Polnox Challenges the World of Antioxidants

First you invent, then you learn. Dr. Ashok Cholli has been busy learning about antioxidant additives in the industrial world. That’s because Cholli has invented a high performance antioxidant—one that outperforms and outlasts anything currently being used. It gives higher protection at lower cost when applied to a variety of materials we use every day. And, best of all, it’s produced on principles of green chemistry, so the process is eco-friendly from the very beginning. The name of this super little macro-molecule is Polnox,® named by Cholli’s sons (in middle school and high school) through combining “polymer” and “no oxidation.”

Polnox Corporation is the name of the company, soon to move into new lab space in the IPI building. Major funding to the company comes from Navigator Technology Ventures, the venture capital arm of Draper Labs. Cholli is chief technology officer and a member of the board of directors. He conducted the research in UMass Lowell’s Center for Advanced Materials and the University retains an interest in the company.

“Our goal is to be in the market with at least one product within 12 months,” says Cholli. “We have scaled from Navigator Technology Ventures, the venture capital arm of Draper Labs. Cholli is chief technology officer and a member of the board of directors. He conducted the research in UMass Lowell’s Center for Advanced Materials and the University retains an interest in the company.

“We have scaled our technology to be in the market with at least one product within 12 months,” says Cholli. “We have scaled from Navigator Technology Ventures, a company that specializes in transitioning research to the marketplace.”

Cholli estimates that the company will be in the market with at least one product within 12 months. The company plans to use the technology to develop new products in the industrial world, including plastics, fuels, and foods.

The company’s first product, Polnox®, is expected to be available in the market within 12 months. The company is working on developing new products using the technology.

Welcome to Cooperstown, Jack!

Well, it’s official. UML, Jack Kerouac and the Lowell Spinners are on their way to Cooperstown, N.Y., to be immortalized in the Baseball Hall of Fame—in the form of a bobblehead. After becoming an international phenomenon nearly two years ago, as a giveaway to the first 1,000 fans at a Lowell Spinners baseball game, the bobblehead generated more than $10,000 for the Jack Kerouac Scholarship Fund and garnered media attention across the country.

English Prof. Hilary Holladay and Jon Goode, director of corporate communication for the Lowell Spinners, teamed up to create the bobblehead as a way to publicize Lowell’s annual Kerouac Conference. Neither anticipated the frenzy to follow, as hundreds of Kerouac fans from all over the world clamored to get their hands on a beloved bobblehead in the likeness of the popular Beat writer.

The future of the Kerouac bobblehead was revealed during a recent press conference at City Hall. City officials and representatives of the Lowell Spinners, UML, and the Kerouac Estate were on hand to announce the acceptance of the cherished keepsake into the National Baseball Hall of Fame.

New Center Finding Key to Network Security

“Trojan horse, worm, virus—these are words that raise the anxiety level of every computer user or network administrator.”

But for Computer Science Prof. Jie Wang, director of the Center for Network and Information Security, these are just part of the landscape of interesting research problems.

Wang is the newest member of the faculty research group, the Committee of Federated Centers and Institutes, CFCI. The CFCI provides University support for research through seed grants and funding of research assistants, and directors meet monthly to discuss research issues and policy.

Arriving from the University of North Carolina in 2001, Wang

New Approach to Learning—Make a Sustainability Machine

Every educator knows that hands-on learning is more effective and motivating than learning strictly from lectures and books. Projects, labs and internships are a staple of many academic programs.

How, though, does one create hands-on learning for an undergraduate course named Sustainable Development?

Assoc. Prof. Sarah Kuhn of the Regional Economic and Social Development Department turned to Asst. Prof. Fred Martin of the Computer Science Department for some multidisciplinary brainstorming.

Together they came up with an idea to integrate a hands-on project into the course. The UMass Lowell Committee on Industrial Theory and Assessment provided seed money.

“We gave 20 students three weeks and some gear, and told them to make something that could help create a more sustainable future,” says Kuhn. “For two months they had studied and reflected on sustainable development through reading, class discussion, films, guest speakers and written exercises. Then we asked student teams to collaborate on building a device that responds to some aspect of concern about sustainability.”

The students worked with the Handy Cricket, a small, battery-powered microcontroller system developed by Martin, which he has used successfully with a diverse group of learners, from fourth graders to computer science majors.

Devices created with Crickets sense touch, light or temperature and can be programmed to react in particular ways—by moving, for example, or by collecting data.

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Computer Engineering Graduates First Majors

The Computer Engineering program is graduating its first crop of master’s degree students. Graduates Philip Sliney of Dracut and John Thomas of North Brookfield, who’ve just completed the five-year BS/MS program, met with Assoc. Prof. Dalila Megherbi of the Electrical and Computer Engineering Department recently to talk about the program and their experiences.

The program was created in response to student and industry demand, explained Megherbi, who also directs the Center for Man/Machine Intelligence, Networking and Distributed Systems, CMINDS. She helped establish the bachelor’s degree program in computer engineering beginning in fall, 2002, after developing a similar one at the University of Denver to the point of accreditation.

“Our UMass Lowell accreditation for computer engineering should happen next year,” she said.

Computer engineering fills a significant gap between electrical engineering and computer science—a combination of the skills of computer science and a concentration on hardware design solutions. Megherbi explains. “Hardware is faster than software. You can build software to do anything, but you are limited by the hardware.”

Both students and professor are excited about the future of computer engineering and its impact on society—especially through the use of little devices called FPGAs, for field programmable gate arrays.

“With FPGAs, you can program your hardware instead of rebuilding it,” says Thomas. “It’s a big chip with every element needed; you design circuits and download them to the chip. This will transform anything electronic, from cameras to defense applications.”

A little history adds perspective.

As electronics has developed, more and more capacity has been moved onto a chip. While software has the advantage of performing very complicated tasks and one is able to make a small change easily, hardware can perform much faster but is difficult to change. The new FPGAs can do both.

Sliney and Thomas credit their knowledge of hardware for an unprecedented success in their senior capstone project.

“We were the first team out of seven to make the motorized stander work,” says Sliney. The stander is sort of upright wheelchair. “Everyone told us that project was a guaranteed failure, but we had more experience working hands-on with components and we understood the hardware aspects.”

Both students have jobs waiting—Sliney with Analog Devices Inc. and Thomas with Raytheon. Thomas also won the Dean’s Medal this year and last for a perfect 4.0 grade point average.

