

Welcome to MRCInfo, a newsletter created to share the latest news from the Midwest Regional Carbon Initiative and the ever-growing field of Carbon Capture, Utilization, and Storage.

MRCInfo

News from the Midwest Regional Carbon Initiative

MAY 2023

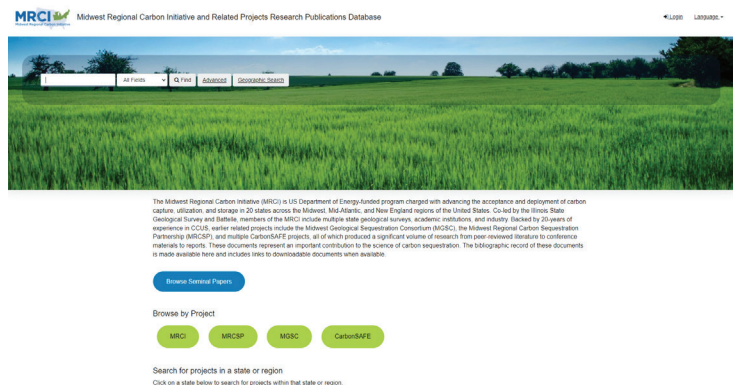
In this issue, read about... A new database of CCS projects from the MGSC, MRCSP, and MRCI; Class VI Permits issued throughout the MRCI region; Legislative updates from MRCI states; and much more!

Midwest CCS Database on MRCI Website

Looking for a one-stop shop to access all your MRCI region CCS research needs? We partnered with the American Geosciences Institute to create a database with links to over 700 references across the MRCI region, including past work done under the Midwest Geological Sequestration Consortium (MGSC) and Midwest Regional Carbon Sequestration Partnership (MRCSP) projects.

The database includes a Seminal Papers button, browse buttons for each DOE project, a map of states and offshore with clickable regions, and general search buttons embedded in the top image. Be sure to bookmark this page as this should be your first stop when conducting CCUS research in the MRCI region!

[Explore the MRCI Database now!](#)



Greenberg Retiring from ISGS, Korose Named Co-PI of MRCI

After 30 years providing research, guidance, and leadership on a host of groundbreaking carbon capture and storage projects through the Illinois State Geological Survey (ISGS), Dr. Sallie Greenberg is retiring.

As Principal Research Scientist at ISGS at the University of Illinois, Greenberg managed a portfolio of \$200 million in U.S. Department of Energy projects as principal or co-principal investigator, including the Midwest Geological Sequestration Consortium (MGSC), the Midwest Regional Carbon Initiative (MRCI), the Illinois Basin – Decatur Project, CarbonSAFE Illinois Corridor, the Sequestration Training and Education Program (STEP), and the Illinois Industrial Carbon Capture and Storage CCUS Projects.



Sallie Greenberg

Her time as co-Principal Investigator on the MRCI included a special focus on societal considerations including stakeholder engagement and environmental justice. “She was instrumental in conceptualizing, planning, and presenting the Stakeholder Engagement and Environmental Justice pre-conference workshop at the September 2022 Stakeholder Meeting, which reached its maximum capacity of 70-attendees and still had a waiting list,” says MRCI co-PI Neeraj Gupta. “Sallie’s guidance over the past two years of this project, especially in the social science aspect, ensured that the MRCI was taking a leadership role in the research, education, and communication about the Department of Energy’s new Community Benefits Plan components and subject matter which has been invaluable to our stakeholders.”

Greenberg, who has experience throughout the entire CCS value chain, specializes in understanding the places where science and technology meet society. She is well known for her ground breaking work in stakeholder engagement and equity, strategic vision facilitation, and program evaluation for scientific and government organizations. Sallie was recently named to the White House Council on [Environmental Quality Carbon Dioxide Capture, Utilization, and Sequestration Federal Lands and Outer Continental Shelf Permitting Task Force](#). She plans to continue working in the CCS space as a consultant.

