BUCKLE UP!

Everything about cars is changing, and UML alumni and faculty are helping pave the road ahead. P.26

Our Legacy, Our Place campaign blows through $125M goal—and keeps going! P.14
University Crossing was turned into an amusement park for our annual UCrossing After Dark event this fall. Students hung out until 1 a.m., lining up for the arcade games, bowling, mini golf and free food.
A message from
Chancellor Jacqueline F. Moloney ’75, ’92

Fall is my favorite season. I love the feeling it brings of a fresh start, and welcoming thousands of enthusiastic students to campus every September always adds to that energy.

Once again we exceeded our largest, most diverse and most accomplished class of first-year students. For the second year in a row, UMass Lowell’s total enrollment topped 18,000.

The university set another record this fall, thanks to all of you. We reached our initial goal of $125 million in our very first fundraising campaign—18 months ahead of schedule. Read about how we did it (and why we’re not stopping!) on Page 14.

The next phase of fundraising will focus on student scholarships, and we have a pretty exciting ambassador to help launch the momentum. On Nov. 15, the reimbirable Oprah Winfrey will be the next guest in our Chancellor’s Speaker Series, which will raise funds for scholarships that will benefit students for years to come.

A special thanks to English professor and best-selling author Andre Dubus II who check out his office on Page 13, whose friendship with Winfrey is responsible for her visit.

The Speaker Series is just one of dozens of events we’ve hosted on campus this fall—everything from Homecoming and Celebration of Philanthropy, to a visit from Comedy Central’s Trevor Noah, to our annual DifferenceMaker Celebration featuring a keynote by CNBC correspondent Ron Insana.

Suffice to say, it feels like we’ve been moving 100 miles an hour this fall. Which brings us to the theme of this issue’s cover package: the future of driving. Everything about the way we own, drive and power cars is changing and, as usual, UMass Lowell faculty are on the forefront of some of the most exciting advances happening in that industry. You’ll see car-related content throughout the issue (including my own reminiscences about my first car, a ’65 Mustang, on Page 35), and the cover story starts on Page 26.

Enjoy!

Sincerely,
Jacqui Moloney ’75, ’92

—

Google Self-Driving Car

The Google self-driving car project—now called Waymo, which stands for a new way forward in mobility—resulted in “Ferry,” a fully autonomous vehicle that first hit public roads in 2015. Ferry has custom sensors, computers, steering and braking—but no steering wheel or pedals.

In the last two years, the company added a fully-self driving Chrysler Pacifica Hybrid minivan to its fleet, launched an early-rider program in Phoenix, Ariz., and partnered with Jaguar to create the world’s first premium-electric self-driving vehicle, the Jaguar I-PACE.

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—

Sarah McAdams Corbett
Editor

Enjoy!
TRENDING @ UML

IN GOOD REPAIR
The UML chapter of the Society of Women Engineers took over the MakerSpace on North Campus in September to host a Repair Café for the community. With the help of volunteers and university staff, students checked fluids and tire pressure in cars, repaired bicycles and fixed a range of household items—including furniture, printers and lamps.

Veronica Brown, a sophomore mechanical engineering major and co-chair of UML’s philanthropy committee, organized the Repair Café, applying for start-up funding through a university grant process with the help of the Francis College of Engineering service-learning coordinator. As a result, she learned more than just how to tear down a microwave.

“Running the café really improved my organizational skills,” Brown says. “And seeing the process of getting a grant, and what a professional document looks like—how to condense everything—has already helped me on lab reports.”

CUMNOCK: THEN AND NOW
On the stage where Pearl Jam and Run-DMC once performed for hundreds of screaming fans, students can now order up Korean chicken baguette sandwiches and kale Caesar salads. With this fall’s opening of the new Cumnock Marketplace on North Campus, the former Cumnock Hall auditorium has been transformed into a bright and comfortable hangout space where students can grab a bite to eat, study and recharge between classes.

HERE COMES YOUR ... ALBUM FROM THE WUML VAULT.
Bands have been playing live in UML’s “Fallout Shelter” studio in the basement of Lydon Library for over three decades. One of the earliest? The Pixies. In December 1986, the Boston band (which went on to record four albums and sell out stadium shows worldwide) played 15 songs at WJUL. The call letters became WUML in 2003. This September, the tracks and interview recorded on campus that day were released as part of a “Come On Pilgrim ... It’s Surfer Rosa” box set celebrating the 30th anniversary of the band’s seminal recordings. The Pixies were invited to perform at WJUL by former student Chris Porter, who founded the weekly “Live from the Fallout Shelter” program with Bob Weston ’88.

“I thought they were a cool band, and it was a good session, but I never knew this might happen,” Porter says.

CHECK OUT MORE TRENDING
UMass Lowell news at uml.edu/news.

SIERRA CLUB RANKS UML NO. 22 IN U.S.
The Sierra Club ranked UML No. 22 in its annual “Cool Schools” ranking of North America’s greenest colleges and universities. That’s a jump of more than 100 spots in one year—a bump that reflects university-wide sustainability efforts in everything from transportation and energy reduction to recycling and composting.

OPRAH. HERE. ON CAMPUS. IN NOVEMBER.
One thing we know for sure: It’s going to be awesome. #OPRAHatUML

THAT’S A THING?
The UMass Lowell underwater hockey team—called RoboMass—won the 2018 USA Underwater Hockey National Championship this summer in Denver. Never heard of the sport? Invented in England by a group of free-divers who wanted to stay in shape over the winter season, the game is played at the bottom of a pool with a short stick and a lead puck. And now it’s a breakaway hit all over the world.

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WHAT'S OLD IS NEW:

The North Campus building formerly known as Pasteur Hall was renamed Dandeneau Hall in honor of plastics engineering alumnus James Dandeneau ’80. But it didn’t just change in name alone: This summer, the university completed a $15.75 million renovation of the 80-year-old building, now home to mechanical engineering, computer science, UTeach and several civil and environmental engineering offices.

YOU WONT BELIEVE WHAT WE’VE DONE WITH THE PLACE.

You’ve read about all the awesome changes on campus in these pages, but wouldn’t you like to see for yourself? If you can’t make it to Lowell, we have the next best thing: a virtual tour.

You can tour the campus—inside and out—from your computer or handheld device. Over 120,000 visitors from 163 countries have popped in via the virtual tour (available in four languages). Check it out for yourself at uml.edu/touruml.

Robot, Diagnose Thyself!

Robots can do a lot of things—assemble cars, search for bombs, cook a meal or assist in surgery. But something they can’t do is tell you how they’re doing.

Researchers from UMass Lowell and several other universities are aiming to change that. With funding from the U.S. Department of Defense’s Multidisciplinary University Research Initiative (MURI), robotics experts from UML, Carnegie Mellon, Brigham Young and Tufts universities are working together to give humanoid robots and other autonomous systems the ability to assess themselves in terms of how well they can perform a given task or why they cannot complete the job.

This real-time feedback is vital as robots become increasingly autonomous and are tasked with jobs in remote, hostile or dynamic environments with minimal human supervision, says computer science Prof. Holly Yanco, who is the principal investigator for UML and director of the university’s New England Robotics Validation and Experimentation Center.

The project—called SUCCESS, which stands for Self-assessment and Understanding of Competence and Conditions to Ensure System Success—is one of 24 grants awarded nationwide this year through the highly competitive MURI program. The grant is worth a total of $7.5 million over a period of five years.

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5 QUESTIONS with Jonathan Arruda, student and Lyft driver...

Drawn to the flexible schedule and the idea of working as much or as little as he wanted, Jonathan Arruda decided to join the gig economy as a Uber driver when he turned 21. That was two years ago. The information technology major, who expects to graduate in 2019, now drives mostly for Lyft, the other popular ride-hailing service. A Medford resident who is planning on a career in the software industry, Arruda talked to us about what it’s like as a driver for him.

HOW MANY HOURS A WEEK DO YOU DRIVE?

I am free between 20 and 40 hours. When I’m not in school, I try to drive as much as possible. I’ve done about 2,500 miles for Lyft and about 1,500 for Uber. Driving in Greater Boston, you stay busy with all the universities, hotels, the airport. Most rides are local, but some are further away, to Providence, Worcester or Cape Cod.

DO PEOPLE TIP YOU?

I get a lot of people who want to tip me. Older people who are used to taxis usually give me cash. Other people tip through the app. I used to worry about my ratings when I first started. With Lyft, I have a 4.9 [out of 5] star rating. I get a higher rating and more in tips if I’m social. I don’t want to get too personal.

DESCRIBE THE ATMOSPHERE IN YOUR CAR.

I do anything I can to make the experience more comfortable. I have gum and mints, phone chargers for every type of phone. I play the radio. Most of the time I share VPRs on Peo- ple get drawn to that. I’m constantly reading the meters. If the person wants to talk, I will start a conversation. Older people are more prone to talk. Younger riders are quiet—they feel more awkward and they stay on their phones.