Computer engineering majors share curriculum with electrical engineering majors for the first two years. The department has 65 junior and senior computer engineering majors and more than 60 in the master’s program.

The new graduates had some advice for prospective computer engineering students.

“It’s worthwhile in the end,” says Sliney. “You work through the theory to get to the labs and find that what you’ve learned can really be used.”

“Welcome change; it’s the future,” says Thomas. “Computers are everywhere and engineering is the lifeblood of society.”

New Center Finding Key to Network Security

created a lab and a weekly seminar series and offered courses on network security. These soon became the magnet for other young faculty interested in security problems.

“Computer engineers work on chip design, computer scientists work on software solutions and

programming, mathematicians work on mathematical problems arising in both computer engineering and computer science,” explains Wang. “It’s an interesting group of young people.”

The Center’s affiliated faculty and grad students engage in several areas of research, reflecting the degree to which computer use has become necessary in everyday life.

“The issue is public trust,” says Wang. “Confidence in the system is a prerequisite for doing business. To be on the Web, you have to resolve problems of access and security.” For example, protocols are the rules of dialogue: they operate every time you go on line to use e-mail or buy something. But designers of early protocols had no security concerns in mind.

“The whole infrastructure lacks a security layer,” says Wang. As researchers work on designing a new protocol and demonstrating that it’s foolproof, they have to decide where to place it in the system—the layer of the Internet, transport control, or the user.”

Another research project aims to create a sensor network, an environmental measurement system for detecting biological and chemical agents. The current technology is bulky and awkward and the Center is developing a mini surveillance system.

Privacy issues are a concern of some users. As marketing compa-
Shuttle Shifts to Web

Beginning in September, the Communications Office will launch a new information page on the UMass Lowell Web site designed for the campus community and offering a wide range of campus news. The site will include announcements about the accomplishments of faculty, staff and students, and news about general campus activities. The page will be updated frequently and will be accessible to all campus community members. The new site will allow the Communications Office to get more information to you more quickly and will reduce the dependence on print. It should also reduce the number of broadcast e-mails sent every day.

Beginning in September, the UMass Lowell newsletter, The Shuttle, will be reduced to four pages and include only the most significant campus news. The “Campus Calendar,” “Research Notes,” “Take Note” and “Noteworthy” features, as well as notification of appointments and promotions, will be on the Web.

‘Save Our History’ Project Unveils Activity Trail Guide to the Acre

Celebration filled the room as dignitaries, family, sponsors and hard-working participants—adults and students—marked the completion of the Save Our History project.

The occasion was the official unveiling of a printed booklet, Lowell’s Acre Activity Trail, written entirely by eighth-grade students from the Bartlett Middle School and designed with the help of Mary Lou Hubbell, director of publications in UMass Lowell’s Communications and Marketing Department. A $10,000 grant from the History Channel and the American Association for State and Local History funded the project, a joint effort of the Tsongas Industrial History Center, the Lowell National Park and the Bartlett School. The celebration was sponsored by Comcast, Sheila Kirschbaum and Michele Turcotte of the Tsongas Center and Amy Glowacki of the Park worked with a Bartlett team of instructional specialists, teachers and about 20 students. They interviewed people who grew up in the Acre and people from historical agencies, toured various historic sites, and selected 11 sites to create a family activity guide. The project, one of only 19 funded out of nearly 600 proposals nationwide, had to be completed in only three months to meet the terms of the grant.

The students learned a lot, but so did the adults. As teacher Steven Cyr remarked, “I learned never to underestimate the ability and enthusiasm of students when they have something worthwhile to do. We take great pride in their achievement.” The Lowell Save Our History project received another award from the History Channel: an all-expenses-paid trip to Washington, D.C., to compete for a national prize. From left, Linda Willis, Neary Mam, Vanessa Perez and Mark Souza will represent their colleagues.

Assistive Tech Design Fair Matches Up Interesting Problems, Creative Kids

The people with needs were aged eight to 80. The problem-causing conditions ranged from cerebral palsy to severe arthritis. And the innovative devices to improve daily living were mind-bogglingly various.

At the third annual Assistive Technology Design Fair (ATDF) on May 21, more than 100 high school students in 22 teams shared their engineering solutions to problems, competing only for their own sense of pride and accomplishment.

“This program has expanded unbelievably,” says Douglas Prime, director Design Camp for the College of Engineering and organizer of the fair. “Teachers and students really appreciate the opportunity to work hands-on, building a prototype and helping someone from their community.”

The ATDF is a spin-off of UMass Lowell’s Assistive Technology program, directed by Donn Clark, electrical and computer engineering professor, assisted by Alan Rux, technical support associate for the department. The program supervises college seniors in their capstone design projects.

But college seniors have completed lots of engineering courses. Taking the program to the high school level was a bold move.

Working with a teacher-adviser, each team of four to six students had to find an actual client whose life would be improved with an assistive device. The teams brainstormed alternative solutions, worked within a budget, developed a presentation and built a working prototype to demonstrate at the design fair.

“The ATDF may be unique in the whole country,” says Prime. “The quality of work is outstanding that these young people are doing. I’m always surprised at what they can accomplish.”

Tyco Electronics was the lead sponsor of the 2005 program, along with Lowell affiliate M/A-COM. Engineers from M/A-COM volunteered their time to help with on-site design reviews for the participating teams. 3M also gave substantial support.

All the teams showed their work in poster sessions set up in Cumnock Hall. Six project teams were selected to give full presentations of their work: one each from Greater Lawrence Technical High School modified her walker to include bright “head-lights” for better discrimination in low-light conditions. The system is compact, lightweight and easy to operate. The team was one of 22 participating in the third annual UMass Lowell Assistive Technology High School Design Fair.

An elderly woman who is legally blind can see only shadow, so students of the Greater Lawrence Technical High School modified her walker to include bright “head-lights” for better discrimination in low-light conditions.

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Speakers at the event included Dean John Ting, Francis College of Engineering; Donn Clark, director, UML Assistive Technology program; and Amy Mulken, head of human resources, Tyco Electronics. Keynote speaker, Dr. Eli Peli of Harvard Medical School, is an electrical engineer and optometrist who specializes in electrical image processing. His team has developed a host of assistive technology devices for people with low vision, including head-mounted displays, electronic displays for low-vision reading and fiber optic magnifiers.

