

the Shuttle

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\$11.8 Million Fox Hall Renovations Underway

Plan Addresses Student Needs

The University has announced that its most recognizable building, the 18-story Fox Hall, will be getting a much-needed overhaul. The \$11.8 million renovation project and maintenance contract will prepare the campus' largest housing facility to meet the needs of current and future students.

"A 23 percent increase in freshman student enrollment this year tells us more students are choosing UMass Lowell," says Chancellor Marty Meehan. "Many of them want to live on campus. By revamping our largest residence hall, we will have more rooms to meet some of that need."

Fox Hall—which currently has 546 beds for both males and females, freshmen to seniors—is the most popular residence hall choice. Twenty-five percent of all campus

residents live in the building, which has not seen any major construction since it was built in 1973.

As part of the overall campus vision he announced in the fall of 2007, Meehan set a goal of a 50-50 mix of resident to non-resident students. Currently, that ratio is about 32 percent resident to 68 percent commuter.

"This project will provide 119 new beds for the start of the fall 2009 semester," says Dean of Students Larry Siegel. "This is a major step forward in meeting the needs of our students, as well as building a stronger sense of community for residents on campus."

The renovation plan includes "living learning communities," clusters of 15 to 18 students with common interests who will share bathrooms and lounges. Student Life staff will convene focus groups next semester to help determine which themes appeal to students, such as arts, politics, culinary arts and culture.

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▲ The University has announced that Fox Hall will get \$11.8 million in renovations. From left, Interim Chief Information and Facilities Officer Tom Costello, Dean of Students Larry Siegel, Executive Director of the Building Authority David MacKenzie, Vice Chancellor for Administration, Finance, Facilities Joanne Yestramski and Chancellor Marty Meehan.

Meet Lowell G. Sims, the Human Simulator

Realistic Technology Aids Nursing Student Retention

He complains, he breathes, he coughs. And, at times, he gags.

Named Lowell G. Sims, a new patient simulator has made its way into a UMass Lowell classroom.

Used successfully for training in other industries such as the military and aerospace, simulation technology is the most realistic way to teach nursing students before they work with humans.

"Considering the nursing shortage, we want students to succeed in the program, graduate, pass the national exam, and work as professional registered nurses," says Jacqueline Dowling, associate nursing professor and principal investigator of the grant that funded the patient simulator. "Simulation-based nursing education is a powerful teaching strategy to improve the competence and retention of our nursing students."

With realistic anatomy and clinical functionality that nursing professors control with a computer, the high-tech mannequin is a convincing patient. The nursing students who met Lowell G. Sims at a demonstration earlier this school year, took his pulse, listened to his heartbeat and gave him oxygen.

"Right now, we listen to each other's vital signs but we're young and healthy," said junior nursing student Deanna Lynch. "By seeing and hearing someone in distress, we'll be better prepared and confident in the real world."

Nursing faculty are currently developing real-life scenarios, such as an adult patient with asthma and a new mother and baby that simulate patient symptoms and reactions to student interventions.

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Endowed Scholarship Named in Honor of Former Dean David Wegman

The University has announced the establishment a \$186,000 endowed scholarship named in honor of Dr. David H. Wegman, former dean of the School of Health and Environment.

Hundreds of alumni, friends and colleagues donated money in December for the student scholarship fund. In addition, the University transferred donations made by DuPont for Wegman's years of service as chair of the DuPont Epidemiology Advisory Board to the new fund.

The scholarships will be awarded to support students committed to an integrated vision of health and environment.

The School of Health and Environment, formed in 2004 under Wegman's leadership, encourages new ways of thinking about the links between health and environment in

the prevention and treatment of diseases.

Wegman stepped down as dean last August to spend more time with his wife, Peggy, who has been in ill health. Prof. Kay Doyle, former chair of the Clinical Laboratory and Nutritional Sciences Department, is serving as interim dean while a search for Wegman's successor is being conducted.

"My goal for this fund is to alleviate financial roadblocks for a new generation of students who can learn how to prevent diseases, protect our environment and enhance our understanding of the relationship between them—with the ultimate goal of creating healthier individuals and communities, safer work environments and a more sustainable



▲ Former Dean David Wegman, with his wife, Peggy, enjoys comments from his colleagues at a recognition event that established an endowed scholarship fund in his name.

world," said Wegman. "I hope what I've helped build in the School is a spirit of community to accomplish this."

