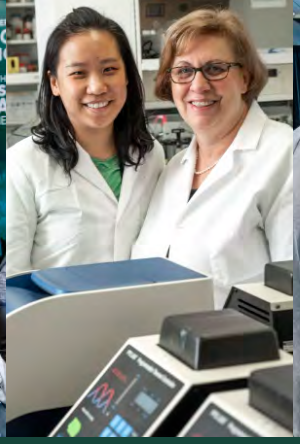











MICHIGAN STATE UNIVERSITY
INNOVATION CENTER

2019 ANNUAL REPORT

About the **MSU Innovation Center**

Tracy Henion, director of communications, sat down with Assistant VP for Innovation & Economic Development Charles Hasemann to discuss the impact and value of the MSU Innovation Center.

What is the mission of the MSU IC?

The Innovation Center is MSU's hub for creating economic value from the research and creativity that happens across our campus. We help faculty and students translate research discoveries and knowledge into products and services that make life better. We offer a world-class network of corporations, entrepreneurs, investors and inventors — all in one place. Our efforts also help grow and diversify Michigan's economy.

- We connect faculty to companies in research partnerships, establishing collaborations in Michigan and around the world.
- We protect MSU's novel creations as patents or copyrighted materials, and we offer those intellectual properties to companies so they can develop them into new products.
- We develop new startups with faculty and students based on the ideas and intellectual property they have created.
- Our job is to make all of this as simple as it can be and bring expertise, relationships and funding to accelerate the translation of ideas to value.

Business-CONNECT links the right people and resources to develop an idea.

MSU Technologies offers the best MSU ideas ready for commercial licensing.

Spartan Innovations creates investment-ready businesses from MSU ideas.

What makes the MSU IC unique?

We keep everything together with consolidated leadership. Corporate partnering, technology transfer, new company startup and entrepreneurship all in one place creates synergy and excitement.

Another strength is our partnership with the MSU Foundation, which brings value to our ecosystem through its network of business talent and investment expertise that supports our startup companies. The foundation also provides leadership and investment in regional economic development through its incubators and other place-making activities.

What is our impact?

First, we help the university make its maximum impact on society by working hard to ensure our innovations make it off MSU's campus and into practical use in the world.

Second, in many cases, our work leads to a significant financial return to the university. As funding to universities shrinks, new sources of revenue are ever-more important. The financial resources of the MSU Foundation are derived solely from the financial successes that come from the work we do. This equates to millions of dollars of support for research and other academic programs at MSU every year.

Third, our entrepreneurship programs focus on developing successful graduates. Our programs help build initiative, risk-taking, adaptability, creativity and innovation, all essential workforce skills.

What value do we bring to MSU?

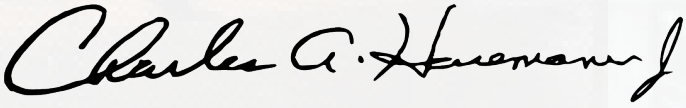
As a 21st century research university, it has become an expectation that the university be a driver for economic growth and diversification. Our work is a major component of how MSU fulfills that intention.

Today's incoming faculty are more entrepreneurial and interested in seeing their innovations reach the marketplace than ever before. A high-functioning unit such as the MSU Innovation Center plays a part in attracting the best and brightest faculty to our campus.

Similarly, incoming students are very savvy about the shape of the economy. Our experiential entrepreneurship programs are part of the value proposition that attracts and retains the best students.

As the leader of the MSU Innovation Center, what do you enjoy most about your job?

I love the variety of science and innovation that I am exposed to every day. Because we serve the breadth of this wonderful university, we see a diverse range of innovations. It's rewarding to be a part of this purposeful center of activity for innovation and commercialization.



Charles Hasemann, PhD
Assistant Vice President for Innovation & Economic Development

Above, left to right: Rebekah Skrzyniarz, Ray DeVito, Marta Sinclair, Guangming He, Jeff Myers, Sandra Clough, Weian Ou, Karen Chang, Janelle' Flores, Aimee Crouch, Karri Christie, Jean Zwier, Randy Sheets, Charlene Fortin, Tom Herlache, Angelia VanWoert, Tracy Henion, Tina Ramos, Ann Spalding, Reanee Unger, Charles Hasemann, Paul Jaques, Anupam Jhingran, Anne Di Sante, Brian Copple, Frank Urban, David Washburn, Richard Chylla, Lisa Croze, Susan Bukovick, Erik Klink, Kay O'Berry, Todd Pasch, Traci Cannon, Jen Folger, Jeff Smith, Drew Lilywhite, Kevin McCurren, Chris Moran, Lori Fischer, Janet Foreman, Gabriela Allum, Aaryn Richard, Neil Kane, Ken Szymusiak, Jeff Wesley

Experienced Leadership at the Helm of Innovation

For 33 years, Anne DiSante, associate director of MSU Technologies, has been immersed in the field of technology transfer — putting research to use to create impact.