HOW CAN YOU TELL IF SOMEONE WANTS TO CHAT OR TO BE LEFT ALONE?

I’ve met a lot of interesting characters. I’ve met Countess COO. I’ve gotten job interviews from people I’ve met. If I’m driving a software engineer, I might talk to him. If I’ve had a pleasant conversation, I ask to connect on LinkedIn or get their business card. I have times out of 10, they are super OK with me asking.

WHAT’S YOUR DREAM CAR?

A Tesla. I want something that would drive itself.

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However, Shortland says, in order to expand, Op250 must deliver certain core messages and skills. “Most importantly, we’ll be able to go into classrooms every week and interact with students, teachers and our community partners.”

Op250 just got a giant boost for its work from the federal government: a $1 million grant from the U.S. Department of Justice to further develop its program. “Now we can develop everything we’ve done tenfold,” says Tyler Cote, one of five students who developed Op250. “Most importantly, we’ll be able to go into classrooms every week and interact with students, teachers and our community partners.”

Op250 began when five interns in the university’s Center for Terrorism and Security Studies entered the U.S. Department of Homeland Security’s Peer-to-Peer: Countering Extremism competition in fall 2016. Their advisor was Neil Shortland, the center’s director and an assistant professor in the School of Criminology and Justice Studies. They developed Op250. “I wanted the extra support network, especially since it’s so far from home,” Simms says. “I read the feel of this campus when I visited. Everyone was really nice and made me feel like they wanted me here.”

Simms is among hundreds of first-generation college students in this fall’s first-year class. All earned their places here through a combination of strong grades, test scores and extra-curricular activities. In fact, many had such high GPAs and test scores that they were automatically invited to join the Honors College. But while they are well-prepared academically, first-generation college students often struggle with financial aid, course selection and time management because they can’t turn to family members who’ve been through the college experience.

That’s where the River Hawk Scholars Academy comes in. All year long, its students are supported by a dedicated academic advisor, workshops and boot camps, social events, volunteering opportunities and peer mentors. “First-generation college students bring so many wonderful abilities, strengths and perspectives to campus, so we want to make sure that they’re getting the support they need to navigate campus culture,” says Thomas Hanratty, program director and an assistant teaching professor in the English Department.

Student Counterterrorism Project Gets $1 Million Boost from DOJ

This is how it begins.

A high school student, a Russian immigrant, goes online to vent about being bullied for being a foreigner. Soon, he’s got a bunch of online “friends” who tell him he doesn’t need “those losers” at school. Over time, they redirect his anger at the United States by sharing news stories about U.S. airstrikes killing civilians in Syria. When he asks what he can do about it, they invite him to move to a private messaging app. He’s now part of a terrorist network. At least 250 Americans have left the U.S. to join ISIS. Operation250, which started as a UMass Lowell project, aims to prevent more young people from joining by teaching children, teenagers, parents and educators about extremism and online safety.

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This fall, more than 3,200 new students—a third of whom are from underrepresented populations—entered UMass Lowell with the highest average SAT scores (1,232) and high-school GPAs (3.596) in the university’s history. More than 650 new students are enrolled in the university’s Honors College, bringing it to a record-high enrollment of 1,750.

For the second year in a row, UMass Lowell’s total enrollment topped 18,000, an increase of more than 57 percent over the last decade. The Chronicle of Higher Education has ranked UMass Lowell in the top 10 fastest-growing public doctoral institutions in the nation for the last three years.

Bigger and better than ever!
$125 MILLION AND RISING!

WORK HARD, GET AHEAD, GIVE BACK—THAT’S THE UML WAY, AND IT’S PROPELLED OUR LEGACY, OUR PLACE PAST ITS INITIAL GOAL
“Everyone at UML is so committed to helping students succeed, it makes you want to do the same thing—to pay it forward and help others.”

At last spring’s Commencement ceremony, Roma Aurora ’18 had one of the best seats in the house. As a winner of the Chancellor’s Medal for Student Service, she was seated on stage at the Tsongas Center, just a few rows away from the chancellor herself, with an ecstatic sea of graduates and their proud families and friends members spread out before her. In her mind, Aurora could see the long road she had traveled to get to this point.

“When I got to campus, I just felt, ‘This is where I belong.’” says Aurora, a business administration major and member of the Honors College. Born in India, she moved with her family to North Andover when she was 15, and remembers feeling shy and a little lost during her high-school years.

She arrived at UMass Lowell determined to step out of her shell, and emerged as one of the most admired student leaders on campus: president of the Manning Leaders Council, where she worked to build community in the business school and strengthen mentoring and professional networking programs, an International Student Ambassador who helped newcomers navigate the culture shock she knew so well, and a member of an award-winning DifferenceMaker team that developed low-cost, high-tech prosthetics.

“I wouldn’t be where I am if I didn’t get involved early on and didn’t have professors who believed in me,” says Aurora, who graduated magna cum laude and now lives in New York, where she has a paid internship with Instinet, a global financial services firm.

“Everyone at UML is so committed to helping students succeed,” she adds. “It makes you want to do the same thing—to pay it forward and help others.”

And that, in many ways, is the spirit behind Our Legacy, Our Place: The Campaign for UMass Lowell.

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FALL 2018
1716
In all, more than 32,000 donors made gifts to the campaign between 2013 and 2018, ranging from a single dollar to seven-figure amounts, says Vice Chancellor for Advancement John Feudo. This university hopes to continue that momentum, with a second phase of the campaign, Our Legacy. Our Place, set to begin in 2019. \(\frac{\text{Page}}{\text{Dimensions}}\) and Rising aims to raise an additional $25 million by 2020, when UML will celebrate its 125th anniversary. Already, donors have helped fuel dramatic growth:

- More than doubling the university's endowment to $84.7 million.
- Helping to fund the physical transformation of the UML campus by building new or changing facilities like University Crossing, the Pulichino Tong Business Center and the Alumni Center, as well as the Fabric Discovery Hall.
- Supporting programs focused on entrepreneurship, like DibbsMobile, and facilities like the Innovation Hub and the Fabric Discovery Center.
- Ensuring a successful transition to Division I athletics.
- Seeding the growth of student connections in the University Criss Center, Jon de Leon '18 marvels at the growth he's witnessed during his four years at UML. "It’s like watching a small city going up," he grins. A criminal justice major from Berkeley, Calif., he first learned about Lowell in his high school AP U.S. history course. Despite that, he says, he hadn’t heard of UML until he met Jon de Leon in April 2016, it had already attracted more than $78 million in contributions from donors like then-campaign chair Charles Walsh, 52, who says he could "talk for hours about UMass Lowell," the university over the past decade have made Lowell, and UMass Lowell in particular, a home for innovation and forward thinking."

"Biology major Kierra Walsh '19 can vouch for that. By the second term of her freshman year, the Billerica native was already in a Saab ETIC research lab, working with chemical engineering professor Gabriel Camacho-Urba on an effort to grow bone cells on fiber paper—a process that could one day lead to a safe, inexpensive source of biomaterials for tissue and organ transplants. "UMass Lowell gave me opportunities I never thought I’d have as an undergraduate," says Walsh, including the chance to co-author an article in a peer-reviewed academic journal. It also provided her with a series of scholarships that will enable her to graduate debt-free and better able to afford veterinary school, a dream she’s had since she was a young girl. Says Walsh: "It’s really impossible to say thank you enough."

"It’s really impossible to say thank you enough."
River Hawk Racing—long the Society of Automotive Engineers chapter at UMass Lowell—recently built (and raced) its first Formula-style car in seven years. Made up of an interdisciplinary team of students across engineering, sciences and business, the club boasts a 100 percent success rate for student members who seek jobs or internships in the auto industry. Check out our entire car-crazy cover story package on Page 26. (Don’t miss the inside scoop on Chancellor Jacquie Moloney’s first car!)
FEATURE STORY

ENGINEERING CHANGE

Alumnus Opens School for Girls in India
A lot of people have asked me, ‘What came into your head that you quit your job, left the country, went to a village where there’s no job, no electricity, no water—nothing?’

Virendra ‘Sam’ Singh ’65 grew up in a small Indian village, went to Aligarh Muslim University on a field hockey scholarship and then traveled halfway around the world to earn a master’s degree in textile engineering at Lowell Tech.

After working on a cotton-cotton blend at Natick Lab for his thesis research, Singh got job offers at nine companies—and chose DuPont on the advice of his mentor, Prof. John Goodwin. Over the next 35 years, he rose to become one of the company’s top executives, returning to India to head its Asia division.

But his career is not what Singh says he built Pardada Pardadi, Hindi for great-grandfather and great-grandmother.

When the school followed through on its promises, the trickle became a flood, and the students began to employ them—and offered jobs to their mothers and older sisters, too.

