Hashem Nehrir, professor of electrical and computer engineering, has been elevated to Fellow by the IEEE. Nehrir was recognized for his contributions to alternative energy power generation. Nehrir joined MSU's faculty in 1987. IEEE is the world’s largest professional association advancing innovation and technological excellence for the benefit of humanity.

Bruce R. McLeod has been granted the "Professor Emeritus" title by the Montana Board of Regents. McLeod's career at Montana State University has included 26 years as an assistant, associate, and full professor (1970-1996) of electrical and computer engineering. He served as head of the Department of Electrical and Computer Engineering from 1996 through 1999. McLeod became dean of graduate studies at MSU in 1999, a position he held for six years. As a researcher, McLeod invents and creates technologies that use electromagnetic fields to control and regulate tissue growth in biological systems. He is the inventor of 28 United States patents and 11 foreign patents.

Ed Adams, civil engineering, featured in article published by the National Geographic Society. Avalanche researcher Ed Adams is featured in an article, adapted for three different age groups, that ran in the November/December issue of National Geographic Explorer (both the Pioneer and Pathfinder editions) and Extreme Explorer. All three are supplemental reading tools for children. Read the article at http://www.montana.edu/cpa/news/nwview.php?article=7845

Stephen Sofie, mechanical engineering, is the principal investigator for a $750,000 NASA grant. The Montana Space Grant Consortium will administer the grant. The multi-disciplinary team at MSU will develop new ceramic materials that will enable solid oxide fuel cells (SOFC) to perform in closed-loop power systems that NASA wants for lunar and Mars missions, as well as powering the crew exploration vehicle.

Rafal Angryk, computer science, receives NASA funding. Dr. Rafal Angryk, computer science, has received a 4-year $400k NASA grant for a Solar Dynamics Observatory Science Center. Angryk is collaborating with Dr. Petrus Martens of the Harvard-Smithsonian Center for Astrophysics.

John Sheppard, computer science, receives U.S. Navy grant. John Sheppard, RightNow Technologies Distinguished Professor, was awarded a 1-year contract from the U.S. Navy for $181K for his proposal CASS Technical Engineering Support: ATS Framework. John is collaborating with two research affiliates, Stephyn Butcher and Patrick Donnelly, to implement and demonstrate semantic interoperability between multiple diagnostic reasoner applications based on an emerging IEEE standard. Results of this demonstration are expected to lead to the Department of Defense mandating the standard for future acquisition programs requiring advanced diagnostics on automatic test systems.

Chris Arrasmith is involved in project to reduce need for biopsies. Chris Arrasmith, MSU researcher and recent master's graduate in electrical and computer engineering, is working with doctors at Vanderbilt Medical Center in Tennessee to build a handheld laser microscope that could reduce the number of biopsies needed to diagnose skin cancer. The project, which Arrasmith began working on when he was an undergraduate at MSU, is funded by a five-year grant from the National Institute of Biomedical Imaging and Bioengineering. Read the article at http://www.montana.edu/cpa/news/nwview.php?article=6998

Willis J. Wetstein has been elected to the Montana Professional Engineers Hall of Fame. Wetstein, '57 CE, has been a civil engineer for Morrison-Maierle, Inc. since 1957. He rose from wastewater engineer-in-training to president and CEO. His career of service and leadership has been dedicated to the advancement of water supply and wastewater engineering, the promotion of public health and a quality environment in Montana, the western United States and developing countries. More information is available at www.mtengineers.org. The Montana Professional Engineers Hall of Fame is sponsored by the Montana Society of Engineers to honor engineers who made significant contributions to the development of Montana and the engineering profession. Wetstein will receive an honorary doctorate at the 2010 Commencement ceremony. More...

Paths of Mark Lies and Cory Pulfrey, both ChE ‘82, overlap in college and again in early semi-retirement. Mark Lies and Cory Pulfrey graduated from MSU in 1982 with degrees in chemical engineering, yet both went on to successful careers in finance and have semi-retired while in their 40s. Although their career paths might seem unlikely, both say their success was logical given the academic rigor and work ethic instilled at MSU. After graduating, each took a job with Chevron, where both say they realized that MSU had prepared them to compete with anyone. After earning MBAs, they entered careers in finance and rose to high tiers at some of the country’s leading financial institutions. In semi-retirement Lies and Pulfrey have spent time giving back to MSU and both say it is gratifying to see the resulting rewards. Read the article at http://www.montana.edu/cpa/news/nwview.php?article=7795
Student-centered campus

Tawny Hoyt, a senior in industrial engineering, won an award for the best student technical paper at the Institute of Industrial Engineers’ Western Regional Conference. The recognition comes with $500 and an invitation to enter her paper in the national competition, to be held in Cancun, Mexico, in June.