DiSante and her team of five technology managers help manage MSU's invention caseload, from the screening process to patenting to introduction into the market through a license with a company.

DiSante has overseen the licensing and commercialization operations and programs since 2012 at MSU Technologies, which is housed under the MSU Innovation Center.

"My first priority when I came to MSU was to hire a strong, experienced associate director with extensive licensing experience, especially in the life sciences," said Rich Chylla, executive director of MSU Technologies. "I couldn't have found a better professional."

DiSante likes to say she got into technology transfer "by word of mouth." She recalls talking to a classmate about her science background, and another classmate overheard and said he knew of a job opening that would fit Di Sante's background and interests.

"That was with the tech transfer office at the University of Michigan, and my tech transfer career started that day," DiSante said.

Michigan State University is the fourth university in Di Sante's career. She began at the University of Michigan, then went on to Wayne State University and Case Western Reserve University.

"A lot has changed in the tech transfer profession since I began," DiSante explained. "Faculty used to view interaction with industry skeptically. Now faculty are more entrepreneurial and interested in how our office can help advance their research to create impact for the public."

"You never know what is going to be on the other side of a meeting, a phone call or an email," DiSante said. "Faculty can surprise me every day with the fabulous technologies they develop. The quality of technologies disclosed to us has really benefited from the collaborations with other labs inside and outside the university."

DiSante is most proud of her involvement in the protection and successful commercial launch of FluMist while at the University of Michigan. However, nothing has surpassed the excitement she felt the day Francis Collins, then a professor at the University of Michigan, told her they had successfully mapped the cystic fibrosis gene. These were early days in realizing the potential of therapeutics based on gene therapy. DiSante smiled and said, "I still get goose bumps when I think of that day."

DiSante has an MBA in marketing, an M.S. in microbiology/immunology, and a B.S. in medical technology, all from the University of Michigan.

MSU INNOVATION CENTER
BY THE NUMBERS

181 **MSU SETS RECORD** FOR NEW INVENTIONS DISCLOSED

$3.25M
INCOME FROM LICENSES

NEW PATENT APPLICATIONS **63**

57 NEW PATENTS ISSUED

$28.9M

TOTAL REVENUE FROM **LICENSING AND REIMBURSEMENTS** SINCE 2015

4

NEW STARTUP COMPANIES

$24.2M

CORPORATE GIFT, GRANT & PROJECT SUPPORT

3.7%

OF MSU'S OVERALL SUPPORT FOR SPONSORED PROGRAMS

318

AGREEMENTS TO TRANSFER AN INNOVATION TO A COMPANY SINCE 2015

Ninth annual innovation Celebration honors a year of success

Excitement and conversation filled the room as a record attendance of more than 400 people gathered at Spartan Stadium on April 18 to celebrate faculty and students showcasing technologies and startups developed in campus labs and classrooms.

The MSU Innovation Celebration, hosted annually by the MSU Innovation Center, honored four faculty members and one student during an awards ceremony where MSU Acting President Satish Udpa provided opening remarks.

"It truly takes a village, indeed a network of networks, to most effectively nurture innovation," Udpa said. "If you don't have that, you won't be able to do anything. That's what the Innovation Center does day in and day out here on this campus."

The following faculty researchers were recognized during the award ceremony:

Ramakrishna Mukkamala, Innovation of the Year: Smartphone-based blood pressure monitoring.
Amy Iezzoni, Innovator of the Year: Cherry rootstock development.
Marcos Dantus, Technology Transfer Achievement Award: Ultrafast lasers.
David Douches, Corporate Connector of the Year: MSU potato breeding and genetics program.

Brianna Makaric, founder and CEO of BRITE bites and Future Founders Fellow, received the 2019 MSU Student Entrepreneur of the Year award.

Currently a junior at MSU, Makaric founded BRITE bites in February 2018 with the goal of changing the way people think about snacks. Since then, BRITE bites has seen incredible growth, part of which Makaric attributes to the MSU Innovation Center.

"The MSU Innovation Center has been extremely valuable," Makaric said. "The amount of support and mentorship I've received from them is what has propelled me so far in my journey. I feel extremely lucky to be a part of this entrepreneurship ecosystem."