The school and related programs attract a steady stream of visitors. The educational society has become the base for social and economic changes in the wider community.

In the meantime, Singh, now 79, plans to keep expanding his vision of rural development through the education, employment and empowerment of women.

He needs to raise $9 million. Once the expansion is complete, his daughters, Renu Singh Agarwal and Ena Singh Murphy, will take over for him.

“My job is to facilitate that future vision and talk to people and say, ‘It’s not an impossible dream; it’s a dream we can put our hands around and make it happen.’”

“I do my 12th grade and go to college!” he says.

For great-grandfather and great-grandmother. He named it Pardada Pardadi, Hindi for ‘My job is to facilitate that future vision and talk to people and say, ‘It’s not an impossible dream; it’s a dream we can put our hands around and make it happen.’”

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BUCKLE UP!

Everything about cars is changing, and UML alumni and faculty are helping pave the road ahead.

The puck drops for the Homecoming hockey game at 7 p.m. "Has it really been 20 years?" you ask yourself. You fish your River Hawks T-shirt from the drawer and tell Alexa to order a car for 6:15.

Destination: the Tsongas Center.

The two-door, electric coupe—the latest model from Facebook’s autonomous transportation division—pulls up to your house at 6:14. The car’s sound system is already playing a tune from your playlist, a favorite old-school Drake song. You climb into what used to be known as the driver’s seat, smile for the facial confirmation scanner, buckle your seatbelt and sit back in your swivel chair for the 31-minute ride (according to the in-dash monitor).

As the car exits off the Lowell Connector and heads downtown, you look up from your phone’s newsfeed and think back to how congested these streets used to be. But now, as in every city, driverless cars barely slow down as they quietly weave past one another in busy intersections. Coming down Dutton Street, you can’t believe the vintage Haffner’s Gasoline “It Kicks” sign is still there, although it now points to an electric hypercharging station.

The car pulls smoothly into the drive-off lane in front of the Tsongas Center (at 6:46 on the nose), stopping abruptly as an oblivious visiting fan steps directly in its path. As the car pulls to its final stop, you check your frequent-rider miles balance on the display before opening the door and stepping out into the cool October night.

Continued
How we power, how we drive and how we own our vehicles—all of these things are going to change fundamentally within the span of one generation, at a level that hasn’t changed in the last 100 years—since cars have been around.”

So says industrial management alumnus Guner Oge, ’75, a leading voice in the automotive world. He’s worked as an industry consultant for nearly 40 years and is the former president of SAE International, a global association of more than 128,000 Society of Automotive Engineers members. SAE is helping the U.S. Department of Transportation establish guidelines for autonomous vehicle development, starting with the classification of the six levels of automation: 0 (where the driver does everything) to 5 (where the driver doesn’t even need to be in the car).

In this emerging era of connected vehicles, where cars rely more on lidar (light detection and ranging) imaging and machine learning than carburetors and pistons, Oge says young engineers today face a phenomenal array of challenges.

“One upon a time, the automobile’s primary interface was the wheels hitting the road. Now, the vehicle has to interface with other vehicles and with the environment around it through the wheels hitting the road. Now, the vehicle has to interface with other vehicles and with the environment around it through information and data,” he says. “All of these additional dimensions—software, connectivity, cybersecurity—are coming into the automotive space.”

As they do, they are revolutionizing how and what we drive—or what drives us. “Whether it’s the promise of planet-saving electric and hybrid vehicles, the disruptive business models of ride-hailing apps like Uber and Lyft or the curious excitement that comes with seeing videos clips of driverless cars navigating city streets, the transformation of personal transportation is shifting into high gear.”

With this transformation comes a litany of new challenges and questions. What’s the best way to power the cars of tomorrow? How do driverless cars respond in life-or-death situations? What happens to the auto industry if people stop buying cars and start sharing them instead? What will our roads, cities and skies look like in 25 years? Will car crashes and greenhouse gas emissions go the way of hand-cranked windows and dashboard ashtrays?

UMass Lowell alumni, faculty and students are playing a role in this lane shift—from computer scientists to engineers, from policy-makers to philosophers. Through research and innovative work, they are helping to pave the road for the future of driving. The future of UMass Lowell states, the transformation of personal transportation is shifting into high gear.

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Take the Wheel

Assisted-driving technology isn’t so new. Cruise control was invented in 1948, and the Toyota Prius has been able to park itself since 2000. Most new cars today have sensors and cameras that will check your blind spots, keep you in your lane and warn you when you’re about to back into that shopping cart. These innovations, combined with increasingly sophisticated GPS systems and navigation apps like Waze, have helped drivers gradually become comfortable with Levels 1 and 2 of the autonomous driving scale.

“If you look at what the automakers in Detroit were doing, it was a slow move toward partial autonomy,” says computer science Prof. Holly Yanco, director of the university’s New England Robotics Validation and Experimentation Center.

“But then Google came along and broke the entire model by removing the steering wheel and pedals from the car. And then Uber broke it worse.”

She’s referring to the fact that those companies along with others such as nuTonomy, which has partnered with Lyft to pilot self-driving cars on the streets of Boston, are skipping the baby steps and jumping right into fully autonomous Level 5 vehicles.

“It’s a bold strategy,” says Manning School of Business Assoc. Prof. Berk Talay, who researches auto industry innovation. “It’s really too early for that technology to take over a significant portion of the market,” he says. “It will be a huge challenge to convince people to ride in autonomous vehicles where there’s nothing you can do if something goes wrong. It’s not comfortable.”

Indeed, a recent Brookings Institution survey found that 61 percent of Americans were not inclined to ride in self-driving cars, while 60 percent of those surveyed by the Advocates for Highway and Auto Safety said they were concerned about sharing the road with autonomous vehicles. Those results were likely impacted by headlines about a self-driving Uber that hit and killed a pedestrian in Arizona and two fatal crashes involving Tesla automobiles in Autopilot mode.

But more than 35,000 people die on American roads each year; that’s almost 100 per day. So aren’t a few fatal accidents involving self-driving cars, while tragic, still an improvement? Isn’t it better to take the steering wheel away from humans and eliminate deadly threats like speeding or driving while distracted, drunk or drowsy?

 autobahn
200: Hours the average American spends driving each year
2.45 trillion: Total miles driven by Americans each year
10,000: Miles driven annually on average by American drivers
3 million: Active Uber drivers globally
61% of U.S. drivers are afraid to ride in a self-driving car
10: U.S. cities piloting autonomous vehicles (including Boston)
1: Group software to assess the ethical dilemmas created by self-driving cars.

Continued
UML STUDENTS HELP CARMAKERS NAVIGATE THE FUTURE

After spending the summer working at Veniard in Lowell, Sam Kovaly will never think about cars the same way. Kovaly, a senior computer science major, worked with the supplier of advanced driver assistance systems as part of UML's professional co-op program. He was assigned to write software code for light detection and ranging, or lidar—a technology that functions a lot like radar but uses short, super-fast pulses of lasers instead of radio waves to measure distance. Lidar then takes those millions of measurements and creates 3-D maps that can be used for navigation.

Advancements in lidar technology over the past 15 years have accelerated the development of self-driving cars. "There's a lot of components. Lidar will make cars safer," says Kovaly, who was not familiar with lidar until his first co-op job. Kovaly was one of three UML co-op students working at Veniard over the summer. They join the ranks of other River Hawks, most of them engineering students, who have been at the forefront of the development of next-generation autos through the professional co-op program and internships.

In recent years, UML engineering students have worked at such companies as Tesla, Ford, Motor Company and Freudenberg-NOK, a maker of gaskets for cars. They've worked on diverse production, research and analyzed new materials for SLIDs and tested safety sensors. Some have even accepted positions into permanent jobs in the auto industry after earning their degrees.

After his summer at Veniard, Kovaly is certain that fully self-driving cars are coming, it’s just not sure how soon.

Every new car will have autonomous capabilities. It could be anything from self-parking or autopilot to fully autonomous. How far out that is depends on how fast the laws change," he says.
LASER FOCUS
Most autonomous vehicles rely on a combination of cameras, radar and lidar to see the world around them. But current lidar systems, which use a high-frequency laser beam, are cumbersome (they look like a blender bolted to the car roof) and expensive.

The same vascular structure that could make cracks self-healing may also make engine radiators obsolete. Mechanical engineering Assoc. Prof. James Mead has identified a promising pathway for producing renew-

BRIGHT IDEA
Guo is also creating advanced materials to improve the color spectrum, efficiency and life cycle of white LEDs (light-emitting diodes), which are often found in headlights. Guo, who received funding from the Massachusetts Clean Energy Center, says the technology will better direct the headlights’ beam.