Bartlett School students created a family activity guide to historic sites in their Acre neighborhood for a Save Our History project funded by The History Channel. Students wrote the text, created the activities and helped design the final publication.

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Polnox Challenges the World of Antioxidants

More than 50 billion pounds of polyolefin plastics are produced each year.

“Every pound of that has to have added antioxidant,” says Cholli. “That’s just the raw material: then more antioxidant has to be added to sustain the material during the molding process.” Polnox prevents the common problems of material degradation, brittleness and yellowing—improving the useful life of finished products.

All the testing was done by independent test agencies. No matter how much he learns, Cholli says, he and his colleagues “are not expert in all fields.”

Polnox’s antioxidants have to be tested for toxicity in food applications, but Cholli is especially proud that Polnox is produced without toxins.

“Our processes are eco-friendly,” he says. “We use biocatalysts and other materials to make the reaction, we use water for washing and there is less wastage. It is green chemistry at work.”

Cholli credits Prof. Jayant Kumar and the late Prof. Sukant Tripathy of the Center for Advanced Materials, for their development of enzymatic synthesis. UMass Lowell Chancellor William Hogan provided early stage property has fostered the project through the formation of the company.

Polnox has had a very positive reception from the scientific and industrial community; the company’s scientific advisory board includes Alan MacDiarmid, 2000 Nobel Laureate in Chemistry and professor of chemistry at the University of Pennsylvania. The company has six employees already and is working with several Fortune 100 companies in beta site evaluations.

“We plan to compete both in commodity and niche markets,” says Cholli. “We think of Polnox as the ‘next generation’ of antioxidants.”

Interdisciplinary Project Benefits Peruvian Village

Peruvian children with disabilities will receive assistance this month thanks to an interdisciplinary project developed by University professors.

Led by Physical Therapy Asst. Prof. Deirdra Murphy and Mechanical Engineering Prof. John Duffy, a group of students engaged in a service learning project to improve the physical therapy given at a Peruvian clinic. A portion of the work involved designing adaptive play equipment for disabled children.

“I am excited about this as it is a small step in collaborative teaching between departments and the global community,” Murphy says.

A group of physical therapy and engineering students led by Duffy is traveling to the Peruvian clinic this month to deliver the equipment and educational materials on functional impairments to the volunteer therapist. Duffy has led several trips to the country as coordinator of the Village Empowerment Project. He noted that two of the mechanical engineering students also designed and built a prosthetic leg for one of the villagers.

Duffy said he recently received an e-mail about the upcoming trip from Rosario Llanotop, the woman who runs the clinic.

Lowell Talks Trash

An afternoon of story telling about past ideas about environmental and community restoration and clean-up efforts will be held on Tuesday, June 14, from 2:30 to 6:30 p.m., at the Wannalancit Mill. Attendees are asked to bring stories, pictures and objects about trash, recycling and reuse. Past stories are meant to spark ideas on how to solve recurring problems.

During the first part of the afternoon, the stories and examples will be collected. For the second half of the event, attendees will discuss what can be learned by recycling great ideas from the past.

For more information contact Julia Villareal, Center for Family, Work and Community, at 978-934-4772.

“Basically she says,” he relates, translating the Spanish, “to send sincere greetings to all our group who work in this big job of aiding children who are really in need of help, and the work gives her as well as her patients much joy, and those in our group have big hearts.”

The Spanish translation for the educational materials was provided by Francesc Medina, visiting professor from the University of Murcia. The Council on Diversity and Pluralism, through its Diversity Initiatives Fund, provided grant funding for the project, while exercise equipment was donated by Therapy Zone Inc. and Hygienic Corp.

Duffy feels that these service learning projects make an impact on the students beyond what could be learned in the classroom.

“One team of students makes a final comment in its report: ‘Entering a field of helping (people with disabilities) while designing, and maybe manufacturing playground equipment, is about as fun and rewarding as mechanical engineering can be,’ ” he says.

Take Note

A cricket-like temperature sensor, based on the Cricket microcontroller, was one of the student projects in a course on sustainable development, taught by Assoc. Prof. Sarah Kuhn, second from left, of the Regional Economic and Social Development Department. Computer Science Asst. Prof. Fred Martin, second from right, introduced the technology section and computer science students Brian Corbin, left, and Sean Quinn created the device.

Students showed their prototypes at a May 10 open house. A radio-controlled model speedboat could measure chemical spill contamination on a lake. A reforestation rover takes soil samples and drops a seed in the right place. A model house demonstrates geothermal cooling and a Wheel of Fortune-style quiz rates the eco-friendliness of your lifestyle.

“It was very interesting to see what projects the students developed after spending a semester of inquiry into sustainable development,” says Martin.

Based on the experience, Kuhn hopes to develop a full-semester, project-based course to be offered to first year students.

Continued from Page 1

New Approach to Learning—Make a Sustainability Machine

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Continued from Page 1
Bioinformatics Conference Highlights Research Role of Public University

Researchers from all five campuses gathered in Lowell on April 29 for the third University of Massachusetts Bioinformatics Conference: Laboratories of Innovation.

But before settling in for presentations and discussion on such topics as DNA microarrays, proteomic analysis and genomic biomarkers, the participants were treated to some reflections on the importance of the public university in our state.

UMass President Jack Wilson reported that UMass conducts $357 million in research annually, accounting for 90 percent of all research done outside Route 128. Yet ours is the only state to spend less on public higher education than 10 years before—down 32 percent—and Massachusetts ranks 49th in the nation in support per $1,000 in income, and 47th in spending per capita.

Massachusetts Sen. Steven Panagiotakos co-chaired the Senate Task Force on Higher Education, which issued its report recently.

“The private colleges and universities can internationalize; they are pricing themselves out of reach of working families in the state,” he said. “We’ve seen a shift in where kids go to college—two-thirds of our high school graduates are going to the publics. We’ve spent $3 billion on education reform for grades K - 12. Now we have to extend support, because the college degree today is what the high school degree used to be.”

Panagiotakos also was the chief negotiator for the state’s economic stimulus bill, which has set a precedent in direct state support for research. He was “proud to say” that nanomanufacturing at UMass Lowell was the first project funded.

The keynote speakers were John Weinstein, MD, Ph.D., head of the Genomics and Bioinformatics Group of the National Cancer Institute; and Mark Gerstein, Ph.D., associate professor of biomedical informatics at Yale University.

