MMRI SUPPORTS NOVEMBER UNDERWATER MINING INSTITUTE MEETING AT THE UNIVERSITY OF MISSISSIPPI

On November 17-21, 2008, the University of Mississippi hosted the annual meeting of the Underwater Mining Institute (UMI). The UMI was founded in 1970 with the charter meeting held in Madison, Wisconsin. The purpose of the UMI is to bring together those in private industry, government, and academia who share the common interest of exploring for and recovering underwater mineral resources. The Institute has international scope with more than 25 nations represented at the annual meetings.

The MMRI arranged a field trip agenda for this year’s attendees. Emily Woolsey, a geological engineering major, wrote the trip log to complement field trip stops. Emily worked with the MMRI, the U.M. Office of Research and Sponsored Programs and the U.M. Department of Geology and Geological Engineering to complete the field trip guide. The guide is available online. Among the several places visited on the field trip were the U.S. Army Corps of Engineers, Engineering Research and Development Center in Vicksburg, Mississippi and the Red Hills lignite mine operated by the Mississippi Lignite Mining Company in Ackerman, Mississippi. The field trip attendees also enjoyed lunch at the Crown Restaurant in Indianola, Mississippi, a premiere location for fine dining in the Mississippi delta.

UMI AWARDS THE ROBBIE MOORE METAL TO FORMER MMRI DIRECTOR JAMES ROBERT WOOLSEY

J. Robert Moore, a well known marine geologist and professor of marine geology, was a founder of the Underwater Mining Institute (UMI). Awarding the J. Robert Moore Medal is one of the highest honors that UMI can bestow. During their November meeting at the University of Mississippi, the UMI awarded the Moore Medal postumously to J. Robert Woolsey, late director of the Mississippi Mineral Resources Institute and long time UMI member. The medal was accepted by Maxine Woolsey on behalf of her husband -- J. Robert (Bob) Woolsey. Bob’s children, Joe and Emily were also in attendance as were many of his colleagues and co-workers.
JULIUS RIDGWAY DATA CENTER UPDATES

We are currently scanning and consolidating well logs into a digital catalogue that will soon be available online (with hard copies available for a nominal fee). Our well log catalogue currently contains 6,874 well logs, with approximately 3,000 of these scanned for digital reproduction. We regularly receive more well logs that we organize, file and scan into a single collection as we receive them which makes the collection easier to access online and easier for us to provide the hard copies. We have scout cards that are available as well. Helping to establish as complete a collection as possible are our student workers, Joe Woolsey and Frank Roecker. Through continual expansion of our database and routine upkeep and maintenance of our servers we hope to provide a service that is both intuitive and comprehensive.

BIODIESEL RESEARCH AND DEVELOPMENT UPDATE

The winter months are typically quiet in the world of biodiesel due to the problems that the cold weather brings with biodiesel performance. However, this winter has been especially problematic because of a new “stabilizing” agent employed by the major fuel producing companies. This issue has been analyzed by the NREL (National Renewable Energy Lab) and determined to be specific to biodiesel blends. When mixed with biodiesel, the newly stabilized ULSD (Ultra Low Sulfur Diesel) produces a gelatinous precipitate that caused many problems in the vehicle engines. However, there are already many companies and researchers working at NREL and elsewhere to remedy this blending difficulty. One of the most promising solutions is the use of oxidation inhibitors to stop the aerobic reaction that yields the precipitate. This will not be a problem for our MMRI biodiesel program because we suspend use during Mississippi’s short, mild winter. The summer ULSD product will not contain this stabilizer and will be “blend friendly”. Next winter the biodiesel community anticipates completion of a B100 (pure biodiesel) trip through the Arctic Circle that includes testing of a new type of biodiesel at temperatures of -20°F!