ISGS Associate Geologist Chris Korose (Coal, Bedrock Geology & Industrial Minerals Section) will assume Greenberg’s role as co-PI for the MRCI beginning May 1, 2023. Chris has over 27 years of experience at the ISGS, and he has been directly involved with project management, research and service in numerous areas, and providing geological data and technical information to the public and industry. Chris brings to the MRCI a strong history of working with the DOE-NETL on the MGSC, Sequestration Atlas, and NATCARB efforts, and is working with Greenberg and the Battelle team on a smooth transition between PIs.



Chris Korose

MRCI Presents Pre-Conference CCUS Seminar for Illinois Oil and Gas Association

The Midwest Regional Carbon Initiative and co-leads the Illinois State Geological Survey and Battelle recently worked with the Illinois Oil and Gas Association (IOGA) to offer a pre-conference seminar on CCUS in advance of the IOGA recent annual meeting.

Entitled “CCUS, What It Is and Why It Matters to You,” the seminar was modeled to provide a clear background on carbon capture, utilization, and storage to membership of the IOGA, which is primarily comprised of conventional oil and gas operators with interests in the Illinois Basin. This audience faces significant transformation in their industry due to the energy transition and the goal of this seminar was to explore the whys, whens, and hows of this impact and to help inspire them to look for opportunities in this change.

Presentations from the seminar ranged from general information on Climate Change, CCUS, CO₂ storage and injection-induced seismicity, and storage capacity to specific case studies in Michigan and the Illinois Basin. Navigator CO₂ also presented an update on their operations.



Roland Okwen, Reservoir Engineer with the Illinois State Geological Survey, presents “CO₂ Storage in the Illinois Basin: Regional Studies and Site Characterization,” at the Illinois Oil and Gas Association pre-conference seminar staged by the MRCI and co-leads Battelle and the Illinois State Geological survey.

“We were excited to work with the folks at IOGA to create this seminar,” says Joy Frank-Collins, MRCI Outreach Task Lead. “Sharing the research and expertise of the MRCI Team about this crucial component to decarbonization is one of our missions. We hope to partner with more industry and community groups to offer these sorts of educational opportunities across our region.”

Interested in teaming up with the MRCI to bring CCUS research and education to your stakeholders?
[Email Joy Frank-Collins](#) to learn more.

MRCI Representatives Attend/Present at Interagency Forum with BOEM/BSEE

MRCI Data Collection and Sharing Task Lead Joel Sminchak recently participated in an interagency discussion and learning opportunity with leaders and staff from the Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE). Focused on offshore carbon storage and geologic sequestration, as well as carbon capture and carbon transportation, the event was hosted by the Carbon Capture Center and Southern Company.

Sminchak’s presentation, “Opportunities and Challenges for CO₂ Storage in the Offshore Mid-Atlantic Continental Shelf,” outlined geologic setting for CO₂ storage along the mid-Atlantic outer continental shelf, seismic interpretation of storage zones, CO₂ storage resource calculations, risk factors, and CCS development options for CO₂ storage along the mid-Atlantic offshore outer continental shelf. There are very large CO₂ storage resources for the offshore mid-Atlantic (150-1136 Gt), which can provide options for CCS for industry along the eastern U.S. seaboard.

In addition to research and technology testing, the National Carbon Capture Center and Southern Company regularly provides a foundation for clean energy thought leadership and knowledge sharing through activities such as this throughout the year, both domestic and international. Additional participants included: Alex Bump of the Texas Bureau of Economic Geology, Ben Wernette of Southern States Energy Board, Robert Van Voorhees of Bryan Cave Leighton Paisner LLP, Chiara Trabucchi of Industrial Economics, Incorporated (IEc), Dan Cole of Denbury Inc., Jessica Raines of Baker Hughes, Katherine Dombrowski of Trimeric Corporation, Lisa Grogan-McCulloch of DOE’s Office of Fossil Energy and Carbon Management, and Nikhil Joshi of Talos Energy.

