

**Nano R&D Receives $4 M in Federal Funds**

*Sensors Under Development Will Protect Soldiers*

Nano sensors that UMass Lowell researchers are developing will be the proverbial canary in the coalmine for U.S. soldiers, says Chancellor Marty Meehan. They will determine whether an area is free of biological or chemical substances so no one risks his or her life entering it.

Nanomanufacturing research and development at UMass Lowell received a huge vote of confidence—and a major financial boost—in December when President Barack Obama signed a defense bill that included a $4 million appropriation to the University for the work.

UMass Lowell has now received a total of $8.6 million in congressionally directed funding for the research project since its inception in 2007.

“We could not continue this work without the critical support of Senators John Kerry and Paul Kirk and Representative Niki Tsongas,” notes Meehan.

In addition to the development of threat-detecting sensors, the University's research team is also developing methods to detect structural damage in vehicles like helicopters, a technology that can provide significant cost savings to the military. Rather than replace helicopter rotors on a scheduled basis, as is often the practice, the monitors would detect when structural damage begins and replacement should occur.

UMass Lowell partners closely with the Army Research Laboratory in Hyattsville, Md., and the U.S. Army Natick Labs on the sensor and health monitoring work.

“They recently were briefed on our R&D by nine members of our faculty, and we came away with a better sense of how to meet the Army's needs,” says Prof. Joey Mead, who directs the University's federally funded nanomanufacturing research team. “It's a partnership that works.”

Nanomanufacturing research and development at the University is helping to ensure that nano-based products can be made in mass quantities, thus spurring manufacturing job growth. It offers promise for medical and environmental breakthroughs as well as defense and safety applications.

Nano products are likely to fuel the next economic boom. Existing products can be made more useful, cost-effective and durable through incorporation of nano elements. Entirely new nano products, as yet undreamed of, will revolutionize many aspects of our lives. And UMass Lowell continues to be a world leader in the technologies that make a difference.

**Learn more about nanomanufacturing at UMass Lowell at www.uml.edu/nano**
Robotic Arms Help People with Disabilities

University Robotics Lab Develops Devices to Grasp, Manipulate Objects

Opening and closing doors, picking up the phone or drinking a cup of coffee are activities that people often take for granted. But for individuals with physical disabilities or cognitive impairments, these can be daunting tasks.

Two prototype systems being developed at UMass Lowell’s Robotics Lab may lend a helping hand.

The first system, a low-cost compact unit called DORA (Door Opening Robot Arm), is mounted on a motorized wheelchair and has a special gripper to unlatch a variety of doorknobs and handles. It is the brainchild of Erin Rapacki, who graduated from UMass Lowell in 2009 with a master’s degree in mechanical engineering.

“The gripper is what I consider the new and innovative part of DORA,” says Rapacki. “It uses only a single motor to turn a knob or handle clockwise or counterclockwise.” Her project was funded through a National Science Foundation (NSF) CAREER grant awarded to Computer Science Prof. Holly Yanco, the lab’s director.

The second system, named Halo, was designed by computer science doctoral candidate Katherine Tsui. It uses a commercially made Manus ARM from Exact Dynamics to help people pick up objects from the floor or a shelf.

“The current menu-driven control system for the Manus ARM is difficult to learn and remember, especially for people with cognitive impairments,” says Tsui. “Our goal is to simplify the control using a vision-based interface, which offers a greater level of autonomy and requires less user input.”

Halo uses tiny stereo cameras mounted over the arm and on the gripper to display the desired object on a flat-screen monitor. The operator simply touches the screen (or uses a joystick) to select the object and the arm uses its gripper to retrieve the object and bring it to the operator.

The project is funded through a three-year, nearly $168,000 NSF grant awarded to Yanco. The algorithm for controlling the gripper and for recognizing various objects was developed in collaboration with Asst. Prof. Aman Behal of the University of Central Florida and his team.

To view videos of DORA and Halo go to umasslowell.edu/DORA and umasslowell.edu/halo

Reports From Ghana

Ten nursing seniors traveled to Ghana, Africa during winter break with Asst. Prof. Valerie King to provide care, medical supplies and education to people in the Kpando district. The Nursing Students Without Borders group brought supplies, including first aid equipment, medication, vitamins, surgical gloves, needle syringes and iron-enriched baby formula as well as soap, shampoo and other hygiene products. Nursing Students Without Borders was the brainchild of Brianna Norton, who established the group in 2008 while in her junior year of the nursing program. The first group of students visited Ghana in January 2009, educating HIV patients about nutrition, health and medication regiments.

