



Volume 3, Number 7, February, 2007

Welcome to Ahoya! Engineers – Marquette University’s College of Engineering e-newsletter for alumni, students and their families, faculty, staff and MU friends. We want you to know what’s happening in *your* College of Engineering. This newsletter will be published periodically to share our accomplishments, milestones and activities.

Please Note: If this e-Newsletter was forwarded to you by fellow alumni and you want to receive future editions *directly*, signing up is fast and easy. Click this link [Subscribe](#), provide your name and e-mail address, and submit your subscription.

Be sure to visit the College Web site at <http://www.marquette.edu/engineering> for complete information on your College.

Marquette Alums Establish Endowed Chair. First, we told you about the \$25 million gift we received last December from an anonymous alumnus and his wife to “help transform” your College of Engineering.

Next, it was announced that Marquette’s Board of Trustees had approved your College to begin offering a new undergraduate degree program in ***Construction Engineering Management*** in the 2008-09 school year.

NOW, we are very pleased to announce that a Marquette alumni couple has established an endowed chair for this newest approved program!

At a special reception held in your College of Engineering on January 30th, it was announced that Jim and Kelly McShane, 1968 graduates of the College of Engineering and College of Arts and Sciences, respectively, are the donors of a \$5 million chair in Construction Engineering Management. Jim McShane is a registered Professional Engineer who leads The McShane Companies, a diversified organization comprised of various real estate and development companies headquartered in Rosemont, Illinois. The firm has expanded significantly over the past ten years establishing operations in offices in Atlanta, Austin, Dallas, Houston, Phoenix and Los Angeles.

Jim began his career at Minneapolis-based Opus Corporation and led that firm's expansion into Milwaukee and Chicago. In 1984, he pursued the establishment of his own company, McShane Construction Corporation, and has since formed McShane Corporation, Cadence McShane Corporation and most recently, McShane Medical Properties.

"Kelly and I have always valued our education at Marquette University and we want to give back to the school and benefit the next generation of students. Our business demonstrates the need for highly skilled engineers, especially with construction management expertise. We hope that our gift will ensure that Marquette engineering students help fill this need." said McShane.

"This gift provides continued momentum for our College of Engineering as we seek to improve the way our students are educated," **Father Robert Wild, S.J.** said at the formal announcement of the gift. "We recognize that tomorrow's engineers will require skills beyond the technical training demanded by their profession. Our goal is that Marquette graduates will be excellent engineers committed to ethical values with strong business, leadership, and communication skills."

Dr. Michael Switzenbaum, Chair of the Department of Civil and Environmental Engineering, praised McShane's "visionary leadership" and support, not only monetarily but in sharing his time and expertise. "Jim McShane exemplifies what we call our graduates to be – a person for others," Switzenbaum said. "In addition to building a company known for its excellence in project management, he is a leader in serving his community, profession, and alma mater."

Jim McShane serves on the College of Engineering's National Advisory Board and is a member of The 1881 Society of Marquette University President's Council. He received the Professional Achievement Award from the College of Engineering in 2003 and is also a recipient of the Don T. McNeill Spirit Award from the Marquette Club of Chicago. Jim serves as the 2005/2007 President of the Chicago Building Congress and is a member of the Board of Directors for the Builders Association Foundation providing educational scholarships to colleges and universities throughout the Chicago area. He is also Chairman of the Planning Commission for the Village of Bannockburn, Illinois.

Dr. Stan Jaskolski, Opus Dean, plans to begin a search immediately for an "exceptional individual" to hold the McShane Chair in Construction Engineering Management. "This wonderful gift ensures that we have the ability to attract and retain an individual of vision with both practical experience and academic expertise," he said.

The McShane Chair is the third \$5 million endowment for your College in the past four years. In May 2006 Robert C. Greenheck, chairman of the board of the Greenheck Fan Corporation, America's leading manufacturer of ventilation equipment, endowed the Greenheck Chair in

Engineering Design. The chair will emphasize the importance of design and problem-solving activities throughout the college's four-year curriculum.

