



Senator Byron Dorgan announces an award of \$5 million to the EERC for work on Advanced Tactical Fuels during a press conference at the State Fair.

## U.S. Senate Budget Committee hearing at EERC

The EERC was honored on June 2 when U.S. Senator Kent Conrad convened a special field hearing of the U.S. Senate Budget Committee to discuss federal support for higher education in North Dakota and its economic impact on local communities and to get tangible evidence into the record about the value of money placed into higher education. Senator Conrad, the Ranking Member of the

## Tactical fuels program receives boost

Earlier this summer at the North Dakota State Fair, U.S. Senator Byron Dorgan (D-ND) announced that \$5 million had been earmarked for the Energy & Environmental Research Center (EERC) Advanced Tactical Fuels for the U.S. Military Program. If approved in the full Senate, these funds will enable the EERC to expand the project to include developing jet fuel and other types of fuel from coal and biomass. Dorgan has been instrumental in acquiring previous funds for this program.

Several years ago, Gerry Groenewold, Director of the EERC, realized that the EERC had talents and expertise that would be invaluable to the U.S. military. The military uses an enormous amount of fuel on a daily basis. The EERC has been developing a variety of environmentally friendly alternative fuel choices, such as a synthetic JP-8 fuel similar to the fuels

used in jet planes. Thus began the Advanced Tactical Fuels for the U.S. Military Program.

The EERC started Year 1 of the tactical fuels program in July 2005 with initial funding of \$1 million, with an additional \$1.4 million approved for Year 2. The EERC is currently developing a system to generate high-pressure hydrogen from jet fuel and dispense it in the field to fuel cell-powered systems.

Groenewold states that “this project draws on a wide variety of expertise here at the EERC, including renewables, hydrogen, biomass, and coal-to-liquid fuels. It’s a wonderful example of the enormous opportunities in economic development and energy security that the EERC brings to this state, region, and our nation because of our unique capabilities.”

–Trish McGuire



U.S. Senator Kent Conrad hosts a Senate Budget Committee Hearing.

Senate Budget Committee, chaired the hearing in order to gather testimony from North Dakota’s higher education and research communities. Those

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# Hydrogen technology displayed at ND State Fair

The United States is catching up to the rest of the world when it comes to gas prices, yet most of us still feel the “pain at the pump.” So much so that people, organizations, and governmental agencies are seeking to support and/or develop alternative fuel sources that will, hopefully, give us some relief as well as offer us choices for



While this may look like a normal internal combustion engine, it is not. This engine was adapted for hydrogen fuel use by the Hydrogen Engine Center of Argonne, Iowa.



The EERC has partnered with the U.S. Army Research and Development Center, ePower Synergies, Inc., and the U.S. Air Force to develop a Hyster fuel cell-powered forklift.

that relief. One alternative fuel source choice is hydrogen.

The EERC is at the forefront of that research. The EERC recently demonstrated numerous aspects of

the future hydrogen economy at the North Dakota State Fair in Minot, North Dakota. One of the goals for presenting at the State Fair was to educate the public about the wide array of initiatives

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## Committee hearing (continued)

testifying at the hearing included Dr. David Wilson, Dean of the School of Medicine and Health Sciences at UND; Dr. Barry Milavetz, UND's Associate Vice President for Research; Dr. Gerald Groenewold, Director of the Energy & Environmental Research Center at UND; Dr. Alice Hoffert, Associate Vice President for Enrollment Management at UND; Bruce Gjovig, Director of UND's Center for Innovation; Dr. Delore Zimmerman, President of CEO Praxis, Inc.; and UND students Logan Tong and Gary Moore. The first of its kind at the EERC, Senator Conrad rarely holds Senate hearings away from the U.S. capital in Washington, D.C.

Beginning the hearing, Senator Conrad said, “My grandmother taught me early on about the importance of education. The future of our nation depends on the education of our children.” Because of his grandmother’s profound

respect for education and the tenacity that lovingly earned her the nickname “Little Chief,” 13 in his generation of cousins got advanced degrees. Even though Senator Conrad is known on Capitol Hill as the deficit hawk, he sees investment in education as a top priority. He says that investing in a first-class education system is one of the very best ways to develop and form an entrepreneurial spirit.

With that in mind, the overarching theme of the hearing was the importance of federal funding for higher education, using specific examples from UND, Grand Forks, and the state of North Dakota. The Senate Budget Committee hearing focused on three general areas: workforce development, research, and the economic impact of colleges and universities on nearby communities and regions.

