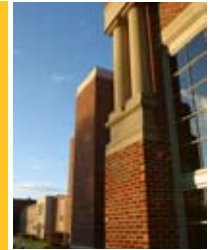
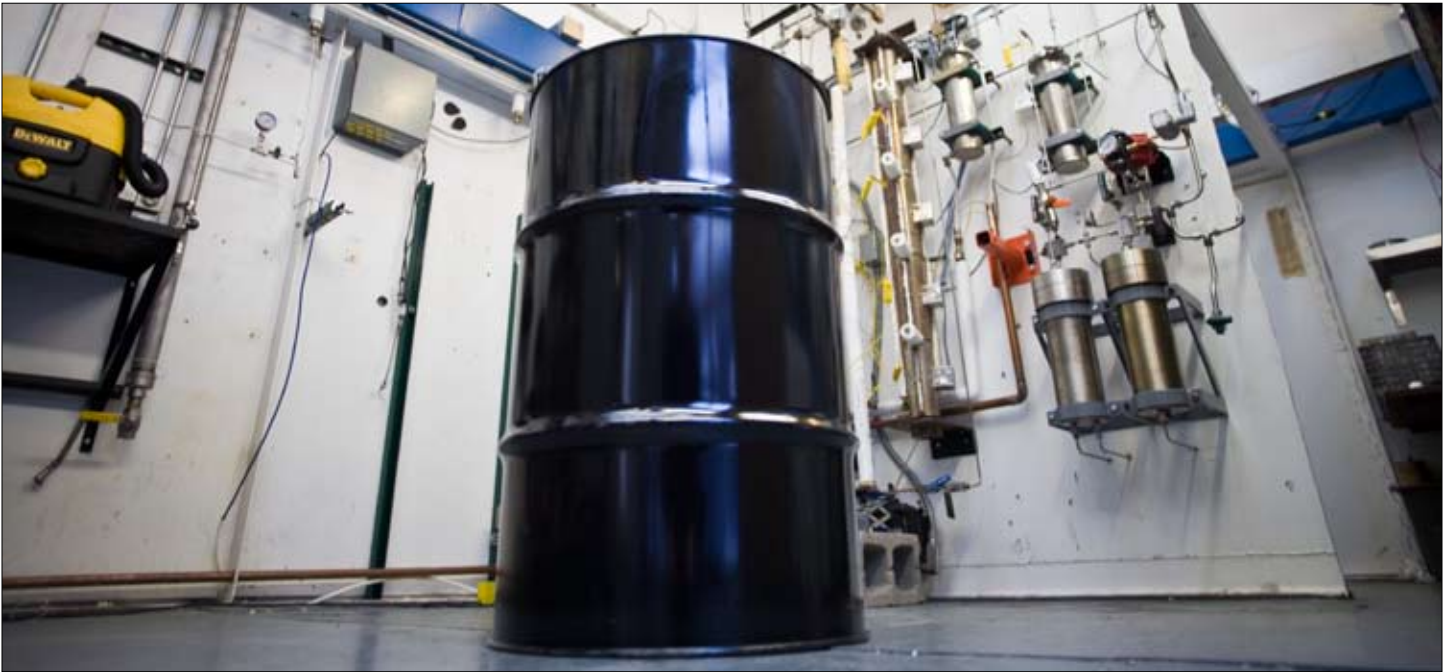


EERC EDGE

Our Edge
Is Our People



November–
December 2008



Fuel for the future: a drum filled with 25 gallons of renewable drop-in-compatible jet fuel.

EERC first to produce 100% renewable jet fuel for U.S. military

Over the past 18 months, the EERC’s alternative fuels team developed the first-ever 100% renewable jet fuel that meets military aviation fuel screening criteria, proving a pathway to providing energy security to the U.S. military and the entire nation.

EERC fuel samples created from multiple renewable feedstocks were tested by the U.S. Air Force Research Laboratory (AFRL) at Wright-Patterson Air Force Base in Dayton, Ohio, and shown to meet or exceed key specification parameters for JP-8, a petroleum-based jet fuel widely used by the U.S. military. JP-8 specifications include parameters such as freeze point, density, flash point, energy content, and others; all of which were met by the EERC fuel samples. This means that the EERC fuel looks

and acts identically to petroleum-derived jet fuel and can be used interchangeably without any special requirements.

