

# UML Shuttle

A PUBLICATION OF THE UNIVERSITY OF MASSACHUSETTS LOWELL

## MTTC Grant Awarded to Ryan, Golomb

### Enhanced Recovery Method Will Squeeze Oil From Deposits

**E**xperienced some sticker shock at the pump, have you? Anxious about the winter ahead and the cost of heat?

Worldwide, the demand for oil continues to rise. At the same time, production is starting to wane and the search is on for new technologies that can retrieve more of the oil from known deposits.

A new UMass Lowell invention for enhanced oil recovery shows promise in meeting this critical need. The Massachusetts Technology Transfer Center (MTTC) awarded a \$25,000 grant to Chemistry Prof. David Ryan and Prof. Emeritus Dan Golomb of the Department of Environmental, Earth and Atmospheric Sciences, to pursue commercialization of their technology. The researchers have also submitted a patent application.

Most people think of oil as sitting in a puddle somewhere underground—"a common misconception," says Golomb—but usually it's dispersed in sand, sandstone, or limestone layers because of the way it was

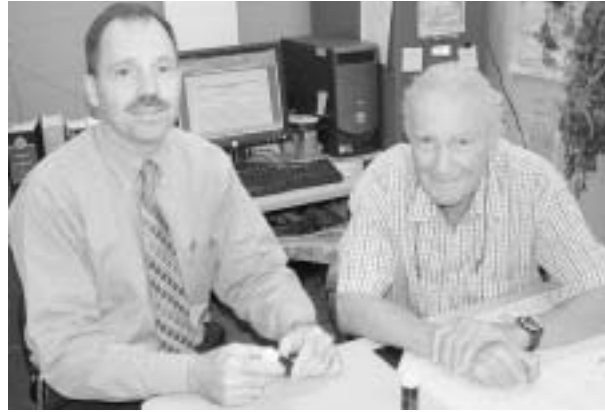
formed. Only 20-30 percent of crude oil can be pumped out of the sand through simple drilling, known as primary recovery.

Secondary recovery, injecting water under pressure, yields another 10-20 percent. Tertiary recovery involves using liquid carbon dioxide under pressure; this acts as a solvent, reducing the oil's viscosity and allowing a little more recovery. Nearly 2 percent of U.S. oil production is tertiary, but the liquid CO<sub>2</sub> is itself somewhat unstable.

Ryan and Golomb's innovation is to combine water and carbon dioxide, substances that don't normally mix, through emulsification. The new emulsion is stable and effective—in lab conditions the method retrieves up to 60 percent of the total oil in a deposit, much better than current methods.

"You can't ever retrieve 100 percent," says Golomb. "Some of the compounds are solid."

Ryan and Golomb developed the new technology while conducting research on the geologic sequestration of carbon dioxide for the U.S.



▲ Prof. David Ryan, left, and Prof. Emeritus Dan Golomb have developed a new technology that may extract up to 60 percent of crude oil from its sandstone deposit.

Department of Energy. After being used in enhanced oil recovery, the carbon dioxide could be retrieved, re-used and eventually sequestered.

The MTTC grant will support instrumentation to scale up the process and test it on core samples of sandstone from oil fields. Only five grants were awarded to Massachusetts universities from more than 50 proposals. The researchers anticipate the technology could be commercialized within a year and that oil companies will be interested in funding and licensing the process.

—SS

## SHE Researchers Awarded \$5 Million NIOSH Grant

*Center for the Promotion of Health in the New England Workplace will be Established*

**U**Mass Lowell recently received a \$5 million, five-year grant under the National Institutes of Occupational Health's (NIOSH's) Centers for Excellence to Promote a Healthier Workforce initiative. UML's was one of only two grants awarded nationwide out of more than 60 applications.

The grant is for the creation of the Center for the Promotion of Health in the New England Workplace (CPH-NEW). It will be implemented under the direction of Prof. of Work Environment Laura Punnett with assistance from Lenore Azaroff of Work Environment, Lin Zhan of Nursing and Nicole Champagne of Community Health and Sustainability—all departments in the University's School of Health and Environment (SHE). UML researchers will collaborate with the University of Connecticut's (UConn's) health promotion researcher team.