Researchers from all five campuses made presentations. The conference was hosted and organized by the UML Bioinformatics Program. Conference committee members included Profs. Ann Marie Hurley, mathematics; Georges Grinstein, computer science and program director; Susan Braurhut, Michael Graves and Brian Bettencourt, biological sciences; and Kenneth Marx, chemistry.

Researchers from all five campuses made presentations and shared findings at the third University of Massachusetts Bioinformatics Conference: Laboratories of Innovation. Welcoming them were, from left, UMass President Jack Wilson, Sen. Steven Panagiotakos, UMass Lowell Chancellor William Hogan, and Computer Science Professor Georges Grinstein, director of the UML Bioinformatics Program.

Welcome to Cooperstown, Jack!

Fame and reflect on its journey thus far.

“This has been a huge phenomenon,” said Spinners’ owner Joann Weber. “Having a partner like UMass Lowell and the Kerouac Center has been a great pleasure.” Her husband and co-owner, Drew, added to the praise emphasizing the “strong partnership between the Spinners, the city and the university.”

“I remember the frenzy it generated at LeLacheur Park, but never did I think it would end up in Cooperstown,” said City Manager John Cox.

“It’s remarkable.”

Hall of Fame spokesman Jeff Idelson said Kerouac is “an American icon who had a deep passion for the game, which he shared in his writing,” and that adding the bobblehead to the collection is important “given baseball’s history and role in helping to shape and define American culture.”

Holladay, who is also director of the UML Jack and Stella Kerouac Center for American Studies, spoke at the press conference, pointing out that “a partnership between a university, English Department and a baseball team is pretty rare.” As for the placement of the bobblehead in the hall of fame, she said she hopes “it will bring attention to Kerouac as a writer and an important figure of pop culture.”

Lowell Mayor Armand Mercier, who knew Jack Kerouac personally, said he had a very special place in his heart for Jack. “It’s such a tribute to him and his legacy, and it’s so appropriate that it’s happening in Lowell, where he came from.”

Kerouac’s brother-in-law and executor of the Kerouac Estate, John Sampas, spoke proudly of the bobblehead, and pointed out that Kerouac’s work is still published in 38 countries. Of the immense popularity that the bobblehead generated and the honor of acceptance into the Baseball Hall of Fame, Sampas said Kerouac would approve. “He’s probably smiling right now, saying ‘I told you so.’”

Goode, who was responsible for drafting the proposal to the Hall of Fame for the bobblehead induction, wrapped up the press conference saying that once the Jack Kerouac bobblehead is officially placed into the collection, “it will be there forever,” and people from all over can see it on display. “He’s gone from being a part of Lowell to a part of history.”

—KP

City officials and representatives from the Lowell Spinners, UML and the Kerouac Estate were on hand at City Hall to announce the acceptance of the Jack Kerouac bobblehead into the National Baseball Hall of Fame in Cooperstown, N.Y. Pictured with the Kerouac bobblehead are, from left, John Sampas, Kerouac’s brother-in-law and executor of the Kerouac Estate; English Prof. Hilary Holladay; John Cox, Lowell’s City Manager; Lowell Mayor Armand Mercier; Jeannie and Drew Weber, owners of the Lowell Spinners; Tim Beerwaller, general manager of the Spinners; and John Goode, director of corporate communication for the Spinners.
Sustainable Production Center’s International Conference Draws 175

A recent conference on Framing a Future Chemicals Policy, hosted by the Lowell Center for Sustainable Production (LCSP), drew 175 attendees representing the chemical industry, downstream users of chemicals, labor, environmental advocacy organizations, government agencies and academia.

According to Michael Warhurst, participants and LCSP program associate, the conference revealed that many are unhappy with chemical regulation in the country. Some were concerned that the U.S. is falling behind its competitors as they revise their systems to encourage innovation to safer products.

Joel Tickner, LCSP project director said, “This discussion, which has been going on in Europe for several years, needed to occur on this side of the Atlantic. We have been able to convene diverse stakeholders with often opposing interests to find common areas of interest in solutions-oriented, scientific tools and policies.”

Through a combination of plenary sessions and workshops, the conference explored many possible options for improving the way in which chemicals are managed, focusing particularly on ways to promote more sustainable product design and green chemistry.

Warhurst said participants viewed research and application of green chemistry as one key to improvement, with UMASS Lowell’s Lowell Center for Sustainable Production and Toxics Use Reduction Institute viewed as a positive model for assisting industry in applying green chemistry discoveries.

LCSP will continue multi-stakeholder discussions on the key issues that came out of the conference discussions. “With this work the Lowell Center hopes to help contribute to the development of a more innovative, competitive and sustainable industry in Massachusetts and the rest of the U.S.,” said Warhurst.

More information about the conference is available at www.chemicalsafety.org.

Researchers Seek to Control Greenhouse Gases

The Department of Energy (DOE) has awarded a grant of $350,000 to four UMass Lowell scientists for their innovative research on capturing and storing CO2 using a process known as carbon sequestration.

The interdisciplinary research is being led by principal investigators Dan Golomb of the Environment, Earth and Atmospheric Sciences Department, Eugene Barry and David Ryan of the Chemistry Department, and Carl Lawton of the Chemical Engineering Department.

Carbon dioxide (CO2) is the principal greenhouse gas, trapping the heat of the earth and leading to the atmospheric warming—also known as global warming—that concerns scientists and policymakers. And while periods of unusually warm weather may fall within normal variability, a steady rise of atmospheric temperature can have far-reaching consequences: warmer seasons, coastal inundations because of a rise in sea level, warmer sea temperature resulting in more frequent hurricanes, and melting glaciers that lead to perturbed ocean salinity. Scientists have demonstrated that CO2 can be dispersed in water with limestone particles under pressure forming a stable emulsion that can be sequestered in the deep ocean. Under the DOE grant, a new process is being tested that would overcome difficult technical challenges, making the CO2 emulsion safer for ocean sequestration than releasing CO2 alone.

Two problems can arise from this process. First CO2 can bubble up to the surface, rather than sink. CO2 is very acidic. If it is not dispersed enough in the water, it could lower the water’s pH, potentially harming sea life. To solve this problem researchers were able to form stable emulsions of CO2 in water with a greatly increased density so the substance can be stored at shallower ocean depths. This increases safety and reduces cost.