Recently, the EERC team sent a drum filled with 25 gallons of the jet fuel to AFRL for testing on a ground-based fully instrumented T-63 shaft turbine.

“We fully expect that our fuel will pass the upcoming engine tests, which are designed to evaluate fuel performance and emissions,” said Ted Aulich, Senior Research Manager, who is leading the team effort.

EERC Director Gerald Groenewold said, “The EERC is proud to be the first organization in the world which has been able to produce a 100% renewable fuel that has been certified to meet all specifications of jet fuel

ahead of the competition of UOP (a Honeywell company) and General Electric, which also received DARPA [Defense Advanced Research Projects Agency] funding.”

The EERC fuel was produced under a \$4.7 million contract with DARPA. The U.S. Department of Defense is the largest consumer of petroleum in the United States, and securing a domestic fuel source is a strategic opportunity for the military.

The feedstock-flexible process can produce fuel from various crop

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oils and waste greases. Utilization of algae oil is also being pursued under a continuation of the EERC's Advanced Tactical Fuels Program. The process can be tailored to produce combinations of naphtha, jet fuel, and diesel that are identical to petroleum-derived fuels, enabling direct substitution with existing fuels and providing renewable options across the spectrum of fuel and base chemical needs.

"This builds on a solid foundation of expertise at the EERC in the area of alternative fuel production," said Groenewold. "The EERC is now uniquely positioned to provide drop-in-compatible JP-8 fuel from renewable feedstocks, providing critical strategic opportunities for the U.S. military as well as commercial aviation."

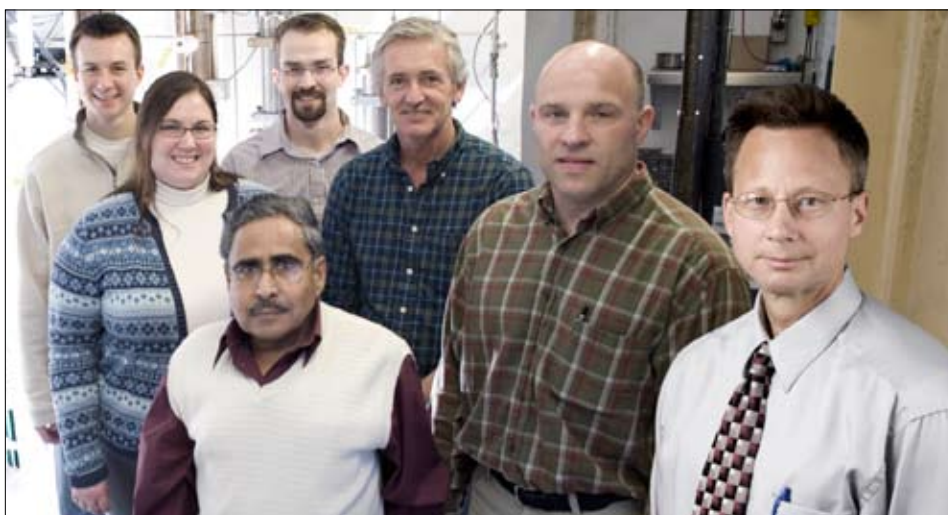
The EERC's current focus is to scale up production of jet fuel for the military and commercial aviation markets. The EERC has been approached by numerous companies from around the world to explore partnership opportunities for commercializing the technology. Preliminary negotiations are under way with feedstock suppliers, alternative fuel companies, and oil refineries. A proposal to design a demonstration plant at the Tesoro Mandan refinery has just been approved for funding by the North Dakota Industrial Commission. Ongoing talks have also focused on building commercial opportunities in conjunction with Grand Forks Air Force Base, ranging from cold-weather testing to distribution and production.

As the roller coaster ride of oil prices has gone from as low as \$16 a barrel in 1999 up to \$147 in July 2008 and now fluctuating rapidly somewhere between \$35 and \$55, the EERC is in a great position to provide solutions to the pressing energy needs of the world.

"However, time is of the essence. We need to move quickly if we want to

fully capitalize on the opportunity and put North Dakota in the 'pilot seat,'" said Groenewold. "We all need to work together, starting with the growers to provide sustainable crops, the Air Force for fuel qualification, the refiners for infrastructure integration, and the state and federal governments for permitting and incentives."

