



*PCOR Partnership members at the 2007 annual meeting.*

## PCOR Partnership Annual Meeting

On October 18 and 19, 2007, the Energy & Environmental Research Center was host to the Plains CO<sub>2</sub> Reduction (PCOR) Partnership 2007 Annual Meeting. The meeting was open to all PCOR Partnership members. Attendees from the meeting included those within the PCOR Partnership region, which includes all or part of nine U.S. states and four Canadian provinces within the central interior of North America. Other PCOR Partnership members are located outside the region in Colorado; Texas; Washington, D.C.; Washington state; and West Virginia. Of the 96 in attendance (32 more than in 2006), 45% of the participants represented industry, 31% research and academia, and 24% government and regulatory

agencies, which prompted productive discussions.

The 2 days were packed with 20 presentations from experts in the field of carbon sequestration. Updates were provided on Year 2 of the PCOR Partnership Phase II Program and on Phase II Field Validation Test sites. The meeting also featured overviews of carbon market trading, proposed regulatory frameworks, and future activities for Phase III.

“These annual meetings are great opportunities for our partnership to get together and exchange strategies and ideas,” said Ed Steadman, EERC Senior Research Advisor and PCOR Partnership Project Manager. “The collective knowledge and resources

represented in our membership are truly astounding.”

A list of the speakers at the annual meeting is provided on the next page. For more information, visit [www.undeerc.org/pcor](http://www.undeerc.org/pcor).

–Trish McGuire

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The PCOR Partnership region.

Speakers at the PCOR Partnership Annual Meeting included:

- Ed Steadman, EERC, Grand Forks, North Dakota
- John Litynski, U.S. Department of Energy, Morgantown, West Virginia
- Steven Smith, EERC, Grand Forks, North Dakota
- Doug Nimchuk, Apache Canada Ltd., Calgary, Alberta
- Bill Jackson, Manager, Apache Canada Ltd., Calgary, Alberta
- Kristine Haug, Alberta Energy and Utilities Board, Edmonton, Alberta
- Lisa Botnen, EERC, Grand Forks, North Dakota
- Dwight Peters, Schlumberger Carbon Services, Sugar Land, Texas
- Robert Gleason, U.S. Geological Survey Northern Prairie Wildlife Research Center, Jamestown, North Dakota
- Randy Renner, Ducks Unlimited, Inc., Bismarck, North Dakota
- Melanie Jensen, EERC, Grand Forks, North Dakota
- Michael Jones, EERC, Grand Forks, North Dakota
- Aaron Koopman, Ramgen Power Systems, Inc., Bellevue, Washington
- Kevin Bliss, Interstate Oil and Gas Compact Commission, Washington, D.C.
- Lynn Helms, North Dakota Industrial Commission Department of Mineral Resources, Oil and Gas Division, Bismarck, North Dakota
- Tiffany McCormick Potter, Point Carbon, Washington, D.C.
- Ray Hattenbach, Blue Source, LLC, Centennial, Colorado
- Dan Daly, EERC, Grand Forks, North Dakota
- Erin O'Leary, EERC, Grand Forks, North Dakota
- Curtis Jabs, Basin Electric Power Cooperative, Bismarck, North Dakota
- Steve Melzer, Melzer Consulting, Midland, Texas



The PCOR Partners were treated to a rare opportunity to visit EERC Director Gerald Groenewold's restoration shop. Pictured (from left to right) behind a 1907 Auburn are Groenewold's wife Connie Triplett and the EERC's Lucia Romuld and Tami Jo Votava.

# Bakken Shale Forum Held at the EERC



*RPSEA President and Program Manager C. Michael Ming addressed the Bakken Shale Forum.*

The EERC was the organizing sponsor of the Bakken Shale Forum hosted by the Research Partnership to Secure Energy for America (RPSEA) held at the EERC in Grand Forks, North Dakota, on Tuesday, November 6, 2007. The purpose of the Forum was to disseminate information on the Bakken Shale Formation, to prioritize key research and development activities that will facilitate Bakken oil recovery, and to provide a networking opportunity for RPSEA members and others in the oil and gas industry.

