

BP Taps MRC for Industrial Assessments

In late 2004, a representative from British Petroleum (BP), on a mission to find universities or institutions dealing with reliability, contacted the College of Engineering (COE) Maintenance and Reliability Center (MRC) at the University of Tennessee. The company was seeking methods to improve the reliability of BP's directional drilling used in the production of oil and gas reserves. The result: a multi-departmental effort within the COE to significantly impact reliability and maintenance, and to reduce the direct maintenance and ensuing production costs of BP's directional drilling equipment.

A team composed of the COE Associate Dean for Research, MRC staff and faculty members from the Departments of Mechanical, Aerospace and Biomedical Engineering (MABE), Industrial and Information Engineering (IIE) and Nuclear Engineering (NE) created a presentation to address the needs of BP, illustrate the strengths of the COE and demonstrate how the college could provide a positive solution. Competing with 12 other entities, the UT team traveled to Houston, TX, to present what the COE could provide in terms of maintenance and reliability for specific directional drilling equipment.

"Obviously we did a good job because BP came back and asked us to work with them on this project," said Tom Byerley, director of the MRC. From this request grew a three-way project between BP, the COE team



MRC team members present results and recommendations from a recent assessment to representatives of BP and BHI.

and Baker-Hughes-Inteq (BHI), one of BP's suppliers. The COE team proceeded to conduct on-site assessments at several BHI and BP locations in the U.S. and in Europe, where they reviewed the process, starting with design, through engineering tests and manufacturing of the equipment, and concluding with repair and recycling of the tools. The team then reported to BP and BHI, offering a list of recommendations and opportunities for improvement, which Byerley believes will result in additional research contracts with UT. So far, reactions from BP and BHI have been positive.

"Our assessments have been very well accepted," said Byerley. "There is a lot of enthusiasm about what the COE team and others at UT can bring to the table."

Maintenance and reliability engineering is considered a business of urgent priority because of its focus on management systems, analysis techniques and advanced predictive and preventative technologies to identify, manage and eliminate failures that lead to losses in system functions.

"Very few universities deal with maintenance and reliability," said Byerley. "UT is unique. This is an exciting project because we have the opportunity to help someone really understand and better utilize their processes. There is also really great synergy within the multi-departmental team."

Dr. Wayne Davis, the COE's associate dean for research and technology, was instrumental in pulling together the multi-departmental team, and said the interdisciplinary nature of the program is an excellent example of teamwork within the college.

"The project is unique in that MRC was able to coordinate the development of a team from multiple departments to respond directly to BP and BHI's concerns," said Davis. The project also utilizes research and experience to address "real world" problems, while at the same time providing the opportunity for the faculty and students to stay current on issues in the field, enhancing the educational environment within the university.

"This is clearly a great example of a win-win situation for all participants," said Davis.

—Story by Amanda Womac

COE Remembers Faculty & Staff Members

The UT College of Engineering lost three notable professors and a longtime staff member in early 2006.

Dr. Raymond Buchanan, professor and head of the Department of Materials Science and Engineering, died on January 15th. Buchanan received his B.S., M.S. and Ph.D. degrees from Vanderbilt University, and joined the faculty of the Department of Materials Science and Engineering at UT in 1985. An outstanding professor and researcher, he was the recipient of numerous awards, including the UT Chancellor's Award for Research and Creative Achievement, the Brooks Distinguished Professor Award, the Allen and Hoshall Engineering Faculty Award, the Robert M. Condra Professorship and several outstanding teacher awards.

Buchanan was appointed as interim department for the MSE department in 2002 and was named as permanent department head in 2004.

"You could always depend on Ray to do the important tasks that needed to be done. And he was a great listener. He would listen carefully to your problem and then give you good, thoughtful advice. This allowed him to get along with everyone, while leading by example," said Dr. Joseph Spruell, MSE professor and former department head.

Another longtime MSE professor, Dr. William T. Becker, died on January 5. Becker received his Ph.D. from the University of Illinois, and was a faculty member at UT for over 35 years until his recent retirement. He served as the faculty sponsor for the student chapter of the American Society of Materials for many years.

Dr. Marcia Katz, a retired professor from the UT Department of Nuclear Engineering, died on March 1. Katz was the first female doctoral student to graduate from the NE department and was also the COE's first female faculty member.

A dedicated professor, researcher and student advisor, Katz received several awards and recognitions, including an American Society of Mechanical Engineers White House Fellow in 1994, the Allen and Hoshall Awards for Excellence in Teaching in 1993, and the department's Outstanding Teacher Award.

"Marcia was a dedicated teacher and advisor who loved her students and did everything she could to help them," said Dr. Lee Dodds, NE department head. "She will be deeply missed, both professionally and personally."

June Moore, who was affiliated with the COE for over 35 years, died on March 8th. Moore retired in 1995 as Associate Dean of Cooperative Education. The college's cooperative engineering program is now administered through the Office of Professional Practice (OPP).

"June Moore was one of the most respected co-op professionals in the state of Tennessee," said OPP Director Walter Odom. "In 1995, the Tennessee Cooperation Education Association established the June Moore Award to recognize excellence in the cooperative education profession."

For more information about the June Moore Award, or other faculty memorial scholarships, contact the Engineering Development Office at (865) 974-2779/engrdev@utk.edu.