In late October, Brad Crafton, our biodiesel expert received a request to assist a private company, Tri-State Petroleum, in the retro fitting of a defunct soybean oil biodiesel plant into a processing facility for animal fats such as processed chicken waste.
This was an interesting project that gave new life to a plant that closed due to the rising cost of soybean oil. The waste animal fats have many more limitations and variations than vegetable oil: higher gel point, varied free fatty acid counts, greater wear on pumps and equipment. However, fat based fuels have greater cetane ratings and higher BTU output than vegetable oil. Add to that the lower price of the fats and you have a very intriguing business model. A recent Chemical Engineering graduate, Sara Mixon, received a full time position with Tri-State Petroleum as a result of this work between them and MMRI. Mixon had been one of the students that did a senior design project under the supervision of Crafton and MMRI. We at MMRI hope that these private industry relationships continue to be formed and thrive in the future.

Brad Crafton (MMRI) and Farm Waste Resources (FWR) submitted a SBIR proposal for funding to DOE. Technology transfer to private industry is a stated objective of MMRI and Crafton has been working with FWR, a waste to fuels upstart, since January of '08 helping them to develop an industrial model of sustainable waste-derived fuel based upon the experience gained throughout the MMRI program. The proposed work should ally well with the newly initiated America Recovery and Re-Investment Act which includes increased support of green energy. Crafton's work in education outreach is scheduled to expand as MMRI has agreed to provide educational outreach service to the STEM (Science, Technology, Engineering, and Mathematics) Climate Change Summer Camp established by Dr. Wei-Yen Chen of the Chemical Engineering Department at Ole Miss. Crafton will perform extensive tutorials on the production of biodiesel from waste grease at this camp for the purpose of inspiring young students to pursue scientific endeavors and careers in theseimmerging industries.

MARINE PROJECTS UPDATE

The National Institute for Undersea Science and Technology (NIUST), an agency of NOAA headquartered at the University of Mississippi, celebrated the opening of its vehicles facility at the University of Mississippi Field Station, with an open house, October 9. The CMRET/STRC Station Service Device (SSD), the custom remotely operated vehicle (ROV) developed for the Gulf of Mexico Hydrate Research Consortium) and the UVTC’s Eagle Ray AUV (autonomous underwater vehicle) were featured in the event which coincided with the visit of National Undersea Research Program (NURP) Interim Director Karen Kohanovich's initial visit to UM. These vehicles provide visual and physical accessibility to the deep seabed and are
MMRI WELCOMES DIANNE WELCH AS MANAGER OF PROJECT RESOURCES

MMRI/CMRET has a new Manager of Project Resources, Dianne Welch. Dianne is a CPA and has more than 30 years experience as a controller and with accounting practices, contracts, etc. Although she is new to the University, she has family in the area and is already adapting well both to MMRI and to Oxford. Welcome, Dianne!

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critical to the research of the Gulf of Mexico Hydrates Research Consortium at their Sea-floor Observatory at Mississippi Canyon 118. MMRI’s Seabed Technology Research Center (STRC), whose mission is to research, develop and employ marine sensors and innovative technology is one of NIUST’s three branches. The Ocean Biotechnology Center (OBTC) and Repository, also located at UM, focuses on developing marine natural products. The Undersea Vehicles Technology Center (UVTC), whose home is the University of Southern Mississippi, advances remote and autonomously operated vehicle design and technology.

MMRI SEEKS NEW DIRECTOR

In October, the Provost and Dean of the School of Engineering created a Task Force and charged them with reviewing the internal, working structure of the MMRI, considering the recommendations of the MMRI Advisory Board regarding internal structure and to make recommendations regarding changes. The Task Force has recommended that the MMRI be formally subdivided into two divisions (Off shore and State Programs), under the leadership of two Associate Directors answering to the Director. The recommendation has been accepted and the re-organization is to begin early in the new calendar year.

Completion of the work by the Task Force was a prerequisite to the process of hiring a new Director. The Director Search Committee has been formed with Charles Swann as committee Chair. In December the Committee drafted a job description and the advertising campaign was begun. The position is posted at www.jobs.olemiss.edu.