“We were extremely pleased to hold this hearing at the EERC, the premier research facility on campus and a model for leveraging federal dollars with private sector cash to produce valuable, practical market-driven products,” said EERC Director Dr. Gerald Groenewold. “Federal funding is virtually the only funding available to support basic applied research—it’s the cornerstone to providing first-phase research that leads to joint venture programs with industry, addresses critical questions regarding energy and environmental issues, and provides our society with the ability to make objective decisions on those topics. It also leads to implementation of new technologies and development of new industries,” he said.

The hearing, open to the public, was a tremendous opportunity to witness the workings of a Senate hearing and to take part in the democratic process.



*Biomass Workshop Technical Director Chris Zygarlicke welcomes an overflow crowd.*

## Biomass workshop sets attendance record

A record-breaking 188 participants attended the Biomass '06: Power, Fuels, and Chemicals Workshop at the Energy & Environmental Research Center (EERC) in Grand Forks, North Dakota, on July 18 and 19, 2006. This year's workshop was also extraordinary in that it included ten exhibitors.

"We thought we were stretching ourselves with a goal of 125 participants, so the attendance was far above our expectations," said Workshop Technical Director Chris Zygarlicke. "Our record attendance was primarily due to a great increase in the notoriety of the EERC in all of our research fields, plus an upsurge in interest in turning the bread basket of the northern Great Plains into a fuel and energy basket."

The Biomass '06 Workshop explored trends and opportunities for utilizing biomass, renewable fuel policies and incentives, biodiesel and ethanol production, biorefinery chemicals and products, and biopower development for heating and electricity.

"Even though renewable energy in the form of ethanol and biodiesel for our

cars and biomass residues or energy crops as fuels for making electricity is only a part of the energy mix in the



*Biomass '06 featured its first-ever exhibit show which included ten exhibits.*

United States, North Dakota needs to take advantage of its tremendous resources, both technological and with respect to biomass production," Zygarlicke said.

Attendees came from 25 states, 7 Canadian provinces, New Zealand, and the United Arab Emirates. Forty-six percent of attendees represented industry; 21% research and academia; 17% government agencies; 7% community and economic development; and 9% financial organizations, landowners, or media.

Participants had positive things to say about the workshop. "It was a very impressive line-up of presenters and an exciting look into the future in a first-class facility," said North Dakota Agriculture Commissioner Roger Johnson, who attended the workshop.

Kenton Onstad of Mountrail-Williams Electric Cooperative of Williston, North Dakota, said, "The EERC is reaffirming my faith in technology."

The Biomass '06 Workshop was organized and sponsored by the EERC Center for Renewable Energy,

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# New employees



If you're wondering why **Randy Knutson** is being featured as a new employee when you've seen him around the EERC for a couple of years, you're probably not alone. Randy was a part-time,

temporary employee until January of this year, when he was hired as a full-time Research Specialist at the EERC. His work involves environmental sampling, including operation and maintenance of advanced monitoring and remediation equipment.

He particularly enjoys the time he spends working in the field with the EERC's two mobile units using different methods to remove contaminants from the soil and groundwater in a multiphase extraction after underground storage tanks have leaked fuel.

"I think the best thing about working here is that there are really no limits to one's success. The people and overall philosophy of the EERC make it a very enjoyable place to work. I feel very lucky to be a part of such an important organization, made even more important considering the energy and environmental challenges the world is facing today," he says.

Randy was previously employed by Ideal Aerosmith in East Grand Forks.

The Knutson family enjoys going to area lakes, biking, walking, summer trips, and golfing. Randy's wife manages three area Curves women's fitness centers. They have two children. Randy likes jogging, biking, fishing, reading, woodworking, and home remodeling.



**Kathy McIntyre** started at the EERC in February. Her work as a Research Specialist involves elemental analysis in biological tissues and nonbiological samples including coal, coal by-

products, and sediment and mercury analysis in combustion flue gas, coal, fuel oil, and biowaste. In addition to wet-chemistry analysis, she assists with x-ray diffraction (XRD), x-ray fluorescence (XRF), and scanning electron microscopy analysis.

Prior to her position at the EERC, she served as a Physical Science Technician at the ARS USDA Human Nutrition Research Center.