BIG BIOFUELS
With engines evolving—and the geopolitical consequences of fossil fuels tough to ignore—the race is on to develop cheaper and more efficient alternative fuels and biofuels. In September, mechanical engineering Asst. Prof. Hunter Mack and chemical engineering Asst. Prof. Chen Xu won a $1 million grant from the U.S. Department of Energy for their proposal to develop renewable fuel additives from woody biomass, or sawdust. “Our team has identified a promising pathway for producing renewable fuel additives derived from a sustainable feedstock,” says Mack, who hopes the method will lead to other potential sustainable fuels and chemicals.

RUIN STOP
Thanks to all that ice-melting salt on the roads every winter, cars in New England are extra-susceptible to rust. Plastics engineering Prof. Joey Maid is part of an international team that’s developed and patented nanotechnology-based coatings that have “superhydrophobic” surfaces to repel water and ice. Easily applied to a variety of surfaces with a sprayer, the coatings can be used to prevent corrosion on cars and improve aerodynamics. Maid and her colleagues are working on a clear version of the coating that could be used on car windshields in the future.

LATER, RADIATOR
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FILL ’ER UP (WITH WATER)
As technology gets smarter, it’s only a matter of time until all states have this technology, for the sheer security and convenience that it offers,” Skelton says. The mobile ID can be updated in real time for name or address changes, and users can hide personal information like their address when showing the bartender that they’re over 21.
If you can order a self-driving car on demand to get you to the work or to the store, why would you want to buy a car?

**GLOBALIZATION: A DRIVING FORCE IN GERMANY**

Thanks to automakers such as Audi, BMW, Porsche and Mercedes-Benz, Germany is synonymous with engineering excellence. But sit in the driver’s seat of one of those cars for a moment and consider the steering wheel.

“Many nationalities are involved in manufacturing that simple part!” says Matthias Weyer, dean of the School of Engineering at Pforzheim University, located in the southern Black Forest region of Germany. “The suppliers of the steering wheel and their sub-suppliers are spread over 15 countries. Engineers therefore need to be more globally positioned and networked worldwide.”

Francis College of Engineering students gained that valuable international experience through the Engineers Made in Germany program, which is held in partnership with Pforzheim University.

“It’s a great experience, yet practical,” says Engineering Dean Joe Hartman, who visited Pforzheim in 2013 and collaborated with Weyer to help establish EMD, a six-week program where students can earn credits by taking two engineering courses and one German language course (at beginner or refresher level). Only three U.S. schools are invited to participate in EMD each year: Penn State University, Lehigh University and UMass Lowell.

“They put together a wonderful program that includes cultural sightseeing, engineering and business visits, and a great experience in automated automobile production.” Hartman says, “What better place than Germany to build cool cars than Germany?”

**WEB EXTRA:** Check out more first-car stories and share your own at uml.edu/magazine.

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**WEB EXTRA:** UML has many more alumni working in the transportation industry—check out what some of them think about the future of driving at uml.edu/magazine.

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systems, those require a lot of energy,” says Mack, whose research focuses on fuel cells and combustion. “Our reliance on autonomous vehicles is going to extend the need for internal combustion vehicles in the long run, which is something that I didn’t see coming 10 years ago.”

Mack believes autonomous vehicles will have a “massive impact” on emissions and fuel efficiency, as they will eliminate many wasteful human driving habits (such as accelerating toward a stoplight before stopping). Engine design will also become more practical, eliminating cars that can accelerate to 120 mph in 10 seconds. “There’s no car that actually needs to be able to hit 120 mph in 10 seconds,” Mack says. “There’s no car that actually needs to do that,” he says. With the auto industry at the crossroads of autonomy and electrification, Mack says it’s an opportune moment for engineering innovation.

“For years, fuels and engines developed in their silos. But now, with all these external factors changing, we’re realizing that we can optimize them in tandem,” he says. “Where we end up in 10 to 15 years is going to be very interesting.”

**LICENSE AND REGISTRATION, PLEASE**

The popularity of ride-sharing apps, combined with mobile technology that makes it easier to connect virtually, has led to an interesting trend: Fewer young people are getting their driver’s license. According to a University of Michigan study, a record-low 71.5 percent of high school seniors had a license in 2015.

If you can order a self-driving car on demand to get you to the work or to the store, why would you want to buy a car?

“Which is why automakers like GM, Ford and Toyota are getting in on the ride-sharing action. They need to get into the ride-hailing business, which will be a lot more profitable,” says Talay, who also predicts that tech companies like Google and Apple will join forces with traditional automakers rather than try to build their own vehicles from the ground up.

Talay points out that 110 years ago, when steam-engine cars first rumbled on the scene, few thought they could replace horse-drawn cartriages. Now you only see cartriages at royal weddings and in places like New York’s Central Park. A century from now, will human-driven cars be relegated to a similarly novelty existence?

“I believe they will coexist,” Talay says. “Some people will still drive cars, especially in rural areas and harsh climates. And some people will keep buying traditional cars anyway, just like some people still ride horses.”

Two UML alumni with a vested interest in the future of cars are John ’90 and Karen ’90 Manelas, who met at the university while earning their degrees in electrical engineering. In 2004, they both quit their corporate jobs to start their own car repair and service shop, Auto Care. The business has grown to six locations across New Hampshire and Maine, and this fall, they’re opening a seventh in Derry, N.H., that will cater primarily to hybrid and electric vehicles.

“They’re building out the charging infrastructure pretty slowly in Europe, and it’s coming this way, too. I definitely see a big shift happening in the next 15 years,” says John Manelas, a self-described “motorhead” who used to build his own muscle cars while growing up in Lowell. He says one of his biggest challenges is finding mechanics who are up to speed with the computer components in new vehicles. “The technology seems to change every minute. It takes a certain mindset to work on cars today.”

Self-driving cars will only make things more complex with their wireless communications, radar, lidar systems, creating entirely new avenues for services and products that “little people” won’t dream of. "I think you’ll start seeing new kinds of jobs where you’ll have the software to control the vehicle,” he predicts.

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**WEB EXTRA:** Check out more first-car stories and share your own at uml.edu/magazine.

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**COVER STORY SIDEBAR**

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"They put together a wonderful program that includes cultural sightseeing, engineering and business visits, and a great experience in automated automobile production," Hartman says. "What better place than Germany to build cool cars than Germany?"
“The whole purpose of Formula SAE is not to just build the car and win the race, but to teach engineers cross-functional teaming that is required for product development.”

BY DAVID PERRY

RIVER HAWKS: START YOUR ENGINES

UML’s Society of Automotive Engineers Chapter Learns How to Build Cars, Confidence, and a Business

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park cascade from the bar of a metal skeleton. Gray Riveter and die on the concrete floor of the Shell station garage as Brian Craven, a senior mechanical engineering major, welds. Craven arrived at 7 a.m., three hours after leaving his other job. It’s now 5 p.m.

This year, the goal was to do better than in 2017. We just work harder. The dedication here is unparalleled.” (The schedule didn’t go as planned, but remember—was instrumental in bringing it back to life. “The cool thing about River Hawk Racing,” he says, “is that it’s an opportunity to meet people from huge manufacturers,” says Tenaglia. “Last year, a couple of our folks landed internships.”

Formula SAE offers great hands-on experience, he adds, pointing out that just like “cars are a system of very small, complicated parts and subsystems working together,” so, too, are successful businesses. “The cool thing about River Hawk Racing,” he says, “is that it’s not just mechanical engineering students. It’s people majoring in electrical engineering, business, finance—students who are not used to working together.”

But they’re getting better at it. The team has already started work on next year’s model, says Nguyen, who landed a sales engineering job at Aligned Vision, a fabrication management systems company. He has no plans to leave River Hawk Racing behind just yet.

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Bill Rhodes ’82 Gives Back by Balancing Things Out for Others

When William Rhodes arrived at UMass Lowell as a first-year graduate student in 1980, he had some serious educational gaps. “I didn’t write well; he says today. “My math skills were poor. And I wasn’t good at critical thinking.”

Today, as one of the nation’s leading experts on key facets of government operation; it’s the government that benefits from our research and assistance services; among those are over-contract with the U.S. government to provide a host of defense—either from natural causes like weather, or from terrorism—security. “I function as a kind of translator,” he says. “My role is to study the data that comes in, say, on threats to our electrical grid security. It’s not a role he could even have dreamed up 35 years ago. And there is no question in his mind as to where the path began. “Whatever successes I’ve had since then,” he says, “I credit to ULowell.”

The successes have been many. For the past 25 years, Rhodes has been a leading member of a series of program teams at Sandia National Laboratories in New Mexico, the nation’s pre-eminent science and engineering lab working on national security. He is also the author of more than 80 technical papers, book chapters and presentations and has consulted with the International Atomic Energy Agency as an expert on radiative and nuclear-material security.