Opus Corporation, which provides architectural, construction and real estate development services in 40 markets nationwide, previously endowed the chair held by Dean Jaskolski.

COE is gaining momentum as it continues to raise funds for four additional faculty endowed chairs, \$32 million in endowed scholarships, as well as completion of a Discovery Learning Complex with state-of-the-art facilities and equipment. Please help us to keep this momentum going so we can truly offer our students a transformational education in engineering!

Lead picture: From left to right: OPUS Dean Stan Jaskolski, Dr. Michael Switzenbaum, Fr. Robert F. Wild, S.J., Kelly McShane and Jim McShane



Engineering Open House 2007. Once again, COE is gearing up for our annual event to showcase our students, faculty, programs and laboratories, so consider this your personal invitation to come back to campus and enjoy ***Marquette's Engineering Open House 2007!***

Doors open promptly at ***10:30 AM on Saturday, February 24th*** when you'll have an opportunity to learn about and observe magnetic levitation, microcontrollers for medical instrumentation, musculoskeletal modeling, traffic simulation, structural engineering, mechatronics, wind tunnel experiments, the SAE race car, and much more.

Students and faculty will be on hand to informally explain our degree programs and answer any and all questions you may have about Marquette, campus life, and of course, the study of engineering. So bring your children, grandchildren, nephews, nieces, friends and neighbors and join us for a fun and enlightening experience. Plan on getting here early to take everything in (Open House ends at 1:00 PM) and have lunch on us!

An Early Start To The Day. Prior to the Open House, accepted Engineering freshman students for the 2007-08 academic year have been invited to take your College's annual test in math and science to compete for scholarship dollars for their Marquette education. After participating in the Engineering Student Council sponsored Casino Night on Friday evening, they will wake up early on Saturday for the 9:00 AM start of the Scholarship Competition and then conclude their campus visit with the Open House event.

If you know of an accepted applicant who hasn't received information about this important scholarship test, please contact ***Dr. Jon Jensen***, Associate Dean for Enrollment Management at [***jon.jensen@marquette.edu***](mailto:jon.jensen@marquette.edu).



Engineering Alum Returns To Teach. *Dr. John LaDisa* joined your Department of Biomedical Engineering as Assistant Professor beginning this spring semester. After receiving his undergraduate degree from Engineering in 2000, Dr. LaDisa went on to complete a Master's degree and a Ph.D. at Marquette, in conjunction with the Department of Anesthesiology at the Medical College of Wisconsin.

John explains that he was “fortunate that a group of researchers at Stanford University was familiar with his doctoral work” and offered him a position as a Postdoctoral Scholar in the Department of Pediatrics and the Stanford University Cardiovascular Biomechanics Lab, where he stayed for 2 ½ years. He also notes that his Co-op experience with Boston Scientific Corporation as an undergrad “really set the stage and motivated much of what my colleagues and I have been able to accomplish in my area of research.” (Editor's note: Now, that's what a Co-op Director likes to hear!).

Dr. LaDisa is currently teaching BIEN 183: Cardiopulmonary Mechanics to your students. The goals of the class are aligned with his areas of research, which lie in the investigation of cardiovascular disease from a hemodynamic, biomechanical, and cellular perspective. He is particularly interested in applying bioengineering techniques for the comprehension, management, and prevention of clinical problems within this area including congenital and acquired cardiovascular disease, cardiac dysfunction, diabetes, and stroke.

John grew up in the Milwaukee suburb of Franklin, and is engaged to be married to Anne Graff next September; Anne is a clinical pharmacist at Aurora Sinai Medical Center. When not teaching, researching, and helping to plan his wedding, he enjoys playing the guitar, mountain biking, and boating.

Welcome home to both Milwaukee and Marquette, John, and we especially welcome you back to our Engineering family!



Dr. John LaDisa



Fulbright Leads To New Developments In Microsensors. Receiving a Fulbright grant to conduct his research in France gave *Dr. Stephen Heinrich*, Professor in the Department of Civil & Environmental Engineering, the opportunity to work in a well-known European laboratory and give international exposure to your College.

