

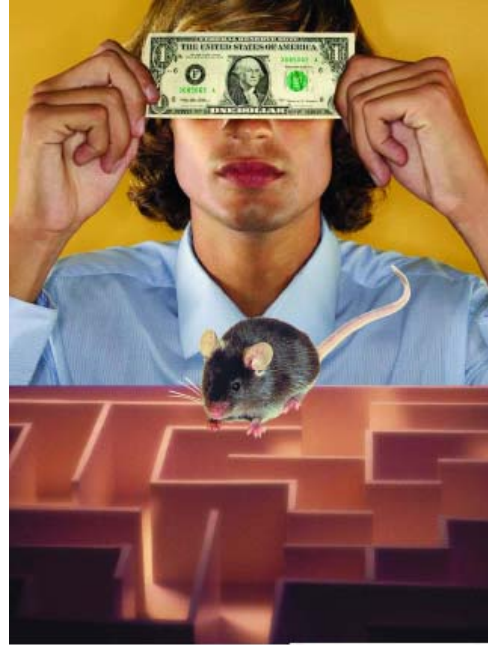


2006 IEEE Region 1 Student Conference to be held at the University of Maine!

The ECE Department will host the 2006 IEEE Region 1 Student Conference on Saturday, April 29, 2006. Region 1 includes: NH, MA, ME, RI, NJ, NY, VT, CT. This is the first time that the conference has been held in Maine. The conference is divided into two competitions.

The paper contest offers undergraduate IEEE student members opportunities to exercise and improve both written and verbal communications skills. The first place winner receives \$800, second place \$500 and third place \$200.

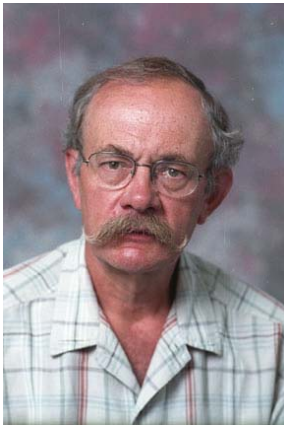
The Micro-mouse contest is a technological competition dedicated to the creation of an automatic “machine” that could autonomously explore a labyrinth, reach its center and eventually find the shortest path between the start and end. The first place winner receives \$800, second place \$500 and third place \$200. The registration deadline is March 21, 2006 and the paper submission deadline is April 1, 2006.



For more details visit www.eece.maine.edu/sc2006 or contact conference chair, Dr. Ali Abedi, Assistant Professor of Electrical and Computer Engineering at abedi@ieee.org.

Holding this event would not be possible without the generous sponsorship of the ECE Department, the College of Engineering, the Graduate School, Office of the Provost, IEEE Region One, IEEE Maine Section, IEEE Life members, Fairchild Semiconductor Company and by dedicated volunteer organizing committees including the IEEE UMaine student branch and the ECE faculty.

ECE Professor Reaches out with Sensors!



Anyone who has ever had the opportunity to work with Electrical and Computer Engineering professor John Vetelino knows that “Vet” is a man on a mission. Exceptionally focused and decidedly direct, Vet discovers a need, establishes a goal, takes aim, and fires - and it’s a rare target that escapes his carefully engineered assault. He is known around the globe as one of the leading researchers in the cutting-edge field of sensors technology.

Vet pursues a vigorous program of teaching and research, and is currently making the most of more than \$8 million in grants from the National Science Foundation (NSF). Vet's programs are bringing the country's best and brightest young engineers and scientists to UMaine.

Vetelino sees a healthy climate for engineering and science research as the best environment for economic success in the state. "When you look at the economic condition of Maine, you realize that something needs to be done," said Vet. "By making the university a rallying spot for engineers and scientists, and by educating and motivating students in middle school and high school to become engineers or scientists, we can incubate small business, strengthen the state, and reverse the so-called "brain drain" that is going on."

In addition to various other research projects Vetelino is pursuing at UMaine, he is the guiding force behind several interconnected programs funded by the NSF. Two such programs, GK-12 Sensors! and RET Sensors!, work together to inspire Maine's middle school and high school students to pursue careers in science and engineering. RET (Research Experiences for Teachers), brings secondary school teachers on campus during the summer to learn about sensors by carrying out research projects related to their own areas of interest.