—KA

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\$11.8 Million Fox Hall Renovations Underway

Along with addressing the issue of limited residential space, the plan also provides for improved security, kitchens for residential use, a more efficient hot water system, Americans with Disabilities Act (ADA) compliance in elevators and living areas, and air conditioning for the first six floors of the building, which includes a dining hall serving the 1,500 students residing on UMass Lowell's East Campus.

"Right now students on the upper floors can't take hot showers during the busy times of the day," explains Siegel. "Some students have to wait a very long time for the elevators. We are going to add a new entrance into the dining hall. This plan will make the flow of the building more efficient."

The UMass Building Authority is supervising the renovation project. The Building Authority and the project's architect, ADD Inc., had estimated the costs at about \$15 million. Dellbrook Construction, headquartered in Braintree, was chosen in December 2008 through a competitive bid process, with their bid coming in \$3 million less than the estimate. Revenue bonds will finance the Fox Hall project, and the debt service will be covered largely with student housing fees.

"We were pleased that Dellbrook's bid came in below our original cost estimates," says David MacKenzie, executive director of the Building Authority and former UMass Lowell interim chancellor. "There are three things we worry about—the project cost, the schedule and the quality. In choosing Dellbrook, we know we will be putting the students' money to good use."

Joanne Yestramski, vice chancellor for Administration, Finance, Facilities and Technology, says the campus has also contracted with cleaning company UGL-Unicco to provide daily maintenance in Fox Hall.

"Our goals were to protect our renovation investment with improved maintenance of the facility, serve students better by providing seven-day-per-week cleaning rather than five, and save money for UMass Lowell," she says.

The contract with UGL-Unicco will meet those goals, saving the campus more than \$150,000.

"That cost savings helped ensure that we could retain all our full-time housekeeping staff despite steep state-mandated budget cuts that resulted in layoffs in other areas," says Yestramski.

"In these tough economic times," says Meehan, "this is very good news. Not only will this plan allow us to keep current staff members, it will also create 200 construction jobs."

Demolition is underway in Fox Hall's fourth, fifth and sixth floors, which had consisted primarily of office and classroom space and will be reconfigured as housing units.

The Office of Residence Life and a Centers for Learning satellite branch will be located on the first floor for easier access. All student clubs will be relocated to the McGauvran Student Union.

"Fox Hall is a place we can all look up to no matter where you are in the city and be grounded," says Siegel. "It emanates the energy of our campus, and we are really excited by this step to meet the needs of our residents."

—MH

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Meet Lowell G. Sims, the Human Simulator

Partnering with Lowell General Hospital, the UMass Lowell Nursing Department received a \$48,000 grant from the Massachusetts Department of Higher Education's Nursing Initiative to fund the Laerdal patient simulator, which will be made available at the University for LGH training. The technology will be integrated into Lowell General's new graduate nurse orientation and residency programs, and will be used during critical care orientation and mock code sessions.



▲ Junior nursing students inspecting Lowell G. Sims are, from left, Lindsey Costello, Lodmira Mousa, Adaobi Onyekau, Deanna Lynch and Anastacia Graves.

Dowling also has applied for a grant for SimBaby, a baby simulator that will teach students the unique way to care for infants.

—KA

Center Receives \$1.1 Million Air Force Grant

Project to Expand Worldwide Ionospheric Radio Sounding Network

Researchers at UMass Lowell's Center for Atmospheric Research have received a \$1.1 million grant from the U.S. Air Force Weather Agency to expand the Center's Digisonde Global Ionospheric Radio Observatory (GIRO). The ionosphere, the ionized upper region of Earth's atmosphere, is widely used for long-distance short-wave radio communications.

In the last three years the Center has developed a new, advanced digital ionosonde—the Digisonde-4D—for monitoring the condition of Earth's ionosphere in real time. The Center will build these ground-based ionospheric Doppler radars for the Weather Agency for five observation sites. Follow-up grants will increase the total to 30.

"The ionosphere is extremely variable and dynamic, with the density of free electrons changing from 1,000 per cubic centimeter to 10 million, with varying effects on satellite-to-ground communication and GPS navigation," says Center Director Bodo Reinisch, the project's principal investigator. For this reason, Reinisch proposed some 20 years ago that the U.S. establish a worldwide network of about 80 Digisondes to monitor the ionosphere in the wake of solar flares, geomagnetic storms and other global space-weather disturbances.

