UML Raises the Curtain on New Fabric Discovery Center

Facility Will Be Home to Research and Development of Next-generation Materials

Shirts and shoes with wearable electronics embedded in them to measure vital signs. Building materials with built-in sensors that can detect unseen structural flaws or damage. Medical textiles that can help heal wounds. Those are some of the innovations that could come to fruition at UMass Lowell’s Fabric Discovery Center, a new research and development facility that brings together researchers, industry and public agencies to develop and manufacture 21st century materials.

Established with a $10 million grant from the state, the center officially opened its doors in July at an event attended by Gov. Charlie Baker, UMass President Marty Meehan, elected officials, representatives of businesses and university administrators, faculty and students. Housed alongside the university’s Innovation Hub business incubator at 110 Canal St. in downtown Lowell, the center offers 28,000 square feet of space for research, design, prototyping, pilot manufacturing and testing of advanced materials.

Baker hailed the facility as the future of manufacturing in Massachusetts.

“The opening of the UMass Lowell Fabric Discovery Center is a powerful demonstration of this university’s national leadership in translating cutting-edge research into solutions that improve people’s lives,” said Chancellor Jacquie Moloney.

Baker and others said the Fabric Discovery Center creates a national model for collaboration between three Manufacturing USA Innovation Institutes: Advanced Functional Fabrics of America (AFFOA), Flexible Hybrid Electronics (NextFlex) and Advanced Robotics for Manufacturing (ARM).

UML’s New England Robotics Validation and Experimentation (NERVE) Center, which is also located at 110 Canal St., will be the home for the robotics investment from M2I2. NERVE is a testbed for robotics systems and is used as a training center by faculty and students as well as Massachusetts robotics companies, software developers and manufacturers looking to evaluate their systems.

“UMass Lowell’s Fabric Discovery Center will enable companies to design, test and create new products and technologies, helping to grow the workforce and shape tomorrow’s economy,” she said.
Biology Professor Seeks to Untangle Mysteries of Spiderweb’s Super Toughness

NSF-funded Research May Lead to Advances in Medical, Consumer and Military Applications

What makes you so tough?

That’s the question UMass Lowell researchers are trying to answer about spider silk, one of the toughest materials found in nature.

Understanding the molecular composition and biomechanical properties of spider silk could open the door to the development of a new generation of high-performance synthetic biomaterials for military, medical and consumer applications, says Jessica Garb, an associate professor in the Department of Biological Sciences.

Garb is leading a research project to examine the evolution of an ultratough silk produced by a species known as Darwin’s bark spider. The study, which is funded with a four-year, $335,000 National Science Foundation grant, could lead to improvements in helmets and body armor or other protective equipment for soldiers, in medical devices such as prosthetics, bandages and sutures and in sports gear, Garb says.

“Several startup companies are already producing spider-silk-based products using genetic engineering techniques, and our work will add to these endeavors by providing new recipes for even tougher silk-based materials,” she says.

The researchers are using tools from microscopy, molecular biology, high-throughput DNA sequencing, protein biochemistry, evolutionary biology and bioinformatics to examine the spider’s dragline silk, which is 10 times tougher than the Kevlar used in body armor. By analyzing the genes that encode the silk’s proteins, the researchers hope to understand how to replicate the material using genetic engineering, Garb says.

The study is being conducted in partnership with the University of Akron and the University of Vermont.

Teachers Learn Hands-on History in Lowell

NEH-funded Program Gives Educators Lessons on Industrial Age

Schoolteachers from around the country spent part of their summer vacation learning about life as a millworker during Lowell’s industrial rise of the 1800s.

The educators were participating in the weeklong summer teacher institute, “Social Movements and Reform in Industrializing America: The Lowell Experience,” which was created by the Tsongas Industrial History Center (TIHC), an education partnership between UMass Lowell’s College of Education and the Lowell National Historical Park.

The program is funded by a $167,000 grant from the National Endowment for the Humanities.