ISGS Scientists Receive Honors from AAPG

The Eastern Section of the American Association of Petroleum Geologists (ESAAPG) recently honored Illinois State Geological Survey researchers for their contributions to the profession and society. Hannes E. Leetaru received the John T. Galey Award, the highest award given by the Eastern Section of AAPG, for sustained scientific leadership and service to the public. Sherilyn Williams-Stroud received the AAPG’s Honorary Membership, their third most distinguished award, for her tireless work on diversity and many contributions to understanding induced seismicity. And finally, Donna C. Willette was presented with the Eastern Section AAPG Distinguished Service Award in recognition of exemplary service and dedication on the Eastern Section AAPG Executive Committee and as Technical and General Co-Chair for the 2022 ESAAPG Annual Fall Conference. Congratulations on these honors!



(From left) Hannes Leetaru, Sherilyn Williams-Stroud, and Donna Willett

PROJECT SPOTLIGHT



National and MRCI Region Class VI EPA Permit Updates

As of May 1, 2023, nationwide, the US Environmental Protection Agency has issued two Class VI well permits, for two wells, both operated by Archer Daniels Midland located in Macon County, Illinois. There are currently a total of 74 permits filed by 26 companies in nine states that are in the “pre-construction” phase with applications pending (one project in Fresno, California, is listed as “application withdrawn”).

Of the nine states with pending applications with the EPA, three are in the MRCI region in Ohio (three projects), Indiana (one project), and Illinois, which has 11 applications pending from four companies (Marquis Carbon Injection, LLC; Archer Daniels Midland; One Earth Sequestration, LLC; and Heartland Greenway Carbon Storage, LLC) and is the site of the only two Class VI wells permitted by the US EPA. Of those permitted wells, one is in the post-injection phase (with a proposed injection rate of 0.3 million metric tons of carbon dioxide per year and maximum injection volume of 1 million metric tons listed) and the other is in the injection phase (with a proposed injection rate of 1 million metric tons per year and maximum injection volume of 6 million metric tons listed).

MRCI Region Class VI wells permitted by EPA and administratively complete Class VI permit applications that are currently under review at EPA.

| State | Number of Permits | Permit Phases | Project Phases |
|----------|-------------------|----------------------|--|
| Illinois | 13 | 11 Pending, 2 Active | 11 pre-construction, 1 injection, 1 post-injection |
| Indiana | 3 | Pending | Pre-construction |
| Ohio | 1 | Pending | Pre-construction |

Information courtesy [US EPA](#) (last updated May 1, 2023)

Check out the entire [EPA Class VI permit table](#) and then [visit this page](#) for more information about Class VI wells for geologic sequestration of carbon dioxide. It is important to distinguish that while the above information is related to current EPA permits for Class VI wells across the US, currently two states, North Dakota and Wyoming, have primacy, or primary enforcement authority, over Class VI wells. At least six states, including MRCI-region states West Virginia, Illinois, and Pennsylvania, have indicated they are interested in obtaining primacy over Class VI wells, according to this recent article in [Upstream Online](#).

LEARNING OPPORTUNITIES



Tune In for Fireside Chats with USEA

The United States Energy Association (USEA) recently launched a new series called “Fireside Chats with Michael Moore,” which aims to pull together experts from across the energy industry for in-depth conversations on issues of the day. Moore, a Program Director for USEA, as well as a managing partner of East-West Strategic Advisors, located in Washington, D.C., and co-founder of the Energy Advance Center, which focuses on CCUS Policy with Fred Eames of Hunton, Andrews, Kurth, hosts the series.

For more than 30 years he has been directly involved in (domestic and international): carbon monetization projects and related asset development, CO₂-EOR, low carbon projects, CO₂ storage, policy and regulatory issues, and natural gas storage development utilizing depleted oil and gas reservoirs; the commercialization of gas storage capacity, interconnection agreements, permitting, land use, gas storage contracts, financing etc.; transacted with utilities, industrials, pipelines, producers and financial houses; spent considerable time on policy and regulatory issues Federal and state; and he worked in and developed opportunities in the deregulated telecom, electricity, and natural gas markets.