"I most enjoy the variety of work and working with such a great group of dedicated people," she says of the EERC. "There's so much going on. I feel privileged to be a part of the research efforts here. They will have a lasting impact on our future and that of our children." Although she says she has a lot to learn, she is looking forward to new learning experiences, working in areas as diverse as studies testing coal emissions and selenium's impact on mercury control.

McIntyre enjoys nature by walking, biking, fishing, and traveling. She has two sons. She also reads, listens to music, tends to her flowers, and bakes.



Research Engineer **Ben Oster** works in the areas of mercury control, hydrogen, and renewable fuels. He enjoys doing data reduction for the EERC mercury control projects in Saskatchewan and

Texas, as well as assisting in writing up the results for technical reports.

In August of 2005, Ben received his B.S. in Chemical Engineering from UND. Prior to his position at the EERC, Ben served as a Production Assistant/Engineer with Archer Daniels Midland's Soybean Division in Lincoln, Nebraska. Although he liked the work, he was thrilled to obtain a position with the EERC. Ben plans to obtain an M.S. in Chemical Engineering.

Ben served in the North Dakota Army National Guard for 8 years. He spent 1 year in Iraq, where he assisted in downtown Baghdad, repairing schools, hospitals, police stations, and other city buildings that had been looted or destroyed during the invasion. He also worked in Balad on the air base fixing runways and building a prison that now holds thousands of detainees. The war in Iraq made Ben realize that "the work we do here at the EERC is more important than ever, given the instability in the area where energy supplies come from today. Research centers like ours will be the backbone in getting the United States out of the energy situation we're in."

Ben's wife has her bachelor's degree in zoology and will pursue a master's degree in speech language pathology at UND this fall. The couple hikes and plays sand volleyball on a league in Fargo, and Ben is a dedicated runner.



**Brandon Pavlish** has been a familiar face around the EERC since he was hired as a part-time student engineer in 2002 while he pursued his bachelor's degree in Chemical

Engineering from the University of North Dakota. Now that he has

graduated, Pavlish will be even more visible as a full-time Research Engineer.

Pavlish's work at the EERC involves gas separation technologies, carbon dioxide sequestration, activated carbon technologies, and emission control related to mercury, sulfur, and particulates. Pavlish is enjoying the opportunity to apply his studies here at work. Although his professional interests range from hydrogen to biomass for energy, he is finding himself especially intrigued by areas of emission control, "especially those of Hg control technologies."

Pavlish likes the people at the EERC, and he's excited about the potential here. "You can do so many different sides to a job and be involved in everything. You can do hard data collection one week, and then you can move into the business side of a project. It definitely keeps it interesting."

Pavlish's wife is an LPN working in occupational medicine at Altru Clinic. The couple enjoys fishing, camping, watching movies, and spending time with their dogs, Shelby and Maxx.



**Sandy Van Eck** joined the EERC Editing Department as a Technical Editor in April, where her work involves editing technical documents and publications as well as marketing and Web materials.

Also a Lecturer in the UND Department of English, Sandy teaches an evening Technical and Business Writing class each semester.

Sandy earned a B.S. in Secondary Education in English and a B.A. in English and Political Science from UND. She holds an M.S. in Community

Counseling from the University of South Alabama, Mobile, and has completed all coursework toward a master's degree in English from UND. Sandy was the Project Manager for a National Institutes of Health-funded longitudinal, epidemiological study of physical function and aging with over 1500 participants at the University of Tennessee Health Science Center in Memphis before returning to Grand Forks in 2004.

Prior to the EERC, she was the Information Specialist for the INMED Program at the UND School of Medicine and Health Sciences. Sandy has worked in higher education for nearly 20 years as an instructor, student advisor and counselor, program coordinator, and researcher at colleges in Arizona, Alabama, and Tennessee, as well as UND. These positions all involved report or grant writing, something she feels helps her to be a better technical report and proposal editor at the EERC.

Sandy's excited about being at the EERC and says, "Producing inexpensive energy while minimizing the impact to the environment will undoubtedly be the largest global concern in the years to come. I think it's fascinating to play even a small part in the important research being conducted here."

In her spare time, Sandy enjoys spending time with family, golfing, watching movies, and reading "anything and everything but especially mysteries for relaxation." Sandy's husband, Rick, is a faculty member and the Graduate Director for the Instructional Design and Technology Program in the College of Education at UND. When they can get away, the couple loves to travel and to camp and hike with their dogs, Rudy and Misha.



