressel

10:35 AM
SMART: Overview of SMART Initiative - Phase I Accomplishments and Phase II Plans
• Grant Bromhal and Srikanta Mishra, National Energy Technology Laboratory/Battelle Memorial Institute

11:05 AM
Real Time Visualization of Rock and Fluid Properties
• David Alumbaugh, Lawrence Berkeley National Laboratory

11:30 AM
SMART Task 3: Pressure and Stress
• Josh White, Lawrence Livermore National Laboratory
• Sherilyn Williams-Stroud, Illinois State Geological Survey

THURSDAY

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BREAKOUT

POINT SOURCE CARBON CAPTURE
CAPTURE FROM POWER GENERATION/LAB/BENCH-SCALE RESEARCH
WESTMORELAND ROOM
Moderator: Carl Laird
1:15 PM
Dual-Loop Solution-Based Carbon Capture System for Net Negative Carbon Dioxide Emissions with Lower Costs (FE0032134)
- Heather Nikolic, University of Kentucky

1:40 PM
Parametric Testing of CO₂-Binding Organic Liquids (CO₂BOLs) (FWP-76270)
- David Heldebrant, Pacific Northwest National Laboratory

2:05 PM
Reducing the Degradation of Carbon Capture Solvents (FWP-77217)
- Philip Koeh, Pacific Northwest National Laboratory

2:30 PM
Transformational Sorbent-Based Process for a Substantial Reduction in the Cost of CO₂ Capture (FE0031722)
- Ravi Jain, Innosiepra, LLC

2:55 PM
Transformational Molecular Layer Deposition Tailor-Made Size-Sieving Sorbents for Post-Combustion CO₂ Capture (FE0031730)
- Mao Yu, University of Buffalo

3:20 - 3:50 PM
Break - 2nd Floor Foyer

BREAKOUT

CARBON TRANSPORT AND STORAGE
SCIENCE-INFORMED MACHINE LEARNING FOR ACCELERATING REAL-TIME DECISIONS IN SUBSURFACE APPLICATIONS (SMART)
PENNSYLVANIA ROOM
Moderator: Dustin Crandall
1:15 PM
Development of a software platform for machine learning-accelerated model calibration and decision support for CO₂ geological storage
- Alex Hanna, Pacific Northwest National Laboratory

1:40 PM
Virtual Learning Environment for Subsurface CO₂ Injection Operations
- Rajesh Pawar, Los Alamos National Laboratory

2:05 PM
Carbon Storage: Engineering Application of Artificial Intelligence
- Shahab Mohaghegh, West Virginia University

PENNSYLVANIA RESEARCH & INNOVATION CENTER (RIC)
2:30 PM
Cost Impacts of Risk-Based Methods for Defining AoR and PISC Duration (FWP-1022464)
- Derek Vikara, National Energy Technology Laboratory

2:55 PM
Refined Storage Efficiency Factors in Saline Systems (CO₂SCREEN)
- Angela Goodman, National Energy Technology Laboratory

3:20 - 3:50 PM
Break - 2nd Floor Foyer
THURSDAY
BREAKOUT

POINT SOURCE CARBON CAPTURE
CAPTURE FROM POWER GENERATION / LAB/BENCH-SCALE RESEARCH
WESTMORELAND ROOM
Moderator: Krista Hill

3:50 PM
Advanced Structured Adsorbent Architectures for Transformative Carbon Dioxide Capture Performance (FE0031732)
• Pierre Hovington, Electricore, Inc.

4:15 PM
Transformational Sorbent System for Post-Combustion Carbon Capture (FE0031734)
• Gokhan Alptekin, TDA Research, Inc.

4:40 PM
Plastic Additive, Sorbent-Coated, Thermally Integrated Contactor for CO₂ Capture (PLASTIC4CO₂) (FE0032132)
• Albert Stella, GE Global Research

5:05 PM
Bench Scale Test of a Polyethyleneimine Monolith Carbon Capture Process for Natural Gas Combined Cycle Point Sources (FE0032138)
• Christopher Bertole, Cormetech, Inc.

5:30 PM
End of Day

THURSDAY
BREAKOUT

CARBON TRANSPORT AND STORAGE
NETL RESEARCH & INNOVATION CENTER
PENNSYLVANIA ROOM
Moderator: Dustin Crandall

3:50 PM
Enhanced CO₂ Storage and Injectivity (FWP-1022403)
• Angela Goodman, National Energy Technology Laboratory

4:15 PM
Supply Chain Vulnerabilities of the Energy Transition with a Focus on Carbon Capture, Transportation, and Storage (FWP-1022464)
• Clint Noack, National Energy Technology Laboratory

4:40 PM
Update on new CO₂_T_COM and CO₂_S_COM Models (CO₂ Transport and Storage Costs) (FWP-1022464)
• Dave Morgan, National Energy Technology Laboratory

5:05 PM
Pathways to CO₂ Utilization and Storage for the Intermountain West Region
• Derek Vikara, National Energy Technology Laboratory

5:30 PM
End of Day
MORNING
FRIDAY

Meeting Registration/Continental Breakfast
7:00 AM

ALLEGHENY ROOM FOYER
POINTER SOURCE CARBON CAPTURE
CAPTURE FROM POWER GENERATION/LAB/BENCH-SCALE RESEARCH
WESTMORELAND ROOM
Moderator: Mariah Richardson

8:00 AM
A New Thermal Swing Adsorption Process for Post-Combustion Carbon Capture from Natural Gas Plants (FE0032151)
  • Gokhan Alptekin, TDA Research, Inc.

8:25 AM
Advancing Post Combustion CO₂ Capture through Increased Mass Transfer and Lower Degradation (FE0031661)
  • Jesse Thompson, University of Kentucky

8:50 AM
Validation of Transformational CO₂ Capture Solvent Technology with Revolutionary Stability (FE0031727)
  • Erik Meuleman, ION Clean Energy

9:15 AM
Intensified, Flexible, and Modular Carbon Capture Demonstration with Additively Manufactured Multi-Functional Device (FWP-FEAA384)
  • Costas Tsiouris, Oak Ridge National Laboratory

9:40 AM
Membrane and Solvent Development for Pre-Combustion Carbon Capture
  • Nicholas Siefert, National Energy Technology Laboratory

10:05 - 10:35 AM
Break - 2nd floor foyer

CAPTURE FROM POWER GENERATION/LAB/BENCH-SCALE RESEARCH
WESTMORELAND ROOM
Moderator: Krista Hill

10:35 AM
Bench Scale Testing of a High Efficiency, Ultra-Compact Process for Pre-Combustion CO₂ Capture (FE0031737)
  • Vasilios Manousiouthakis, University of California - Los Angeles

11:00 AM
High-Temperature Ceramic-Carbonate Dual-Phase Membrane Reactor for Pre-Combustion Carbon Dioxide Capture (FE0031634)
  • Jerry Lin, Arizona State University

11:25 AM
Development and Testing of a High Temperature PBI Hollow-Fiber Membrane Technology for Pre-Combustion CO₂ Capture (FE0031633)
  • Elisabeth Perea, SRI International

11:50 AM
End of Day