Also, the limestone increases the pH of the emulsion, reducing the problem of localized acidity. With the support of the DOE grant, the UMass Lowell researchers will be able to optimize the parameters for creating the CO2 emulsion, adding equipment and supporting graduate students.

Brunch Sends Seniors on Their Way

More than 200 students were treated to the seventh-annual graduating seniors brunch on May 12. Sponsored by the Office of Alumni Relations, Career Services, Student Activities and Barnes & Noble Bookstore, the brunch was served by 30 faculty and staff volunteers. In addition to brunch, students could pick up their caps and gowns, order a class ring, buy senior week tickets, or sign up for a U.S. Bank credit card. Lucky raffle winners walked away with prizes such as a class ring, alumni memorabilia and River Hawks season tickets. Pictured are the members of the committee that organized the brunch: (from left) Diane Earl, Alumni Relations; Kim Bilavchuck, Career Services; Dave DeAngelis, Student Activities; Dame Sy, Alumni Relations; Jean Leboviller, Athletics; Pat Yatos, Career Services; Chris Monte, Atraxmark; Joe Beinanger, Barnes and Noble.

Raytheon Marks Milestone with Check for $50,000

Mark E. Russell, right, alumnus in electrical engineering (BS ’83, MS ’85) and vice president of Integrated Defense Systems (IDS) of Raytheon, has encouraged Raytheon to give more than $100,000 to UMass Lowell’s College of Engineering in the past year, including a recent check for $50,000. The funds have supported renovation and equipment for the machine shop in the Mechanical Engineering Department and the Microwave Measurements Lab in the Electrical and Computer Engineering Department; two outreach programs—the summer DesignCamp and the afterschool DesignLab, undergraduate scholarships and unrestricted funds for the college. With Russell are, from left, Dan Earley, Antenna and Microwave Department Manager, IDS; Tony Mariotti, Engineering Fellow, IDS; and Dean John Ting, Francis College of Engineering. IDS is headquartered in Tewksbury; it generates about $3.1 billion in revenues and employs more than 12,000 people.
Nursing Students Translate Clinical Experience into Works of Art

The lobby of the School of Health and Environment was transformed into an exhibit area during Nurses Week in May as nursing students displayed art work and poems describing how they felt they made a difference in the care of patients with whom they worked during their clinical experience.

Nursing students in the senior Role Transition course work with nurse preceptors and other members of the health care team to help them prepare for their professional roles after graduation. The students are assigned to various clinical agencies depending on their individual career interests. As part of their work in Asst. Prof. Jackie Dowling’s course, they worked with peers on projects to portray the art of nursing. They were asked to write a poem, create a drawing or painting, or use any other form of art to reflect an experience that they felt made a difference in the care of a patient with whom they worked during their clinical experiences.

Typical projects included a collage, titled “Nurses Mend Broken Hearts,” that depicted experiences at Children’s Hospital; a drawing that a 4-year-old boy gave to a student who had taken care of him when he had trouble breathing; and a poem, “A Lesson Never to be Forgotten,” describing what it was like for the student to discharge to a foster home a child she had cared for.

As part of their work in the Role Transition course, students in the Nursing Department created various forms of art work that depicted their experiences in their clinical assignments. The works were displayed in the lobby of the School of Health and Environment during Nurses Week. Standing, from left, are Pauline Ladabauce, director of Undergraduate Education in the School of Health and Environment, seniors Ashley Gate, Lindsay Waller, Kailyn Pray and Jaime Rumore, Asst. Prof. Jackie Dowling and Dean David Wegman. Front, from left, are seniors Diana Ruisi, Rebecca Taylor, Jamie Ellis and Alysia Morgan.

Tripathy Fellows Chosen

Two graduate students have won the 2005 Tripathy Memorial Summer Graduate Fellowships to complete their final year of doctoral research—Yonghua Zhou and Sarika Venna, both in chemistry. The fellowship, awarded for outstanding research in the areas of materials science and polymer science, provides a summer stipend and additional travel funds to participate in national meetings during the following year. The fellowship is awarded in memory of the late Sukant Tripathy, University Professor and a former provost. He was an internationally recognized leader in the materials sciences, a dynamic research collaborator, and founder and director of the Center for Advanced Materials. The Tripathy Fellows and members of the committee are, from left Zonghua Zhou; Prof. Jayant Kumar, Center director; Prof. Emeritus Arthur Watterson; Sarika Venna; Susan Tripathy; and Dr. Ashok Cholli. Committee member Prof. Daniel Sandman was not present.

GSE Students Paint the Town

Pre-service teachers in Prof. Patricia Fontaine’s Elementary Social Studies course painted United States maps and murals in five Lowell elementary schools. This project fulfilled their community service requirement for the course.

Chancellor Speaks to Legislators about Advanced Manufacturing

Chancellor William T. Hogan traveled to Lawrence to address members of the Legislature about the need to support advanced manufacturing—particularly in nanoscale and biotechnologies—in the Merrimack Valley. The hearing was convened by Rep. David Torrisi, House Chair of the Community Development and Small Business Committee.

Help the University, Maybe Win a Sweatshirt

Participants in the 2005 Faculty/Staff Campaign for the Lowell Fund will be entered into a raffle for a UMass Lowell hooded Champion sweatshirt, a $50 value. The drawing will take place on June 1.

To date, faculty and staff have pledged more than $101,000 for the Lowell Fund, which supports campus-wide, current priorities including student scholarships, faculty development, library and computer resources, special research projects and facilities management. All gifts to the Lowell Fund are put to use in the year they are received.

“Even modest pledges can make a difference,” says Sheila Capone, assistant director of the Lowell Fund. “For instance, someone who pledges $4 less than the cost of a large coffee and donut per week-per pay period through payroll deduction, ends up contributing $100 to the Lowell Fund over the course of the year. All sizes of gifts are appreciated.”

The goal of the Faculty/Staff campaign is $150,000 by June 30, although Capone says increasing the participation level is important as well. If you have any questions, please contact Capone at x 4817 or e-mail at Sheila_Capone@uml.edu.
More than 500 people attended the 50th anniversary celebration of plastics engineering at UML, held during the Society of Plastics Engineers ANTEC Conference at the Hynes Convention Center in early May.

A gala dinner included talks by Michael Johnston ’69, president and CEO of Visteon Corporation, and Barry Perry ’68 chairman and CEO of Engelhard Corporation. The night also included a video presentation of the history of the department and interviews with alumni who are making a difference in the field. Six plastics faculty and staff members were honored for their long service to the department: Steve Orroth, Steve Driscoll, Rudy Deanin, Amad Tayebi, Nick Schott and Manny Panos.