Dr. Heinrich received a grant from the Fulbright Scholar Program/Council for International Exchange of Scholars for his research, “Dynamic Modeling of Lateral-mode Microcantilever Sensors in General Fluid Environments,” returning from his five-month stay last December.

“In civil engineering, the types of structures that we usually deal with are large structures, like buildings and bridges,” states Heinrich. “However, I’m a little unusual in that I tend to work on very tiny structures – structures you might find in microelectronics applications.”

His research is on small sensors based on very tiny, vibrating beams on a silicon chip. These finger-like beams can be excited by the circuitry on the chip, causing them to vibrate. A selective coating on the beam absorbs particular substances, allowing the device to “detect” chemicals or biological substances.

“To detect a particular toxin in the environment, the coating will be designed to absorb only that particular molecule,” explains Dr. Heinrich. “If present, the substance is absorbed by the coating, increasing the mass of the beam. When the mass increases, the frequency at which the beam wants to naturally vibrate changes. By electronically monitoring the change in vibrational frequency, we can determine how much of that substance is in the environment.”

Heinrich worked with Dr. Isabelle Dufour, two graduate students at the University of Bordeaux 1 and one master’s student at Marquette on a new theoretical model that incorporates arbitrary coating thicknesses and material properties for the tiny beams. Dr. Heinrich believes these types of sensors could be very useful in medical diagnostics and they could be used to detect a specific pathogen in a sample of blood or trace amounts of explosives at airports, or to monitor air and water quality.

Dr. Heinrich’s sabbatical culminated in a presentation to faculty and students at the University of Bordeaux 1, which he was able to deliver in French – a goal of his when he began his Fulbright experience. Another goal was to assimilate into the French culture as much as possible. Describing himself as a novice jazz trumpet player, he took some trumpet lessons with a jazz artist there and ended up playing at a club a couple of nights. “That and my technical presentation in French were two of the highlights I enjoyed the most,” comments Dr. Heinrich.

(Reprinted from *Marquette Matters*, the monthly newsletter for faculty and staff)



On The Road.... Your student chapter of ***Engineers Without Borders*** reports that they had two successful trips during semester break: one down South for Hurricane Katrina recovery and another site assessment trip to Guatemala (which was featured on a local Milwaukee TV station). Up next, two implementation trips to Guatemala – one in March for solar powered water systems and one next May. We’ll keep you posted!

Dr. ***William Brower***, Professor in the Department of Mechanical Engineering, recently traveled to China to present a seminar entitled, “Application of Metastable Glasses in Metallic, Ceramic, and Water Based Systems.” This trip was a result of the Beijing Institute of Technology (BIT) educators visit to Marquette last December. Future collaborations between Dr. Brower and BIT

faculty are now being discussed. While in China, he also visited his son, William, who is teaching English at Henan Normal University.



Student Awards. Marquette's Educational Opportunity Program has informed your College that ***DeAngelo Trotter***, a McNair Scholar who worked on a research project last summer with ***Dr. Shrinivas Joshi***, Professor in the Department of Electrical & Computer Engineering, has been invited to present his research abstract at the National Conference on Undergraduate Research at Dominican University of California next April. Dr. Joshi, who EOP thanked for his support and guidance to DeAngelo, will be assisting him in the preparation of this prestigious technical presentation.

The Graef, Anhalt, Schloemer Foundation Inc. has awarded a \$2500 scholarship to ***Jennifer Krahn***. Jenny, a sophomore Environmental Engineering student from Seymour, Wisconsin, will be starting a Co-op position next summer with Opus North Corporation in Milwaukee. Congratulations, Jenny and thank you to the GAS Foundation! It's scholarships like this that help our students pay for their college expenses and reduce their debt load.



Jenny Krahn



Celebrating EWeek! National Engineers Week (EWeek) begins on February 18th and your College is partnering with Discovery World at Pier Wisconsin to offer activities for the public at two locations for "A Celebration of Engineering and Innovation."