In all, 72 history, English and elementary school teachers participated in two separate sessions. The grant covers tuition and pays the teachers a stipend to defray the cost of housing, meals and travel.

The summer institute is now in its 11th year and has trained more than 1,000 teachers from schools across the country, says Sheila Kirschbaum, the TIHC’s director and a College of Education staff member.

Participants took walking tours with local historians, saw historical performances and took a boat ride up Lowell’s first canal. They also visited Concord and Old Sturbridge Village.

“This program is very well-constructed,” says Paul Horton, a high school history teacher at the University of Chicago Laboratory Schools.

“It’s a very intentional balance of content and experience.”

Financial Aid Planning Sessions Provide Personal Touch

New Program Helps Students, Families Map Out Plan to Pay for College

To help incoming students and their families navigate their options for paying for college, the university has introduced one-on-one financial aid planning sessions.

During the summer, dozens of incoming freshmen and their parents came to campus and met with a team of expert staff members from the Solution Center, Financial Aid and Student Financial Services to go over everything from student loans to monthly payment plans.

Launched as a pilot program for 60 families in the spring of 2017, the program doubled in size this summer, with 120 families registering for 30-minute appointments offered on three dates at University Crossing and the Campus Recreation Center.

Participants could ask questions about everything from grants, scholarships and loans to the cost of residence halls, meal plans, health insurance and projected tuition and fees.

“A lot of families have special circumstances that they’re not comfortable talking about in a big group, so this gives us the opportunity to connect with them on an individual level,” says Senior Asst. Director of Financial Aid Somers Rivera.

Nicole McClung, an incoming mechanical engineering major from Merrimac, Mass., and her parents, Jeff and Terri, spent much of their session learning about student loans.

“I was trying to figure out whether or not I want to do subsidized or unsubsidized loans, and what the best plan is for me,” says McClung.

Based on the positive response, the university hopes to add even more one-on-one sessions next year.

Four years ago, the center got a grant to put much of the course material online for teachers who are unable to attend in person, Kirschbaum says. That’s crucial, since there are far more applicants than the program can accommodate; 328 applied for only 72 places this year.

The program is very well-constructed,” says Paul Horton, a high school history teacher at the University of Chicago Laboratory Schools.

“It’s a very intentional balance of content and experience.”

Learning with Purpose
UMass Lowell’s Women’s Leadership Conference Tackles Workplace Bias

Chancellor: In the #MeToo Era, There’s Still Work to Do

The #MeToo movement has brought a welcome spotlight to workplace sexual harassment and bias, but there’s still plenty of work to do before women achieve true equality.

That’s the message Chancellor Jacquie Moloney delivered in welcoming a sold-out crowd to UMass Lowell’s third annual Women’s Leadership Conference.

“The incredible participation of our students past school year.

“The fact that we are more than 97 percent of raising their families as single parents with low-wage jobs,” Moloney said.

While universities and companies have an important role to play in helping women achieve equity, individual women can also create change by standing up for themselves, she added.

The conference drew women from around the region who work in a wide range of corporate and nonprofit organizations. Between two keynote talks, there were sessions on cultivating career development skills, strategies for business and entrepreneurship success, and ways to lead effectively and mentor others.

Keynote speaker Danielle Niles ’06, the weekday morning meteorologist at WBZ-TV in Boston, said it’s important for women to learn to ask for what they need.

Chancellor: In the #MeToo Era, There’s Still Work to Do

Other giving milestones included the creation of 34 new endowed funds, totaling more than $1 million for scholarships and other programs benefiting students. UML now has 520 endowed funds, a third of which have been created since the start of Our Legacy, Our Place. And UML’s second annual Days of Giving attracted 2,719 donors who gave $314,070 in 48 hours to support student scholarships, colleges, clubs and athletic teams.

UMass Lowell’s Women’s Leadership Conference Tackles Workplace Bias

Chancellor: In the #MeToo Era, There’s Still Work to Do

The #MeToo movement has brought a welcome spotlight to workplace sexual harassment and bias, but there’s still plenty of work to do before women achieve true equality.