Currently on sabbatical (or as he puts it, “on loan”) from his most recent post, as technology and program deputy with Sandia’s Defense Nuclear Non-proliferation Division in Albuquerque, he is mid-way through a two-year stint as a congressional fellow in support of the office of U.S. Senator Ron Johnson, who chairs the Senate’s committee on Homeland Security and Governmental Affairs. “I function as a kind of translator,” he says. “My role is to study the data that comes in, say, on threats to our electrical grid security—either from natural causes like weather, or from terrorism—then break down the technical stuff into basic layman’s terms, so the committee can act on it.”

Sandia Labs, a subsidiary of Honeywell International, is under contract with the U.S. government to provide a host of defense-related research and assistance services; among those are over-contract with the U.S. government to provide a host of defense—either from natural causes like weather, or from terrorism—security.

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The ‘Life-Changing Opportunity’

By the time Rhodes arrived on campus in the fall of 1980 with a bachelor’s degree in physics from Ohio’s Wittenberg College, he had a pretty good idea already of what he could expect: “I had applied to a half-dozen universities, had gone around and met all these different professors. It was the ones at ULowell who really took the time to talk with me. And that’s what sealed the deal.”

For the two years that followed, as he pursued a master’s degree in radiological sciences and protection, his early impressions were borne out, he says. “I had a lot to learn, a lot to digest. And the professors always made time; they answered my questions, they worked with me one-on-one,” he says. “Two of them especially: my thesis advisor, Ken Skrable, and George Cabot [today an emeritus professor]. Just unbelievable educators, both of them. I can’t tell you what a difference they made.”

His years at ULowell, he says, coupled with the financial support that came along the way (he was a teaching assistant, for two years, under Skrable), made his time on campus “literally life-changing,” he says.

That’s why he’s made it a priority to return the favor, giving nearly a quarter-million dollars to the university so far, in part to support two UMass Lowell endowed funds and the top-rated Radiological Sciences Program. He is also a member of the Legacy Society and the Radiological Sciences Advisory Board, and is currently chairman of the Advisory board for the Kennedy College of Sciences.

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In 2009, he kicked off a fund of his own, the William G. Rhodes III Scholarship Fund, in support of minority and female students studying radiological sciences. Asked what’s behind his choice of beneficiaries (being a member of neither group himself), his response is as sensible as the science he pursues.

“Well, in my family, we’ve had some amazing women,” he says. “My grandmother, for instance, was among the first females ever to graduate from Cornell. It must have been a struggle. I can only imagine what people like her might have done if they’d had more opportunity.

The ‘PERSONAL TOUCH’

As for the minority-student end of the gift, his thinking is just as applied to a half-dozen universities, had gone around and met all these different professors. It was the ones at ULowell who really took the time to talk with me. And that’s what sealed the deal.”

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The theme of “Space Exploration in the Upcoming Decade,” was directed at the 60th anniversary of the dawn of the Space Age and designed around collaborations. One of these, last year’s “Space Conference,” celebrating the 25th anniversary of the dawn of the Space Age and designed around collaborations, was the 25th anniversary of the dawn of the Space Age and designed around collaborations.

The mission of BAE’s Electronic Systems sector—which produces commercial and defense electronics for flight and engine control, surveillance, electronic warfare and a host of other equally critical tasks—lines up well with the university’s prowess in STEM education. “UMass Lowell produces great engineers,” says Brousseau, a member of the university’s Industrial Engineering Advisory Board. “And not only that—they’re great engineers who love the area and want to live their lives here.”

The company has been around since 1951, when a crew of Raytheon engineers left the Massachusetts giant to found a small company in an abandoned Nashua textile mill. Originally called Sanders Associates (after two of the founding group), the new firm’s focus was on protecting military aircraft from detection by radar. By the mid-1970s, the mission had broadened: The company became a leader in defending U.S. J-10 jets from an enemy’s heat-seeking missiles, and in defeating any countersnares that might disrupt its sensors. All this came under the general heading of military electronics, still a young industry at the time—though by the end of the century, most of the country’s military aircraft would be equipped with its defenses.

In 2000, Sanders was acquired by the British firm BAE Systems, among the largest military contractors in the world, then merged with a second defense-focused company to form the Electronic Systems of today. At the core of the UML-BAE partnership is employment. The company, which currently has 6,500 employees in southern New Hampshire, hired roughly 1,000 new workers last year alone and recently announced plans for 400 additional jobs. Many of these are graduates of UMass Lowell.

For some of them, says Brousseau, the relationship begins with a summer internship. “We look for the students with the latest skills, then we put them next to work—they’re not just running out for coffee, believe me. By the end of the summer, they’ve received some valuable experience, as well as exposure to what the company is about. And for us, it makes for some excellent branding. Lots of those students end up leaving here with a job offer in hand. It works out well all around.”

For some UML grads, there is another benefit. BAE Systems offers the students an internship at its Nashua campus. “It’s a four-year rotational program designed to integrate post-grad, combat-injured veterans into the company’s workforce, seems almost tailor-made for this university, whose population of veterans is the highest in the state and among the highest in New England.”

A second area of partnership revolves around UML’s Electrical Engineering Advisory Board, who led the company’s effort to launch the program. “And it definitely shows off what they’re known for: an ability to get things done.”

There have been other partnerships. BAE Systems was the chief sponsor of this year’s Women’s Leadership Conference, hosted by UMass Lowell at the Inn & Conference Center. And on BAE’s Nashua campus, a series of four three-credit courses taught by UML faculty—the university’s Graduate Certificate Program in Microwave Engineering—offers company employees advanced training in radio frequency and microwave development, as well as credit toward a graduate degree.

Finally, the company is also a longtime collaborator with UMass Lowell students in their senior-year capstone design projects, often to the benefit of both parties. “It’s not uncommon for us to have a problem we need help solving,” says Brousseau. “A student will come in with a fresh perspective, and really add something to the discussion. We’re talking about well-prepared, high-caliber people—the sort who go on to be outstanding engineers.”

When Ray Brousseau, vice president and deputy general manager of electrical systems for BAE Systems’ Electronic Systems sector—the largest manufacturing employer in New Hampshire—is looking for a new employee with a particular skill set he needs, the first call he makes is to UMass Lowell Engineering Dean Joe Hartman. “Joe knows this sort of people we need here, he understands just what I’m looking for,” says Brousseau, a 1986 ULowell electrical engineering graduate who’s been with the company for 24 years. “That’s the best sort of partner to have.”

The partnership between UMass Lowell and BAE Systems runs deep. Whether it’s a question of employment opportunities, resource donations or joint-project collaborations, the interests of the university and the Nashua-based company are well-aligned.

The company has been around since 1951, when a crew of Raytheon engineers left the Massachusetts giant to found a small company in an abandoned Nashua textile mill. Originally called Sanders Associates (after two of the founding group), the new firm’s focus was on protecting military aircraft from detection by radar. By the mid-1970s, the mission had broadened: The company became a leader in defending U.S. J-10 jets from an enemy’s heat-seeking missiles, and in defeating any countersnares that might disrupt its sensors. All this came under the general heading of military electronics, still a young industry at the time—though by the end of the century, most of the country’s military aircraft would be equipped with its defenses.

In 2000, Sanders was acquired by the British firm BAE Systems, among the largest military contractors in the world, then merged with a second defense-focused company to form the Electronic Systems of today. At the core of the UML-BAE partnership is employment. The company, which currently has 6,500 employees in southern New Hampshire, hired roughly 1,000 new workers last year alone and recently announced plans for 400 additional jobs. Many of these are graduates of UMass Lowell.

For some of them, says Brousseau, the relationship begins with a summer internship. “We look for the students with the latest skills, then we put them next to work—they’re not just running out for coffee, believe me. By the end of the summer, they’ve received some valuable experience, as well as exposure to what the company is about. And for us, it makes for some excellent branding. Lots of those students end up leaving here with a job offer in hand. It works out well all around.”

For some UML grads, there is another benefit. BAE Systems offers the students an internship at its Nashua campus. “It’s a four-year rotational program designed to integrate post-grad, combat-injured veterans into the company’s workforce, seems almost tailor-made for this university, whose population of veterans is the highest in the state and among the highest in New England.”

A second area of partnership revolves around UML’s Electrical Engineering Advisory Board, who led the company’s effort to launch the program. “And it definitely shows off what they’re known for: an ability to get things done.”

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TAKE A HIKE

Over 130 days of hiking north from the Mexico border through California on the Pacific Crest Trail, Kyle Soeltz, ‘14, had tasted the array of spoils the natural world offers. Fresh air, sunlight, challenge. There were surprises, of course, including the acrid smoke from distant forest fires. Soeltz was mostly alone.

The 26-year-old graphic design graduate finished the 2,660-mile trek in September.

Along the way, he raised money for Hike for Mental Health, far surpassing his goal of $1 per mile. The idea for the trip began with “Reconnect,” a campaign he developed for his UML capstone project that encourages folks to “experience the world on your feet, not on your phone.”