– Trish McGuire



Members of the alternative fuels team include (above, left to right) Paul Pansegrau, Research Scientist; Alexey Ignatchenko, Research Scientist; Chad Wocken, Senior Research Manager; Tony Snyder, Research Engineer; Kyle Martin, Research Engineer; Marc Kurz, Research Scientist; Heidi Vettleson, Administrative Assistant; Mike Collings, Research Engineer; Tim Kujawa, Research Specialist; and Tera Buckley, Marketing Research Specialist; and at left (left to right) Ben Oster, Research Engineer; Kerryanne Leroux, Research Engineer; Ramesh Sharma, Research Scientist; Josh Strege, Research Engineer; Curt Foerster, Research Specialist; John Richter, Research Associate; and Ted Aulich, Senior Research Manager.



EERC Associate Director John Harju receives the award from Oklahoma Governor Brad Henry while Nebraska OGCC Director Bill Sydow and North Dakota Oil and Gas Director Lynn Helms look on.

EERC receives IOGCC Stewardship Award



The Energy & Environmental Research Center's (EERC's) Plains CO₂ Reduction (PCOR) Partnership received the prestigious Chairman's Stewardship Award from the Interstate Oil and Gas Compact Commission (IOGCC) during the IOGCC's Annual Meeting in Santa Fe, New Mexico, held November 16–18, 2008. The award, which represents the Commission's highest honor for exemplary efforts in environmental

stewardship, was presented by the 2009 incoming chairman of the IOGCC, Oklahoma Governor Brad Henry.

The IOGCC is a multistate government agency that promotes conserving and developing domestic oil and natural gas in responsible, environmentally sound ways while protecting health, safety, and the environment. The Commission serves as a collective voice for member governors on oil and gas issues and advocates state rights to govern petroleum resources within state borders. The governors, state oil and gas regulators, industry representatives, and environmental community members that comprise the Commission's committees and workgroups initiate projects to advance the nation's energy future and attempt to resolve issues regarding domestic energy resources. The Chairman's Stewardship Award is given in four categories: energy education, small company, large company, and environmental partnership, the category in which the PCOR Partnership received the award.

"The Chairman's Stewardship Awards are the IOGCC's highest honor for the oil and natural gas industry in conservation of domestic resources," said EERC Associate Director for Research John Harju, who accepted the award on behalf of the EERC. "The PCOR Partnership is certainly proud to be recognized."

EERC Senior Research Advisor Ed Steadman, who manages the PCOR Partnership Program, said, "We are incredibly honored to receive this award."

The PCOR Partnership is one of seven regional partnerships under the U.S. Department of Energy National Energy Technology Laboratory's Regional Carbon Sequestration Partnership (RCSP) Program. The RCSP Program is a government–industry effort tasked with helping to develop the technology, infrastructure, and regulations needed for large-scale carbon capture and storage (CCS) in different regions of North America.

Since its inception in 2003, the PCOR Partnership's more than 90 members have provided data, guidance, financial resources, and practical experience with CCS. The PCOR Partnership region includes all or part of nine states (Iowa, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming) and four Canadian provinces (Alberta, British Columbia, Manitoba, and Saskatchewan).

"This award is a testament to the entire team of people working in the PCOR Partnership, including our various public and private industry partners from across the continent," said EERC Director Gerald Groenewold. "The PCOR Partnership is addressing a global environmental issue through the development and demonstration of commercially deployable technology. In turn, the PCOR Partnership is greatly enhancing the opportunity for our nation to achieve energy security through the use of clean fossil fuels," Groenewold said.

– Sandy Van Eck



EERC choir members include (left to right) Ed Olson, Dan Laudal, Lacey Niceswanger, Trish McGuire, Derek Walters, Kerryanne Leroux, Jordan Bremer, Tom Erickson, and Joyce Riske.

EERC holiday party held

The ballroom was filled to capacity as EERC employees and their guests shared the joys of the holiday season, as well as great food and laughter, at the EERC holiday party on Friday, December 5, at the Alerus Center in Grand Forks, North Dakota. Dinner music was provided by Brent Hermans on piano. The annual Holiday Party is often an occasion to showcase the creative talent at the EERC during the after-dinner entertainment, and this year was no exception.

