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Researcher receives award for contributions to carbon mitigation technology

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UT senior research scientist Susan Hovorka was awarded the Greenman Award for her research on greenhouse mitigation technologies during the annual Greenhouse Gas Control Technologies conference last month.

Hovorka, who works at the Bureau of Economic Geology in the Jackson School of Geosciences, is one of only twelve recipients of the award.

“I’m very humbled to have been selected by my colleagues in my field whom I admire so much, so it’s a great honor for me,” Hovorka said.

The Greenman Award was established in 1996 by the Greenhouse Gas Control Technologies conference series. It recognizes individuals who have made a significant contribution to the field of carbon dioxide removal, storage and utilization, according to the website.

2007 Nobel Peace Prize, presented the award to Hovorka.

Thambimuthu said in a press release that Hovorka's work has greatly advanced the field of carbon capture and storage and has inspired many students and fellow researchers.

"Hovorka's work in carbon dioxide storage has advanced the field of carbon capture and storage immeasurably," Thambimuthu said in a press release. "Most priceless of all, she has been a mentor and inspiration to the students she's advised, and an internationally influential leader to many technical research teams."

Hovorka helped found the Gulf Coast Carbon Center in the Jackson School. The center was established in the late 1990s, Hovorka said, when the portfolio of options for managing carbon was still small.

"Back then, there was still uncertainty about the significance of carbon's impact on the atmosphere," Hovorka said. "There was a lot of uncertainty about what should be done, and it became increasingly clear and attractive that one thing we could do is to mitigate combustion of carbon at its source."

This technique, called carbon capture and storage, prevents carbon dioxide from reaching the atmosphere, Hovorka said.

"When we first started, there was a lot of doubt about the geological storage — capturing the carbon and putting it back," Hovorka said. "The idea might have sounded good, but wasn't practical … I thought we should just start it and see because that's what research is about."

As Hovorka and her team continued their work, they found out that this technology was a necessary and viable option for carbon dioxide emission reduction. Additionally, they explored the effects of carbon storage on the geological rock formations by injecting compressed, liquid carbon dioxide into the porous spaces between sand located around a mile below the surface of the earth, Hovorka said.

"If you imagine a flower pot with soil, you can pour a lot of water into it and it won't overflow because the water goes between the soil grains," Hovorka said. "Here, we have sand grains more than a mile deep, and we have these layers that go up and down the Gulf Coast that can store this water."

Hovorka and her team created models to see how much carbon dioxide could be kept in the soil without

“If we wanted to capture carbon dioxide from all stationary sources, we could put the carbon dioxide in for a thousand years,” Hovorka said. “There are strips of sand like this all around the world that we can use, so we know for sure that there’s enough space to take in all the carbon dioxide you want to put in.”