"My proposal found wide support," he says, "but there was not enough funding, and the proposal was eventually declined as too futuristic." However, the Center did build a smaller network of 17 Digisondes in the late 1980s for the U.S. Air Weather Service. This network is still operational and continues to supply valuable data to World Data Centers and UMass Lowell's Digital

Ionogram Data Base (DIDBase).

In the meantime, Reinisch and his colleagues collaborated with research institutes in other countries, and today there are some 80 Digisondes scattered around the world, operating continuously and feeding information to the Data Centers and the DIDBase.

The Air Force Weather Agency's Nexion (Next Generation

Ionosonde) project, which calls for 30 new Digisonde-4D systems to be deployed across the globe, will help make Reinisch's futuristic dream become a reality. The first system is scheduled to be installed this February at Vandenberg Air Force Base in California. "The Nexion project was announced on a competitive basis, and the competition was tough," he says. "Ultimately, the Center's longtime scientific and engineering experience and international leadership in the field of geospace plasma sounding won us the award."

—EA



▲ Prof. Bodo Reinisch with a Digisonde-4D ionospheric Doppler radar built at UMass Lowell's Center for Atmospheric Research.

Grad and Continuing Studies Open House a Success



▲ Hundreds of prospective and returning students attended the Graduate and Continuing Studies Open House and Registration held Jan. 14. Students were able to talk to advisers and graduate program coordinators, attend workshops and register for spring classes. Here, Accounts Receivable staffers Diane McLaughlin, second from left, and Nancy Sireen, far right, help three prospective students.

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Study Evaluates Male Reproductive Health Clinics in Fitchburg and Leominster

Nursing Partners on \$1.2M Grant

To confront rising rates of teen pregnancy, sexually transmitted diseases, and HIV infections in Leominster and Fitchburg, Asst. Prof. of Nursing Ainaat Koren will evaluate the effectiveness of male reproductive clinics in her role as co-investigator on a \$1.2 million grant.

The federal Office of Population Affairs awarded the five-year "Male Research Cooperative Study" grant to the Montachusett Opportunity Council (MOC), a non-profit organization that reaches young African American and Hispanic males in north central Massachusetts.

Koren will partner with Mary Giannetti, director of Nutrition and Wellness at MOC and principal investigator of the grant, and Curtis Lopes, MOC's Mens's Program Coordinator, to test

outreach efforts and the structure of model clinics to improve reproductive health for men.

Koren's research on a previous grant with MOC found that reaching vulnerable high-risk

young men required creative innovations. Educational materials and services were delivered to places where young men visit, such as community centers and barbershops.

"Our past study showed that we needed to integrate

reproductive services where young males are already receiving health, education or social services," says Koren, who conducted her doctoral thesis on family planning.

The model service clinics will be available at multiple sites within the community including Fitchburg State College Health Services, Fitchburg High School Health Center and the Community Health Center. Leominster sites will be determined as the project progresses.



▲ Ainaat Koren

BPA Health Risks Make List of 100 Top Science Stories of 2008

Prof. Woskie of Work Environment Contributed to Federal Report

Two reports concerning the safety of human exposure to bisphenol A, or BPA, a chemical used in manufacturing many consumer products, were ranked No. 12 in the list of 100 Top Science Stories of 2008 compiled by *Discover*, the nation's leading monthly popular-level magazine on science and technology.

The first report, issued by the National Toxicology Program (NTP), concludes that there is some concern for adverse effects of BPA, which mimics the hormone estrogen, to human reproduction and development. The second study, published by a team of British and American researchers in the *Journal of the American Medical Association*, associates high urinary concentrations of BPA with an increased prevalence of cardiovascular disease, diabetes and liver-enzyme abnormalities.

Prof. Susan Woskie of the Department of Work Environment, one of the expert panelists who prepared the NTP paper, says that, as far

as she knows, the Food and Drug Administration (FDA) has no immediate plans to ban or phase out BPA in plastics manufacturing. "In April, Canada banned baby bottles containing BPA, and several states in the U.S., including California and New York, have had legislators propose bans on BPA-containing products," she says.

In the meantime, stores like Wal-Mart and Toys 'R' Us are starting to phase out BPA-containing baby bottles and sippy cups, contributor Jocelyn Rice wrote in *Discover*.