Forum presentations included an overview of RPSEA's responsibility under the Energy Policy Act of 2005 (EPACT) and global energy development by RPSEA President and Program Manager C. Michael Ming. RPSEA was founded in 2002 as an industry-led nonprofit research and development consortium whose mission is to provide a stewardship role in ensuring focused research, development, and deployment of safe and environmentally responsible technology to advance the U. S.'s

ability to efficiently find and produce domestic energy resources. The RPSEA consortium currently has 125 members. Members include 25 of the nation's premier research universities, five national laboratories, other major research institutions, and large and small energy producers and consumers.

"RPSEA is really a network of networks," says Ming. "We don't have the time or energy to reinvent the wheel when someone else can already do it better."

In 2007, RPSEA signed a 10-year, \$37.5 million annual contract with the U.S. Department of Energy to become the Section 999 Consortium Manager with a mission to promote increased production from ultradeepwater, unconventional onshore natural gas and other petroleum resources, and smaller producers. The program is funded from royalties paid by the industry on oil and gas production from federal leases.

The Bakken Formation fits under EPACT's definition of an unconventional resource as it is a "natural gas or other petroleum

resource located onshore in an economically inaccessible geological formation." RPSEA plans to catalyze increased production from gas shales, coalbed methane, and tight sands with "the assistance of companies and organizations that can contribute time, resources, and expertise," according to Ming.

Bakken Formation presentations at the Forum included a discussion of its hydrocarbon potential by Julie LeFever, Geologist and Core Library Director of the North Dakota Geological Survey. Other presentations included a discussion of the ongoing evolution of Bakken E&P (exploration and production) techniques by North Dakota Industrial Commission Director Lynn Helms, a presentation of completion challenges by Hohn Engineering Senior Associate Engineer Monte Besler, and a presentation from the view of an operator of the play by Marathon Oil Company's Bakken Project Team Subsurface Manager David Brimberry. Attendees also shared information and updates on current initiatives and perceived needs. John Harju, EERC Associate

*Continued on page 4*



*Nancy Johnson, Director of Environmental Science and Policy Analysis at the U.S. Department of Energy (DOE) in Washington, D.C., was among the 40 participants at the Forum.*

Director for Research, who served as Technical Coordinator for the Forum, led a discussion to prioritize potential research and development activities on the Bakken Formation.

Just 8 years ago, oil was trading at \$16 a barrel. Just this fall, the prospect of \$100-a-barrel oil has been looming ever closer, with prices hitting a high of almost \$97 in November and still hovering around \$90 a barrel in December. Consequently, interest in the Bakken Shale Formation's oil reserves is greater than ever.

"At \$30-\$40 a barrel, there's not much activity in the Bakken Formation," says Harju. "New technologies and our dramatically increasing knowledge base of producing oil in the Bakken will still require strong prices (over \$50 a barrel) to maintain significant drilling activity."

The Bakken Formation contains somewhere between 80 and 413 billion barrels of oil in place, with many estimates around 250 billion barrels. For reference, Saudi Arabia is credited with 260 billion barrels of proven oil reserves, which means the oil can be retrieved at today's prices and with today's methods.

"It's hard to say precisely how much oil is in the Bakken and, for that matter, how much of that oil can be converted to reserves or ultimately produced," says Harju. "Reserve accounting is price-sensitive and dependent on new oil discoveries, technological advances in completion techniques and fracture stimulation, and new determinations of what is economically recoverable, so the reserve numbers change all the time."

"The North Dakota Bakken Shale may turn out to be one of the largest oil fields in the United States," says Joseph Allman of JPMorgan, who also noted that Wall Street is starting to pay more attention to the expansion of production from Montana into North Dakota (EI Oil Daily, Sept 28, 2007, vol. 57).

Because the rich, black, oil-bearing shale of the Bakken Formation is practically impermeable and doesn't allow oil to pass freely, horizontal wells have been very expensive—over \$5 million for each well drilled in 2006—and have met with mixed success. A portion of the Bakken formation in Montana has been a very productive oil play, but higher

temperatures and pressures in North Dakota and differing geologic conditions have posed both technical and economic challenges.