Acting President Udpa said he is proud of the work underway at MSU and of 2019's award recipients.

"They are talented. They are motivated. They are forward-thinking innovators who are deeply engaged in finding solutions to real-world problems," he said. "After all, that was what our founders wanted 160 years ago."

In addition to the awardees, several faculty researchers and startup companies set up exhibits at the event. This year also included 25 student startups from the MSU Hatch startup incubator, a program that offers free services, support and funding to MSU students.

"This event gives us the chance to celebrate the great work done by faculty and students striving to move their ideas into the marketplace where they will have a chance to have their greatest impact," said Charles Hasemann, assistant vice president for Innovation & Economic Development at the MSU Innovation Center. "We do it every year to highlight the dynamic pipeline of opportunities at MSU. ... Business moves fast, so we've got to keep our ideas flowing every year."

MSU professor recognized for the fruits of her labor

AMY IEZZONI
INNOVATOR OF THE YEAR

It isn't a reach to say that Amy Iezzoni is working to increase the profitability of cherry production. And with her research in cherry rootstock development, trees that are easier to harvest and that produce fruits years earlier than those with traditional rootstock is well within grasp.

Iezzoni, a professor in the department of horticulture and 2019 Innovator of the Year winner, has worked to develop cherry rootstocks that reduce the size of sweet cherry trees by 65-75%.

"I have always been interested in genetics and diversity of crop plants," she said. "I began my career as a plant collector and literally got to travel to collect cherries in their natural habitats in Eastern Europe. My passion is using that natural diversity to breed new cherry varieties and rootstocks that have a positive impact on grower profitability and consumer enjoyment."

Iezzoni's research has transformed the smaller, precocious trees that traditionally take four to six years to flower and produce fruit into trees that now have a two- to three-year timeframe to production. MSU rootstocks are being tested in all major cherry production regions of the U.S. to determine scenarios that contribute to grower profitability.

The benefits also extend to workers during harvesting, as dwarf sweet cherry trees can be picked without ladders. This translates to reduced labor costs for producers.

For lovers of tart cherries, Iezzoni said there is interest in extending the adoption of her cherry rootstock to those trees. The result would be high-density systems that could be harvested in three years.

Iezzoni's research also includes screening for Armillaria root rot, a fungus that leads to gradual tree loss and persists in soil even after a tree's death. Armillaria root rot occurs naturally in the majority of the Great Lakes region and throughout the U.S., affecting Great Lakes crops such as maple, oak, white pine, red pine, aspen, peach, cherry and potato.

MSU's Innovation Center helped Iezzoni protect the rootstock releases and license the rootstocks nationally and internationally. Because rootstocks are below the surface and their benefits are seen in the upper part of a plant, they are harder to handle as intellectual property. Through the Innovation Center, a volume restriction strategy was formed that allowed the rootstocks to be commercialized but limited their use until testing is complete.

MSU professor brings blood pressure readings to the palm of your hand

RAMAKRISHNA MUKKAMALA
INNOVATION OF THE YEAR

Taking measures to improve your quality of life might become as routine as pulling up an updated weather report on your smartphone thanks to Ramakrishna Mukkamala, a professor in the department of electrical and computer engineering.

For his idea to measure blood pressure with a smartphone, Mukkamala is the recipient of the 2019 Innovation of the Year Award.

Here's how it works: The smartphone measures blood pressure as the user presses their fingertip to a sensor unit, with results comparable in accuracy to existing finger cuff devices. Mukkamala and his research team developed both a smartphone encased with a custom sensor unit and an iPhone app that leverages sensors including the front-facing camera.

Instead of scheduling an appointment with a doctor, Mukkamala's smartphone blood pressure measurement devices could significantly reduce the 45% of people in developed countries who have hypertension, but aren't aware of it. The same goes for the 55% of hypertensives not aware of it in developing countries, in which smartphone use is growing.