▲ *Discover* magazine's January 2009 issue

Baseball Research Lab Featured on Discovery Channel

Show Highlights Science Behind Bat and Ball Collisions

As Major League Baseball teams get ready for spring training, the contribution of UMass Lowell's Baseball Research Center to America's favorite sport was spotlighted in a recent episode of Discovery Channel TV's Time Warp series hosted by MIT's Jeff Lieberman.

The six-minute segment, which aired in November, showed Patrick Drane, assistant director of the Center, explaining why baseball bats sometimes break during a game. Using the lab's air cannon, Drane fired baseballs at a stationary bat made of ash. A super high-speed video camera shooting at 10,000 frames per second showed how the ball gets squashed and the bat vibrates like Jell-O during the collision. In one demonstration, Drane fired a ball at 150 miles per

hour—replicating a 90-mph fastball and a 60-mph swing—outside the bat's proverbial "sweet spot," causing the bat to vibrate so violently that it splintered along the wood's grain.

If you missed the show, you can view it on YouTube at this link: <http://www.youtube.com/watch?v=FPeOg6tHoR0>.



▲ This frame from the YouTube video shows how a baseball gets deformed upon contact with a bat.

Faculty, Staff and Students Discuss Proposed New Academic Building

Workshop Session Airs Ideas About Art, Lighting and Space

Areas for students to congregate. Food options. Art on the walls.

These and many other topics were discussed last month during a two-hour "community workshop" in which dozens of faculty members, staff and students offered their thoughts about the proposed new academic building for the South Campus—and the needs of the University community in general.

The meeting, held in O'Leary 222, was conducted by Selena Goldberg, project manager in the state Division of Capital Asset Management (DCAM).

The plan for the new building, Goldberg said in her opening remarks, will be "realistic and implementable" and should "provide an opportunity for UMass Lowell to find its way to the future." This "mini plan," she added, will become part of the overall Master Plan for the whole University.

The South building design, she said, will involve many departments, and participants in the process will assess what is needed in the way of upgrades and space allocation.

"The new building—which we hope will be completed by the fall of 2012—is the long-range goal," Goldberg said. "Meanwhile, we want to hear suggestions about what you see as the needs here and now, as well as in the future."

Included among the many comments, questions and issues raised during the "brainstorming" open discussion were the following:

- There is a need for a dedicated student center. Much of McGauvran, it was noted, houses offices and other facilities.
- A building should be open 24-hours a day for South Campus residents—a "welcoming" place to "hang out" other than classrooms and dorm rooms.
- Food services other than Aramark are needed.
- Does the planning process include transportation and parking? Transportation between campuses is time-consuming and often inconvenient.
- Open spaces, such as the gazebo area in the South Quad, should be the scene of more activities. They should be a "symbol for open discussion."
- The new building should have a food kiosk and a common space for activities and congregating, a place to display art works. It should be well lighted. "Lighting changes attitudes."

DCAM's Goldberg said there would be a series of open forums held in the future to seek input from the University community and to elicit reaction to what is being done. She also agreed with one suggestion that the University might establish a Wiki, a web page that everyone could access to contribute ideas about the building project.

—JMcD

Marching Band Hits a High Note With First New Look in Two Decades

Fall 2008 had a lot in common with Fall 1988: The stock market plummeted, a Bush was in the White House and the UMass Lowell Marching Band got new uniforms.

"People couldn't have been more elated," Director of University Bands Daniel Lutz says of the band's first new uniforms in 20 years. "The students were beside themselves, being able to put something on that they feel proud of."

In early September, the 90-member band debuted the uniforms at Convocation. The new look—white jackets with black pants—are a dramatic change from the previous uniforms, which combined a sometimes cumbersome collection of eight pieces in a variety of colors, including red. The new, sleeker-styled uniforms are not only more consistent with the University's colors of white, black and royal blue, they are also more contemporary-looking and easier to maintain, says Lutz, who conducts the marching band.

Discussions about the need for new uniforms had been going on for some time because, despite some minor replacements over the years, they had become outdated. Lutz says it had seemed like purchasing new uniforms was outside the realm of possibility until a "stroke of wonderful luck and serendipity" during the Fall 2007 semester when Chancellor Marty Meehan saw the band perform at Family Day and recognized the need to replace the garments. From there, Lutz said, the replacement moved quickly as students, staff, University officials and experts were called upon to weigh in on the new design.

"We had certain parameters. It needed to serve its purpose up close for ceremonial functions, like Convocation or Homecoming, and at a distance when the band performs in exhibitions and parades," Lutz says. "A band uniform is a ceremonial dress derived from a combination of formal concert wear and a military uniform."