Joyce Riske and Kerryanne Leroux penned new lyrics to old favorites, and the choir sang “The EERC Song,” “Good King Groen-e-wold,” and “I Love Staff Meetings.” Thanks go out to the choir for putting their voices on the line and wearing those robes.

The audience was rolling on the floor with laughter during a special EERC edition of the game show “Are You Smarter Than a Fifth Grader?” With a little help coaxed from the audience by Tom Erickson, good sports Angie Morgan and Paul Arnason took up the



“Smarter Than a Fifth Grader” master of ceremonies Kyle Glazewski.

challenge against “fifth graders” Dave Dunham, John Kay, Andy Palmiscno, and Sheryl Landis. They all proved that the EERC has some pretty smart employees, some of whom are still real kids at heart. Kyle Glazewski masterfully hosted the show.

Thanks go out to the Holiday Party Planning Committee for doing a great job once again this year.

–Sandy Van Eck

New Employee



Lacey Niceswanger is an Account Technician at the EERC, where she works in the Financial Services Department processing payments,

preparing billings, and auditing invoices and financial transactions. She is also involved in the payroll process, where she audits time sheets, runs reports, and uploads data to the University of North Dakota (UND) system. Niceswanger will also provide support to Travel and other accounting areas as needed and function as editor of the Accounting/Purchasing/Shipping/Receiving sections of the EERC Business Team Web site.

“I enjoy learning new skills, and the team and client-centered atmosphere at the EERC has fostered

my growth,” says Niceswanger of her position. “Everyone here is motivated and professional but also can be casual, friendly, and fun!”

Niceswanger holds a B.S. degree in Education with a double major in Special Education and Elementary Education along with a minor in Art from UND. She taught 2nd–4th graders as well as students with disabilities for 17 years in North Dakota public schools. Prior to her position at the EERC, she was an administrative assistant in the Department of Teaching and Learning at UND.

A native of Mott, North Dakota, Niceswanger has lived in Grand Forks for 16 years. She is married to Kevin Dean Niceswanger, the public information officer for the city of Grand Forks. They have four grown children. They enjoy Bocce, card games, bike rides, and travel.

Niceswanger sings lead and bass as a member of the Twin Forks Sweet Adelines. Her many interests include art, calligraphy, drawing, crocheting, crafts, golf, making wine, reading, listening to all types of music, watching movies, attending theatrical events and concerts, cooking, baking, and entertaining.

Not content to be empty nesters, the Niceswangers have hosted 17 students from six countries (Panama, China, Taiwan, South Korea, Saudi Arabia, and Japan) since 2005 as part of the English as a Second Language Center.

“It keeps us busy and broadens our understanding of other countries and people . . . and it helps us practice our English skills!” Niceswanger laughs.

Transitions



Joshua Stanislawski was promoted to Research Manager at the EERC, where he is involved with gasification, gas cleanup, hydrogen

production, liquid fuels production, and systems engineering projects. He holds a B.S. in Chemical Engineering from the University of North Dakota. Stanislawski’s principal areas of interest and expertise include coal gasification, process modeling, and experimental design and analysis. Prior to his current position, Stanislawski served as a Research Engineer at the EERC. Previously, he was a process engineer for Innovex, Inc.

“The EERC provides tremendous employment opportunities in an area where historically it was difficult for engineers to find jobs,” Stanislawski says. “As a graduate of UND, I am grateful to be able to live and work in the town I’ve always called home and do something I really enjoy.”



Brandon Pavlish was promoted to Research Manager at the EERC, where his work involves gas separation technologies, carbon dioxide sequestration,

activated carbon technologies, and emission control related to mercury,

sulfur, and particulates. He holds a B.S. in Chemical Engineering from UND. His previous position was as a Research Engineer at the EERC.

“I am excited to work at a place that offers the many opportunities in advancing technologies for cleaner, more efficient energy systems. The people here are great to work with, and being a research manager will offer a new challenge,” said Pavlish. “I look forward to managing people and projects as I continue to follow my career path. The EERC has always appealed to me as it has the unique combination of mixing business with engineering.”

–Sandy Van Eck



Pazderic is Fair person of the year

EERC Facilities Maintenance Coordinator Dennis Pazderic received the North Dakota Fair Person of the Year Award at the Dakota Fairs Convention November 20–23, 2008, in Bismarck. Pazderic has volunteered for the Greater Grand Forks Fair for 23 years. He has been a member of the Fair Board and, for the past 10 years, has been chair of the Fair’s buildings and grounds committee, where he is in charge of plant improvements, winter storage rentals, and building rental for events outside of fair week.

