



MECHANICAL ENGINEERING NEWS

November 5, 2009

A newsletter for the UML Mechanical Engineering community (also available online at <http://mechanical.uml.edu>)

North Campus Day

You are invited to participate in the first ever “North Campus Day”, November 10, from 11.00 – 3.30 pm in Cumnock Hall. Students from all majors are invited. There will be a **cookout** as well as information on athletics, career services, centers for learning, financial aid, student clubs, university honors program, housing, and study abroad. North Campus Day is sponsored by the Student Government Association.

Focus on Service-Learning Projects

Motorcycle Ambulance

A motorcycle ambulance, designed and built as part of a senior capstone design project, has been completed and tested. The project was led by Prof. John Duffy (faculty advisor) and Renzo Colosimo (ME Senior). Also working on the project were ME students Deniz Gifford, Ashbed Tashjian, and Devin Michaud. Money is being raised to ship the ambulance down to Peru for use in remote villages in the Andes. The folks in the medical clinics in Peru are quite excited about the flexibility and low cost of building and operating the ambulance in the mountains. Prof. Duffy is looking for seniors to continue with the development of the ambulance.



Zero Energy Challenge

A team of UML ME seniors assisted property owners in the City of Lowell to meet the “Getting to Zero Energy Challenge”, by helping them evaluate their housing energy needs and design alternatives for least

energy consumption. National Grid Company (NG) contributed two \$25,000 awards for the two ultimate winners. Professor Shina organized the training of 11 ME seniors in zero energy design (sponsored by NG) and communications with the City of Lowell and NG. Prof. Duffy supervised the students in a senior capstone project. Pictured below is one of the winners, the Mai family of Lowell, with Professors Duffy and Shina, and ME seniors Tim Matook and Roger Gyebi, as well as the mayor of Lowell and other officials.



World’s Largest Book

For the past three years, mechanical and electrical engineering students have been working with students from Groton-Dunstable Regional Middle School on a project to build the world’s largest book. Although it is planned that the final book will be 12 feet tall and 21 feet wide, it was decided to start with a quarter scale prototype, to demonstrate the concept of the automatic page turner. The quarter-scale prototype uses pneumatic suction nozzles to lift one sheet at a time, allowing a robotic bar to slide underneath it and slowly flip the page.

The president and advisor of the high school club (Pages for Peace) is Betsy Sawyer. She met with engineering faculty, students and alumni for the formal hand-off of the automatic page-turner. The handover occurred on Sept. 11, the eighth anniversary of the terrorist attacks, and the first officially recognized National Day of Service and Remembrance.



Dean Ting hands over the page-turner's manual to teacher Betsy Sawyer. Looking on are, from left, Linda Barrington, Jason Cook, Mike Gagnon, Kiersten Lemoine, Prof. Sammy Shina (ME) and Prof. Yan Luo (EE).

The final book will be filled with messages of hope and peace from nearly 1,000 people from all walks of life, including Nobel Laureates Jimmy Carter, Nelson Mandela, and the Dalai Lama.

Go to YouTube and search for "**Big Book: Pages for Peace Project**" to view the page-turner in action.

If you are interested in working on a Service Learning project contact Linda Barrington (SLICE coordinator) in E224, x2627.

Mechanical Engineering Barbecue

The Mechanical Engineering Department held its first Fall BBQ in Cumnock Hall recently.



Schedule Addition

Please note that a trailer section of 22.381 Fluids will be offered in the Spring semester. The course will be taught by Prof. David Willis.

You are reminded that the best place to obtain the latest class schedule (all departments) is at http://www.uml.edu/registrar/schedules/class_schedules/spring_courses.html

Upcoming ME Seminars

Everyone is invited to the upcoming ME department seminars. Pizza will be provided.

"*Nanoimprint Lithography Technology*", Chong Huang, Nanonex Inc., Nov. 5, 2009, 11:30 am, K 309 (joint seminar with the Center for Nanomanufacturing)

"*Dynamic TEM Visualization of Nanoscale Surface Oxidation of Metals and Alloys*" Guangwen Zhou, Assistant Professor of Materials, State University of New York, Dec. 3, 11:30am, Falmouth 300 (joint seminar with the Center for Nanomanufacturing)

"*Aircraft Fire and Explosion Protection –How Safe Are The Friendly Skies?*"

Dr. Albert Moussa, Blazetech Inc. Dec. 9, 11:30am, K 309.

DIG Forms

If you intend to graduate in December 2009, May 2010, or September 2010 please have your advisor fill out and sign a Declaration of Intent to Graduate form, and give it to Jackie Paradise.

Recent Publications

Professor Sammy Shina and his PhD student, Dr. Gregory Morose of TURI, published an article entitled "*Quality Evaluation of Lead-free Solders, Halogen-free Laminates, and Nanomaterial Surface Finishes for Assembly of Printed Circuit Boards*", in the Journal of Surface Mount Technology v22 i4, November 2009.

Professor Sammy Shina submitted a chapter on Design of Experiments (DoE) to be published in the second edition of the High Density Interconnections (HDI) Handbook, an e-book to be published in November 2009.

IF YOU HAVE NOT ALREADY DONE SO, PLEASE SEE YOUR ADVISOR TO PLAN YOUR SPRING SEMESTER CLASSES.