His deep contact list and wide berth of knowledge will make this series, which does not currently have a set schedule, timely and topical. [Sign up here](#)





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Learn About Geology from the Michigan Geo Survey YouTube Channel

Looking for a way to reach a diverse audience with a message about CCS or other geological information? Use the Michigan Geological Survey's YouTube channel for inspiration. It features 30 A+ videos dedicated to providing helpful resources from the Survey and Michigan Geological Repository for Research and Education to residents. [Visit the MGS YouTube](#)

FECM Engagement Websites

The Department of Energy - Office of Fossil Energy and Carbon Management (FECM) recently launched an engagement webpage to provide stakeholders with the resources to learn about FECM's engagement work. The page provides stakeholders with a centralized source of information regarding FECM's domestic and international engagement initiatives as well as a calendar listing webinar opportunities and a direct link to news and blog posts. [Check out this webpage!](#)

COMING SOON!

The MRCI is launching a webinar series late this spring with bi-monthly presentations and discussions on topics including CCUS and Sustainability, the status of current infrastructure within the region relative to accelerating CCUS deployment, and more! Slated to last an hour, each webinar will include a presentation or a panel discussion as well as plenty of time for Q&As.

Registration information will be posted to the MRCI website midwestccus.org soon.

LEGISLATIVE ACTIVITY



Class VI Primacy Bill Amendment in US House

Recently, the US House of Representatives passed H.R. 1, the [Lower Energy Costs Act](#), which the bill states is to "lower energy costs by increasing American energy production, exports, infrastructure, and critical minerals processing, by promoting transparency, accountability, permitting, and production of American resources, and by improving water quality certification and energy projects, and for other purposes."

An amendment related to Class VI primacy was added to the package, which is designed to create additional certainty surrounding the Class VI state primacy application process by requiring the Environmental Protection Agency (EPA) to issue a letter to the state informing them of the status of their application within 270 days. If EPA has still not issued a final decision on the application after an additional 30 days, the application will be deemed approved so long as the state has established an effective program. A prior version of this bill, the Well Primacy Certainty Act, was discussed last year.

While the bill passed the House, its passage in the Senate is uncertain, therefore there will be more opportunities for modifications before it is considered again.

MRCI Region State-by-State Carbon-related Updates

West Virginia Passes State-owned Land Leasing Bills

In January, the West Virginia House passed Senate Bills 161 and 162, which grant the Division of Natural Resources, with approval of the Commerce Secretary, permission to lease state-owned pore spaces underlying state forests, natural and scenic areas, wildlife management areas, and other lands under its jurisdiction for carbon sequestration. They were signed by Governor Jim Justice within days of their passage.

The leases, says this article from [WV Metro News](#), will be offered to the “highest responsible bidder, with the proviso that DNR may reject all bids and re-advertise should the round of bidding prove unsatisfactory.” It also allows both the secretaries of Commerce and Economic Development to bypass the bidding process and directly award a lease if it is a necessary component of “an economic development project and would net a market value or greater royalty,” the article says.

All lease profits go to the West Virginia Department of Natural Resources.

[Read the text of the bill.](#)

Pennsylvania Announces Plans to Apply for Primacy

Officials with Pennsylvania’s Department of Environmental Protection announced recently intentions to apply to the US Environmental Protection Agency for primacy for Class VI carbon dioxide wells. This move, which could also include other types of Pennsylvania-based injection wells currently regulated by the US EPA, could significantly speed up approvals for Class VI wells, thereby advancing carbon capture and storage research and project approvals.

To learn more, [read this article](#) from the Pittsburgh Post-Gazette.

Indiana Senate Bill 451 Advances Wabash Valley CCS Project

Senate Bill 451, legislation that advances carbon capture and sequestration projects recently passed in the Indiana General Assembly by a 30-18 vote. Specifically, this bill is the result of a multi-year campaign to advance the construction of CCS projects and provides special privileges to Wabash Valley Resources LLC, an Indiana company planning to build an ammonia production facility in Terre Haute and sequester its carbon dioxide emissions.