**William "Jib" Wilson** isn't afraid to take risks. In high school, the Hawaiian native and a couple of friends started the now popular, albeit dangerous, sport of skateboarding

down all 10,023 feet of Maui's Mount Haleakala by the light of a full moon. "You have to be careful," he says, "but it's a real rush."

Jib joined the EERC in February as a Research Specialist, where he works in the areas of energy efficiency and renewable energy applications in residential and commercial settings. He holds an A.S. in Electronic Engineering from Maui Community College and a Hawaiian real estate license. Because of his background in real estate and residential building, Jib was instrumental in bringing Energy Star home standards to Hawaii.

Jib is intrigued by the "seemingly endless possibilities" at the EERC. "The thing that excites me most is matching the different technologies the EERC is working on with industries that could benefit from them. Initially, I'd like to start with Hawaii, since that's where I am from, and get my feet wet and then expand to other states."

Jib is a passionate and accomplished surfer and excels at polo. He comes by the "horse gene" naturally, he says, since one of his great-grandfathers was King Kalakaua's horse trainer. In Jib's spare time, he golfs, restores cars, and works on computers. His wife is a noted artist ([www.kimberlyfornesswilson.com](http://www.kimberlyfornesswilson.com)) and a Grand Forks native. Their son will be a junior at Red River this fall.

## Hydrogen technology (continued)

occurring regionally, around the state, and in the upper Great Plains with respect to hydrogen fuel cell technologies.

Display items included the eP-Ice Bear (the world's first hydrogen fuel cell ice resurfacer), a Hyster forklift truck, a Global Electric Motorcar (GEM), a hydrogen-fueled internal combustion engine, the UND fuel cell car, three hydrogen-powered Chevrolet Silverado 4x4 half-ton pickup trucks, and a portable hydrogen refueler.

According to the Minot Daily News, the State Fair attracted 248,000 people with many interested participants attending the various EERC displays.

"We estimate we talked directly to approximately 2500 individuals. Most of them were in farming, some had businesses with vehicle fleets, some were looking for investment information, a few were vehicle mechanics, and many were familiar with and used ethanol, E85, and biodiesel," said Dan Daly, Research Manager at the EERC. "Folks were curious about transportation fuel, including hydrogen, and wanted an answer to the high fuel prices."

"Some of the comments we heard ranged from 'this will never work' to 'where can I buy these?'" said Kirk Williams, Research Engineer. "All were encouraged to see alternatives for energy so close."

Going into the fair, the team was hoping to get a sense of the public's understanding and interest as well as to test the effectiveness of its outreach materials. Organizers were pleased with attendee interest as well as lessons learned.

"We need to do a lot more work in the area of general public education and awareness about H<sub>2</sub>," Kirk Williams said.

"We also need to fine-tune the outreach materials to better address the questions we were asked," said Dan Daly.

An added bonus at the State Fair was the announcement made by Senator Byron Dorgan (D-ND) that the EERC will receive \$5 million for the Advanced Tactical Fuels for the U.S. Military Program. These funds will enable the EERC to expand the project

## Biomass (continued)

with additional sponsorship from the U.S. Department of Energy. The North Dakota Department of Commerce Division of Community Services – Office of Renewable Energy & Energy Efficiency Program was a collaborating sponsor, and partnering sponsors included Fagen, Inc.; Great River Energy; MDU Resources Group, Inc.; Minnesota Power; the North Dakota Department of Agriculture; the North Dakota Forest Service; Otter Tail Power Company; Basin Electric Power Cooperative; Minnkota Power Cooperative, Inc.; the North Dakota Association of Rural Electric Cooperatives; and Wanzek Construction, Inc.

–Sandy Van Eck

## Chili Cook-Off

Dave Hassett and Debbie Pflughoeft-Hassett of the EERC placed a respectable 7th in the 7th Annual Friends of the Greenway Chili Cook-Off held at LaFave's Park near Cabela's in East Grand Forks on August 12, 2006. Their winning D2B2 team entry was Bandit & Buster's Best Dog Chili, named for their dogs, although Bandit and Buster had nothing to do with making the chili.

"The team is really just Debbie and I," Dave says, and they each credit the other with being the head chef. The secret to their success? Dave readily confesses that his secret ingredients include beer and tequila. Neither Dave



*Debbie and Dave Hassett team up to the delight of chili tasters.*

nor Debbie will divulge the winning recipe, but the ingredients include pork roast and beef round steak, cooked with a variety of dried chili peppers, most from their own garden. A purchased exception is the pasilla pepper, a very mild pepper that Dave says "tastes almost like raisins" and gives the chili a unique flavor.