"It has always been easiest to achieve safer and healthier workplaces by implementing preventive measures, such as ergonomically designed work stations or patient lifting devices for nursing homes. At the same time, the workplace has become a common location for health education and health promotion activities. This center will combine the expertise of both types of health professionals, in order to learn whether we can be even more effective," said lead researcher Punnett. "These grant funds will permit us to take a much broader and more inclusive approach to promoting health as well as preventing disease and injury."

In an August announcement of the grant, U.S. Rep. Marty Meehan said "A healthy workforce is vital to maintaining our

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## TEAMS Academy To Bring Top High School Students to Campus

### Collaborative Pilot Offers Advanced Math and Science

**A** new pilot program starting this semester will bring some of the area's brightest high school math and science students to UML.

The TEAMS (Technology, Engineering and Math-Science) Academy will allow academically accelerated high school sophomores to participate in a series of sessions on campus taught jointly by University and high school faculty.

The idea has been in the planning stages since last October and got an infusion of funding this fiscal

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▲ From left, Dean John Ting, Dean Robert Tamarin, Dean Donald Pierson and Senator Steven Panagiotakos.

## Milíshtein Wins CVIP Award

### Infrared Imaging May Improve Mammography

**A** new type of imaging that uses benign infrared radiation may improve the accuracy of mammograms.

Prof. Samson Milíshtein of the Electrical and Computer Engineering Department has received one of four grants announced by UMass President Jack M. Wilson to accelerate the commercialization of technologies developed in UMass laboratories.

The grants are awarded from the CVIP Technology Development Fund of the Office of Commercial Ventures and

*Continued on Page 2*

## IN OTHER NEWS

**Critical Issues Sessions** — Vice Chancellor Diana Prideaux-Brune says Critical Issues sessions have been "very useful."

**Student Group Receives National Excellence Award**—The Collegiate Chapter of MENC received the MENC National Collegiate Chapter of Excellence Award

**Online Auction**—Bidding has been fast and furious during the online auction to benefit the Costello Gym renovations.

To see these and other stories, go to UMass Lowell's new online eNews Web site at [www.uml.edu/enews](http://www.uml.edu/enews)

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## TEAMS Academy To Bring Top High School Students to Campus

year from the State House. The program has been a collaborative effort led by Deans Donald Pierson, Robert Tamarin and John Ting. Working together with area superintendents, the program will bring select sophomore math and science students to campus to engage in higher level courses than they would have access to at the high school level.

"This pilot is the latest example of the University's outreach to schools in the region in order to enhance the quality of education throughout the continuum," said Pierson.

Beginning this October, students participating in the pilot will come to campus for three different sessions. The program will include workshops exploring alternative energy, crime scene investigation and robotics, among others. Based on evaluation of the pilot, the plan is to roll out the program next fall to junior level high school students. The goal would be to extend the Academy to close to 60 students once the program is officially in place.

The legislature, led by Sen. Steven Panagiotakos, provided funding for the pilot program.

"The University has really stepped up to the plate with The TEAMS Academy. By bringing University faculty together with high

school faculty, UMass Lowell is addressing the high schools' critical need for math and science teaching," says Panagiotakos. "The TEAMS Academy also provides an opportunity to challenge high achieving students with advanced high technology classes.

"We know that we need to grow our talent in the Merrimack Valley to ensure our kids will capture the jobs of the future—in engineering and nanotechnology and biotechnology. This project starts our tenth graders on that path to success. I was pleased the Legislature backed this project with start-up funds," he says.

The pilot includes students from 15 area cities and towns, including Andover, Bedford, Billerica, Chelmsford, Dracut, Haverhill, Lawrence, Littleton, Lowell, Methuen, North Reading, Reading, Tewksbury, Tyngsboro and Westford.

"Faculty have been amazingly receptive to this program," says Pierson, "Both high school faculty in terms of recognizing the need for a program like this as well as University faculty who have shown tremendous responsiveness and a willingness to make this happen."