Another of Vet's recently funded sensor projects, the NSF Research Experience for Undergraduates (REU) Program, brings high-achieving engineering undergrads from across the country to the University over the summer to share ideas and conduct research.

Two Engineering Students Inducted into the Senior Skull Honor Society.

For nearly 100 years, the Senior Skull Honor Society has represented some of the best University of Maine students. The top 1 percent of senior men is chosen for the prestigious society based on leadership, character, campus and community involvement, and outstanding academic achievement.

Eleven students founded the Senior Skills in 1906. Their goal was to "publicly recognize, formally reward, and continually promote outstanding leadership and scholarship, and exemplary citizenship within the University of Maine community."

In the past century, more than 1,250 UMaine men have been inducted, including 10 students who are now members of the Senior Skull Centennial Class of 2006. Two such inductees are engineering students, Roger Blanchette and Zachery Richards.



In this photo, nine members of today's Senior Skulls appear with nine of the 1906 members. Front Row: l-r: Matthew Fortin, Devon Gaudet, Kirby Davis, Second Row: Roger Blanchette, Stefan Scarks, Brandon Berce, Zachary Richards, John Deangelis, Seth Robertson



Roger Blanchette is from Saco, Maine. He is a senior majoring in Computer Engineering. Some of Roger's credits include: President of the UMaine chapter of IEEE; Teaching Assistant with the Electrical and Computer Engineering Department; Junior Leader, Boy Scouts of America; Eagle Scout, Boy Scouts of America; National Honor Society; Dean's List; Church Youth Ministry Volunteer.

Zachary Richards is from Rogue Bluffs, Maine. He is a senior majoring in Electrical Engineering. His credits include: Recipient of Top Scholar Award; UMaine Dean's list all seven semesters; selected for National Dean's list; member of Phi Kappa Phi, Tau Beta Pi, and Eta Kappa Nu honor societies; and National Science Foundation Research Experience for Undergraduates (NSF-REU) Grant recipient.



Congratulations to Roger and Zach for their outstanding academic achievement and leadership!

ECE Student Wins Innovation Award



Mitchell Wark, a senior computing engineering student, is the recipient of the UMaine 2005 J. Morris Weinberg Student Innovation Award.

The family of Dr. J. Morris Weinberg '60 established this scholarship in Dr. Weinberg's memory as a tribute to his insatiable desire to learn and to share his knowledge by mentoring those on their own creative path. The purpose of this award is to encourage the efforts and achievements of outstanding science undergraduates who undertake novel and entrepreneurial initiatives in a multidisciplinary environment.

Mitchell worked on the detection of phosmet, a commonly used pesticide used on fruits and vegetables, using a Lateral Field Excited (LFE) acoustic wave sensor. Phosmet is often found on imported produce and is especially dangerous to kids and older adults.

Mitchell was also co-author of a paper entitled, "A Lateral Field Excited Acoustic Wave Pesticide Sensor," which received the Best Paper Award at the 2005 IEEE Ultrasonics Symposium held in Rotterdam, The Netherlands, September 19-22, 2005.

Engineering Art Competition

The University of Maine's Engineering Art Club sponsored the 2nd Art by Engineers show. This show featured art work of all kinds by students, faculty and friends in the engineering community. Items were displayed at the University's new Engineering and Science Building

throughout the month of February and closing award ceremonies were held on Wednesday, March 1. At last year's show, close to 50 paintings, drawings, photos and sculptures were on display and \$1000.00 in cash prizes was given away to the student winners.



We Need Your Help

ABET Survey

We need your help in evaluating our program in order to make ongoing improvements. We ask for a few minutes of your time to fill out the on-line alumni survey form at:

<http://www.eece.maine.edu/survey/alumni/>

As you are aware, The University of Maine Department of Electrical and Computer Engineering is fully accredited by ABET. All accredited programs must go through an accreditation process on a rotational basis. Our last ABET visit was six years ago. We will be undergoing an ABET accreditation this year. We are required to have an assessment program documenting that our graduates are “adequately prepared to enter and continue the practice of engineering.” We also must show that we are listening to our graduates, and implementing continuous improvement processes based upon that feedback.