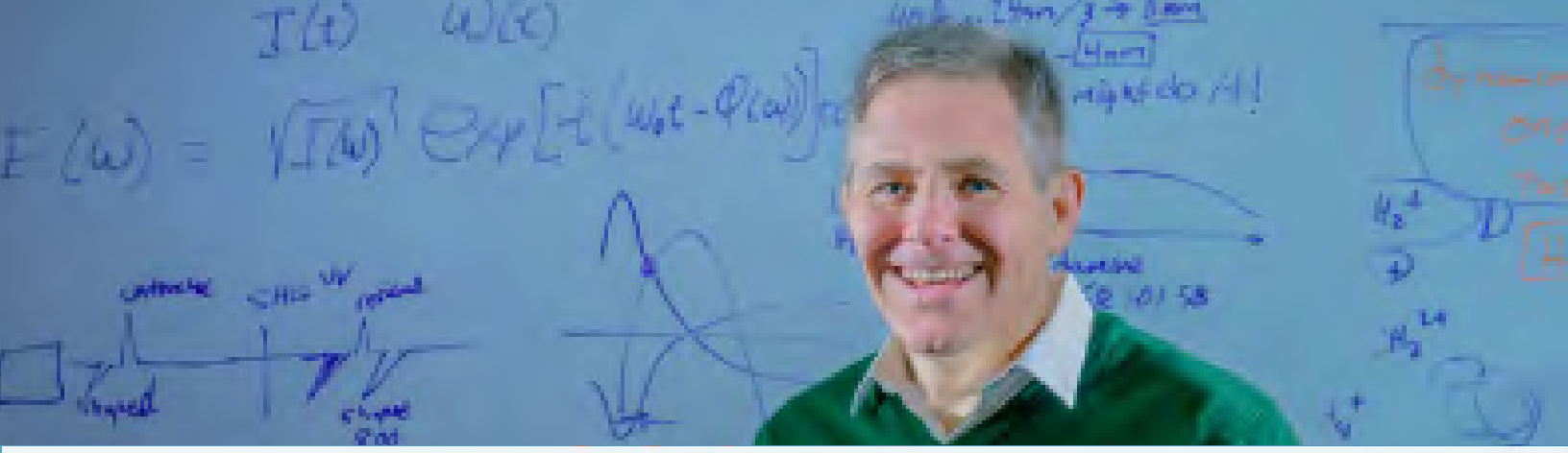
The devices are user-friendly, with 90% of participants in a study able to correctly perform the finger pressing after just one or two practice trials.

More frequent blood pressure readings can lead to hypertension prevention. High blood pressure can be treated with medication and lifestyle changes, making a life-saving decision mere seconds and a fingertip away.

Mukkamala's ambitious start to smartphone blood pressure measurement is just the beginning. Along with improved accuracy that could rival the standard blood pressure arm cuff, the goal is to develop a complete hypertension management system by including an alert to warn users of high blood pressure. The system would securely relay the measurements to medical professionals and send text message reminders to patients with high blood pressure measurements to take medication.

MSU's Innovation Center was instrumental in providing Mukkamala and his team with research funding, patents, licensing and finally commercialization. But he said the personal investment the IC had in his work was its most significant contribution, praising Richard Chylla, executive director of MSU Technologies; Brian Copple, technology manager; and Anne DiSante, associate director at MSU Technologies.

"We were able to work productively together," he said. "While doing so, we also got to know each other. ... The MSU Innovation Center truly cares about me. Taken together, it has been a joy to work with them."



Laser-focused MSU professor has wide innovative reach

MARCOS DANTUS

TECHNOLOGY TRANSFER ACHIEVEMENT AWARD

Compressing Marcos Dantus's career as an MSU Foundation professor in the department of chemistry is a daunting task, and it's a fundamental idea he is all too familiar with.

But Dantus's impact can be summed up simply as a problem solver. His research in ultrafast lasers, taking a low-intensity, long pulse and compressing it to increase its energy, has earned him the 2019 MSU Technology Transfer Achievement Award.

His life-saving work with ultra-short pulse lasers has contributed to Nobel Prizes in chemistry and physics. He has 47 inventions disclosed, over 200 peer-reviewed papers, 30 patents and 16 technologies licensed to industry.

Dantus's work has helped doctors detect cancer earlier with enhanced optical biopsies. For example, in skin cancer cases, rather than looking at the outermost layer of skin, doctors can see into deeper layers to better determine if a patient has cancer, what kind it is, and study its progression using a laser microscope.

Away from MSU, Dantus launched two successful spin-out ventures: Biophotonic Solutions Inc. and KTM Industries Inc. He founded BSI to make ultrafast laser technology more practical for scientific, medical, industrial and defense applications. KTM, which he co-founded, manufactures biodegradable packing materials.

Both companies continue to build on the innovative platform Dantus established. BSI, which was acquired by IPG Photonics in 2016, is releasing a highly efficient ultrafast fiber laser for industrial applications. KTM, which produces a natural, biodegradable packaging material called Green Cell Foam, is replacing the use of styrofoam for packaging in wine shipping boxes and coolers.