John Davis, senior development officer in the University Advancement Office, announced the conclusion of a five-year fundraising campaign for the Plastics Engineering Department that raised $10.6 million, including $8.4 million in cash and equipment for renovating and creating laboratory space and $2.2 million in cash for 13 new endowed scholarship funds.

“This fundraising effort was a great partnership between industry and the university. We have a hands-on, industry-oriented program, and the plastics industry has responded by keeping our laboratories on the cutting edge of technology,” says Davis. “Our success in raising scholarship money will help keep public education affordable, and allow students from any background to take advantage of the world’s best plastics engineering education.”

Eight of nine major laboratories have been renovated or completed since the start of the campaign, and work will continue to locate a corporate sponsor for the ninth, he says. Before the dinner, about 125 people traveled to the UML campus from Boston to tour Ball Hall and get a first-hand view of the labs and the exciting research being conducted there. Participants included alumni and friends, but also prospective students and faculty from other universities.

Davis says the hard work of many plastics faculty members and administrators made the anniversary celebration and fundraising effort a success. He singled out for special recognition Plastics Department Chairman Bob Malloy, “who worked tirelessly on the fundraising campaign, personally designing many of the new laboratories and helping with the organization of the 50th celebration.”

He also praises Krishna Vedula, the dean of engineering, who started the whole project. “He was the unsung hero during the campaign. Krishna crisscrossed the country, getting our message out to alumni and corporate friends, and provided clear leadership during the critical stages of the fundraising campaign,” Davis says.
Performers Offer a Funny Look at Looks

From “Going Straight (A Hairy Journey)” to “Boobs, Glorious Boobs,” performers Judy Tso and Christina Chan took a humorous look at the pressure for Asian Americans to conform to white culture’s idea of beauty at a recent performance of “Bobby Pins up Your Nose” in O’Leary Library during Asian Heritage Month.

Sporting shirts emblazoned with “Silicone Free,” the two performers took on Western critiques of “flat” noses, non-“bodacious, luxurious hair,” and an inability to “measure up” to Western heights. A tale of the cousin who was hung by her feet to make her taller—“still didn’t work”—was retold, along with a reenactment of one woman’s attempt to use bobby pins to “pinch up her big nose.”

Beneath the humor lay a plea for change, without altering anyone’s standards of beauty. The performers closed by saying, “Mirror, mirror on the wall, who is the fairest of them all? You, my darling, you—without change, without alteration.”

About 100 attended the performance and participated in discussion led by Chan and Tso following the performance. The event was funded by the Council on Diversity and Pluralism, and organized by Asst. Prof. Khaahn Dinh of Psychology.

Radio Roundtable Asks, ‘What’s the Matter with Math Education in America?’

In conjunction with the GEAR-UP (Gain Early Awareness and Readiness for Undergraduate Programs) program, the Center for Family, Work and Community (CFWC) and the School of Health and Environment are participating in the American Chemical Society’s (ACS) Project SEED.

David Turcotte, program manager of CFWC and Prof. John Warner of the School of Health and Environment will be joining forces to select four students from Lowell High School to take part in the project, which allows the students to spend the summer in the laboratory doing hands-on research guided by a scientist-mentor. Students chosen for the project must demonstrate an interest in science, have completed one year on introductory chemistry and come from economically disadvantaged backgrounds with annual family incomes below $27,000.

The program is set to begin the last week of June. Warner will lead the students with assistance from Sofia Trakhtenberg, a researcher in his Green Chemistry lab. The students will be working on two projects concentrating on Green Chemistry. The first seeks to learn how molecules combine to form crystals, which can be designed to accomplish various commercially relevant tasks. The second project will have the students working with bioinspired photopolymers that can be used to make electronic materials that are environmentally benign and renewable.

This is the first time that the School of Health and Environment has been awarded fellowship funds to participate in Project SEED. UML will match the funds awarded to them by ACS in order for the four students to participate. The objective is to encourage the students to pursue career opportunities in the field of chemical science.
English Department Celebrates a New Offering

The English Department celebrated the release of its newest issue of its literary journal, *The Offering*, in style this May with a fiesta at the Mambo Grill in downtown Lowell. Contributors, editors, and English Department faculty, including well-known novelists David Daniel and Andre Dubus III, celebrated the publication with burritos, quesadillas, and spirited conversation.

“This exemplifies what the Offering is all about and ideally what literature and the arts are all about: bringing people together,” says Asst Prof. of English Julie Nash who serves as staff advisor for the student run publication along with Visiting Asst. Prof. of English Paula Haines. “We expect to receive a lot of contributions from English majors, but this year’s Offering included pieces from engineering majors, MBA candidates, retired professors, alumni, and staff.”

“We think the widespread interest in *The Offering* says a lot about our University as a whole and its commitment to the humanities.”

Chamberlain Uses Her Green Thumb to Spruce up South Campus

Assoc. Prof. Claire Chamberlain of Physical Therapy had noticed the area outside her office in Weed Hall was looking a little desperate; especially after trees had been removed, leaving an open space on the South campus quad.

“I kept looking at that area, thinking I’ve got to do something about this.”

With the help of John Murphy of Facilities, the planting happened almost overnight. Chamberlain personally donated the funds to purchase 10 holly bushes and a weeping cherry tree. Murphy immediately got to work planting and within a day or so, the bushes and trees were planted atop the circled stone wall just outside the bookstore.

Students now have a place to sit and enjoy themselves and their newly beautified surroundings.

“A campus is more than buildings. It’s living things as well,” says Chamberlain, who hopes more flowers will join her bushes and continue to bloom during the coming months.

Wheeling for Dollars

Members of the Physical Therapy Club at UMass Lowell took to chairs to play the Baystate Wheelers—whose members are wheelchair bound—in Costello Gym recently. According to organizer Eric Campbell, the event raised $500 for Special Olympics.
Nursing School Profs Publish Book on the Psychology of Aging

Profs. Karen Melillo and Prof. Susan Houde of the School of Nursing have edited and published what promises to be the text of gerontological psychology, Entitled Geropsychiatric and Mental Health Nursing and published by Jones & Bartlett Publishers, the book brings together leading researchers and practitioners in the field of geropsychology to address the issue of health care in older adults.