Chancellor’s Speaker Series
Tsongas Center at UMass Lowell
uml.edu/oprah
SAMUEL L. CLOGSTON ’48 isn’t as interested in the future of driving as he is in its past. The Octcott, N.Y., alumnus recently acquired a 90-year-old Model T Ford Depot Hack. Originally designed to transport guests from train stations to hotels, the station wagon-like hack retailed for $695 in 1928.

Robert Murcos of Dallas, Texas, retired from IBM and Motorola and is spending time traveling extensively, with emphasis on the contiguous 48 states.

Arthur Stein is retired and reports that he is “Way, way, way, way, way, way, way too busy ‘attending former employees’ retirement parties.”

Ann Fox Chandonnet is an accomplished author, poet, culinary historian, and journalist, with an impressive catalogue of published works. Ann resided in St. Louis, Mo.

SAMUEL L. CLOGSTON ’48

A License for Loyalty

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John and Bonnie '68 Wilder celebrated 50 years of marriage last October.

Paula Abate reports that she is now unannounced from her career as a licensed marriage and family therapist.

Lillian Pearson retired from the Department of Meteorology, Nutting, in July 2016. Since then, she has visited several national parks in the western U.S., cruised to Norway and the U.K., and has visited several national parks in the western U.S., cruised to Norway and Britain through the Panama Canal, and visited both coasts of Mexico. She is also spending time with family and friends in both Massachusetts and California.

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A Man, a Squirrel and the Game of Life

On an afternoon in August 2015, an orphaned baby squirrel, just fallen from a tree, showed up in Randy Hecht’s front yard in Huntington Beach, Calif. He took him in and named him Roxy. After researching squirrel care online, he nursed her back to health, and when she was eight months old, he released her. But Roxy didn’t go far, parking herself permanently in a series of nests in Hecht’s yard. On Mother’s Day 2016, she delivered a litter of babies. “I felt so proud,” Hecht says. Meanwhile, Roxy is thriving—and pregnant for the fifth time. She and Hecht created the board game “It’s a Squirrel’s Life” in Roxy’s honor. Designed for players 8 and older, the game’s objective is to gather a certain number of food pieces (like acorns and strawberries) and obtain different-colored tail rings signifying squirrel-life milestones (like nests and babies). Due largely, Hecht says, to the marketing skills of his wife, Ophelia, the company’s VP of nuclear engineering, the Game of Life is now the company’s most well-known product. Hecht says, “It is a classic, and I made some OK money.”

Edward J. Samowski retired and living in Chelmsford, Mass., recently visited the Merrimack Valley Nurse Practitioner Group, which he co-founded back in 1989. When he was hired on as an adjunct faculty member at Rivier University. He continued his leadership of the Merrimack Valley Nurse Practitioner Group, which serves as head/chief provider of the Merrimack Valley Integrated Care Network. He has retired from officiating women’s basketball after 38 years of refereeing. She spent 30 of those years refereeing women’s Division I college games, including at UMass Lowell.

Thomas Galvin was appointed to the Massachusetts Clean Energy Center by Gov. Charlie Baker in 2015. He currently serves on the board of directors of two renewable energy technology companies in Scotland.

Howard Kangas is now retired and looking forward to new opportunities.

CLASS OF 1977

Joan S. Linares retired from her career as a nurse and moved to Boquete, Panama.

Edward J. Samowski retired and living in Chelmsford, Mass., recently visited the National Baseball Hall of Fame in Cooperstown, N.Y., during the annual Hall of Fame Weekend. He was the special guest of Atlanta Braves former third baseman and Hall of Fame inductee Chipper Jones.

Dori authored a novel, “Mrs. Bennet’s Sentiments.” A “Pride and Prejudice” spinoff, the novel tells the story from the perspective of the character of Mrs. Bennet. The book was selected as a top fiction pick by People magazine.

Lee Whiting-Potras ’82, ’86 noticed as a family basketball game participant for 28 years in two local family practices before retiring in 2015. After a world where she was hired on as an adjunct faculty member at Rivera University, she continues in the leadership of the Merrimack Valley Nurse Practitioner Group, which she co-founded back in 1989. When not working, she bakes a lot of cookies and a lot of pictures for the UML women’s basketball team at UML hockey games.

Joe was an engineer during the week, the Caped Crusader on weekends,” he chuckles, remembering those long-ago days. “It was a kick, and I made an improvised Batman costume, driving around in a homemade Batmobile Boeing in California for 28 years, he spent his weekends during the ’90s in

Bret is now the partner at his own law firm, LaFortune and LaFortune, in Andover.

Timothy Creegan, a former captain with the Lowell police department, is now the new police chief in Athens, N.Y.

MaryEllen was awarded a Rising Star award.

Chris Jolla, Calif., and recently retired from 18 years in two local family practices before retiring. She views in the leadership of the Merrimack Valley Nurse Practitioner Group, which she co-founded back in 1989. When not working, she bakes a lot of cookies and a lot of pictures for the UML cross-country and track and field teams while cheering on her son, Tim Potras, who graduated in May with a degree in athletic health care and head trainer for UML hockey.

MaryEllen’s husband, Arnie Potras ’85 is the head of athletic health care and head trainer for UML hockey.
Diane Feeney Mahoney ’80: Five Decades of ‘Doing What Needs To Be Done’

Growing up in Cambridge, Mass., in the 1960s, Diane Mahoney (then Diane Feeney) wanted to be a fire fighter like her dad. But at high school, her teachers urged her to aim for a more “polished” career — so she became a sociologist, teaching and research her long career as a nurse, educator and researcher, she has no regrets.

Mahoney learned about the UMass Lowell gerontology nurse practitioner program so that I’d have the knowledge that I needed to change policies, she says.

Mahoney shared her frustrations with May Fundi, who at the time was chief administrative officer of the hospital’s care chain.

Funding advice tapped into my pioneering spirit by telling me that I didn’t like it, then I should figure out how to change it,” she says. “The UML gerontology program gave me a new cohort of nurse practitioners the expertise and confidence to blaze a new trail for improving the lives of patients.”

After earning a master’s degree in gerontology, Mahoney went on to earn a Ph.D. at Brandeis University because, she says, “I needed to learn the language and methods of policy-makers.”

One of her major projects was Washington, D.C., where she did policy work.

I testified at a D.C. hearing back in the Reagan days on the issues of overmedicating older people,” she says. “And I published several papers on overmedicating and on restraint-free nursing homes, which pointed to better alternatives.”

Mahoney is the director of the Massachusetts Institute for Technology’s Aged Care Policy Research Center at the School of Nursing and a professor of aging at the School of Public Health. She is the principal investigator of a new study that is exploring the potential of a “smart dresser” for aging adults.

“Only a few years ago, we were pretty convinced that care screens would be used as a way to admit more people into state nursing facilities,” she says. “But, we were wrong.”

Mahoney was an early champion of using technology to help people with dementia or disabilities; 15 years ago, she oversaw a large study of a “smart” home in which people could do things like wake up, eat lunch and take their pills. Each system was tailored to the patient’s specific concerns.

Her next stop was Washington, D.C., where she did influence policy. “I spent enough years, I’d made enough money; I’m not a restaurant guy,” he says. “But he’d put a lot of his life into that place, and he was close to going out of business. He’s been struggling to stay open. McConney, just retired and with only this time around, the roles would be reversed.”

He hadn’t figured on any new business ventures. But it was at that point that a second older man would figure prominently in his life — his life, only this time around, the roles would be reversed.”

The two men have been friends for 20 years.

Santa Cruz, Calif. — a 10-minute drive from where McConney now lives — and the younger man’s first real job: with Digital Equipment. The result was the younger man’s first real job: with Digital Equipment. The result was the younger man’s first real job: with Digital Equipment.

The train, McConney shared his résumé, the older man his business plan.

“What a challenge, what a challenge! What a colorful appeal, according to a local reviewer, “with chic banana-bread coloring, and inexpensive prices,” he says.

“I’d spent enough years, I’d made enough money; it was time for other things,” says McConney, who adds that the plan was to spend more time with his teen-aged son, and with his 95-year-old mother, back in his home state of Massachusetts.

He didn’t think in life business ventures. But it was at that point that a second older man would figure prominently in his life — only this time around, the roles would be reversed.”

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John Lavelle

Eileen is a medical physicist at Lahey Hospital of upstate New York. Mahoney has been a leader in the field of occupational and environmental health and has been appointed to the Department of Transportation to blaze a new trail for improving the lives of patients.

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“Mr. McConney put in much of the legwork, and still does: hiring, money stuff, interacting with people, pulling the right levers — a career change,” according to a local reviewer.

“With GE since 1986.”

“Since the height of the Eiffel Tower. John has been published several papers on overmedicating and on restraint-free nursing homes, which pointed to better alternatives.”

