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## GCCC Hosts Virtual Sponsor Meeting

Posted on September 3, 2020 (<https://www.beg.utexas.edu/gcccc/blog/summer-2020-sponsor-meeting/>) | Leave a reply (<https://www.beg.utexas.edu/gcccc/blog/summer-2020-sponsor-meeting/#respond>)

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(<https://www.beg.utexas.edu/news/articles/2020/09/gcccc-hosts-virtual-sponsor-meeting>)*

Each year, the Gulf Coast Carbon Center (GCCC) holds two mid-year meetings for their industrial affiliates: one in January and one in August. These meetings cover the latest developments in carbon capture and storage research completed by the center's scientists. The most recent meeting took place on August 25 and was attended by nearly 50 representatives from the GCCC's sponsors.

To give a different look and feel to the poster session this summer, researchers used Prezi, an online presentation software, to create an interactive environment in place of the usual static poster content. During each of three time slots, grouped into three themes, researchers gave a technical brief followed by lengthy discussion. You can read an overview of each theme below.

Following the poster sessions, the researchers conducted a short feedback poll to glean insights for the next sponsor meeting. Researchers that serve as point liaisons with the various sponsor companies will follow up after the meeting to schedule more individualized meetings to further discuss research and future directions to pursue. GCCC researchers are looking forward to applying lessons learned to the next meeting.

BIGFOOT

Modeling  
&  
Monitoring

Ecosystem

BIGFOOT refers to GCCC research into storage that has a large footprint. Enhanced tax credits for storage, combined with falling oil prices and public concerns over climate change, have spurred interest in near-term, moderate-scale storage projects on the Gulf Coast and longer-term interest in large-scale storage hubs capable of storing several megatons or more per year.

Work to date has demonstrated the Gulf Coast's capacity for storing large volumes of CO<sub>2</sub> at industrial rates, but the process of optimizing site selection for individual projects is still an open question, particularly for large-scale projects. BIGFOOT aims to address that gap by developing both a Gulf Coast prospect inventory and a set of broadly applicable characterization workflows that can reduce cost and increase confidence in siting very large-volume storage.

During the BIGFOOT presentation, **Alex Bump** (<https://www.beg.utexas.edu/node/5613>) gave an overview of the GCCC's recent work on large-scale storage projects. He shared the center's progress on adapting petroleum exploration workflows for carbon capture and storage (CCS) using layered risk maps calibrated with historic gas production to predict regional variations in storage performance of the Gulf Coast Oligocene and Miocene sections. He also presented promising storage play concepts and more detailed, site-specific characterizations.

## Modeling and Monitoring

CO<sub>2</sub> storage regulations require that storage operations are rigorously monitored to provide assurance of long-term storage integrity. To evaluate injection scenarios and estimate storage capacity and security, an accurate understanding of the subsurface migration of CO<sub>2</sub> plume and its trapping mechanisms is essential. Through pore-scale studies, researchers have shown how dissolution of CO<sub>2</sub> in brine contributes to the trapping of the advancing plume during the injection stage.

During the Modeling and Monitoring presentation, **Sahar Bakhshian** (<https://www.beg.utexas.edu/people/sahar-bakhshian>) covered two topics: prediction of a CO<sub>2</sub> plume migration and trapping using numerical models, and advanced field-scale monitoring techniques. Among other models and simulations, she presented an analytical solution to a basin-scale theoretical model for the migration and capillary trapping of CO<sub>2</sub> plume in a sloping aquifer during the post-injection stage.

She also reviewed the recently deployed process-based technique for soil-gas monitoring at geologic CO<sub>2</sub> storage sites that her team is working on, and demonstrated her team's machine learning techniques for facilitating prediction of plume migration and their data-driven deep learning approach for anomaly detection in streaming environmental sensor data.

## Ecosystem

The Ecosystem theme covered outreach and networking done by the GCCC for the energy ecosystem outside and within the field of carbon capture and storage. During the Ecosystem presentation, **Katherine Romanak** (<https://www.beg.utexas.edu/people/katherine-romanak>) covered research and outreach relevant to the ever-changing CCS ecosystem. To reiterate the importance of stakeholder-oriented research, Romanak remarked:

“The ecosystem includes expanding our connections with new stakeholders such as the Gulf Coast Carbon Collaborative and the Carbon Utilization Research Council. We also have continued our previously successful activities, such as implementing the 4th International Workshop on Offshore CO<sub>2</sub> storage and continuing our involvements with ISO standards. We are also embarking on targeted studies, including looking at the potential for recommissioning offshore infrastructure and providing screening of storage sites looking at fetch-trap pairs.

“Looking to the future, we are developing an online CCS course for petroleum professionals who may need to retool their skills for application in CCS industry and applying our environmental monitoring techniques to satisfy the technically challenging requirements of the low carbon fuel standard CCS protocol.”

### **GCCC's next sponsor meeting is scheduled for January 2021.**

*To become a sponsor member of the Gulf Coast Carbon Center, please contact Research Program Coordinator Emily Moskal (<http://mailto:emily.moskal@beg.utexas.edu>).*

*Read more about the GCCC on the center's website (<https://www.beg.utexas.edu/gccc>).*

*Current GCCC sponsor companies include Air Products, BHP, BP, Chevron, ExxonMobil, Petra Nova Parish Holdings, Shell, and Total.*

Posted in Susan Hovorka ([https://www.beg.utexas.edu/gccc/blog/category/susan\\_hovorka/](https://www.beg.utexas.edu/gccc/blog/category/susan_hovorka/)).

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- The Gulf Coast Carbon Center (<http://www.gulfcoastcarbon.org/>)
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