That’s the message Chancellor Jacquie Moloney delivered in welcoming a sold-out crowd to UMass Lowell’s third annual Women’s Leadership Conference.

“We want to send a strong message that women are integral to the success of our university,” Moloney said.

While universities and companies have an important role to play in helping women achieve equity, individual women can also create change by standing up for themselves, she added.

The conference drew women from around the region who work in a wide range of corporate and nonprofit organizations. Between two keynote talks, there were sessions on cultivating career development skills, strategies for business and entrepreneurship success, and ways to lead effectively and mentor others.

Keynote speaker Danielle Niles ’06, the weekday morning meteorologist at WBZ-TV in Boston, said it’s important for women to learn to ask for what they need.

UMass Lowell’s Women’s Leadership Conference Tackles Workplace Bias

Chancellor: In the #MeToo Era, There’s Still Work to Do

The #MeToo movement has brought a welcome spotlight to workplace sexual harassment and bias, but there’s still plenty of work to do before women achieve true equality.

That’s the message Chancellor Jacquie Moloney delivered in welcoming a sold-out crowd to UMass Lowell’s third annual Women’s Leadership Conference.

“We want to send a strong message that women are integral to the success of our university,” Moloney said.

While universities and companies have an important role to play in helping women achieve equity, individual women can also create change by standing up for themselves, she added.

The conference drew women from around the region who work in a wide range of corporate and nonprofit organizations. Between two keynote talks, there were sessions on cultivating career development skills, strategies for business and entrepreneurship success, and ways to lead effectively and mentor others.

Keynote speaker Danielle Niles ’06, the weekday morning meteorologist at WBZ-TV in Boston, said it’s important for women to learn to ask for what they need.
Students Gain New Perspectives, Course Credit and Career Skills

Dozens of students are getting a taste of what it’s like to live, learn and work overseas this summer through study abroad programs and international internships.

In all, 150 UMass Lowell students are studying and working in 20 countries around the world through programs offered by the Office of International Experiences & Study Abroad.

Of those students, 100 are taking part in 10 different overseas courses led by UML faculty, including a choral workshop in Tuscany, Italy, an international management course in Copenhagen, Denmark, and an honors course on Basque cultural immersion in San Sebastian, Spain.

University partnerships are key to the study abroad programs. UMass Lowell currently has more than 100 international partnerships and exchanges around the world, including a new one this summer at the University of València in Spain. That’s where nine sociology students, led by lecturer Thomas Piñeros-Shields, are spending six weeks working as interns and doing coursework.

River Hawks Spread their Wings on Study Abroad Programs

A growing number of students participated in study abroad and international internship programs this summer, traveling to destinations around the world including Italy, Germany, Ecuador and Spain.

Biology major Alexandra Collias is addressing conservation in the Turks and Caicos Islands, business administration major Andre DiFilippo is interning at a startup accelerator firm in Melbourne, Australia, and nursing major Kimberly Ng is working at a school for physically and mentally disabled children in Quito, Ecuador.

“We’re always finding new ways to incorporate experiential learning and academic coursework in an international setting,” says Fern MacKinnon, director of the Study Abroad office. “We’re able to offer programs that accommodate a wide variety of students from different majors and with different trip-duration preferences.”

Students say there is no substitute for international experiences.

“It is one thing to read about a culture, but it is even better to experience different cultures firsthand,” senior business administration major Hannah Wright blogged during her trip to China for the Global Entrepreneurship Exchange program.

“Being able to step out of your comfort zone and try something new is the essence of this program.”

Studying abroad does more than immerse students in new cultures and languages—it also gives them a leg up on their future careers. According to a recent report by the Institute of International Education, students who study abroad gain nearly a dozen “21st century workplace skills,” including adaptability, confidence and self-awareness. With that in mind, the Study Abroad office has partnered with the Career & Co-op Center to offer résumé workshops that focus on how students can leverage their international experiences when applying and interviewing for a job.