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Out of the Wood

H e was 13 years old, in a carpentry program at vocational school in Lowell, when he first faced the saw, making a cabinet—though he didn’t know it at the time. “There was just something about working with wood,” says Tom McLaughlin. “I was sort of grasping at ideas, that really appealed to me. Years later, that call led to an invitation to serve as the new host of the Public Television program “Rough Cut,” a weakly woodworking instructional show that now in its eighth season—a job McLaughlin earlier this year ended with a serious injury sustained in an accident while repairing a bicycle. But that wasn’t the end of his acting plans. “We signed on with a Boston casting agency, and before long, the calls started coming: auditions for more films than he can recall—films like “Crooked Arrows,” “Chasing the Dream.” Meanwhile, to make ends meet, she managed a restaurant. “I was happy.” And she kept going I’d eventually get somewhere. She’s known all along, she says, that “if I keep sober and work hard, keep soaking up stuff, stay focused and work hard, I’ll eventually get somewhere.”

Continued

"There was just something about working with wood, something about expressing things that way, that really appealed to me.

"I'm all in on teaching now," he says. "I've been designing furniture almost 30 years and I've learned a lot—And it still seems sort of surreal."

Traditional Home Magazine and others. A series of guest appearances on "Rough Cut" went well, and led to the launch of an online and on-site tutorial featuring four-and five-day classes on different aspects of the woodworking craft. But teaching claimed increasingly more of his time. Four years ago, McLaughlin established Epic Woodworking, a team of apprentices to help fill the custom orders of a growing client list. As an math major at ULowell (which he was the youngest of four siblings to attend), McLaughlin did not foresee his current career—he recalls a lot of back-and-forth traveling between his math classes on North Campus and the art courses he signed up for on South. “I guess I couldn’t quite give up on the artistic end of things,” he says. And he never did. Not during a post-UML stint as an electronics salesman, not even through the four years in the Coast Guard. In 1993, he set up his first shop in Wilson, N.C., from which he designed and sold the earliest of what became thousands of custom pieces. "Pug" Moore, who would remain McLaughlin’s mentor through the rest of Moore’s life. It was from Moore, he says, that he first heard the difference between good and great—why some pieces make it into museums while others don’t.

In 1990, only a year out of seminary, he moved to North Carolina to begin a three-year apprenticeship making 18th-century-style custom furniture under the tutelage of a master craftsman, P.A. Blanchard. “I wanted to do something with my life,” he says. “I had a sense that it could be a viable choice for a career.”

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From Haverhill to Hollywood: Chasing the Dream

S ometimes, a dream is nurtured over years. Other times, it takes shape overnight. For Beth Petrou, 34, the dream of Hollywood overtook her like a bolt from the blue. “One day, almost out of nowhere,” says the Haverhill native, “I just heard this voice saying ‘Oh, you need to go to LA and try acting!’”

That polished professionalism and moved west and followed in the footsteps of thousands of other hopefuls: acting classes, script readings, audition calls. Her parents, who were regulars for years that followed with several Infamous, a part in an independent film and a dozen or so auditions. Meanwhile, to make ends meet, she managed a restaurant. Then, in 2016, she and her sister-in-law were planning to open a restaurant in Haverhill. She agreed to come back and run it for them and since that time has been the manager of Butch’s Uphook, on Locke Street in Haverhill.

Meanwhile, she continues to take any audition calls that come in and to raise her 17-month-old daughter, Lyra, with her 3-year-old son, Noah. “I managed to balance the restaurant and acting.” Meanwhile, to make ends meet, she managed a restaurant. Then, in 2016, she and her sister-in-law were planning to open a restaurant in Haverhill. She agreed to come back and run it for them and since that time has been the manager of Butch’s Uphook, on Locke Street in Haverhill.

In 1996, she was back running the restaurant. “As an actress, I’m a big–

Continued

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The Cape Verdean students worked hard and wanted to succeed so they could help their families, but many were leaving high school before graduating to take jobs, while others went on to college. “I saw some amazing kids make different choices, and I wanted to know why,” Crowley says.

Under the guidance of Assoc. Prof. Phitsamay Uy, Crowley found an advisor. “Chief among them was social capital—conversations with career counselors who could help them navigate the educational system.” For example, one student befriended a custodian who spoke Creole and English. The custodian sent him to the guidance counselor’s office for information about college, Crowley says.

Just as Crowley was finishing his dissertation in 2015, Woburn offered him a job as assistant superintendent. The district had a growing number of economically disadvantaged students and English language learners, mostly immigrants from Brazil and Central America, and that year, state authorities had downgraded Woburn Memorial High School, designating it a school in need of intervention.

Crowley was the intervention. He instituted the kind of “restructuring campaign” that decided they should start a literacy campaign, involving teachers in every class, from gym to math, to incorporate writing into their lessons. Students would run, and then write about what they felt about what they were doing. They would write down every step they took to solve a math problem. “Writing is thinking,” Crowley says. The administration backed the teachers’ plan, as did the teachers’ union.

It paid off. The next year, the seventh- and eighth-grade MCAS English scores rose dramatically. And year after year, the gains continued. Fewer students dropped out, and more went on to college. Now more than 90 percent of Brockton High School students pass the English portion of the MCAS, and 78 percent pass in math. “What we did over time was raise expectations and allow kids to achieve things they didn’t think they could achieve,” Crowley says. “Expectations matter.”

The turnaround was exactly what Crowley was looking for to become an administrator at Brockton. And he went back to school himself in 2007, attracted by UMass Lowell’s reputation for working effectively with public schools in Lowell, and also by a large population of immigrants. UMass Lowell also offered flexibility. With help from other Ed.S. students on the South Shore, Crowley took classes in real time by videoconference. “UMass Lowell was really quite progressive,” he says.

Crowley took a break after completing his coursework, unsure what to research for his dissertation. The answer came to him in 2013 as he was flying home from an education conference in Brazil, where he had been invited to speak about Brockton’s turnaround. “He thought about his coursework and Portuguese-speaking students from Cape Verde, whose numbers at Brockton High had more than tripled since 1999. “I thought, ‘What if I were coming here from Cape Verde and landing at Logan Airport for the first time?’ That’s how and why I became personal to me.”
**Wimbledon Champ Aced Online Degree**

C

The Future of the Long-Haul Trucker

B

Joe Bendor ’17 arrived at UMass Lowell in the fall of 2014, he had a pretty good idea of what he wanted to do with his life. He’d spent the previous two years at community college outside Boston, and the five years before that driving a truck around New England delivering ice, printed maps and heating oil. And the more that time passed, he said, the sadder he was.

“I just knew I wanted something more,” he says. “I wanted to make a difference, I guess. I wasn’t sure how it would happen, but I figured I was good at mechanical stuff, and maybe I could help make things better than they were.”

Better than anything else, Bendor knew trucks. For his senior-year mechanical engineering capstone project was a natural choice—a series of aerodynamic studies to determine the optimum “platooning” distance between two pairs of connected 28-foot trailer rigs—or “double pups”—traveling at highway speeds. The studies were done for Peloton Technology in California, a Silicon Valley startup whose whole business is the safety and fuel efficiency of long-haul tandem trucks.

For the trucking industry, the potential benefits of such a project—in both safety and fuel costs—are enormous. With the computer on trucks-regular “talking” to each other—its possible to greatly reduce the safe following distance, thereby improving drag and lowering fuel costs by about 7 percent. While safety is assured by the computer links—a truck’s computer, says Geoff Safar, “can read and react to a threat way, way faster than a human”—the “green” benefit, with much less carbon dioxide released into the air.

Even with the Peloton platooning system, however, the business of sleeper bunks is still left to the driver. “It’s very different than with passenger cars,” Bendor, who has been working for Peloton as a “validation analyst,” says. “At times you’re going to see fewer guards in the cab, maybe with dedicated lanes on the highways for platooning rigs. But that’s still a while away.”

BY GEOFFREY DOUGLAS

> CLOSE-UP CLASS OF 2015

> CLOSE-UP CLASS OF 2017
Johanna Rodrigue is happy to report that she got a job doing what she loves. “Working with the elderly is a job that shows my compassion for others. As a health services coordinator, I must make sure that those who are 85 and older are getting the best of their health insurance coverage. Thanks to my degree and everything I learned at UMass Lowell, I am where I am today! Dreaming is believing!” [11]

Thomas follows in the international footsteps of former River Hawk Anfernee “Penny” Hardaway, who did it for Memphis in 1992-93). Thomas ranks seventh on UML’s all-time scoring list with 1,864 points and 1.5 steals per game in a single season (the other was former NBA great Michael Jordan as a senior, signed his first professional contract with BC Zaporizhya of the Ukrainian Basketball SuperLeague in August.

“I’m just going to go out there and play my game. I don’t really feel too much pressure,” Thomas says. “I’m really excited that this is the next step and feel blessed to be able to continue to play basketball.”