"With most unconventional resources, you're not successful right away," says Harju. "You have to take an engineering development approach, adapting knowledge and technology to discover what works. There is a tremendous volume of knowledge being generated on Bakken production, and it's happening at an astounding pace."

Today, 57 rigs are working in North Dakota, with 37 of those drilling in the Bakken Formation. Overall, oil production has been ramping up steadily to over 123,000 bbl a day in North Dakota. Oil production peaked at 52,000,000 bbl for the year of 1984 but then declined until the late 1990s. Industry leaders are cautiously optimistic that the 1984 peak can be exceeded, if prices remain strong and if Bakken completions continue their positive evolution.

—Sandy Van Eck

## EERC Team Heads to South Africa

In September, five EERC staff members traveled over 10,000 miles to attend the 24th Annual International Pittsburgh Coal Conference (PCC) in Johannesburg, South Africa. The conference, which alternates yearly between a U.S. and an international location, is considered one of the biggest coal conferences in the world and "aims at fulfilling the ultimate goal of efficient and effective use of coal while protecting the environment" ([www.engr.pitt.edu/PCC](http://www.engr.pitt.edu/PCC)). The conference is a good fit for the EERC.

"The EERC is recognized as a world leader in coal research and development," said Michael Jones, Senior Research Advisor. "I don't know exactly how many of the [PCC]



*African elephants blending into the background.*

Photo submitted by Jason Laumb

conferences we have participated in, but it is a significant number.”

The conference was first-rate, held in the middle of the banking area or wealthiest part of Johannesburg, a city of 3 million people (the greater metropolitan Johannesburg area is around 8 million people). Over 400 people attended the conference from 34 countries, of which approximately 130 were from South Africa and 93 from the United States. Of the 54 sessions, EERC staff were involved in 12 sessions. Jones chaired three sessions, presented two papers, and was also elected to serve on the Advisory Board. Jason Laumb, Research Manager, presented three papers. Ed Steadman, Senior Research Advisor and the Plains CO<sub>2</sub> Reduction (PCOR) Partnership Project Manager, and Stephanie Wolfe, Project Management Specialist, presented two papers. Mark Musich, Research Engineer, coauthored two papers.

The conference included 3 days of technical sessions and 2 days of technical tours. Oftentimes, the most valuable connections were made in between the sessions.

“We had good conversations with people from Poland. They were interested in CO<sub>2</sub> sequestration and asked if we’d be interested in working together—under the U.S. Department of Energy, of course, which was one of the big sponsors of the conference,” said Jones. “South Korea is moving toward gasification very rapidly and asked if we’d consider doing a project; they are already developing an entrained-flow gasification system.”

Jones and Laumb handed out quite a few prospectuses on the CABRE III project. CABRE III, which stands for Coal Ash Behavior in Reducing Environments, is a project that will focus on operational issues associated with coal ash behavior in a gasification environment. A number of groups expressed an interest in the \$2 million project, which will kick off in January.

Several EERC staff took advantage of this “trip of a lifetime” and scheduled



*EERC’s Stephanie Wolfe bungee jumping over the Zabezi River, South Africa.*

other activities within South Africa. Jones and Laumb went on a photo safari at the Pilanesberg National Park in the Bojanala Region of the North West Province.

The Pilanesberg National Park covers 55,000 hectares, which is about 200 square miles. The park is almost perfectly circular because it comprises the area of a 1200-million-year-old volcanic crater and has a small lake in the center.

“The park is gigantic. The roads you can actually see are just a small portion of the park. There are many places you can’t get to, like to see the water buffalo,” Laumb said. “But we did see animals native to South Africa: elephants, giraffes, rhinos, hippos, impala, ostrich, wildebeests, etc.” Laumb was amazed when he was told that more human deaths are caused by hippos than any other animal.

Jones was amazed that “elephants can disappear in the landscape, blend in. You see them one moment, and the next, they’re gone.”

Wolfe went to Victoria Falls, which is between Zambia and Zimbabwe, where she went whitewater rafting on the Zabezi River and bungee jumping off the Victoria Falls Border Bridge. The bridge is 111 meters (365 feet) above the water level, which makes it

the world’s highest commercial bungee jump.