“We went to look for a text in this field and there wasn’t one so we decided to publish one ourselves,” says Melillo, a 2001 faculty including Ruth Remington. Houde and Melillo’s text will be required reading on the subject in UML classrooms and in UML’s Graduate Certificate in Gerontology. Houde and Melillo’s book on an old subject, ageing. Entitled Geropsychiatric and Mental Health Nursing, the book stands to be the definitive text on the subject of ageing and health issues.

As people continue getting older and living longer than previous generations, gerontology is becoming one of the fastest growing fields in professional healthcare. The growing interest in UML’s Graduate Certificate in Geropsychiatric and Mental Health Nursing is testimony to this. This certificate is for the post-baccalaureate nurse who wants to develop greater knowledge and skills in the assessment and nursing care of older adults who are experiencing common mental health and psychiatric problems of late life. Houde and Melillo’s text will be required reading on the subject in UML classrooms next year and there is hope that other universities will also make use of its resources.

“We want to educate students to work with patients and families and recognize what may be really happening,” says Houde. “Too many ailments or behaviors are written off as just a natural part of ageing but a lot of these things are treatable and can make life better for patients and their loved ones.”

“This book will prepare nurses, nurse practitioners and all caregivers to evaluate and treat individual patients,” says Houde. “We’re really happy about the experts who contributed to the book from the Harvard Institute for Nursing as well as our own faculty including Ruth Remington, Mary Futrell, Liz Zhan, Betty Morgan and Geoffrey McEnany.”

As the creator of “Green Chemistry,” Prof. John Warner has received his share of accolades during his 20-year career. But nothing quite compares to being invited into the Oval Office for congratulations from George W. Bush for earning a Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring.

“It was really cool,” he admitted. “It was a very odd moment to just be standing there in the Oval Office. It was something I never thought I’d do.”

Warner was among nine individuals and five institutions nationwide who last month received the award for helping increase participation of minorities, women and people with disabilities in science, mathematics and engineering. He was the only individual recognized in the Northeast.

“I feel so honored to have had the opportunity to meet the president and be recognized,” Warner said. “But I really think that the award is less recognizing John Warner as it is recognizing Green Chemistry and the students who are doing the work.”

After receiving the award from John H. Marburger, the president’s science advisor and director of the Office of Science and Technology Policy, Warner and the others met with Chief of Staff Andrew Card before being invited into the Oval Office.

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“Then I was just a kid representing a high school band. This time it was quite a bit different,” he said.
Dean Wegman Named Chair of National Research Review Committee

The National Academy of Sciences (NAS) has appointed Dean David Wegman of the School of Health and Environment chairman of a steering committee that will oversee a five-year effort to review research programs of the National Institute for Occupational Safety and Health (NIOSH).

NIOSH is the federal agency responsible for research and prevention of occupational injuries and disease.

“It is quite an honor to be selected for this task. It’s the third NAS committee that I’ve chaired, although I have served on a number of them,” Wegman says.

NIOSH is in the process of establishing and evaluating performance measures for each of its research programs and has requested that the National Research Council and the Institute of Medicine review its program elements with respect to their impact, relevance and future directions.

The review will evaluate not only what the NIOSH program is producing, but also will determine whether it is credible to credit to the Institute research with changes in workplace practices, or whether the changes are the result of factors unrelated to the Institute’s work.

“This task is partly in response to a need that all federal agencies have to evaluate their programs to make certain that their research is well targeted and that their results can have an impact on the population,” Wegman says.

“What we’re trying to do is establish a framework, after which between eight and 15 panels from across the nation will evaluate one specific area each. The first two committees will be looking into the areas of mining, and noise and hearing.

“Each panel of 10 or 12 members will review the research, according to our framework, and then make an evaluation of it. We expect that they will then feed that back to us and we’ll write an overall report at the end of five years.

“We’re under the gun because we want to start the first two before the end of September—so we have to come up with a framework by the first of September.”

Wegman’s group already has met once in May and July, and will convene again in August.

CSCE Presents Haskell Memorial Award to John Colluccini

Continuing Studies and Corporate Education presented the annual Haskell Memorial Award for Distinguished Teaching to John D. Colluccini, an adjunct faculty member of mechanical engineering.

“Professor Colluccini captures the essence of a great teacher, which is what the Haskell Memorial Award was built upon,” said Pauline Carroll, CSCE director of enrollment management and administration. “We’re proud to honor him with this esteemed award.”

Before becoming an adjunct faculty member, Colluccini was a full-time assistant professor for the College of Engineering for nearly 10 years. He holds three engineering degrees from UMass Lowell, including a master’s in mechanical engineering. His articles have appeared in Mechanical Engineering and Modern Materials Handling, among others. He is a member of the American Society of Mechanical Engineers and the Society of Plastics Engineers and is former vice chairman of the ASME Boston Chapter. He continues to travel extensively on behalf of the University to provide on-site corporate training.

“This award means a lot to me, especially since I earned all three of my degrees here at UMass Lowell,” said Colluccini. “It’s an honor to receive an award in memory of William Haskell because he was such a great teacher.”

Haskell taught at the University for many years and was known among students as an exceptional teacher. Each year, CSCE selects a faculty member who personifies the spirit and teaching excellence of the award’s namesake.

Computer Science Undergrads Learn with PalmOne Equipment

UMass Lowell’s Computer Science Department has received a gift of palmOne products valued at more than $5,000. The 14 Tungsten handhelds and Treo smartphones are used in a required course on operating systems. According to Asst. Prof. Fred Martin of Computer Science, students will learn Palm OS programming and understand how these ideas and techniques relate to operating systems in general.

“Even this late in the semester,” says Martin, “students are excited to get their hands on this cutting-edge, fun technology. They’ll be writing their own applications, and I’m looking forward to seeing what they invent.” Other faculty members also plan to use the equipment for student senior projects and subsequent research.

Dan Greeoe, technical lead for Desktop Applications for palmOne, Inc., and a UMass Lowell Computer Science graduate, coordinated the equipment grant with the University.