For more information about The TEAMS Academy, contact Dean Pierson at Donald\_Pierson@uml.edu.

—JH

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## Mil'shtein Wins CVIP Award

Intellectual Property. The \$20,000, one-year grant will fund development of a prototype infrared imaging machine to be used at the Leominster location of the UMass Medical Center. The novel infrared (IR) imaging system is low cost and allows one to scan parts of the body to visualize different tissues—bones and cartilages, tendons, muscles, ligaments, blood vessels—some of which cannot be detected by conventional x-rays.

The new study is based on earlier animal studies, conducted in collaboration with Prof. Thomas Shea, of the UML Biological Sciences Department, that investigated the use of IR imaging on injected tumors in mice.

At the UMass Medical Center, the experimental goal is to collect test images in parallel with conventional x-ray mammography.

"Mammograms are often inconclusive and rely on the intuition of the oncologist to decide whether to order an MRI," explains



▲ Prof. Samson Mil'shtein received funding to explore commercialization of a novel infrared imaging system.

Mil'shtein. "So we will compare the x-ray and infrared images against the MRI images. Our target is to verify that IR imaging is capable of seeing the tumors earlier than x-ray examination. We also hope to visualize the morphology of tumors in more detail than current x-ray mammography provides."

The prototype development and testing are steps that may lead to licensing of the novel technology. Says Mil'shtein, "We consulted on the commercialization plan with Paul Wormser of the CVIP office and got good suggestions. With only four awards, the competition with many projects from other campuses was tough and the support of our home campus was important."

CVIP is responsible for the commercialization of discoveries made on the five campuses of UMass. Licensing of UMass intellectual property generated approximately \$28.5 million in FY '05.

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## SHE Researchers Awarded \$5 Million NIOSH Grant

competitive edge in the global marketplace, and UMass Lowell will be leading the way in promoting workplace safety and health among New England's expansive workforce," Congressman Meehan said. "I am extremely pleased that UMass Lowell was able to secure this highly-competitive \$5 million grant. UMass Lowell is consistently on the cutting edge of research and development, and they are once again leading the way in an area that will help ensure that Massachusetts and all of New England continues to be amongst



▲ Work Environment Prof. Laura Punnett is directing the Center for the Promotion of Health in the New England Workplace.

the most highly-productive workforce in the world."

The CPH-NEW is a cooperative initiative by UML and UConn, along with the private sector (St. Paul Travelers Insurance Company, Genesis HealthCare Corporation, Liberty Mutual Research Institute for Safety), labor (Massachusetts Nurses Association and the Connecticut Council for

Occupational Safety and Health), and state government (Massachusetts and Connecticut Departments of Public Health).

—RC

## State Funds Nano- and Bio-Manufacturing Building

### Board of Trustees Approves Funding Plan

Governor Mitt Romney, over the summer, signed into law an economic stimulus bill that includes \$35 million for an integrated advanced manufacturing research and technology assistance facility at UMass Lowell, following strong advocacy for the funding from Lowell area legislators.

"This investment puts Lowell at the forefront of two emerging industries—nanomanufacturing and biomanufacturing," said Sen. Steven C. Panagiotakos, a member of the conference committee that crafted the final legislation. "This will capture for the region the jobs of the future."

The new law appropriated \$21 million and approved state bonding for \$14 million for a nano- and bio-manufacturing facility on campus. "The university is not the only agency the state has to worry about. We appreciate all that they do for us," said Chancellor David J. MacKenzie.

The University's plan for funding the remainder of the \$80-million-dollar facility costs was approved recently by the UMass Board of Trustees. The University will borrow an additional \$35 million and tap other sources for another \$10 million. The building requires state-of-the-art interdisciplinary research laborato-

ries and prototype manufacturing space and will be the first new academic building constructed on campus in more than 30 years.

The building is expected to house the campus's expanded Nanomanufacturing and BioManufacturing Centers and the green chemistry program. It will be outfitted with state-of-the-art equipment, clean rooms, research and production assistance, and prototype manufacturing space to facilitate partnerships with industry.