The dog theme came about this year because of the Hassetts' support for an off-leash dog park in the city. The team wore dog tags, the table was piled with stuffed dogs, and there was even a patrolling robotic dog programmed to bark whenever someone approached the table. A sign on the table read "Leashes? We don't need no stinkin' leashes. We need an off-leash dog park!"

# EERC on the move

## **GHGT-8: 8th International Conference on Greenhouse Gas Control Technologies, Trondheim, Norway, June 19-22, 2006:**

**Steven Smith** (EERC) gave a presentation coauthored by **James Sorensen** (EERC), **David Fischer** (Fischer Oil & Gas, Inc., PCOR Partnership member), **Erin O'Leary**, **Wesley Peck**, **Edward Steadman**, and **John Harju** (EERC) entitled "Estimates of CO<sub>2</sub> Storage Capacity in Saline Aquifers and Oil Fields of the PCOR Partnership Region." **James Sorensen** (EERC) gave a presentation coauthored by **Lynn Helms** (ND Industrial Commission), **Steven Smith** (EERC), **David Fischer**, **Edward Steadman**, and **John Harju** (EERC) entitled "Unitization of Geologic Formations for the Purpose of Monetizing Geologic Sequestration Credits." **Ed Steadman** (EERC) gave a presentation coauthored by **David Fischer**, **John Harju**, **Lisa Botnen**, **Daniel Daly**, **Melanie Jensen**, **Erin O'Leary**, **Steven Smith**, **James Sorensen**, and **Charles Nelson** (EERC) entitled "The Plains CO<sub>2</sub> Reduction (PCOR) Partnership - Developing Opportunities for CO<sub>2</sub> Sequestration in the Central Interior of North America." **Charles Nelson** (EERC) gave a presentation coauthored by **John Harju** and **Ed Steadman** (EERC) entitled "Geologic Suitability of Coal Deposits in the Northern Great Plains Region of the United States for CO<sub>2</sub> Sequestration."

## **Fossil Energy Materials Conference, Knoxville, Tennessee, June 12-15, 2006:**

**John Hurley** (EERC) presented a poster coauthored by **Norman Bornstein** (Senior Metallurgical Consultant) and **Ian Wright** (Oak Ridge National Laboratory) entitled "Corrosion and Joining of ODS FeCrAl Alloys for Very High-Temperature Heat Exchangers."

**Steve Benson** and **Mike Jones** (EERC) presented the Ash Behavior & Mercury Control in Coal Combustion Short Courses in Dallas, Texas, June 14-15, 2006.

## **Renewable Fuels Action Summit, Bismarck, North Dakota, June 12, 2006:**

**Chris Zygarlicke** (EERC) delivered a presentation entitled "Biomass Gasification and Biodigestion."

**Steve Benson** (EERC) gave a presentation entitled "Mercury Control for Lignite-Fired Systems" at the WEST Associates Meeting in Bismarck, North Dakota, June 8, 2006.

**John Hurley** (EERC) participated as a peer reviewer of high-temperature materials programs at the Albany Research Center, Albany, New York, June 7-8, 2006.

## **MEC3, the 3rd International Experts' Workshop on Mercury Emissions from Coal, Katowice, Poland, June 5-7, 2006:**

**John Pavlish** (EERC) is one of the regular participants in this invitation-only workshop of global experts discussing ongoing mercury emissions. The event was hosted by the International Energy Agency (IEA) Clean Coal Centre (CCC) and Norwegian Institute for Air Research (NILU) Poland and cosponsored by the U.S. Department of Energy.

## **Windpower 2006: American Wind Energy Association Annual Conference, Pittsburgh, Pennsylvania, June 4-7, 2006:**

**Brad Stevens** (EERC) gave a presentation coauthored by **Troy Simonsen** (EERC) entitled "A Model System for Disseminating Wind Resource Data." **Troy Simonsen** (EERC) presented a poster coauthored by **Jerald Brotzge** (CAPS, U of OK) entitled "Utilization of Weather Radar for Wind Resource Assessments."

**Mike Jones** (EERC) gave a presentation entitled "Status of Mercury Control Technology" at a hearing held before the Montana Board of Environmental Review regarding potential mercury regulations for the state of Montana in Billings, Montana, on June 1, 2006.