Check out their amazing blogs from Ghana at: http://blog.uml.edu/NSWB and http://blog.uml.edu/NSWB/students

Kay Doyle Wins UMass President’s Public Service Award

Professor Recognized for Years of Advancing Clinical Lab Sciences

Prof. Kay Doyle grew up in a time when many women didn’t pursue careers in the sciences. But from an early age, Doyle was intrigued by science. It answered her many questions about how the world works. More importantly, it helped her find ways to make the world a better place.

Recently, Doyle was recognized by University of Massachusetts President Jack Wilson for providing exemplary public service to the Commonwealth through her teaching, research and outreach in clinical lab sciences. She was one of five recipients of this year's UMass President's Public Service award.

“I am humbled and honored to receive this public service award from the President’s Office,” says Doyle, who is chair of the Clinical Laboratory and Nutritional Sciences Department at UMass Lowell. “My work in a public university is important to my life as an educator and member of this community, where I can make a difference in the lives of students who appreciate the value of an education and the opportunities it brings.”

“Kay Doyle has enormous compassion for and dedication to her community and her students who study science and health,” said Chancellor Marty Meehan. “She is a true leader and model for others in her roles as educator, UMass Lowell department chair and community advocate.”

As a scientist and global leader within the American Society for Clinical Pathology (ASPC), Doyle participates in the certification of medical laboratory professionals in this country.

Doyle has been part of an international effort to extend the ASPC’s standards of excellence for laboratory medicine to South Korea, Panama, Philippines, Hong Kong, Japan and Guyana, with many more to come.

Doyle has taught at UMass Lowell since 1981. She and her husband attended UMass Amherst, as did their two daughters. She earned her master’s degree and Ph.D. at UMass Lowell, then called the University of Lowell.

Computer Science doctoral candidate Katherine Tsui demonstrates “Halo,” a prototype robotic arm that she has designed to help people with physical disabilities reach for objects on the floor or a shelf.
UMass Baseball Coach Inducted into Hall of Fame

Jim Stone Honored in Dallas for Coaching Achievements

Former UMass Lowell baseball coach Jim Stone was inducted into the American Baseball Coaches Association (ABCA) Hall of Fame earlier this month in Dallas.

Stone is one of four members of ABCA’s Class of 2010, joining Mike Gillispie (Cal-Irvine), Bob Milano (Cal-Berkeley) and Terry Ayers (Fenton High School, Illinois).

At UMass Lowell, Stone compiled an 801-393-7 record in 37 seasons. He was inducted into the UMass Lowell Athletic Hall of Fame in November 2003 after his final season with the River Hawks.

Stone led UMass Lowell to the Northeast Regional Championship and Division II World Series in 2001 and 2002.

He was named the New England Intercollegiate Baseball Association (NEIBA) Division I Coach of the Year nine times and the ABCA Northeast Region Coach of the Year five times. He was also named New England Collegiate Conference Coach of the Year six times and the Northeast-10 Conference Coach of the Year in 2003. Stone led UMass Lowell to the Northeast Regional Championship and Division II World Series in 2001 and 2002.

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One of Stone’s biggest accomplishments came in 1991 when he was named the recipient of the Jack Butterfield Award by the members of NEIBA.


A native of Easthampton, Mass., Stone and his wife, Pat, have three children and six grandchildren. They now reside in North Fort Myers, Fl.

Workplace Learning Gives Students a Valuable Edge

New Federal Money to Bolster Co-op Education at UMass Lowell

More UMass Lowell students will receive on-the-job learning, thanks to a recent federal appropriation to the University of $200,000, aimed at strengthening undergraduate and graduate co-op education.

Cooperative education—also known as experiential learning—is a successful hallmark of many UMass Lowell academic programs. It provides students with multiple, real-world paid work experiences in which they can apply their classroom knowledge, learn new technical and career skills, such as teamwork and project leadership, and earn academic credit. Co-op jobs also give students a competitive edge in the job market.

A new program has been piloted that adds several important features to the co-op experience. The new features include a preparatory one-credit professional development seminar, increased communication and on-site visits with the student and supervisor during the co-op employment period.