“It’s something I’ve always wanted to do,” said Wolfe. “It all went so fast—like a blur. It was pretty scary!”

The varied adventures the staff took will stay with them for the rest of their lives. Yet, it was when they left the conference area that their eyes were opened and their hearts were touched.

“South Africans were proud and pleased to have the meeting there. They were very hospitable. The retail trades people were also very friendly. I never felt anything but welcomed,” said Jones. “Yet, just beyond the city, people were living in cardboard boxes.”

Wolfe also saw people living in similar conditions when she visited Soweto, a township southwest of Johannesburg where the people make less than a U.S. dollar a week. She enjoyed her visit to Soweto because of the kindness of the people. Seeing their joy amidst their poverty made her even more appreciative of life in North Dakota.

“Overall, we take a lot for granted here,” said Wolfe.

–Trish McGuire

# Award Winning Artist Alexey Ignatchenko

## *In His Own Words*

I am not an artist. I do not consider myself an artist. I simply like to create something that will be a pleasant thing to look at. As a child, I liked to play by mixing watercolors and watching how different pigments are able to penetrate into each other, swirling on paper, creating new tints and shapes. With your imagination, you could see almost anything in them. Some objects are growing and swallowing other spots on paper. You feel yourself like a magician shaping that world. You could play a battle game between red and blue dyes to see which one wins. With the help of a brush, the blue-red border line moves around leaving a purple field behind. When you add a drop of



*The Crab Nebula.*

another color in the middle, it starts pushing other colors to the edges. It's growing like a supernova M1, the famous Crab Nebula, in Constellation Taurus. Isn't it fun to watch?

It's just recently that I have learned from my friend, a professor of Arts at the University of Uralsk in Kazakhstan, that mixing colors for children is not only a fun game, but it also helps them to develop an emotional side of a color perception. It helps to connect different colors with the different emotional states of mind. Red is aggressive. Purple is for your imagination and spirituality. Green helps to calm down and relax. One of my favorite artists, Konstantin

Vasilyev, used more than two hundred different shades of green in his painting of a pine tree in the deep woods. The painting is entitled "Forest Gothic." Surprisingly, you don't see a distinct green color there.

My older brother influenced me with his drawing of a kitten when I was about 7 years old. He showed me how disordered and randomly colored spots could turn into a picture when seen from a distance. Painting is all about creating an illusion for an audience. It is different from constructing a building where you have to set up a certain structure, a basement, walls, roof, and only after that you add decorations. In contrast, you don't care about these things when painting. All you can see in a painted object is its outer shell, its appearance. You don't pay attention to what is inside and how the object is constructed. The view by an artist is different from a scientist or an engineer. The same applies to any form of art, like theater, poetry, music. The art is designed to bring emotions to the audience.

I have always enjoyed classic art, realism. I admired the Russian artists Levitan, Shishkin, and Polenov. First, I did not understand modernism. However, with the development of computer graphics and digital media, questions arise why are we still trying to paint in a classic way if everything could be done much better on a computer? What is the difference between a painting and a photograph? And again, it comes to delivering emotions. If you are able to do it in any media, you achieve your goal. So, an artistic inspiration comes to me when I get impressed with some beautiful object, a landscape, or a human body. I would like other people to share my view. It has been a driving force for me, a motivation to paint. Painting is certainly not for relaxation. It is a hard work, when you have to dedicate the whole weekend or even more. That is why I do not paint too often.



*EERC Research Scientist Alexey Ignatchenko, who has a Ph.D. in Organic Chemistry, is also a part-time artist whose paintings have won or placed in several juried art shows.*

Among all my work, I am most proud of a portrait of my younger daughter, Nina. The story of its creation is touching. When we went to visit Nina's grandparents in June 2003, Nina entered Russia as a Russian citizen on an American passport, which was an accidental mistake. This created a lot of problems. Since Nina was born in the United States and is an American citizen, the American embassy wrote a note to the Russian Ministry of Foreign Affairs asking to let her return, but the note was rejected. Nina had to stay in Russia longer than it was originally planned. A lot of adventures happened on attempts to bring her back to the United States. For example, one day I had to visit the head of the Moscow OVIR (an agency issuing Russian passports and dealing with visas). He opens his office to the public just for 2 hours a week, on Tuesday from 4 to 6 p.m. I had to stay in the waiting line for 12 hours from 4 a.m. until 4 p.m. There were five people in front of me and several hundred behind. At 4:30 p.m., I got to his office, but he referred me to OVIR in another city. After I spent all of my 3 weeks vacation, I had to come back to the United States in July without Nina. While I was waiting, talking to her on



