Nonspec Named One of the Most Promising New Businesses

Nonspec Inc., an emerging business founded by UMass Lowell engineering students, landed a $50,000 prize as one of the top startups in the MassChallenge business accelerator program last month.

It is just the latest win for the emerging company, which makes low-cost, high-quality prosthetic limbs for people in developing nations. To date, the company has raised $350,000 in grants and competitions and now has a staff of six—three in the U.S. and three in India, where its first products hit the market in October.

The MassChallenge award will help the company continue growing, says co-founder Erin Keaney, who earned bachelor’s, master’s and doctoral degrees in plastics engineering from the Francis College of Engineering. “We plan to use the $50,000 to purchase materials to make more limbs, to help our team in India be self-sustaining and to accelerate our manufacturing.”

Keaney and her colleagues spent four months participating in the highly competitive MassChallenge program, which gives promising startups access to corporate partners, expert mentors, shared workspace in Boston’s Innovation and Design Building and a research and development lab. Thousands of startups from around the world vied for one of the program’s 128 spots. Nonspec was among the group of 26 “high impact” companies that competed for $1.5 million in prize money.

That Nonspec made the final 26 “is a significant validation of its business and of our own DifferenceMaker program,” says Steven Tello, senior associate vice chancellor for entrepreneurship & economic development.

Nonspec got its start in the DifferenceMaker program, winning $5,000 in the first campuswide competition in 2013. Since then, Keaney and her co-founders have continued to refine their business plan and products.

“We’ve made mistakes, learned to articulate what we do and have delivered too many pitches to count. But it has all been worth it to see what a difference our product can make in a person’s life,” says Keaney, who is Nonspec’s chief operating officer.

The company has targeted developing nations for its products because that’s where 83 percent of the world’s 54 million amputees live. In many countries, access to affordable prosthetics is extremely limited.

“Although most of them have access to a clinic, they don’t have access to someone who can fit a prosthetic or have the funds available to afford a prosthetic that works well for them,” says Keaney. The waiting period can be up to two years; Nonspec thinks it can change that.

Pre-sales put the company on track to meet 2018 sales goals, Keaney notes. The company plans to break into the U.S. market next year and is exploring expansion into the Philippines and Rwanda as well. Keaney and her colleagues will continue to seek funds, with a goal of raising $700,000 over the next 18 months, to allow Nonspec to scale manufacturing and hire staff.
**Learning with Purpose**

**Facility Win NSF Grant to Improve Probation Monitoring**

**Smartphone Apps Will Promote Positive Behavior**

Three UMass Lowell faculty members have won a $99,000 National Science Foundation grant to develop the next generation of electronic monitoring for probationers using smartphones, sensor technology and GPS tracking. The goal is to keep people who are on probation on track and prevent them from going back to jail by promoting and rewarding positive behavior.

Assoc. Prof. April Pattavina and lecturer Rob Corbett of the School of Criminology and Justice Studies teamed up with Assoc. Prof. Guanling Chen of the Department of Computer Science on the project. They are building on studies that show rewarding positive actions can be more effective at changing behavior than simply punishing negative conduct.

“We’re looking at different ways we could promote positive behavior, like reminding probationers about treatment appointments and job opportunities and then sending them positive reinforcement messages when they follow through,” says Pattavina, the project leader.

“For too long, we’ve focused on catching offenders when they screw up,” says Corbett, who previously served as acting commissioner of the Massachusetts Probation Service and executive director of the state Supreme Judicial Court.

“We think we can cut down on probation violations this way.”

The professors will interview ex-offenders who have completed probation about what helped them succeed as well as public safety and addiction treatment professionals to figure out what strategies work best.

Chen and his graduate students will incorporate those strategies into smartphone apps.

“Think of it as a personal coach, like a weight-loss program, to keep probationers motivated and accountable,” Chen says.

**Partnership with Autism Treatment Center Flourishes**

PCAL is designed for children ages 2 to 22. There are rooms set up like a home to help teenagers develop skills from socializing to cooking and doing laundry. For younger children, there are rooms filled with educational toys and games.

“There’s so much complexity to autism, so we’ve put together a place completely designed around these children’s needs and behaviors,” says Frank McCabe, executive vice president of PCAL and one of its four co-founders, all longtime friends who grew up together in Lowell.

PCAL now serves about 30 families, with preschoolers there during the day and 12 to 15 children in the building on weekdays after school, vacation days and Saturdays, each working one-on-one with a staff member.

“We really can’t hire enough,” McCabe says. “We’ve had such wonderful luck with the UMass Lowell students, both graduate and undergraduate, who want to get into this field. We want to build on that.”

**Educators Focus on Computer Science Literacy**

**Technology Skills Key to Economic Growth**

Educators from across the Northeast gathered at UMass Lowell for a daylong conference focused on boosting computer science education in grades K-12.

The need for highly skilled computer science professionals has never been greater, Massachusetts Secretary of Education James Peyser said in his keynote address at the Computer Science Teachers Association (CSTA) New England Regional Conference.

“Currently, we have an abundance of demand for computer science graduates and insufficient supply,” Peyser said. “We need to have more students pursue this field to fill the demand, grow businesses and attract more companies like Amazon.”

“Whether it’s health care, the financial industry, professional baseball or drilling for oil ... computing is a fundamental advantage in every business,” said Google executive Steve Vinter, who was also a featured speaker.

The conference featured sessions and panel discussions covering topics such as how to develop engaging lesson plans and incorporate computer science in fashion, art, engineering and robotics, as well as internships, cybersecurity and ethics.