After the co-op has concluded, students take a formal assessment course in which they summarize their progress through written work, presentations and seminars. Academic credit for the co-op is assigned after the successful completion of this course.

With the new federal funding, the co-op education will be integrated into a broader range of academic disciplines, providing more students with the opportunity to learn both in the classroom and the workplace.

For all UMass Lowell news go to www.uml.edu/news

Tap Into the Power of Network UMass

Join the UMass Lowell Alumni Online Community to network with other alumni, learn about upcoming events and discover what’s happening on campus. Visit www.uml.edu/alumni.

Reading Day a Slam Dunk When River Hawks Visit Lincoln School

Members of the UMass Lowell basketball teams and students at the Lincoln School in Lowell are all smiles on Read for 2010 Day in early January. The men’s and women’s b-ball squads visited the elementary school to discuss their favorite books, to share how reading helped them get into college and to explain why being a good reader helps in many aspects of life. After promising to keep up their good reading habits, the students of the Lincoln School were given vouchers to a River Hawks basketball double-header to cheer on their new friends. “It is really nice to be involved in our local community,” said senior co-captain Jen Valente (Prospect, Conn.). “To help out at the Lincoln School today wasn’t just a great experience for the kids, but for us, too.”
Distinguished Musicians Bring Exquisite Sounds to Lowell—In Free New Series

“Music on the Merrimack” Offers Jazz, Chamber and Classical Music to the Community

Ladies and Gentlemen: Appearing over the next three months in Lowell will be some of the best regional and national musicians, bringing you jazz, chamber and classical music—all free of charge!

How is this possible?

Because UMass Lowell has launched the Music on the Merrimack Concert Series, the brainchild of Bonnie Anderson, a visiting lecturer and performance coordinator at the University.

“I have chosen musicians who are at the heights of their careers both as performers and as teachers,” says Anderson, who remembers taking flute and piano lessons at UMass Lowell when she was a middle school student in her native Westford. Anderson is also a classical pianist who will perform with trumpeter Joseph Foley on Feb. 18 and pianist Donna Gross Javel on March 4.

The concept behind Music on the Merrimack is to take the standard music master class, expand on it and add a public performance feature. In master classes, music students play their instrument of choice—piano, trumpet or violin, for example—and the master teacher listens, then critiques.

In this series, the masters—some of them UMass Lowell faculty members, others guest artists—will start the class with a short performance of their own, followed by remarks and a question and answer session.

“I wanted to offer students a more dynamic master class,” explains Anderson. “Students will be able to interact with great artists, ask questions and play for them. It’s great exposure for them.”

And in another twist, community members may attend the sessions, held from 1 to 2:45 p.m. at the University. At 7:30 p.m. on the day of the class, the musicians perform, free, for students and the public alike at Durgin Hall. (See box for the schedule of classes and concerts.) Audience members can meet the artists at receptions following the concerts.

Concert-goers will hear distinguished musicians in this series, says Anderson, noting that many music faculty members at the University perform with the Boston Symphony, the Boston Ballet Orchestra, the Handel and Haydn Society, the Boston Philharmonic and other major groups in Boston. The guest performers are also dynamic musicians who perform around the world.

Anderson, a classical pianist, teaches applied piano and opera workshop among other courses and has been at the University for 10 years. She hopes to continue expand the series in future years with new features such as a residency.

Music on the Merrimack Concert Series Schedule

All concerts start at 7:30 p.m. in Durgin Hall, 35 Wilder Street, Lowell. Master classes are held the same day in Durgin Hall from 1 to 2:45 p.m. Concerts and Classes are free and open to the public.

Feb. 4
An Evening of Jazz: John Wheatley on guitar with guests Billy Novick on saxophone and clarinet and Dave Clark on double bass.

Feb. 18
An Evening of Music for Trumpet and Piano: Joseph Foley, trumpet and Bonnie Anderson, piano.

Feb. 25
An Evening of New Music for Strings: UMass Lowell new string faculty Mark Berger, viola; Aristides Rivas, cello; and Carolyn Davis Fryer, double bass perform with Ketty Nez, guest composer and pianist.

March 4

April 1
The Borromeo String Quartet

April 22
An Evening of delightful Chamber Music: Melissa Mielen, flute and Nancy Dimock, oboe.

For all UMass Lowell news go to www.uml.edu/news