# **Roadmap for CO2 Transport Fundamental Research Workshop**

Sponsored by the U.S. Department of Energy, Office of Fossil Energy and Carbon Management
Columbus, Ohio
February 21 - 23, 2023

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DOE Program Introductory Remarks

* [Overview of DOE’s Office of Fossil Energy and Carbon Management (FECM) (15 minutes)](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/6c9febf0d3334db78210763aeba521e4.pdf) - **John Litynski, Director, DOE Carbon Transport and Storage Program**
* [Overview of the Carbon Transport RD&D Program at DOE](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/e47a218495e64b22a238bc785e51f4fe.pdf) (15 minutes) - **Sarah Leung, Carbon Transport Program Manager, DOE**
* [Perspectives from Labor (United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada)](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/b8217a8515c74d4086d5188f5fd0949f.pdf) (5-10 minutes) – **Jeremy Moddrell, UA**
* [Perspectives from Industry (API)](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/15e403ab08e14c80a555fe9301788737.pdf) (5-10 minutes) – **Mark Piazza, API**
* [Perspectives from Academia and Steel Producers (Colorado School of Mines)](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/598b004f1bf74193b9c85f8a8693b99f.pdf) (5-10 minutes) - **Lawrence Cho, Colorado School of Mines,** Advanced Steel Processing and Products Research Center (ASPPRC)

Ongoing Initiatives: Building a consortia to complement partnerships that exist today

* [PRCI CO2 Task Force](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/eff3afca6c7647b2a6224f8a28f90336.pdf) (15 minutes) – **Rick Noecker, ExxonMobil**
* [Ohio University CO2 Impurities Joint Industry Partnership (JIP)](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/a602e1538c7844de8ff49e8b2ed346c1.pdf) (15 minutes) – **Yoon-Seok Choi, Ohio University**
* [DNV Safe and Sour CO2 Pipeline JIP](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/bed633f941054b8fb655af5d4f019d45.pdf) (15 minutes) – **Ramgopal Thodla, DNV**
* [BMT Global – DOT PHMSA R&D Material Testing and Qualification for CO2 Pipelines](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/661140891f064e97a18cc7ee26e8b95f.pdf) (15 minutes) – **Aaron Dinovitzer, BMT Global**

Topic 1: CO2 Impurities and Impact to Integrity (2 hours)

* 1A. [First principles thermodynamic modeling of phase change in dense phase CO2 environment in the presence of impurities](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/2a8cce627f864ad38862b44cf3e3370f.pdf) (15 minutes) – **Sumit Sharma, Ohio University**
* 1B. [Lab-based corrosion determination of impurities on dense-phase and supercritical CO2](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/832edc64ec0940049d9ca58984f53c92.pdf) (15 minutes) - **May Martin, National Institute of Standards and Technology (NIST)**
* 1C. [Impact of impurities on non-metallic seals](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/7e14d1d0a4e042b0a473fe8f478443f6.pdf) (15 minutes) – **Bonnie Antoun, Sandia National Laboratories**

Topic 2: CO2-Specific Leak Detection and Emergency Response Protocol (1.5 hours)

* 2A. [Dispersion modeling and Potential Impact Radius (PIR) for CO2 / Odorant Additives R&D](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/12ebaa3517494f6aa3930b1e5cbc643a.pdf) (10 minutes) – **Bob Smith, DOT Pipeline and Hazardous Materials Safety Administration (PHMSA)**
* 2B. [Sensors Development and Integrity considerations for CO2-pipelines, multi-modal monitoring, and leak detection](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/9addc9dfc46e4e1983e8f34609a0937f.pdf) (10 minutes) – **Jagan Devkota, National Energy Technology Laboratory (NETL)**
* 2C. [Low temperature brittleness and ductile propagation testing in CO2 depressurizing scenarios](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/4f37d2440ce1465081ef11ff061a90e9.pdf) (10 minutes) – **Benjamin Hanna, DNV**
* 2D. [Overview of Emergency Response Workgroup (API-LEPA)](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/963cf61a97e447dbbacda65c5f8a7127.pdf) (10 minutes) – **Mark Piazza, American Petroleum Institute** **(API)**

Topic 3: Repurposing of Existing Infrastructure for CO2 Service (1.5 hours)

* [3A&B. Databasing information for existing pipeline infrastructure / Dual-use infrastructure – technical considerations for dual-use transport of LPG/LNG/H2/CO2/Ammonia](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/642899c83d9947f08711e58faea9ca13.pdf) (15 minutes) – **Mike Kass, Oak Ridge National Laboratory (ORNL)**
* 3C. [Lab-testing capabilities to determine integrity for repurposing](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/836f7ffea86947e39b635bea61f68ac4.pdf) (15 minutes) – **Yunior Hioe, Engineering Mechanics Corp. of Columbus**
* 3D. [Leveraging ongoing Hydrogen pipeline R&D for CO2 (H2 @ Scale / HyBlend / HyMaRC) / Co-location considerations with Hydrogen Hubs](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/6bb98146f6f641e8988eabb6ab688c8f.pdf) (15 minutes) – **Amgad Elgowainy, Argonne National Laboratory**

Topic 4: Developing and Connecting with Other Modes of CO2 Transport/Intermodal Hubs (1.5 hours)

* 4A. [The Role of CO2 Infrastructure in Achieving US Economy-Wide Net-Zero Emissions](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/2e602489bfd240c9a61bec128c77273d.pdf) (15 minutes) – **Derek Wissmiller, GTI Energy**
* 4B. [Considerations for offshore pipelines / pipelines that cross navigable waterways and water bodies](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/6d529b55a2874d969969786379ef9b67.pdf) (15 minutes) – **Yong-Yi Wang, Center for Reliable Energy Systems (CRES)**
* 4C. [Multi-modal modeling for decarbonization scenarios and industrial decarbonization, CDR, CO2 conversion](https://custom.cvent.com/DCBD4ADAAD004096B1E4AD96F3C8049E/files/event/2d60ec9ac07c4fe488f1a37ca7db44c8/3a2bfe6649f248b49a3911305a68e172.pdf) (15 minutes) – **Corey Myers and Wenqin Li, Lawrence Livermore National Laboratory**