Dantus has also shown an ability to pivot, taking a method originally intended for microscopes and applying it to use lasers to detect a bomb from 40 feet away.

Managing the minutia of securing funding and working with patent attorneys can bog down a researcher such as Dantus. Working with the MSU Innovation Center has helped him determine what level of IP protection he needed for each of his inventions and the proper funding channels to go through.

"As a serial inventor, it is great that I have gotten to work closely with the MSU IC," Dantus said.

Hot potato: MSU professor develops new varieties for countries far and wide

DAVID DOUCHES

CORPORATE CONNECTOR OF THE YEAR

As eating habits evolve, the potato's place at the dinner table continues to change.

David Douches, a professor in the department of plant, soil and microbial sciences and director of the MSU potato breeding and genetics program, has been at the forefront of the potato's ascension as people get more adventurous with their eating habits. Known as "Mr. Potato Prof," he is MSU's Corporate Connector of the Year.

Douches helps develop new varieties for Michigan, one of the country's top potato producers, with names ranging from Beacon Chipper and Purple Haze to Raspberry and Spartan Splash. Blackberry, a fresh market purple potato, is bringing a pop of color to the snack world.

"Great Lakes Potato Chips is working out the commercialization of purple potato chips from this potato," Douches said. "It should be a fun product."

The wide range of varieties he has developed are becoming more and more relevant. About 15 years ago, he noticed a change coming in potato consumption, citing a variety named Jacqueline Lee (named after his daughter), a medium size potato with yellow flesh that didn't fit the market at the time. Now, it is being marketed nationally and internationally.

"Our Manistee variety is helping the growers and processors by having a quality product throughout the storage season, as well as extending the storage season," Douches said.

Douches earned this award for his tireless efforts to connect his potato breeding program to the needs of companies in the potato marketplace. He works with companies at all stages — from basic plant genetics research in collaboration with french fry giant Simplot, to cooperative programs with the Michigan potato growing industry, and multiple licenses of potato varieties to producers around the world.

"The expertise at the Innovation Center allows me to stay on task and continue to advance my activities by managing the IP," Douches said. "This is very valuable."

Douches's efforts provide farmers a longer supply period and processors with more product. He also helped potatoes become more self-sufficient by integrating resistance traits for diseases.

"In my opinion, plant breeding is a public service," Douches said. "Plant breeding contributes to a diverse and abundant food supply that we all benefit from."

Students who have learned under Douches have come to MSU from countries including Bangladesh, Iraq, Kyrgyzstan, Saudi Arabia, Colombia and Argentina to breed strains that can survive back home. They have produced potatoes engineered to thrive in different environments, including drought tolerance and resistance to late blight, which caused the Irish Potato Famine.

The big breakthrough for Douches came in 2011, when the potato genome was sequenced through an international team, which led to his team developing genome-wide genetic markers. This enabled more precise breeding and the ability to genetically mark desired traits, giving the already-versatile potato even more possibilities.

MSU builds on Coursera outreach

Throughout 2018-2019, professors at Michigan State University continued to extend their knowledge, reaching thousands through Coursera, an online database of courses and specializations taught by accredited university professors around the world.

Through Coursera, professors upload course material in the form of videos, quizzes and projects. Students sign up for the classes and receive a certification upon completion.

The course material is free through Coursera, which means anyone with access to the internet can participate and learn. However, to have the work graded and earn a certificate, there is a fee, which varies depending on the course. Scholarships are available.

Gerald Rhead, director of MSU relations with Coursera, plans to develop MSU's role with Coursera, such as exploring avenues to offer specific tracks or credit-based courses.

"Coursera is continuing to modify and change their business model," Rhead said. "This forces us to think innovatively and differently than before."

MSU Innovation Center staff helped launch the early entrepreneur specializations to gain an understanding of how an online learning space such as Coursera affects the way professors teach both online and face to face, especially around classroom engagement and technology use.

Gerald Rhead

Director of academic entrepreneurship at MSU's HUB for Innovation in Learning and Technology

Jen Folger, intellectual property finance coordinator for the MSU Innovation Center, became involved early on with the finances of MSU's involvement.

"What I really like about this program is it gives more people access to quality course content and MSU faculty," Folger said. "Access to education is something that is extremely important."

MSU joined Coursera in 2015 when it launched an authenticated platform. The first three specializations from MSU — entrepreneurship, photography and journalism — launched the same year.

MSU assists professors who want to get involved by providing support in the design and video production of their course. MSU also ensures courses produced from the university follow Coursera's guidelines.