Graduating seniors continue to surpass peers in FE Exam. In October 2009, College of Engineering graduating seniors once again outperformed all of their peer groups nationwide on the Fundamentals of Engineering (FE) exam. The eight-hour exam is the first step toward acquiring a professional license. COE seniors across all engineering disciplines achieved a pass rate of 89%, while the aggregate national pass rate was 74%. MSU COE is among the 10% of engineering programs that require all graduating seniors to take the exam.

Computer science graduating seniors outperform their peers. In spring 2009, MSU’s Computer Science students achieved a median score of 157 on the Major Field Test in Computer Science, compared to the national median of 148 in the same session. CS graduates are required to take the exam, which is used to measure student academic achievement in their major.

Opportunities for hands-on, active learning

Engineers Without Borders at MSU bring potable water to families and school children in Kwisero, Kenya. In the past four years, EWB-MSU has installed six deep water wells, five composting latrines, and one biogas latrine. In Dec. 2009, a group traveled to Kwisero to prepare for construction of a mile-long water distribution pipeline. If, during the early part of 2010, the community makes preparations for the pipeline, it might be laid in summer 2010. These plans represent a major step forward in terms of scale and complexity of installations in which EWB-MSU is involved.

More than 30 projects were on display at MSU’s Fall 2009 Engineering Design Fair. During fall and spring semesters, undergraduates from throughout the College showcase their projects at a design fair. Students learn valuable lessons about working in teams on a complicated problem. The displays at the Fall 2009 Design Fair represented the work of more than 120 engineering students. Projects ranged from a computer system for NASA’s “Robotic Lunar Regolith Excavator” to an easy-to-use, accessible hand pump for water wells maintained by the U.S. Forest Service.

Leading research

Brent Peyton, chemical and biological engineering, leads multidisciplinary team investigating fungus as a source of biodiesel. A multi-disciplinary research team at MSU received a four-year, $2 million grant from the National Science Foundation to study the feasibility of producing biofuel from wood chips using a fungus discovered in South America. In 2008, Gary Strobel, plant sciences professor, and other researchers announced the existence of the fungus, which naturally produces gases containing many hydrocarbon compounds found in petroleum-based diesel fuel. Ross Carlson, chemical and biological engineering, will create a computer model of the fungus’s metabolism to predict what growth conditions will cause the fungus to produce the most hydrocarbons. His predictions will be tested in the laboratory, and the lab results will be analyzed at Yale. Read the article at http://www.montana.edu/cpa/news/nwview.php?article=7872

WTI houses one of the country’s largest driving simulators. The Western Transportation Institute at Montana State University is home to one of the largest and most sophisticated motion-based driving simulators in the United States. The $915,000 simulator pairs a surround sound system with real vehicle bodies mounted on a motion platform and surrounded by a 240-degree arc of projector screens. The simulator gives WTI the ability to approximate existing places, including Montana’s problematic roadways, such as Highway 191 between Interstate 90 and West Yellowstone. As the simulated environment more closely approximates realistic conditions, researchers can be more confident that they are collecting valid behavioral data, especially those related to complex research questions. The data are important because car crashes are the chief cause of fatal injuries in rural areas and because testing systems prior to construction can help save money on road designs and infrastructure upgrades. Funding for the simulator came from a variety of federal and private sources.

Service & outreach

The College of Engineering was awarded $312,000 by the Toyota USA Foundation to support Teaching Engineering Applications in Math and Science (TEAMS), an innovative program developed to enhance teaching of K-12 math and science in and around Montana’s Native American communities. Read the article at http://www.montana.edu/cpa/news/nwview.php?article=6046
FIRST robotics tournaments inspire young students.
Montana State University hosted 12 high school teams and 38 middle school teams from Montana, Utah, and Wyoming for FIRST Robotic tournaments in 2010. Robots inspire young students. When compared to their peers who haven’t participated in FIRST activities, FIRST students are: More than three times as likely to major specifically in engineering, roughly 10 times as likely to have had an apprenticeship, internship, or co-op job in their freshman year; significantly more likely to expect to achieve a post graduate degree; more than twice as likely to expect to pursue a career in science and technology; nearly four times as likely to expect to pursue a career specifically in engineering; more than twice as likely to volunteer in their communities. Read the article at http://www.montana.edu/cpa/news/nwview.php?article=6745

MMEC and UTAP design a harmonious, functional space for two growing firms under one roof. Plastic Design and Manufacturing (PDM) turned to Montana Manufacturing Extension Center (MMEC) for expertise in laying out a well-designed space that could be shared with Quake Industries. PDM and Quake are not competitors but share similar needs such as flow of materials, environmental conditions and utility configurations for running molding machines, cranes for lifting heavy molds for installation on injection machines, shipping and receiving. According to PDM President Mike Groff, “Conservatively, I expect a 10-20 percent benefit to my bottom line from the plant layout assistance enabling me to attract new business.” Read the article at http://www.mtmanufacturingcenter.com/Newsletters/index.htm#ff