Alexey's painting of his daughter Nina entitled "Portrait of Daughter." He won best of show at the 35th Annual Kiamichi Owa-Chito Festival of the Forest in Oklahoma.

the phone everyday, I painted her portrait day by day, as I remembered her—a cheerful, cute little girl with curious eyes. Here she is. You can see the progress of my work, step by step. It was only at the end of August that Nina was finally rescued.

I have never thought about selling my art. How could you sell your emotions? An old definition of prostitution sounds like "selling your arts." I do not mean to offend those who make a living on their art work. They are professional. It is just too

valuable to me to sell my work.

I never paint the same thing twice. It would be boring, and it looks more like manufacturing. Each painting should be created as a result of a discovery. Learning how to portray each new entity is a big part of the fun!

I apply the same principle in my research work in a lab, admiring the beauty of nature's laws, discovering, creating, and inventing something new.

My older daughter, Varya, is attending the University of North Texas in Denton. She is majoring in the arts. She started to draw when she was 5 years old. She shocked me one time with such a precise figure of a pony that she sketched from a TV screen while watching cartoons. I still don't know how to draw horses! Later we participated together in a juried art exhibition, Kiamichi Owa-Chito in Beavers Bend Park in Oklahoma. Varya won the best of the show award with her Fibonacci's Legacy painting. I find her self-portrait to be a very interesting drawing. You can see through her smile the warming and pleasant character of a young girl. She looks attentive and curious.

A reproduction of my work is placed in this newsletter. If you like what you see, I am delighted. Remember, I am not an artist, I am a scientist. Sometimes, we just like to do different things for a change.

–Alexey Ignatchenko



Varya Ignatchenko's self-portrait entitled "Fibonacci's Legacy."

# New Employees



The new face at the front desk is Bonnie Hillerud, who joined the EERC as a Research Information Associate. Hillerud provides

a variety of office services, including producing documents, fielding incoming telephone calls, providing initial contact for EERC visitors, serving as a Centerwide contact and reference point, and disseminating information.

Prior to her position at the EERC, Hillerud worked at the Grand Forks School District for nearly 8 years. For over 6 of those, she served as an Administrative Assistant at Schroeder Middle School, working with accounts payable and receivable, monthly newsletters, fundraisers, and office services. She says all of the skills learned at that position are helping her here as she learns her different job duties.

“I love to learn new things. The harder the challenge the more I like it. Everyone is always willing to give a helping hand, too,” she says. “Everyone makes me feel welcome.”

A native of Velva, North Dakota, Hillerud has lived in Grand Forks for the past 20 years. Hillerud’s husband is a superintendent at a Grand Forks construction company, and they have a 14-year-old daughter. The family likes to go camping, go to hockey games, watch movies, and go on “travels of any sort.”

When she’s not working, Hillerud enjoys doing crafts, reading, baking, walking, skating, bike

riding, going to her daughter’s volleyball games, and “just spending time with my family.” Hillerud is also a licensed beautician and works at keeping her skills current in that area.



**Doug Heisler** is a Technology Development Operator at the EERC Technology Development Facility, where he constructs, operates, and maintains bench- and pilot-

scale equipment and performs field sampling in support of multiple EERC projects.

Heisler says he is enjoying his new job. “I really like learning about the equipment and how it works,” he says. “I am enjoying the new challenges here. The people are great, too.”

Prior to his position at the EERC, Heisler worked for Structures, Inc., of Grand Forks, North Dakota, as a carpenter for 15 years. Heisler holds a degree in Auto Mechanics from Lake Region Community College in Devils Lake, North Dakota.