“UMass was instrumental in preparing me for my career at palmOne, and I hope students working with palmOne handhelds and smartphones will help continue the tradition of innovation for future generations.”
Prom. Arno Minkkinen of the Art Department will lead workshops this summer in France, Italy, New Hampshire and Maine. In France, he will be at the Noir d'Ivoire Photography Workshop in Provence; in Italy at the Toscana Photographic Workshops; and in this country, at Plymouth State College and in Rockport at the Maine Photographic Workshops. This February, former Village Voice and New York Times photography critic and author A.D. Coleman presented “The Saga of Arno Rafael Minkkinen” at New York’s School of Visual Arts’ “Artists Talk on Art” series. In the same month, the Association of International Photography Art Dealers (AIPAD) art fair in New York resulted in two magazine reviews on Minkkinen’s work, “Buoyant Photo market at AIPAD” in ARTnews and “Going Silver: The Photography Show 2005” in Camera Arts.

In March, Minkkinen’s “Canyon Lake, Arizona, 2002” was among works donated for a benefit auction in New York, the proceeds of which provide legal assistance for women and children in crisis.


In the fall, a retrospective showing of 126 works representing Minkkinen’s 35 years in photography will be exhibited in the main galleries of the DeCordova Museum and Sculpture Park in Lincoln.

This Arno Minkkinen photo, “Canyon Lake, Arizona, 2002,” was donated to Sotheby’s in New York this spring for a benefit auction, the proceeds of which provide legal assistance for women and children in crisis.

Prom. John Warner, director of the University’s Green Chemistry program, was the keynote speaker at the annual meeting of the Alliance for a Healthy Tomorrow, held in Weston last month. The Alliance is a citizen initiative in Massachusetts to establish new government policies to prevent harm from toxic hazards. Warner’s Center for Green Chemistry is defined as “a revolutionary philosophy that seeks to unite government, academic and industrial communities by placing more emphasis on tendency to environmental impacts at the earliest stage of innovation and invention.”

Rich Lemoine, director of Environment, Health and Safety, has received national recognition for the Environmental Management Systems (EMS) Webware software that he developed with former IT graduate student Mukunj Joshi. The Campus Safety, Health and Environmental Management Association—a division of the National Safety Council—will present the Award of Recognition in the Unique or Innovative category of its awards program to Lemoine at the International Conference on Campus Safety, to be held in Philadelphia on July 20. EMS Webware is the first software developed primarily for on-campus use that will be sold on the open market by UMass Lowell. The process is being managed by UML’s Commercial Ventures and Intellectual Property office.

Renae Lias Claffey, University Communications, recently was elected to the executive board of the Massachusetts Women in Public Higher Education. Claffey has handled communications and government relations at the University, where she has worked for 10 years.

Two members of the Physical Therapy Department will present papers at the annual Conference and Exposition of the American Physical Therapy Association this month in Boston. Assoc. Prof. Joyce White, along with several of her students and graduates, will present: “Effects of Counterforce Forearm Bracing on Handgrip and Wrist Extensor Strength in Patients with Lateral Epicondylitis,” “Handgrip and Wrist Extensor Strength Response to Counterforce Forearm Bracing in a Healthy Population,” and “The Reliability and Validity of a Passive Knee Extension Test for Assessing the Length of the Hamstring Muscles.”

Asst. Prof. Deirdra Murphy will present “The Effects of Therapeutic Riding on Functional Outcomes for Children and Disabilities.”

During the conference, the Physical Therapy Department will sponsor an alumni reception on Friday, June 10, from 6:30 to 8:30 p.m. at the Sheraton Boston Hotel, Beacon B Room, 39 Dalton St., Boston. This is an opportunity to celebrate the success of the UML program. Conference registration is not required to attend.

Note Worthy

Promotions
Donna Vieweg, senior equal opportunity associate in Equality Opportunity and Outreach, from compliance specialist.

Appointments
Hassen Bouchekif, postdoctoral in polymer science.
Gregory E. DeLaurier, associate director of the Center for Economic and Civic Opinion.

Appointments
Tomoya Higashihara, postdoctoral in polymer science.
Justin Lombardi, institutional security officer in Residence Life.
David Miranda, maintainer in Facilities.
Kelly Nardoni, institutional security officer in Residence Life.
Steven P. Snay, radiation safety technician in the Radiation Safety Office.
Mingxing Wang, postdoctoral in the Chemistry Department.

Brachman Addresses Students at Monthly Speaker Series

Brachman, left, a lawyer and associate director of the Delta Institute, a Chicago-based nonprofit organization that helps improve environmental quality and promote community and economic development, stands with David Turcotte, program manager of the Center for Family, Work and Community; RESQ graduate students Yovani Baer and Jason Carter; and RESQ Prof. Chris Tilly. Brachman was on campus to deliver her talk “Challenges of Community-Based Brownfields Development,” as part of the monthly speaker series for the Community Development Work Study project, sponsored by the U.S. Department of Housing and Urban Development (HUD). Turcotte and Tilly co-coordinate the project which funds four students to do community development work with different organizations in the area.
Researchers Explore Health and Work Issues of Rural Southern Women

African-American women who work in North Carolina’s poultry processing industry are at risk of suffering carpal tunnel and other musculoskeletal disorders, according to two Duke University Medical Center researchers. Hester Lipscomb and Mary Anne McDonald described this situation recently in a UML campus talk entitled “Exploration of Work and Health Disparities Among Women in the Rural South.” The talk grew out of a project called Safety and Health of Working Women.

Lipscomb, the project director, explained that participants in the study completed questionnaires and were given physical examinations in three- and six-month intervals. The goal of the research was to determine the incidence and prevalence of long-term injuries and to evaluate the risk of exposure to these injuries.

Sponsored by UML’s PHASE (Promoting Healthy and Safe Employment) in Healthcare project, the Center for Women and Work, and the Center for Public Health Research and Health Promotion, the talk also featured an exhibit of photographs of the women who work in the poultry plants, accompanied by their own descriptions of the struggles of daily life and injuries they have had to endure.

PHASE project administrator Diane Doherty, left, stands with Jody Lally, PHASE project manager; Duke University researchers Hester Lipscomb and Mary Anne McDonald; and PHASE principal investigators Prof. Laura Punnett and Asst. Prof. Craig Stain. Lipscomb and McDon-ald, researchers from the Division of Occupational and Environmental Medicine at Duke University, gave their talk “Exploration of Work and Health Disparities Among Women in the Rural South,” which examines health and safety issues of African-American women working in the poultry-processing industry in North Carolina.

Stay on top of upcoming events at UMass Lowell by checking out the online calendar at...

http://www.uml.edu/calendar.asp