Pazderic has initiated and accomplished many projects at the fair grounds, including digging water lines, installing stalls and outside water spigots at the horse barns, placing concrete and improved lighting in the exhibit buildings, repairing the small grandstand, and working with outside contractors on various projects.

– Sandy Van Eck



Hassett receives EPA award

Dave Hassett, EERC Senior Research Advisor, recently received the Environmental Achievement award from the U.S. Environmental Protection Agency’s (EPA’s) Coal Combustion Products Partnership (C²P²). EPA works with the American Coal Ash Association (ACAA) and other C²P² sponsors to recognize C²P² partners for outstanding achievements in the beneficial use of coal combustion products. The award ceremony was part of the ACAA’s 40th Anniversary Meeting.

“This award recognizes the efforts of the EERC coal ash research team for their work to evaluate and understand the environmental performance of coal combustion products in a wide variety of utilization applications,” said Hassett. “It’s a great honor for all of us.”

–Trish McGuire



Stevens family receives conservation award

EERC Research Manager Brad Stevens and his wife, Dawn, were selected to receive the 2008 Conservation Achievement Award by the Grand Forks County Soil Conservation District. They received the award and were recognized at the North Dakota Association of Soil Conservation Districts Annual Meeting on November 11 in Bismarck.

The Stevens’ family farm is located about 15 miles northwest of Grand Forks, where they raise 35 registered and commercial Red Angus cattle. The Stevenses have planted trees, replaced barbed-wire fencing with hi-tensile, and converted to a rotational grazing system on their farm. In the near future, they plan to construct a compost facility for animal mortalities and a new cattle watering facility.

In the Renewables Group at the EERC, Stevens’ areas of expertise include wind power generation and soil, groundwater, and industrial process water remediation.

– Sandy Van Eck



Santa's helpers included Jimmie Kennedy, Rosemary Flynn, and Joyce Sundby.

EERC contributes to the Adopt-a-Family Program

The Adopt-a-Family Program is in its 8th year at the EERC. The program came to the EERC through DeAnn Beard, a social worker with the Grand Forks Public School system and wife of EERC Computer Systems Manager Roy Beard. DeAnn Beard and other elementary school social workers saw families in need and wanted to help.

“We try to focus on families that, without this program, may not have a Christmas,” says Beard. “The recipients are generally the working

poor. They work, have a family, and are having a hard time making it. This program gives them a boost.”

The EERC’s efforts were coordinated by Human Resources (HR) Personnel Assistant Joyce Sundby. Additional staff provided assistance in shopping for and wrapping gift items on a list provided by Adopt-a-Family organizers.

“The EERC employees welcomed the Adopt-A-Family Program with open arms, making sure that we brighten the holidays for the Grand

Fork area families in need,” said Sue Bartley, HR Manager. “Each year builds upon the previous, and we feel it is a privilege to be part of the program.”

This year, the EERC helped three families: a single mother with two daughters and a son; a single mother with two daughters; and a two-parent household with four children.

“The families are so appreciative,” says Beard. “We get to see that. We get to see how the program really helps the families.”

The EERC is one of several organizations that contribute to the Adopt-a-Family program.

–Trish McGuire



This year's winners of the Administrative Resources Awards, nominated by their colleagues and voted on by the managers, are (left to right) Customer Service: Ray Pikarski, Best Attitude: Bonnie Hillerud, Leadership: Kelly Hodgson, and Team Player: Jane Russell.

Administrative Resources awards

The Administrative Resources (AR) Awards were handed out recently at the AR holiday party. This is the second year of the AR Awards, and AR staff have embraced the opportunity to recognize their colleagues in this manner.

Deb Haley, Associate Director for Marketing, Outreach, and Administrative Resources, said, "I am proud of the work Administrative Resources does throughout the year.

Their work, attitude, wisdom, and service truly support the EERC's mission and set our team apart."

-Trish McGuire

Upcoming Events

February 17-19, 2009, San Diego, CA

July 14-15, 2009
Grand Forks, North Dakota

October 25-29, 2009, Arlington, VA

EERC EDGE

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