## **31st International Technical Conference on Coal Utilization & Fuel Systems, Clearwater, Florida, May 21-26, 2006:**

**Chris Zygarlicke** and **Bruce Folkedahl** (EERC) gave a tutorial entitled "The Economics of Ash Deposition: What Is the Cost and How Do We Remediate? A Practical Tutorial for Coal Utilities." **Dennis Laudal** (EERC) delivered a paper entitled "State of the Art of Continuous Mercury Monitors for Measuring Mercury in Coal-Fired Boilers" and a presentation entitled "Continuous Mercury Monitors for Coal-Fired Boilers: the State-of-the-Art." Both were coauthored by **Lynn Brickett** (U.S. Department of Energy (DOE) National Energy Technology Laboratory (NETL)). **Ed Olson** (EERC) presented a paper coauthored by **Grant Dunham**, **Katie Hill-Brandt**, and **John Pavlish** (EERC) entitled "The Effects of SO<sub>3</sub> on Mercury Capture by Activated Carbon Sorbents." **Joshua Strege** (EERC) gave a presentation authored by **Mike Swanson** (EERC) and coauthored by **Doug Hajicek**, **Mike Collings**, **Ann Henderson** (EERC), and **Ronald Breault** (U.S. DOE NETL Office of Coal and Environmental Systems) entitled "Gasification of Mississippi Lignite Coal in a Transport Reactor."

## **Remediation of Chlorinated and Recalcitrant Compounds: The 5th**

**International Conference, Monterey, California, May 22-25, 2006:** **Jaroslav Solc** (EERC) presented a poster coauthored by **Zdenek Hejzlar** (Engineering Systems, Inc.) and **Samir Bouzrara** (Specialty Systems Integrators, Inc.) entitled "Vacuum-Enhanced Injection Control for In Situ Degradation of Chlorinated Hydrocarbons." The conference was organized and sponsored by Battelle Science and Technology International.

**Interstate Oil & Gas Compact Commission Midyear Issues Summit, Billings, Montana, May 22-23, 2006:** **John Harju** (EERC) was invited to present on the PCOR Partnership.

**Mike Jones** (EERC) gave a presentation to the Lignite Energy Council regarding the FutureGen Site Proposal Project in Bismarck, North Dakota, on May 18, 2006.

**Continuous Mercury Monitor (CMM) Workshop, EERC, Grand Forks, North Dakota, May 16-18, 2006:** **Dennis Laudal** (EERC) delivered a presentation coauthored by **Richard Schultz** (EERC) entitled "Mercury Measurement in Combustion Flue Gases."

**Minnesota DNR Taconite Industry Kickoff, Chisholm, Minnesota, May 7-12, 2006:** **Dennis Laudal** (EERC) delivered a presentation coauthored by **Grant Dunham** (EERC) entitled "Assessing Mercury Control Strategies for the Taconite Industry."

**Fifth Annual Conference on Carbon Capture & Sequestration, Alexandria, Virginia, May 8-11, 2006:** **Ed Steadman** (EERC) gave a presentation coauthored by **David Fischer**, **John Harju**, **Lisa Botnen**, **Daniel Daly**, **Melanie Jensen**, **Erin O'Leary**, **Steven Smith**, **James Sorensen**, and **Charles Nelson** (EERC) entitled "PCOR Partnership Phase II."

**Williston Basin Petroleum Conference, Minot, North Dakota, May 7-9, 2006:** **John Harju** (EERC) was invited to give a presentation entitled "Moving Forward with the Plains CO<sub>2</sub> Reduction (PCOR) Partnership - A Vision for Enhanced Resource Recovery in the Williston Basin and PCOR Partnership Region."

**American Oil Chemists Society (AOCS) 97th Annual Meeting & Expo, St. Louis, Missouri, April 30 - May 3, 2006:** **Kerryanne Leroux** (EERC) gave a presentation coauthored by **Melanie Jensen** and **Ron Timpe** (EERC) entitled "Utilization of Cuphea Oils for Biodiesel Production."

**28th Symposium on Biotechnology for Fuels and Chemicals, Nashville, Tennessee, April 30 - May 3, 2006:** **Chuanbin Liu**

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## *EERC on the move continued*

(EERC) presented a poster coauthored by Bo Hu, Shulin Chen (Washington State University), and Richard W. Glass (National Corn Growers Association) entitled "Value-Added Products from Condensed Distillers Solubles."