“People had a great experience on our campus, connecting to each other and learning about the state of K–12 computer science education nationally and locally,” said computer science Prof. Fred Martin, who is associate dean of student success in the Kennedy College of Sciences and chair of the CSTA’s board of directors.

“I had an amazing time and was able to bring back a lot of ideas and information to my district,” said Ryan Robidoux, a computer science instructor at Old Colony Regional Vocational Technical High School in Rochester.
New B.A. Education Majors Are Making an Impact at Lowell School

First-year Students Get Classroom Experience at Murkland School

In their first semester, 18 first-year education majors are getting a taste of what it’s like on the frontlines of teaching at the Charlotte Murkland Elementary School in Lowell.

The students, who are enrolled in the new bachelor of arts in education program that was launched this fall, are working alongside classroom teachers, developing lesson plans and interacting with Murkland students. They will continue to get hands-on classroom experience throughout their four years in the bachelor’s program.

EPA Lauds University’s Efforts to Reduce Food Waste

Nearly 250 Tons of Waste Composted from UML Dining Halls Last Year

For the third consecutive year, the U.S. Environmental Protection Agency has recognized the University’s work in reducing food waste, part of a nationwide effort to cut down on the amount of food that gets thrown in the trash.

The EPA program, known as the Food Recovery Challenge, encourages grocers, restaurants, educational institutions and sports and entertainment venues across the country to prevent and reduce waste. UMass Lowell was among 24 organizations in the New England region to be recognized for its efforts, joining higher education institutions such as Boston College, Northeastern University, College of the Holy Cross and UMass Dartmouth.

The university composted 247 tons of food waste in FY2017. Working with its solid waste contractor, Casella Waste Systems, the university collects and pulps table and kitchen scraps from its dining facilities. Casella then transports the waste to a local farm, where it becomes nutrient-rich compost.

“We are proud to be recognized once again by the EPA as a leader in food waste diversion,” says Rich Lemoine, executive director of Administrative Services and Environmental and Emergency Management. “These efforts are an important part of our commitment to sustainability and energy conservation.”

The university launched its composting program at the Fox Hall Dining Commons in 2013 and has since expanded it to all of dining facilities.

Fado Concert Raises Funds for Portuguese Studies

“Sounds of Portugal” Supports Saab Center

Music lovers and the Merrimack Valley’s extended Portuguese-American community turned out in force to hear two leading Portuguese singers, Joana Mendonça and Duarte, perform an evening of fado music at Durgin Hall.

More than 300 guests attended the Nov. 3 “Sounds of Portugal” concert, raising more than $40,000 to benefit UMass Lowell’s Saab Center for Portuguese Studies—a new record for the annual event. The funds will help support study abroad programs, visiting professors and more cultural and community events, says the center’s director, Prof. Frank Sousa.

Founded in 2013 with generous support from the Saab Family Foundation, the Saab Center celebrates the region’s rich Portuguese heritage and promotes the multidisciplinary study of Portuguese language, literature and culture.

In early December, the Saab Center hosted a public lecture by Joao Vale de Almeida, the European Union ambassador to the United Nations, and co-sponsored a panel discussion on “The Portuguese Immigrant Experience in Lowell Since the 1960s” at Lowell National Historical Park.

Saab Center Director Prof. Frank Sousa, Chancellor Jacqueline Moloney, musicians Joana Mendonça and Duarte, sponsor Elisia Saab and Consul General José Rui Velez Caroco at the “Sounds of Portugal” concert.

Duarte (left), an award-winning fado singer-songwriter, talks with Analise Saab, who helped organize the fundraising concert.

Food waste from UML’s dining halls is collected for composting.
Patton Film Workshop Brings Vets Together to Heal

Marine veteran Brandon Thompson has witnessed the suffering that often follows veterans when they return home from the service. The transition can be painful and isolating, says the sophomore business major.

In an effort to break out of that isolation, Thompson was among a group of veterans who recently participated in the two-day “I Was There” film workshop, run by the Patton Veterans Project, a program that brings veterans together for a crash course in filmmaking and a chance to bond with fellow veterans. It’s a weekend that can change lives, says Benjamin Patton, the program’s executive director.

The filmmaking process “counters isolation with a process that is inherently collaborative” and helps veterans understand their experiences, Patton says. It can also bring veterans like Thompson out of the shadows.

“For me, with no family around, it’s been about trying to build connections,” Thompson says.

Patton approached UMass Lowell about hosting a workshop, mainly for its large student-veteran population and the support they get.

Though he’s not a veteran, Patton knows about military culture. His father was a U.S. Army general and his grandfather was “Old Blood and Guts,” George S. Patton, the famed World War II general.

An author and filmmaker, Patton launched the Patton Veterans Project in 2011 with the idea that storytelling through film could be not just beneficial, but even therapeutic for veterans. He has since hosted more than 40 workshops at military bases, veterans hospitals, universities and private clinics both in the U.S. and Israel, giving nearly 1,000 veterans the tools to work together on more than 300 films.

The program is also part of a Department of Veterans Affairs research study to evaluate the effectiveness of using filmmaking to help veterans with post-traumatic stress disorder.

“Yes, we see PTSD, but the most common thing we deal with is just plain transition. We ask soldiers to make a 180-degree transition into a culture that’s pretty much opposite to what they live in the military,” she says.

A public screening of the veterans’ films was held on campus in December. Patton will return to campus next year to conduct additional filmmaking workshops.