

# CMTC 2017 Preliminary Program

## Monday, July 17, 2017

9:00 AM	5:00 PM	Registration
9:30 AM	12:00 PM	Petra Nova Tour, NRG & JX Nippon
1:00 PM	5:00 PM	Hastings Oil Field Tour, Denbury Resources
1:00 PM	6:00 PM	Port Arthur Refinery Tour, Air Products & Valero
7:00 PM	8:00 PM	Welcoming Reception

## Tuesday, July 18, 2017

7:00 AM	12:00 PM	Registration
7:30 AM	8:00 AM	Coffee
7:50 AM	8:00 AM	<b>Greetings from Conference Chairs</b>
8:00 AM	11:50 AM	<b>Tuesday Plenary</b>
8:00 AM	8:35 AM	Keynote 1 - TBD
8:35 AM	9:10 AM	Keynote 2 - Charles McConnell Executive Director, Rice University Energy and Environmental Initiative
9:10 AM	9:45 AM	Keynote 3 - Jeff Erikson General Manager for the Americas, Global CCS Institute Carbon Capture at a Crossroads
9:45 AM	10:05 AM	Break
10:05 AM	10:40 AM	Keynote 4- Janet Gellici Chief Executive Officer, National Coal Council Charting a Course for Coal's Future
10:40 AM	11:15 AM	Keynote 5 - Frederick Eames Partner, Hunton & Williams U.S. Direction on CCUS
11:15 AM	11:50 AM	Keynote 6 - Robert Williams Senior Research Scientist, Andlinger Center for Energy and Environment, Princeton University Negative Emissions Technologies and Strategies Based on Geological Storage of Photosynthetic CO2
11:50 AM	1:00 PM	Lunch
1:00 PM	1:35 PM	Keynote 7 - Jennifer Holmgren Chief Executive Officer, LanzaTech Carbon: The Final Frontier
1:35 PM	2:20 PM	<b>Panel Discussion: Opportunities that Exist for CCU Technologies</b> Chair - Jennifer Holmgren, Chief Executive Officer, Lanzatech Panelist - Matt Carr, Executive Director, Algae Biomass Organization (ABO) Panelist - Robert Sturtz, Vice President of Business Development, World Fuel Services Panelist - TBD
2:20 PM	2:40 PM	Break

### BOA - C

### Room 330

### Room 329

		Session 1 - Solvent-Based CO2 Capture Systems	Session 2 - EOR 1	Session 3 - Business Frameworks
2:40 PM	4:20 PM	Kevin O'Brien, Illinois Sustainable Technology Center, UIUC	Robert Balch, New Mexico Institute of Mining and Technology	Ramón Gil-Egui, Bureau of Economic Geology
2:40 PM	3:05 PM	CCUS As a Regional Economic Development Tool: Planning and Design Considerations	The Intersection of Environment and EOR: How Carbon Capture is Changing Tertiary Recovery	Matching Environmental and Economic Performance of CCUS Systems: An Approach to a Decision-Making Methodology for Sustainable Development
3:05 PM	3:30 PM	Jonathan V. Pelgen, University of Kentucky	Benjamin Cook, University of Wyoming	Sa'd Shannak, KAPSARC
		Reducing Regeneration Energy and Capital Costs in an Advanced Pccc System	Electricity in the Oil Patch: The Power Costs of Production, CO2-EOR, Electric Lines and Onsite Generators	Could China Meet Its CO2 Reduction Goal By CO2-EOR?

3:30 PM	3:55 PM	<p>Avi Patkar, CCS USA</p> <p>Carbon Clean Solutions Limited Cdrmax® CO2 Capture Technology</p>	<p>David Merchant, Merchant Consulting</p> <p>Enhanced Oil Recovery – the History of CO2 Conventional Wag Injection Techniques Developed from Lab in the 1950's to 2017</p>	<p>Louis Fradette, CO2 Solutions Inc.</p> <p>Valorisation Carbone Quebec – a Unique CO2 Capture and Reuse Project</p>
3:55 PM	4:20 PM	<p>Andrew Sexton, Trimeric Corporation</p> <p>Pilot Plant NO2 Removal with Aqueous Sulfite</p>	<p>Hamed A. Hamed, The British University in Egypt</p> <p>Study of Applying Solar Energy in Enhanced Oil Recovery.</p>	<p>Anna Sberegaeva, The National Academies of Sciences, Engineering, and Medicine</p> <p>Developing a Research Agenda for Carbon Removal, Sequestration, and Utilization – Two Studies at the National Academies of Sciences, Engineering, and Medicine</p>

4:20 PM 4:40 PM *Break*  
4:40 PM 5:40 PM Rapid-Fire Poster Session  
5:40 PM 6:40 PM Poster Session + Light Reception