To serve both purposes, he adds, the uniform should

be elegant, showing what is known in the marching band world as "depth, emblem and color." White, the predominant color, gives height and presence to the ensemble, and the contemporary lines of the royal blue slash help the ensemble to stand out.

The band wore its new uniforms at events from Convocation and Family Day to parades and charity walks to exhibitions at high-profile marching band competitions, including the Massachusetts state championship and similar New England and New York-Connecticut regional events.

Being a featured ensemble at such events is a big deal for the student musicians and is among the ways the marching band helps promote UMass Lowell, Lutz says. "The band has served as a draw for students entering college, offering the opportunity to continue to pursue their passion for music during their studies at the University."

The marching band is open to any UMass Lowell student, regardless of major, year or experience playing an instrument. Anyone interested in joining should talk to Lutz.

This spring semester, a significant number of marching band members will be performing in the pep band at River Hawk hockey games, and with other UMass Lowell ensembles. Lutz says one of the highlights of the semester will be the spring concert in April at which music, including Aaron Copland's "Lincoln Portrait," will be performed.

—CG



▲ The UMass Lowell Marching Band debuted its new uniforms at Convocation in September. Shown performing at the event are, from right, Eric Salituro of Marlboro; Ben Tracey of Chelmsford; and Lindsey Marino of Gloucester.

Numbers of Women in CS Declining, Newspaper Says

UMass Lowell Works to Attract, Retain Female Students, Faculty

According to a feature story in the New York Times, although the percentage of women majoring in science and engineering fields is about on a par with men, the numbers of women majoring in computer science is much lower and is declining.

In 2004-05, only 22 percent of computer science degrees went to women, a decrease of 6 percent from the previous three years, the story said.

The Times article gave no clear explanation for this decline.

At UMass Lowell, female undergraduates in CS total 12 out of 167, which is 7 percent. In the master's program, the percentage is 28 (30 out of 109) while the percentage of women in the doctoral program is 19 (7 out of 36).

But steps are being taken to improve these numbers.

"Our gender ratio is probably typical," says Asst. Prof. Fred Martin. "We do have some initiatives going to change this, including Artbotics and Performamatics."

Artbotics, a collaboration between the University and Lowell's Revolving Museum, enables students to explore the connection between art and computer science, especially robotics. In the Performamatics program, students in the Computer Science, Art, Music and English departments combine their talents in the area of exhibition and performance technologies.

"Also," says Martin, "we have an active Women in CS (WiCS) student group that has been very effective in building community, not only with the female students but broadly across the department."

"So we do have some good things going. Hopefully, the ratio will improve."

But, he adds, this will require changes in perception in the middle

and high school years.

Computer Sciences Prof. Georges Grinstein finds that the effect of computer science on social issues can be a positive factor.

"What I have found," he says, "is that direct and more immediate social impact is very important to women. Note the 'immediate' here."

"Our work with breast cancer for Massachusetts General Hospital and the indicator project (monitoring homeless, health, education, etc.) is of great interest to women in my lab (five women, 10 men). These views

have been expressed by them, as well.

"And, of course, role models are critical."

And what better role model than a faculty member?

Assoc. Prof. Karen Daniels says, "Three of our 18 computer science professors are women. (The other two are Assoc. Prof. Holly Yanco and Asst. Prof. Cindy

Chen.) I think this is a very positive influence for attracting and retaining women. There is strong support for encouraging women among our entire computer science faculty, including the men."

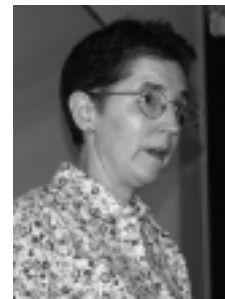
Daniels says her father was an engineer and skilled programmer who used to bring home punched cards and plastic "write rings" used for reels of magnetic tapes, which she and her sister used as toys. Her father also supported her math and logic skills, she says.

"This is a critical time when many girls 'fall off the math bandwagon' and, therefore, don't have a sufficient math foundation upon which to build solid computer science skills."

Daniels says her mother "contributed to my ability to overcome the hurdle of being part of a small minority in a male-dominated career field."

Computer Science Department Chair Jie (Jed) Wang says, "We encourage female students and female faculty to our program. We provide whatever we can to attract them and, once they're here, we try to make sure they're successful."

—JMcD



▲ Karen Daniels