Thomas ranks seventh on UML’s all-time scoring list with 1,864 points and third with 862 rebounds. As a senior, he became just the second Division I player in the last 25 years to average 21 points, eight rebounds, four assists and 1.5 steals per game in a single season (the other was former NBA great Artest “Penny” Hardaway, who did it for Memphis in 1992-93).

Thomas, who considered offers to play in Portugal and Korea, is eager to join the highest tier of Ukrainian hoops. “I don’t really feel too much pressure,” he says. “I’m just going to go out there and play my game.”

Thomas follows in the international footsteps of former River Hawk teammate Tyler Livingston ’17, who averaged 17.6 points and 2.4 rebounds for the Spanish team Arcos Albacete Basket last season. Livingston, a 6-foot-6, 210-pound forward from Hudson, N.H., is looking to return for the Spanish team Arcos Albacete Basket last season. Livingston, a teammate Tyler Livingston ’17, who averaged 7.6 points and 2.4 rebounds per game, followed in the international footsteps of former River Hawk Anfernee “Penny” Hardaway, who did it for Memphis in 1992-93).

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1. The UMass Alumni & Friends Reception brought together alumni and friends of all campuses for a gathering in Palm Beach, Fla. Pictured, from left: UMass Lowell alums Diana Russell '61, Jim '80, '18 [H] and Dae Danielsen, Doug Reader '83, Chancellor Jacob Moloney '75, '82 and John Pulichino '65, '14 [H].

2. Salsa ‘75 and Nancy Joseph enjoy the warmer weather during a UMass Lowell’s Palm Beach event in March.

3. Alumni join the chancellor for lunch in Sarasota, Fla., during annual events in the Sunshine State. From left: Edward Keon Jr. '77, Chancellor Jacob Moloney '75, '82, Mary Hagan, Frank Spinola '86, '17 [H] and Robert Smith.

4. Alumni enjoy lunch together in St. Armands Key, Fla. From left: Jean '73 and Terry '72 and Gerry LaChic '72, Mary Jo '18, '17 [H] and Tony Spinola '86, '17 [H], Brett '72 and Ruth Zaritsky, Howard '64 and Irene Harley, Ed '86 and Andrea Novi, and Sara and Ed '16 Freshman

5. Manning School of Business Alumni. Prof. Elizabeth Altman shares her insights on the digital economy with alumni from all five campuses during a lecture series in Florida.

6. Alumni and friends gather with Chancellor Jacquie Moloney '75, '92 during the UMass Reception in Washington, D.C.

7. Alumni, current students and friends met in Orlando, Fla., for the MPE-2018 Plastics Show in which Prof. Stephen Driscoll '66, '72 was honored with the 2018 Russell W. Ehlers Award. Pictured, from left: Chair of the Plastics Engineering Department, Prof. David Kazmer poses for a photo with Driscoll and Rowdy after the awards ceremony. Back row, from left: Provost Michael Scalise, Richard Lynch '07, Dean Shorte McKinley, Dean Sandra Richtermeyer, Dean Luis Falcon, Dean Elanee Alhamer, Chancellor Jacob Moloney '75, '82, Dean Brenda Evans '84, '89, Elizabeth Brackett '84, Dean Noureddine Maqubela '72, Dean Joseph Hartman and Lisa Brehm '84, Provost, from left: William '15, Armand's Key, Fla. From left: UMass Lowell alumni Dick Russell '80, '18 (H), Herb '72 and Ruth Zaritsky,Howard '64 and Irene Harley, Ed '86 and Andrea Novi, and Sara and Ed '16 Freshman.

8. University Alumni Awards honorees gather with campus leadership during the University Alumni Awards ceremony. Back row, from left: Provost Michael Scalise, Richard Lynch ’07, Dean Shorte McKinley, Dean Sandra Richtermeyer, Dean Luis Falcon, Dean Elanee Alhamer, Chancellor Jacob Moloney ‘75, ’82, Dean Brenda Evans ’84, ’89, Elizabeth Brackett ’84, Dean Noureddine Maqubela, Richard Lynch ’07, Dean Joseph Hartman and Lisa Brehm ’84. Front row, from left: William ’15, Armand’s Key, Fla.

9. Scholarship recipient Justin Prezioso ’30 shares his appreciation of Theresa Ogonowski during the Celebration of Scholarships. The John Ogonowski Memorial Scholarship Fund was established by his late husband, Alexander Ogonowski, in memory of their son, John Ogonowski ’72, pilot of American Airlines Flight 11 on Sept. 11, 2001.


11. The university dedicated a historic North Campus building in honor of Jim Dandeneau ’80, ‘18 [H], shown, in recognition of his and his family’s generous and longstanding contributions to the university. Dandeneau Hall (formerly Pasteur Hall) will house robotics and computer science, as well as space for computer science and engineering faculty. Danielsen, who took classes in computer labs, as well as space for computer science and engineering, faculty. Danielsen, who took classes in Pasteur Hall, also received an honorary degree during the 2018 UMass Lowell Commencement exercises.

12. Lauren Scannell, Jacob Ashley ‘17 and Chris Mafrison ‘94 enjoy the Chancellor’s Leadership Society dinner at the UMass Club in Boston.

13. The Golden Alumni Reunion was an opportunity to connect with alumni and classmates who have already celebrated their 50th reunion and to welcome the Class of 1968 in the Golden Alumni family. Pictured, from left are Sharine Galliano, Steven ‘56 and Patricia Apostolakos Mahoney ’64.


15. Lowell Tech graduates from 1968 and friends meet for their 60th reunion. Pictured, from left: Jack Danny Brown, Preston Cooper ’68, Paula Molloy Petrone ’68 and Toby (Kohn) Hodis ’68.
The Francis College of Engineering celebrated reaching 500 alumni donors during their alumni reception and men's hockey game.

### College Events

#### ALUMNI EVENTS

- **FRANCIS COLLEGE OF ENGINEERING**
  - **2/22 vs. Merrimack College**
  - **2/15 vs. Providence College**
  - **2/9 vs. UMass Amherst**
  - **1/26 vs. Boston College**
  - **1/19 vs. University of Vermont**
  - **11/23 vs. Rensselaer Polytechnic Institute**
  - **11/17 vs. University of Connecticut**
  - **11/9 vs. University of New Hampshire**

#### HOCKEY NIGHTS

- **2/22 vs. Merrimack College**
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#### River Hawk Road Show

- **Arizona Alumni Reception & Baseball Game**
  - **Saturday, Feb. 9, 2019**
  - **5 p.m., River Hawk Field, Stony Brook, N.Y.**

#### Alumni Events Calendar

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The Legacy Scholarship
for UML Families Living Outside of Massachusetts

Annual scholarships up to $10,000 are now available for children and grandchildren of UML alumni who live outside of Massachusetts.

For more information on applying, visit uml.edu/scholarships.

Freshmen for fall 2019:
Scholarships applications are due March 1.
Transfers students for fall 2019:
Applications are due June 1.

Do you know someone who is interested in applying for this scholarship, but hasn’t applied to the university yet? Visit uml.edu/admissions.

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More than 100,000 spectators gathered to watch along the Merrimack Valley Auto Course, which began and ended on Pawtucket Boulevard along the Merrimack River. In this photo of the main event, which is from the UMass Lowell Center for Lowell History collection, drivers lapped the course 24 times, traveling 254 miles at an average speed of 53 mph. The races not only brought excitement, but they also helped advance both car and street design to improve performance and safety. The event returned to Lowell in 1909, firmly establishing the city’s role in the development of automobiles.

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These days, many students spend more time driving on screens than they do on the road. A national 2017 survey conducted by The Washington Post and UMass Lowell found that 73 percent of Americans ages 14 to 21 played an online multiplayer video game or watched someone else play video games online in the past year. Meanwhile, Pew Internet Research found that 70 percent of college students play video games at least "once in a while."

At UMass Lowell, hundreds of students are members of gaming-related clubs, including the Super Smash Bros. Club, some members of which gathered recently in the second-floor Club Hub at University Crossing to play the racing game Forza Motorsport 6.

"Video games allow your mind to transport itself into another world, letting you relax and think creatively and without pressure," says Smash Bros. President Seth Kary, a senior electrical engineering major. "Plus, gaming gives me a type of motivation I can't find elsewhere, because the types I play challenge me to be better than everyone else. Competitive games help my reflexes, logic and awareness of situations."
You did it. You helped UMass Lowell soar. You embraced our first-ever comprehensive campaign, Our Legacy, Our Place, and met our $125 million campaign goal two years ahead of schedule.

**Now, you can help us rise even higher.**

As we approach our 125th anniversary, we want to raise an additional $25 million—to invest in our students and our future.

Together, we can leave a larger legacy. For more information about 125 and Rising, visit [www.uml.edu/ourlegacy-ourplace](http://www.uml.edu/ourlegacy-ourplace).