### *Coal Ash Professionals Training Course, Memphis, Tennessee, April 19–21, 2006:*

**Debra Pflughoeft-Hassett** (EERC) gave a presentation entitled "The Evolution of Fly Ash." **David Hassett** (EERC) presented on the topics "What the Chemical Composition of CCBs Really Tells You" and "Mercury and Its Impact on CCBs." **Tera Buckley** (EERC) gave a presentation entitled "Comparison of Ash Utilization Scenarios in Texas and Florida." **Loreal Heebink** (EERC) presented on the topic "Anticipated Changes in Emission Regulations and How They Will Impact CCBs."

### *48th Cement Industry Technical Conference, Phoenix, Arizona, April 9–14, 2006:*

**Ed Steadman** (EERC) presented a technical paper coauthored by David Fischer, **John Harju**, **Lisa Botnen**, **Daniel Daly**, **Melanie Jensen**, **Erin O'Leary**, **Steven Smith**, **James Sorensen**, and **Charles Nelson** (EERC) entitled "The Plains CO<sub>2</sub> Reduction (PCOR) Partnership – Identifying CO<sub>2</sub> Sequestration Opportunities for the Cement Industry in the Central Interior of North America."

### *37th Annual Convention of the North Dakota State Building and Construction Trades Council, Alerus Center, Grand Forks, North Dakota, April 6, 2006:*

**Tom Erickson** (EERC) gave a presentation entitled "EERC – Putting Research into Practice."

**Steve Benson**, **Mike Jones**, and **Kevin Galbreath** (EERC) presented the Ash Behavior & Mercury Control in Coal Combustion Short Courses in Pittsburgh, Pennsylvania, April 4–5, 2006.

### *Western Interstate Energy Board Meeting, Portland, Oregon, April 3, 2006:*

**Ed Steadman** (EERC) gave a presentation via conference call entitled "PCOR Partnership Phase II Activities."

### *American Chemical Society (ACS) National Meeting, Atlanta, Georgia, March 26–30, 2006:*

**Ed Olson** (EERC) served as Chair-Elect of the ACS Fuel Division, where he coordinated the evaluation of Storch Award papers.

### *Mike Holmes, Tom Erickson, and Chad Wocken*

(EERC) gave a workshop entitled "Future Issues and Opportunities for the Hydrogen Economy" at the North Dakota State College of Science in Wahpeton, North Dakota, on March 28, 2006. The EERC National Center for Hydrogen Technology organized and sponsored the workshop. Additional sponsors were Senator Byron Dorgan's Red River Valley Research Corridor, U.S. Department of Energy National Energy Technology Laboratory, U.S. Department of Labor Employment and Training Administration, North Dakota State College of Science, and Northern Great Plains, Inc.

### *2nd Annual Carbon Capture and Transportation Working Group Workshop, Palo Alto, California, March 22–23, 2006:*

**Melanie Jensen** (EERC) delivered a presentation entitled "Plains CO<sub>2</sub> Reduction Partnership."

**Steve Benson**, **Kevin Galbreath**, and **Jason Laumb** (EERC) presented the Ash Behavior & Mercury Control in Coal Combustion Short Courses at the EERC in Grand Forks, North Dakota, March 21–22, 2006.

*Midwest Association of State Departments of Agriculture (MASDA) Roundtable on Carbon Sequestration 6, Madison, Wisconsin, March 21–22, 2006:* **Lisa Botnen** (EERC) gave a presentation coauthored by **Ed Steadman** (EERC) entitled "PCOR Partnership Overview."

### *National Hydrogen Association Conference, Long Beach, California, March 12–16, 2006:*

**Mike Holmes** (EERC) was elected to the National Hydrogen Association (NHA) Board of Directors. His fellow members elected him to represent the University/Education class of membership for the next two years.

## 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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# Upcoming events

## Ash Behavior and Mercury Control in Coal Combustion Short Course

- Denver, Colorado, September 6–7, 2006
- Maui, Hawaii, November 30 – December 1, 2006

## PCOR Partnership 2006 Annual Meeting and Workshops, Calgary, Alberta, September 13–15, 2006

International Symposium on Western Fuels Presymposium Workshops, Marriott Denver Tech Center, Denver, Colorado, October 23, 2006

## Symposium on Western Fuels: 20th International Conference on Lignite, Brown, and Subbituminous Coals, Denver, Colorado, October 24–26, 2006

For more information:  
[www.undeerc.org](http://www.undeerc.org)