If Heisler’s name sounds familiar, it’s because Doug is married to Dee Heisler, Supervisor of the Purchasing Department here at the EERC. The two originally hail from Bisbee–Egeland, North Dakota. They have two daughters, ages 10 and 7½.

This close-knit family loves to hunt, fish, spend time at the lake, and ride four wheelers. Heisler is also interested in old cars and has restored several, his favorites being 1950s’ Chevrolets. The family often goes to car shows. Heisler’s youngest daughter now shares his interest in old cars; she’s even taken over his matchbox car collection.



**Charles Gorecki** is a Research Scientist at the EERC, where he is currently working with the PCOR Partnership to develop models and perform simulations to

describe the behavior of CO<sub>2</sub> prior to injection into saline aquifers and oil fields. Mr. Gorecki’s principal areas of interest and expertise are reservoir engineering and CO<sub>2</sub> sequestration.

Gorecki earned a B.S. in Geological Engineering from the University of North Dakota in August of 2007 and was hired at the EERC in September. Gorecki took as many petroleum engineering courses as he could at UND, and his senior engineering project focused on the potential of CO<sub>2</sub> enhanced oil recovery and sequestration in the Golden Pinnacle Reef Reservoir in the Williston Basin.

Of his work with the PCOR Partnership Program, Gorecki says, “I wanted to be on the cutting-edge of technology development, so this is perfect for me. It’s an exciting field to be in right now.”

Originally from Spicer, Minnesota, Gorecki served in the Minnesota Army National Guard for 6 years, then joined the North Dakota Army National Guard for 3. He and his North Dakota combat engineering unit were deployed to Iraq from December 2003 to February of 2005. The unit was based near Saddam Hussein’s home city of Tikrit. Gorecki earned a Bronze Star when, during a routine nighttime roadside patrol, he halted traffic on a busy road

# Transitions

and called for the bomb robot to check out a suspicious area on the roadside. When the bomb robot got tangled up after uncovering two bombs, Gorecki exposed himself to enemy fire by partially leaving the mine sweeper to grapple the robot and place the C4 charges on the top bomb himself so that the bombs could be safely detonated from a distance.

Gorecki and his wife, a counselor with the Community Violence Intervention Center, enjoy UND hockey and football games and love to travel. They mostly travel within the States, although they got married in Florence, Italy, 2 years ago and spent time exploring that country afterward.

Gorecki's hobbies also involve hunting ducks, pheasants, and geese. He is the chapter president of the Kelly's Slough Chapter of Delta Waterfowl, a national nonprofit group that advocates for hunters' rights and raises money for their "adopt a pothole" and henhouse nesting structure programs, as well as other conservation programs. Gorecki is also involved with Ducks Unlimited and Pheasants Forever and feels very strongly about conserving wildlife habitat.

—Sandy Van Eck



**Erik Pihl** has been promoted to the position of Research Specialist where he works with an interdisciplinary team of scientists and engineers involved in advanced

technology and power systems research. In this position, he works with project managers to develop financial project plans for proposal preparation, assists with the financial management of projects, and coordinates project-related activities with other groups at the EERC. He also assists with the planning and design of technical and managerial databases. Prior to this promotion, he served as an Administrative Clerk and Lead in charge of Shipping and Receiving at the EERC. He holds Junior Accountancy and Business Administration diplomas from Aaker's Business College.



**Tim Kujawa** has been promoted to the position of Research Specialist. He assists process engineers in system design and selection, location,

and procurement of fabrication materials and components for fuel-processing reactor and high-pressure systems that utilize and/or produce hydrogen. He is responsible for system fabrication and operation as well as sample acquisition and characterization. Prior to this promotion, he served as a Technology Development Operator at the EERC. He holds licenses as a journeyman plumber in North Dakota, a special engineer in Minnesota, and a journeyman mechanical installer for the city of Grand Forks.

## ADOPT-A-FAMILY PROJECT



*Santa's gift wrappers.*

EERC staff participated in the Annual Adopt-A-Family Project again this year, donating gifts that filled two vans, \$745 in gift cards, and \$500 in cash that was used for gifts and gift certificates.