By taking a few minutes to complete our survey, you will help us with the information we need to assess our programs. We need your honest assessment of your UMaine Engineering degree and the preparation you received to practice engineering.

Again, thank you for taking the time to help us to maintain and strengthen the tradition of excellence associated with UMaine Electrical and Computer Engineering.

Annual Appeal

Over the last two years, about 30% of the Electrical and Computer Engineering (ECE) Department operational budget has come from our alumni contribution. You support helped us develop two new laboratories, upgrade one of the most important facilities in the ECE Department, and give the gift of education to 43 students through scholarships. Please visit our site below for a complete list of your contribution and its impact on our department

www.eece.maine.edu/alumni/support/alumnisupport05.pdf

Our annual appeal will go out in a couple of days. When you receive the letter, would you please take a few minutes of your time to help your alma mater by sending your gift and allocating it to the Electrical and Computer Engineering Department?

Ask what your UMaine education means to you and how you can help the next generation of UMaine graduates with your gift. Your gift can make a tremendous difference in the education, career, and life of young people. We will permanently place a placard in our department acknowledging each gift of \$1,000 or more. A gift of \$75,000 would allow us to endow a department laboratory in the donor's name and ensure that the lab is upgraded for the generations to come.

You can also make your check payable to the Electrical and Computer Engineering Department and send it to:

Electrical and Computer Engineering Department
University of Maine
5708 Barrows Hall
Orono, ME 04469

Gifts/Donations

With a gift of \$10,000 from Mr. Bill Lambert, whose story appeared in the December 2005 Newsletter, the "Lambert Family Scholarship" was established in the ECE Department.

Grants Received

Y. Zhu, "An Undergraduate Student Team for (IEEE) International Competition," Center for Teaching Excellence (CTE), \$750, January 23.

M. da Cunha, (50%) and **R. Lad** (50%), "Microwave Acoustic Sensors for Condition Based Maintenance in Harsh Environment," Air Force Research Lab, \$75,000, January 27.

L. Connell (60%), **R. Smith** (40%), "Targeted Proposal: Rapid HAB Detection Instrument Development and Deployment," MERHAB, \$391,858, October 30.

J. Vetelino (75%), R. Lad (25%), “Development of Chalcogenide Glass Semiconductor Thin Film Gas Sensor,” CRDF, \$18,600, December 12.

Publications

Peer Reviewed Journals

Y. Zhu, H. Jiang, D. Swanson, and X. Qin (2004), “A Case Study of Parallel I/O for Biological Sequence Search on Linux Clusters,” *Int. J. High Performance Computing and Networking*, Vol. 1, No. 4, pp. 214-222 (2004) January 2006 issue.

T. Pollard, T. Kenny, **J. Vetelino** and **M. da Cunha**, “Pure SH-SAW Propagation, Transduction and Measurements on KNbO₃,” *IEEE Transactions on Ultrasonics and Frequency Control*, Vol. 53, No. 1, pp. 199-208, January 2006.

E. Berkenpas, P. Millard and **M. da Cunha**, “Detection of *Escherichia coli* 0157:H7 with Langasite Pure Shear Horizontal Surface Acoustic Wave Sensors,” *J. Biosensors and Bioelectronics*, pp. 1889-1897, December 2005.

Peer Reviewed Conference

P. Gu, **Y. Zhu**, H. Jiang, J. Wang, “Nexus: A Novel Weighted-Graph-Based Prefetching Algorithm for Metadata Servers in Petabyte-Scale Storage Systems,” accepted by International Symposium on Cluster Computing and the Grid (CCGrid, 2006), Singapore, May 16-19, 2006. (Acceptance rate: 61/257, 25.7%).

Y. Zhu and H. Jiang, “RACE: A Robust Adaptive Caching Strategy for Buffer Cache,” accepted to the Fourth Workshop on Memory Performance Issues held in conjunction with the 12th International Symposium on High Performance Computer Architecture (HPCA), Feb. 2006.

A. Abedi and A.K. Khandani, “A New Method for Performance Evaluation of Bit Decoding Algorithms Using Statistics of the Log Likelihood Ratio,” accepted for presentation at the 4th International Symposium on Turbocodes, April 2006, Munich, Germany.

Other

Since December the faculty have submitted six proposals for a total of about \$4,610,000.