### Wednesday, July 19, 2017

7:00 AM 12:00 PM Registration  
7:30 AM 8:00 AM *Coffee*  
7:50 AM 8:00 AM **Remarks from the Chair**  
8:00 AM 11:50 AM **Wednesday Plenary**  
8:00 AM 8:35 AM Keynote 10 - Haroon Khesghi  
ExxonMobil Research and Engineering Company  
The Potential Role of CCS in Electricity and Liquid Fuel Production Sectors  
8:35 AM 9:10 AM Keynote 11 - Mike Monea  
President and CEO, The International CCS Knowledge Centre  
Introduction to The International CCS Knowledge Centre  
9:10 AM 9:45 AM Keynote 12 - Bill Brown  
Chief Executive Officer, NET Power, LLC  
9:45 AM 10:05 AM *Break*  
10:05 AM 10:40 AM Keynote 13 - David Greeson  
VP Commercial, NRG Carbon 360  
10:40 AM 11:15 AM Keynote 14 - TBD  
11:15 AM 11:50 AM Keynote 15 - Juan Anguiano  
Oil and Gas Climate Initiative  
The Oil and Gas Climate Initiative Works Scope in CCUS  
11:50 AM 1:00 PM *Lunch*

		<b>BOA - C</b>	<b>Room 330</b>	<b>Room 329</b>
<b>1:00 PM</b>	<b>2:15 PM</b>	<b>Session 4 - Membrane-Based Capture Systems</b>	<b>Session 5 - EOR 2</b>	<b>Session 6 - Next Generation Capture Technologies 1</b>
1:00 PM	1:25 PM	Jay Kniep, Membrane Technology and Research, Inc. Pilot Test Results from a Polaris™ Membrane 1 MWe CO2 Capture System	William Ampomah, New Mexico Institute of Mining and Technology Study of CO2-EOR Performance in the Morrow Formation, Ochiltree County, Texas Edward Ennin, Petroleum Recovery Research Center	MinKi Cho, Postech Spray Towers Can Perform Better Than Packed Towers in Capturing CO2 Aaron Sayre, Sustainable Energy Solutions
1:25 PM	1:50 PM	Shiguang Li, Gas Technology Institute Pilot-Scale Development of a PEEK Hollow Fiber Membrane Contactor Process for Post-Combustion CO2 Capture	Optimizing Reservoir Oil Displacement and CO2 storage in the Texas Farnsworth Unit	Field Testing of Cryogenic Carbon Capture
1:50 PM	2:15 PM	Shilu Fu, American Air Liquide Bench Scale Testing of Next Generation Hollow Fiber Membrane Modules	Junjie Yang, Baker Hughes Miscible CO2 Flooding Using Horizontal Multi-Fractured Wells in the San Andres Formation, TX – a Feasibility Study	Soheil Khiavi, Inventys Can Engineered Structured Adsorbent Alter the Capital Cost Paradigm of Carbon Capture?

2:15 PM 2:35 PM Break

2:35 PM 4:15 PM

**Session 7 - International Test Center Network Panel**

2:35 PM 3:00 PM

Chair: Frank Morton, Southern Co.

Panelist: Kunlei Liu, University of Kentucky

3:00 PM 3:25 PM

Panelist: Jon Gibbins, UK CCS Research Centre

Panelist: Abdul Qader, CO2CRC

3:25 PM 3:50 PM

**Session 8 - CCUS Transition Issues: The Legal and Policy Landscape**

Chair: Mary Ellen Ternes, Earth & Water Law LLC

3:50 PM 4:15 PM

Panelist: Frederick Eames, Hunton & Williams

Panelist: Charles McConnell, Rice University

Panelist: E. Dennis Griffith, Granherne

**Session 9 - EOR 3**

Christian A Dalton, Louisiana State University

Bayesian Proxy-Based Optimization of Immiscible-CO2 Huff-n-Puff Flooding to Enhance Oil Recovery in Unconventional Shale Oil Reservoirs

Japan Trivedi, University of Alberta

Evaluating the Potential of CO2 Foam and Polymer Enhanced Foam for Heavy Oil Recovery and CO2 Sequestration

Neil Wildgust, University of North Dakota

Demonstration of Secure CO2 Geologic Storage Associated with Enhanced Oil Recovery in the PCOR Partnership Region.

Nick Jones, University of Wyoming

Wyoming Reservoir Information Tool - a Map and Query Based Web Application for Oil and Gas Reservoirs

**Session 10 - CO2 Storage Case Studies**

Kyle Worth, PTRC

Aquistore: the World's Most Comprehensive Industrial-Scale Field Laboratory for the Investigation of CO2 Geological Storage

Vello A. Kuuskraa, Advanced Resources International

The Project ECO2S Phase 2 Carbonsafe Field Project

Joseph Swisher, Electric Power Research Institute

Techno-economic analysis of extraction, treatment, and distribution of brines as a part of pressure management operations for CO2 storage in saline aquifers

Abdul Qader, CO2CRC

Carbon Capture and Storage Demonstration By CO2CRC

4:15 PM 4:35 PM Break

4:35 PM 5:50 PM

**Session 11 - Offshore Storage**

4:35 PM 5:00 PM

Jack C. Pashin, Oklahoma State University

Offshore CO2 Storage Potential of the Mafra Continental Shelf, Eastern Gulf of Mexico

5:00 PM 5:25 PM

Marina Rossi, Virginia Tech

Carbon Dioxide Storage Resource Assessment of the Mid-Atlantic Ocean Seaboard: Analysis of Geological and Geophysical Vintage Data

5:25 PM 5:50 PM

Tip Meckel, University of Texas at Austin  
Pre-Injection Reservoir Characterization for CO2 Storage in Near-Offshore Miocene Gulf of Mexico - Seismic Inversion for Lithology and Porosity Estimation.