"I think the staff feels as I do. We're able to help, so we do," says Sue Bartley, EERC Human Resources Manager. "We focus on four families so that their needs are fully taken care of for the holiday and beyond. If there's any money left over, we give them gift certificates."

The EERC's charitable effort was coordinated by Sue Bartley and Joyce Sundby, EERC Personnel Assistant.



*The inner workings of the biomass gasification system at G F Truss.*

## Update on G F Truss Biomass Gasifier Demonstration Project

When EERC Research Manager Darren Schmidt first contacted G F Truss owner Stuart Johnson about a biomass gasifier demonstration project, Schmidt imagined that the 50-kW biomass gasifier system he designed would be used 8 hours a day to eliminate a day's worth of wood waste as well as produce electricity and heat for the truss-building facility, offsetting 100% of its power use. Johnson had something else in mind.

Outside of the G F Truss warehouse is a stack of wood chips approximately 300 feet long, 100 feet wide, and 12 feet high leftover from 20-plus years of production. "We're hoping to have the system running for 16 hours a day to work the pile down out there," said Johnson. "I'd really like to reclaim some of our land back."

All of the components for the gasifier are now in place and fine-tuned for production. Some minor computer programming issues that delayed connecting to the utility grid have been resolved.

"The project is currently grid-connected and being transitioned from start-up to full-time operation," said Schmidt. "It is expected that the EERC will be able to capitalize on license agreements and provide the technology to the marketplace."

That's great news since Johnson feels that there's a need in the building products industry for this system. "Other places have far more waste than we do," he said. "I do believe it would be beneficial for the industry."

Another aspect of the project that Johnson feels is very important is the low-emission system. "Keeps the air clean," he said. "The more we can cut back on all the polluting gases in the air, the better off the whole nation will be."

While G F Truss will operate the system, the EERC will remain active in monitoring process performance. The EERC and G F Truss will continually communicate about upgrades and features.

The demonstration conducted at G F Truss will provide critical information on commercial biomass gasification development and service for EERC partners and product customers.

–Trish McGuire



*Wood waste at G F Truss.*

# SNAPSHOTS:

## EERC Tour



On October 24, the EERC was host to the North Dakota Legislative Council Interim Energy Development and Transmission Committee. North Dakota state senators and representatives and others took a tour of the EERC and attended sessions presented by EERC staff on coal, the Plains CO<sub>2</sub> Reduction Partnership, oil and gas, renewable energy, and distributed energy.

## Expo



*EERC Director Gerald Groenewold.*

EERC Director Gerald Groenewold was one of the keynote speakers at the Great Plains Energy Expo & Trade Show, which was held at the Bismarck Civic Center October 29 and 30. The event was cohosted by North Dakota Senator Byron Dorgan; Bismarck State College; and Kadrmas, Lee & Jackson and discussed how North Dakota and the Upper Great Plains could play a leading role in securing energy security for the United States. Topics included Greenhouse Gas Management Strategies, Enhanced Oil Recovery, Wind Power, Energy Efficiency, and Renewable Fuels into the Future. In addition, John Harju, Associate Director for Research, gave a technical presentation at the Expo. The EERC was also featured as an exhibitor in the trade show.

# SNAPSHOTS:

## EERC Tour



On November 20, the EERC was host to members of the Empower North Dakota Commission, which develops policy recommendations to expand the state's energy industry and helps the state realize the full potential of its diverse energy resources. EERC Associate Director for Research Tom Erickson (with back to the camera) explains the current and future plans for growth at the EERC.

## Northwood

When the Northwood community was devastated by the tornado on August 26, 2007, EERC staff responded by volunteering their time and money to help in the recovery and rebuilding efforts. EERC employees contributed \$3025, which was matched by the

EERC for a total contribution of \$6050.

EERC Director Gerald Groenewold said, "Once again, I am proud to be part of this family. Thank you—and keep up the good work. Their recovery is far from over."

## EERC EDGE

The EERC Edge is published for employees of the Energy & Environmental Research Center at the University of North Dakota. Send comments and story suggestions to Trish McGuire, Editor, (701) 777-5025 or [tmcguire@undeerc.org](mailto:tmcguire@undeerc.org).

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*The EERC wishes you the best in the new year!*