Let's start with ***Marquette Engineering*** activities that are free and open to the public (please go to the 1st floor lobby of Haggerty Engineering Building for room locations):

Tuesday, February 20th, 6:00 to 8:00 PM: MU Engineering Challenge

Short, intense engineering contests between student engineering groups/societies

Wednesday, February 21st, 7:00 to 8:30 PM: The Age of Innovation

Presentation about engineering and economic challenges in the 21st Century followed by the video “Top Ten Science Discoveries of All Time” hosted by Bill Nye

Friday, February 23rd, 4:00 to 6:00 PM: Engineers Invent the Future

Hands-on activities that will enlighten you about the engineering process

Saturday, February 24th, 10:30 AM to 1:00 PM: Engineering Open House

Information in a previous article of this newsletter

Activities at ***Discovery World at Pier Wisconsin*** (500 N. Harbor Dr. in Milwaukee on Lake Michigan, north of the Summerfest grounds and south of the Milwaukee Art Museum):

Wednesday, February 21st, 9:00 AM to 5:00 PM: Engineering is for Everyone

Table displays promoting and explaining engineering

Thursday, February 22nd, 9:00 AM to 5:00 PM: Introduce a Girl to Engineering

Women engineers will have demonstrations, hands-on activities and information about Engineering, which is not just a “guy’s” thing!

Thursday, February 22nd, 7:00 PM to 8:30 PM: THE ROBOTS ARE COMING!

Presentation about the proliferation of robots in schools and society, followed by the video “Robosabiens” and demonstrations of educational robots used by schools

Friday, February 23rd, 9:00 AM to 5:00 PM: Engineering is for Everyone

See Wednesday’s description

Saturday, February 24th, 9:00 AM to 5:00 PM

Engineering is for Everyone

See Wednesday’s description

Family Challenge

Families challenge each other on design and building of assigned projects; no experience necessary

VEX Robotics

Drive a remote-controlled vehicle through an obstacle course

Sunday, February 25th, 9:00 AM to 5:00 PM

Same schedule as Saturday



Additional Engineering Education Outreach Programs To Be Offered. The above listed activities for EWeek are only a few of the programs and academies that your College has planned throughout this winter, spring and summer of 2007 for different age groups. For a brochure that lists all of the offerings, please call **414/288-6720** or e-mail engineering@marquette.edu.



Upcoming Department Seminars.

The ***Department of Electrical & Computer Engineering***'s colloquiums are offered on Tuesdays at 3:00 PM in Olin Engineering lecture hall #202:

Tuesday, February 20th - *Thin Film Fabrication and Characterization for Coated Conductors* by Dr. Tim Weber, Buehler, Ltd., Lake Bluff, Illinois.

Tuesday, February 27th - *TBA* by Dr. Erik Weber, GE Healthcare, Waukesha, Wisconsin.

Tuesday, March 20th: *Micro-Acoustic Devices for RF Communication and Sensor Applications* by Dr. Roy H. Olsson, Sandia National Laboratories, Advanced MEMS Department, Albuquerque, New Mexico.

The ***Department of Civil & Environmental Engineering***'s seminars are offered on Thursdays at Noon in Haggerty Engineering Building Room #494:

Thursday, February 15th - *Environmental Sustainability Efforts in Milwaukee* by Ms. Ann Beier, Director of the Mayor's Office of Environmental Sustainability.

Thursday, March 8th – *Presentation of Various Environmental Clean-Up Case Studies* by Stephen Pause, Atlantic Richfield Company.



Help Us Spread The News! We realize that we are missing *many* e-mail addresses for alumni and friends who should receive this e-newsletter, so we're asking for your help. If you received this e-newsletter directly from Marquette, it means we already have your e-mail address on our list serve. However, ***we would really appreciate it if you would forward this newsletter to your fellow-alumni friends and other friends of the College and tell them they can subscribe to the list serve to receive future editions of this e-newsletter.***

To subscribe to this newsletter: Click this link [Subscribe](#), provide your name and e-mail address, and submit your subscription. Be sure to visit the College Web site at <http://www.marquette.edu/engineering> for complete information on your College.

To unsubscribe, please send an e-mail to jessica.bulgrin@marquette.edu with the word "unsubscribe" in the subject bar.