**Session 12 - Storage Integrity and Monitoring**

Ahmed Abdulhamid Mahmoud, King Fahd University of Petroleum & Minerals

Investigation of Nano Clay-Based Cement Alteration and Associated Conductivity Change in CO2-Rich Environments Relevant to Geological Carbon Sequestration

Nam Tran, Louisiana State University

Application of Harmonic Pressure Test and Signal Analysis to Characterize CO2 Leakage

Muhammad Zulfarnain, Louisiana State University

Risk Based Approach to Identify the Leakage Potential of Wells in Depleted Oil and Gas Fields for CO2 Geological Sequestration

**Session 13 - CO2 Utilization**

Brittany Foley, Northeastern University

Carbon Dioxide Recapture Utilizing an Integrated Vertical Aquaponics System

Andres Clarens, University of Virginia

Life Cycle Implications of Using CO2-Based Fracturing Fluids As a Substitute for Slickwater

Brian Tang, Shockwave CO2, LLC

Shockwave CO2

5:50 PM 6:50 PM Poster Session

## Thursday, July 20, 2017

7:00 AM	9:00 AM	Registration
7:30 AM	8:00 AM	Coffee
7:50 AM	8:00 AM	Remarks from the Chair
8:00 AM	10:20 AM	Thursday Plenary
8:00 AM	8:35 AM	Keynote 16 - Frank Morton International Test Center Network
8:35 AM	9:10 AM	Keynote 17 - Steve Carpenter Director, Enhanced Oil Recovery Institute, School of Energy Resources, University of Wyoming
9:10 AM	9:45 AM	Keynote 18 - Anthony Ku Director of Advanced Technologies, National Institute of Clean and low-carbon Energy (NICE), Shenhua Group Carbon Management at Shenhua: NICE R&D initiatives and CCUS Demonstrations
9:45 AM	10:20 AM	Keynote 19 - Jon Gibbins Director, UK CCS Research Centre
10:20 AM	10:40 AM	Break

		BOA - C	Room 330	Room 329
10:40 AM	12:20 PM	<b>Session 14 - Analysis and Modeling for CCUS Technologies</b>	<b>Session 15 - Storage Characterization</b>	<b>Session 16 - Next Generation Capture Technologies 2</b>
10:40 AM	11:05 AM	Dale Keairns, Deloitte Consulting LLP  Utilizing Systems Analysis to Inform Carbon Capture Technology Development  Christina Reynolds, University of Michigan	Ashwin Pasumarti, Battelle Memorial Institute  Assessing the Effective CO2 Storage Capacity of a Reservoir Using a Geomechanical Framework: A Case Study of a Site in the Arches Province of the Midwest U.S.  Isis Fukai, Battelle Memorial Institute	Shiguang Li, Gas Technology Institute  Graphene Oxide-PEEK Hybrid Membrane Process for CO2 Capture  Mustapha Soukri, RTI International
11:05 AM	11:30 AM	Mobile Carbon Dioxide Removal: A Baseline Cost Estimate and Testing Protocol  Seyed Mostafa Safdarnejad, Intech Process Automation	Characterization of CO2 Storage Resource and Reservoir Feasibility of Deep Saline Cambrian-Ordovician Formations in Eastern Ohio  David Riestenberg, Advanced Resources International, Inc.	Hybrid MOF Solid Sorbent-Based CO2 Capture Process for Power and Industrial Applications  WS Winston Ho, The Ohio State University
11:30 AM	11:55 AM	Performance Comparison of a Cryogenic and Chemical Absorption Carbon Capture Systems in Response to a Dynamic Electricity Load Profile  Michael Buckner, Colorado State University	Project ECO2s: Geologic Characterization and Preliminary Storage Capacity Estimates  Autumn Haagsma, Battelle Memorial Institute	New Amine-Containing Membranes for CO2 Capture  Amanda Warriner, University of Kentucky
11:55 AM	12:20 PM	Automotive CO2 Mitigation Via an Onboard Bosch Reactor System	Impact of Geologic Diversity on Static Earth Models in a CO2-EOR Reef Complex	Evaluating the Effect of Aqueous Calcium Chloride Desiccant on Cooling Tower Performance in a Heat-Integrated Post-Combustion CO2 Capture System
12:20 PM	12:30 PM	Closing Remarks		