Since the funding was approved, plans have moved forward for selecting a site for the building. Vice Chancellor for Facilities Diana Prideaux-Brune recently presented four siting options to Lowell's State House delegation, Congressman Marty Meehan and officials from the City of Lowell. Under consideration are sites on UML North (Riverside Parking Lot), UML's old West Campus on Princeton Street, the corner of Perkins and Aiken Street in the Lawrence Mills site and an area near the National Park Visitor Center in Lowell's Hamilton Canal District.

The building is only one element of the campus's \$266 million master plan, which the Trustees also approved. For more information on the plan go to [www.uml.edu/masterplan](http://www.uml.edu/masterplan).

## Artbotics Blends Art and Technology —

High school students, artists, professors, computer science and art students mixed with the just plain curious at the Artbotics exhibit gallery opening recently in the Revolving Museum of downtown Lowell.

# Chancellor MacKenzie Lays Out 14 Goals

## Priorities Intended to Provide Focus for the Coming Year

Following meetings over the summer with administrators, faculty and staff, Interim Chancellor David J. MacKenzie put forward 14 goals for the campus for the coming year.

The first goal on the list, "Strengthen the start of school formalities," has already been met, as Student Affairs staff and others pulled together the first-ever freshman convocation on September 7 (see "Jacobs Gives Freshman an Optimistic Start").

Other priorities include #4, "Siting and schematic design of the Nano-Bio Center;" #6, "Study and target retention activities;" #7, "Improve campus IT wiring;" #13, "Make strategic improvements in diversity at the University;" #14, "Produce white papers for next chancellor;" and #5, "Search for and hire a new Chancellor," with the UMass President's office designated as primarily responsible for carrying out that particular goal.

"It's a working document," says MacKenzie. "There may be a need to add another goal or two. I believe it is important to have common, achievable goals for the campus to meet over the next 12 months. Achieving these will prepare the University for its transition to permanent leadership—and will keep me focused on what we can accomplish during my year here." MacKenzie said he knows there is a lot of other important and necessary activity taking place at the University, and that these goals are not "set in stone."

## University Priorities for the Next 12 Months

As of Sept. 5, 2006

### Priority

Primary Responsibility

- 1. Strengthen the start of school formalities**  
*Provost*
- 2. Revise and balance the budget process and results**  
*Vice Chancellor for A&F and Chancellor*
- 3. Make strategic faculty hiring decisions**  
*Provost and Chancellor*
- 4. Siting and schematic design of the Nano-Bio Center**  
*Chancellor, Executive Vice Chancellor and Vice Chancellor for Facilities*
- 5. Search for and hire a new chancellor**  
*President's Office*
- 6. Study and target retention activities**  
*Enrollment*
- 7. Improve campus IT wiring**  
*Vice Chancellor for Information Technology*
- 8. Collective bargaining negotiations**  
*Provost and Human Resources*
- 9. Internal charging systems for trust funds, etc.**  
*Chancellor and Vice Chancellor for A & F*
- 10. Focus Transformation Plan: cost estimates**  
*Transformation Team*
- 11. Proceed with renovations including boathouse**  
*Vice Chancellor for Facilities*
- 12. Establish Title IX compliance plan**  
*Athletics and Chancellor*
- 13. Make strategic improvements in diversity at the University**  
*Equal Opportunity*
- 14. Produce white papers for next chancellor**  
*Everyone*

## Search Committee for Next Chancellor Announced

Panel Will Recommend Finalists to President Wilson

University of Massachusetts President Jack Wilson recently announced the makeup of a committee charged with seeking a permanent UMass Lowell chancellor.

"The UMass-Lowell campus, which was led so ably by former Chancellor William Hogan for the past 25 years, is poised for a new era of growth. That growth will benefit UMass Lowell's students and the region," said Wilson. "Historically, the City of Lowell—our longtime partner—has been the economic hub of the Merrimack Valley. This national search for a new UMass-Lowell chancellor is designed to identify the individual who will be best-equipped to lead this important institution of higher education into the future."