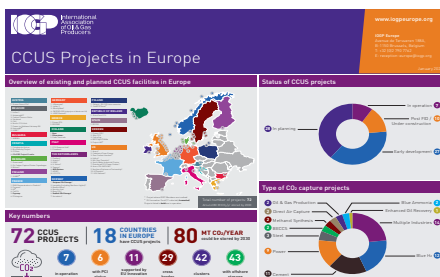
[Read the bill language here.](#)

In February, the Indiana Senate Committee on Environmental Affairs voted against Senate Bill 247, which aimed to require all CCS projects to get approval from the local government where the CO₂ would be sequestered. Multiple state business and trade organizations opposed the bill, saying it would create a layer of bureaucracy that would allow counties to block projects.

FACT SHEETS



CCUS is advancing rapidly across the globe. The International Association of Oil and Gas Producers recently released [this colorful infographic](#) of CCUS projects throughout Europe.



WATCH THIS SPACE!

The MRCI is working on a series of our own Fact Sheets featuring graphics and content that will make even the most complex aspects of CCUS easy to understand.

The Regional Deployment Initiative of the Great Plains Institute recently released its Jobs and Economic Impact state fact sheets tracking potential jobs creation and economic impact of carbon capture deployment, based on collaborative analysis by Rhodium Group. Check out the Fact Sheet [here](#).

IN THE NEWS



U. S. Steel and CarbonFree recently signed a Memorandum of Understanding to jointly pursue capturing CO₂ emissions from U. S. Steel's Gary Works manufacturing plant in Gary, Indiana. [Read more here.](#)

Wolf Carbon Solutions' Mt. Simon Hub carbon pipeline system finds a new partner with Howden. [Read more here.](#)

Battelle Memorial Institute recently submitted two separate, multi-state applications to the U.S. Department of Energy's (DOE) Office of Clean Energy Demonstrations (OCED) for the regional clean hydrogen hub Funding Opportunity Announcement (FOA) as designated in the bipartisan Infrastructure Investment and Jobs Act. Read the press releases for the [ARCH2](#) and [Southeast Hydrogen Hub](#).



RELATED UPCOMING EVENTS



Carbon Capture Summit: Europe 2023

Amsterdam, Netherlands – June 26-27, 2023

[Link to event](#)

Carbon Capture Technology Expo North America

Houston, TX – June 28-29, 2023

[Link to event](#)

Post Combustion Capture Conference – PCCC-7

Pittsburgh, PA – September 25-27, 2023

[Link to event](#)

SPE Permian Basin Energy Conference

Midland, TX – September 25-27, 2023

[Link to event](#)

SPE Eastern Regional Meeting

Wheeling, WV – October 3-5, 2023

[Link to event](#)

SPE Annual Technical Conference and Exhibition

San Antonio, TX – October 16-18, 2023

[Link to event](#)

Carbon Capture Technology Expo

Messe Bremen, Germany – September 27-28, 2023

[Link to event](#)

2nd American Carbon Capture Utilization and Storage Forum

Houston, TX – October 25-27, 2023

[Link to event](#)

CCS4G Symposium 2022 "A symposium on CCS for Geoscientists"

London, UK – December 15, 2023

[Link to event](#)

SAVE THE DATE!

The MRCI Team is working hard to plan our annual Partners and Stakeholders Meeting for late September or early October 2023. Be on the lookout for an announcement soon and reach out if you have suggestions for sessions, workshops, or speakers!

Like what you see?
Have ideas for future features?
Want your news or resources spotlighted?
[Email us!](#)

The Midwest Regional Carbon Initiative receives primary funding from the U.S. Department of Energy's National Energy Technology Laboratory (NETL) under DOE project number DE-FE 0031836. The MRCI is co-led by Battelle and the Illinois State Geological Survey and is comprised of team members from multiple state geological surveys, academic institutions, and industry. Backed by more than 20-years of experience in the field, the initiative works to connect science, technology, and research to advance CCUS acceptance and deployment in 20 states across the Midwest, Mid-Atlantic, and New England regions.

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