Currently, there are six courses and five specializations offered by MSU. The most popular, "Photography Basics and Beyond: Smartphone to DSLR," has served nearly 18,000 students to date.

MSU expands mobility research opportunities

Michigan State University has entered into an exclusive partnership with Gotcha to provide scooters for use by students, faculty and staff. The program will include approximately 300 e-scooters at 40 hubs throughout campus.

As part of the agreement, Gotcha will provide MSU mobility researchers with data, collected anonymously, that fits with the university's larger mission to leverage its campus as a testbed to drive the future of human-centric mobility.

"E-scooters are a relatively new, yet increasingly popular mode of transportation, particularly for students. To accommodate this, we considered two things: rider safety and data sharing," said Wolfgang Bauer, associate vice president for administrative services and university distinguished professor. "We are confident in Gotcha's approach to encouraging rider safety. Plus, the available real-time data has endless opportunities to advance mobility research."

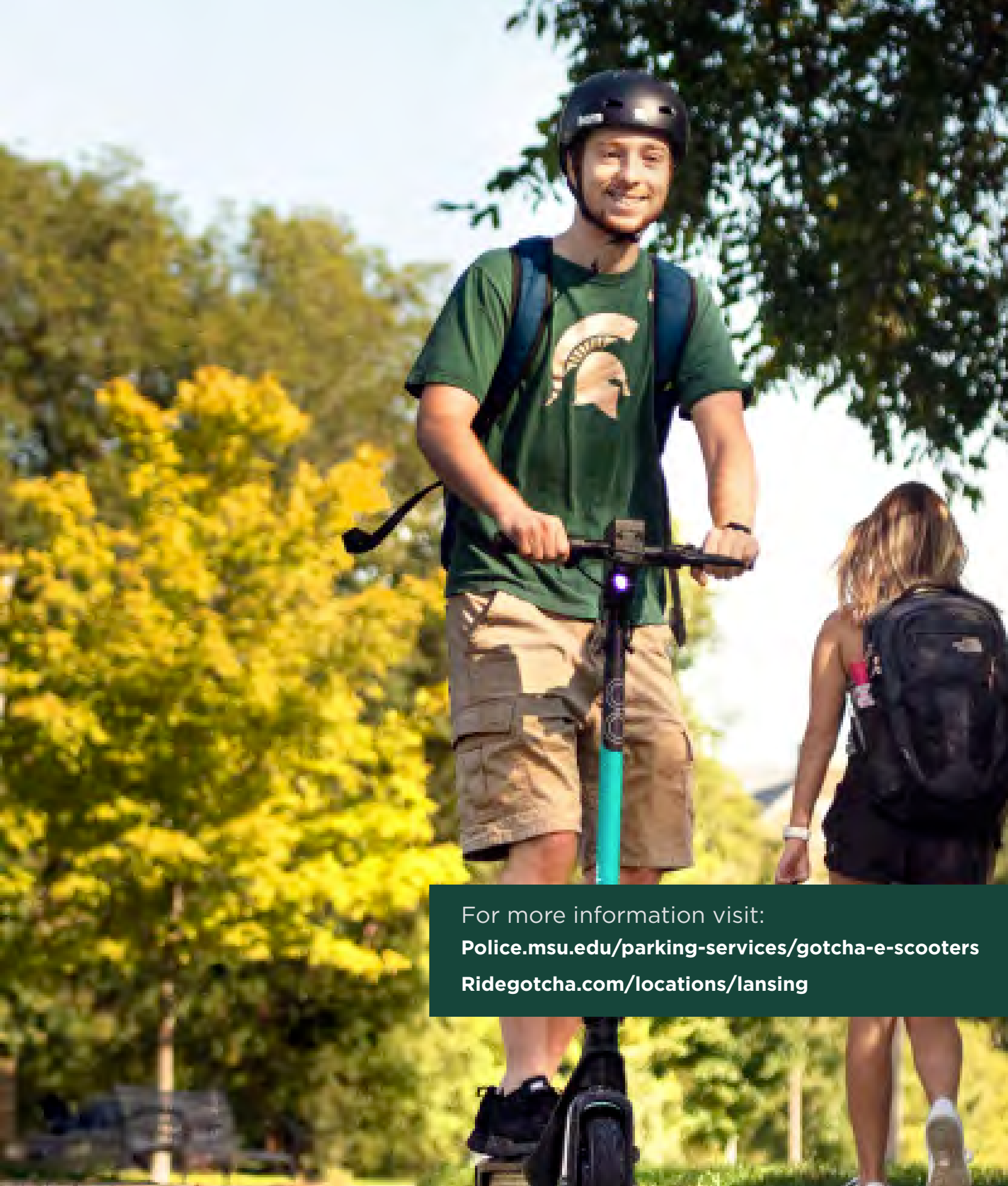
The e-scooter data will provide insight on how this emerging technology fits into the larger transportation picture by giving researchers the opportunity to:

- Analyze traffic density to ensure better management, especially during busy time periods, such as athletic events.
- Develop technology solutions to encourage good social behavior, from safe driving practices to alleviating accessibility hazards such as the issue of e-scooters being left in the middle of sidewalks or blocking stairs.
- Analyze how, when and why e-scooters are used.
- Develop sensors to predict mechanical failure in batteries, tires, bearings and joints to enable proactive maintenance.
- Explore the sociological impact of mobility related transportation.

"We're excited to bring a micro-transit solution to MSU's campus for students to commute to class and around town," said Sean Flood, CEO and founder of Gotcha.

"Gotcha's e-scooters are a great way to connect students to the city in a safe, affordable and environmentally friendly way."

With offices in California, Georgia and South Carolina, Gotcha has 10 years of experience in the micro-transit industry. Today, the company has partnerships to provide mobility assets in more than 50 cities and universities across the country, including new relationships in East Lansing and Lansing.



For more information visit:

Police.msu.edu/parking-services/gotcha-e-scooters

Ridegotcha.com/locations/lansing

INNOVATOR SPOTLIGHT

Dr. Muhammad Rabnawaz

Dr. Muhammad Rabnawaz is making the world a greener place through his paper research at Michigan State University.

Rabnawaz, assistant professor in the School of Packaging and adjunct professor in the department of chemistry, is researching and developing smarter and more environmentally friendly packaging solutions.

"Our projects are broadly applied, and we expect close collaboration with world-leading industries," Rabnawaz said. "These partnerships will offer unique training and career opportunities for our research group members. Currently, we are collaborating with companies across the globe testing our paper coating technology."

The paper Rabnawaz developed has the potential to replace disposable plastic or plastic-laminated paper dishes, food wrappers, utensils, straws and more that currently create a massive, negative environmental impact.

Current disposable items have led to an increase in the use of plastics and fluorochemicals, which are synthetically produced chemicals that repel oil and water. Fluorochemicals and plastics do not easily decompose and often accumulate in the environment.

Researchers are growing increasingly concerned by petro-chemical-derived plastics pollution, the use of harmful chemicals like fluorochemicals in the paper industry, and the growing demand for food across the globe.

"Research is my passion, and I enjoy each bit of my work," Rabnawaz said. "There is always something new under development, and it is exciting to see this technology being put into use where it will help to improve peoples' lives."

Rabnawaz's new paper, in addition to being fluorine-free, is both water and oil resistant, making it an ideal solution to replace the fluorochemicals often necessary for packaging. It is also 100% recyclable, which will alter the paper coating industry and minimize its environmental footprint.

Rabnawaz and his team worked with the MSU Innovation Center to obtain the MTRAC Grant for this project. This grant helped to speed up the commercialization of their work.

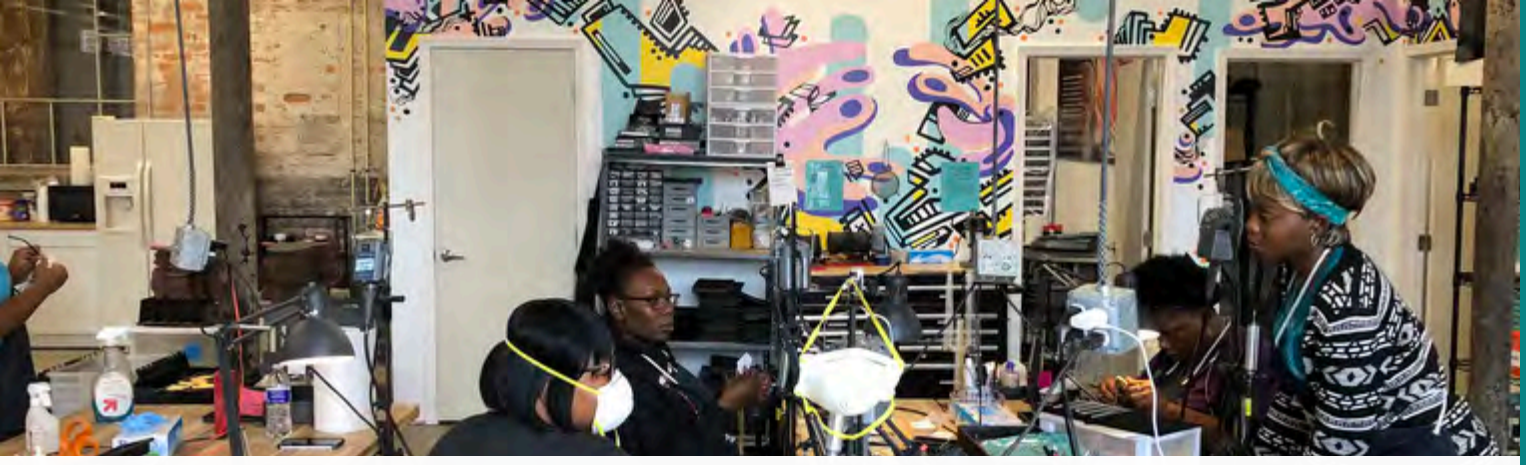
Rabnawaz takes inspiration from his research and from the words of Arthur Ashe: "Success is a journey, not a destination."