"UMass Lowell offers programs recognized globally and is committed to sustainable economic development locally," Mackenzie said. "The committee appropriately reflects this range. From international business leaders to the UMass Lowell student trustee, all are outstanding representatives of their constituencies. I look



▲ Associate Vice Chancellor Joyce Gibson and Mathematical Sciences Prof. Ann Marie Hurley are among those serving on the search committee.

forward to working with the committee in the months ahead as it begins the process of identifying the best candidates for permanent Chancellor."

The group's first meeting is scheduled for late September. There is no definite timetable, although President Wilson has said that a search is likely to take seven to 12 months.

At the completion of the search process, the committee will provide UMass President Jack Wilson a final list of candidates. The president will then recommend a candidate to the UMass Board of Trustees.

For the full story go to [www.uml.edu/enews](http://www.uml.edu/enews)

## UMass Lowell Will Soon Take Control of the Bellegarde Boathouse

\$1 Million Approved for Renovations



Under legislation passed by the Legislature and signed by the Governor, UMass Lowell will switch from tenant to landlord of the Bellegarde Boathouse. A \$1 million appropriation for the campus for the facility's upkeep also was secured by Lowell's State House delegation.

"It's a gem and it's been falling into disrepair," said Rep. Thomas Golden, Jr of the facility located across from the Dunkin' Donuts on Pawtucket Boulevard. "We've been trying to put money into a vehicle that would allow us to either rebuild it or repair it."

Athletics Director Dana Skinner will help develop a management plan for the facility. "We would love to see the facility become more user friendly," he said. "The onus is on us now to maintain the building, and we have a million dollars to start us down the road. We thank [Lowell Rep.] Tom Golden and the legislature for that."

For the full story go to [www.uml.edu/enews](http://www.uml.edu/enews)

## Longtime Chancellor's Secretary Retires

Event Reunites Administrative Staff



◀ Joyce Sullivan, seated in center, retired this summer after serving many years as secretary to Chancellor William Hogan, now also retired. The farewell reception gathered many longtime friends and colleagues, many of whom held administrative positions in Cumnock Hall. Sitting to Sullivan's left and right are Val Leahy and Pat Gallagher. Standing, from left, are Marie Sherman, Bernie Galvin, Patricia Masterson, Vera Preston, Donna Gryzb, Joy Ennis and Kay Merrill.

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# President Wilson Taps David J. MacKenzie to Lead UMass Lowell

*Building Authority Director Chosen as Interim Chancellor*

**D**avid J. MacKenzie, head of the University of Massachusetts Building Authority, assumed the role of interim chancellor in early July upon former Chancellor William T. Hogan's retirement after 25 years at the helm.

The selection was announced in June by University of Massachusetts President Jack Wilson.

"David MacKenzie has dedicated himself to public service and has always served with great distinction," said Wilson. "I have complete confidence in his ability to keep UMass



▲ David J. MacKenzie, executive director of the UMass Building Authority, was named interim chancellor over the summer.

Lowell moving in the right direction."

"These are big shoes to fill with Chancellor Hogan leaving," said MacKenzie, upon the announcement. "I am honored and excited to accept this post. I have the utmost respect for what a great institution this is." Wilson and MacKenzie met with senior administrators prior to a public announcement. Louise Griffin, vice chancellor for administration and development, praised MacKenzie as "great to work with," and Diana Prideaux-Brune, vice chancellor for facilities, said MacKenzie "has a background in facilities construction and budgeting, which should make this a very productive year."

MacKenzie will serve until a permanent chancellor is chosen. Wilson has said he expects the search process to take seven to 12 months. MacKenzie will serve on the search committee and has said he is not a candidate for the permanent position.

For the full story go to [www.uml.edu/enews](http://www.uml.edu/enews)

## John Pakstis Appointed Director of Counseling

*He Brings Experience in Wellness-Based Services*

**J**ohn C. Pakstis has been appointed UML's Director of Counseling, succeeding Noel Cartwright, who retired in June.

Formerly the assistant director of Clinical Service at Northeastern University, Pakstis comes to the campus with years of experience in wellness-based counseling services. UMass Lowell's counseling center, along with many other offices in the Division of Student Affairs (see related story) is shifting to a proactive, educational approach in the services it offers students.

"In wellness-based service, we are working toward reaching students before an issue becomes a crisis," he says. "We need to get out there and encourage students to seek help when they need it. Our role, in part, is to help them understand when and who to ask."

Pakstis holds a bachelor's degree in psychology from Northeastern University, a master's degree in rehabilitation counseling from Michigan State University and a Ph.D. in counseling psychology from the University of Virginia, Charlottesville.



▲ Dr. John C. Pakstis is the new Director of Counseling.

## Student Affairs Is Midway Through a Self-Evaluation and Reorganization Process

*Division Adjusts Services to Better Meet Students' Needs*

**W**hy offer students a weekly movie in Cumnock Auditorium when they can watch whatever they want whenever they want on desktop DVDs? That's the kind of question the Division of Student Affairs has grappled with over the last four years as they conducted a rigorous self-evaluation and reorganization process.

"Our goal was to look at everything we do and ask ourselves why we do it," says Dean of Students Larry Siegel. "Every department we've focused on has been taken apart and significantly redesigned."

The result, Siegel contends, is a range of services that more directly address issues facing 21st century students and a shift to proactive, education-based services intended to avoid problems rather than simply responding to them. The process has also resulted in an inclusive model for developing division strategies.

For the full story go to [www.uml.edu/enews](http://www.uml.edu/enews)

## Jacobs Gives Freshmen an Optimistic Start

*Convocation Ceremony Begins Students' Academic Life*

**M**embers of the freshman class were treated to a high dose of energy and optimism at UML's first-ever convocation ceremony held Thursday, Sept. 7, at Durgin Hall, as Life is Good founder Bert Jacobs revealed the secret of his company's success—and of a successful and fulfilling life.

"You need to be an optimist. It is the most empowering thing you can do," said the academic-robed but sneaker-wearing Jacobs as he prowled the Durgin stage. "If you don't realize today that today is good, you're not going to get there...You have to appreciate today."

The packed auditorium seemed to respond to the high-energy, unscripted talk by Jacobs, who, with his brother John, founded the Life is Good brand 10 years ago. Now an \$80 million business with more than 200 employees, the company started with the brothers selling t-shirts out of their van on the streets of Cambridge. After five years of barely surviving, they finally struck a chord with a stick-figure character named Jake, whose simple optimistic sayings counter society's overwhelmingly negative messages.

"It's a tremendous advantage to stop and appreciate the good things in life," said Jacobs. "It's not about some day. It's about today."

Freshmen were treated to other wise advice during convocation, which marked the beginning of the UML educational experience just as commencement marks the end. Interim Chancellor David MacKenzie, seeing the fruits of one of his first goals—to strengthen the start of school formalities—reassured students that the University is committed to providing the best education possible for every student. But he also asked students to go further.



▲ Bert Jacobs

"You will probably never have a better chance for a transformative experience," said MacKenzie. "I encourage you—no, I implore you—to go beyond the academic and become fully engaged in the UML experience."

"If you fully participate...life can be more than good. Life can be great at UML," he said.

For the full story go to [www.uml.edu/enews](http://www.uml.edu/enews)

## Libraries Website Goes Live

**W**eb Services and the Communications Office recently launched the University Libraries website, the largest site to be incorporated into the content management system. The site encompasses nearly 150 pages of content, profiles for each of the 39 librarians, more than 475 resources pages and nearly 1,000 links. New features include "Special Information For" and "News and Events" sections.

Other sites launched over the summer include Gender Studies, Centers for Learning and Academic Support Services, American Studies, Institutional Compliance, the Massachusetts Biomanufacturing Center, and Campus Transportation.

To assist with the search for the next Chancellor, a link to the President's Office search page has been added to the main page at [www.uml.edu](http://www.uml.edu).



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