In 2019, Rabnawaz significantly advanced his research:

- Awarded a grant of $24,847 from the U.S. Environmental Protection Agency to develop a planet-friendly and scalable approach toward 100% recyclable water- and oil-resistant paper.
- Awarded $38,000 by the ADVANCE Grant Proof of Concept Fund at MSU for developing food safe water- and oil-repellent paper substrates for food packaging.
- Nominated again for the prestigious Moore Inventor Fellowship by MSU.
- Research team awarded a Targeted Support Grant for Technology Development (TSGTD) for $100,000.
- Rabnawaz and Bahar Aliakbarian were awarded a TSGTD grant for $51,800.

2019 patents

- M. Rabnawaz. Resealable glue for packaging and non-packaging applications.
- M. Rabnawaz, S. Hamdani. Water- and grease-resistant biodegradable materials.
- M. Rabnawaz, M. Khan, A. Khan. Novel additives for clear omniphobic materials.
- M. Rabnawaz, A. Khan. Self-healing materials.
- M. Rabnawaz, A. Khan. Self-healing omniphobic composition.



York Project opens permanent store in Detroit

Josh York, Michigan State University and Conquer Accelerator alumnus, opened the first permanent location for his company, the York Project, in late August.

The York Project is a Detroit-based clothing company. York became interested in making clothing when he was in middle school. He made shirts with his mom and sold them to his classmates.

In 2013, during his first year at MSU, York became involved with Conquer Accelerator, a 10-week program that gives entrepreneurs resources and funding to develop their startups. With the help of the Innovation Center, York opened his company in Detroit.

"The MSU Innovation Center took my college project and turned it into a business," York said. "They introduced me to people who would help me set the foundation for future growth."

York partnered with another Detroit-based clothing company, Rebel Nell, on the opening of his store. Both businesses are social enterprises that work to help the homeless community in Detroit.

For every article of clothing the York Project sells, they make a donation to Detroit's homeless community. They donate essential items that are often not given, such as toilet paper and socks. In this way, York is able to give back to his community.

"It's been a dream of mine to open a store in Detroit, where I grew up," said York. "It's been my dream for the last seven years."

Jeff Wesley, executive director of Red Cedar Ventures, worked with York during his time at the Innovation Center.

"I admire Josh and his team for their grit and passion for their brand and their spirit to impact Detroit in so many positive ways," Wesley said. "Josh is a true entrepreneur. It is rewarding to partner and support him as he continues to hit new milestones of success."

The store, located at 1314 Holden St. in Detroit, had its grand opening in August. It's open 10 a.m. to 6 p.m. Monday through Friday and 10 a.m. to 3 p.m. Saturday.

NPR's 'How I Built This' selects Every Two Minutes founder Erin Rose for 2019 fellows cohort

NPR's second annual How I Built This Summit with Guy Raz recently announced its 2019 fellows, including Michigan State University alumna Erin Rose.

In 2016, Rose created Every Two Minutes, a comprehensive application that addresses issues of sexual violence with a mobile interface to help better engage college students.

Rose was selected as a part of the 2018 Conquer Accelerator program before transitioning over as a portfolio company of Red Cedar Ventures.

"Being accepted as one of the 2019 summit fellows is an honor," said Rose, founder and CEO of Every Two Minutes. "I have listened to 'How I Built This' with Guy Raz since it launched in 2016, and it is surreal to think about being in the same room with Guy and many other entrepreneurs."

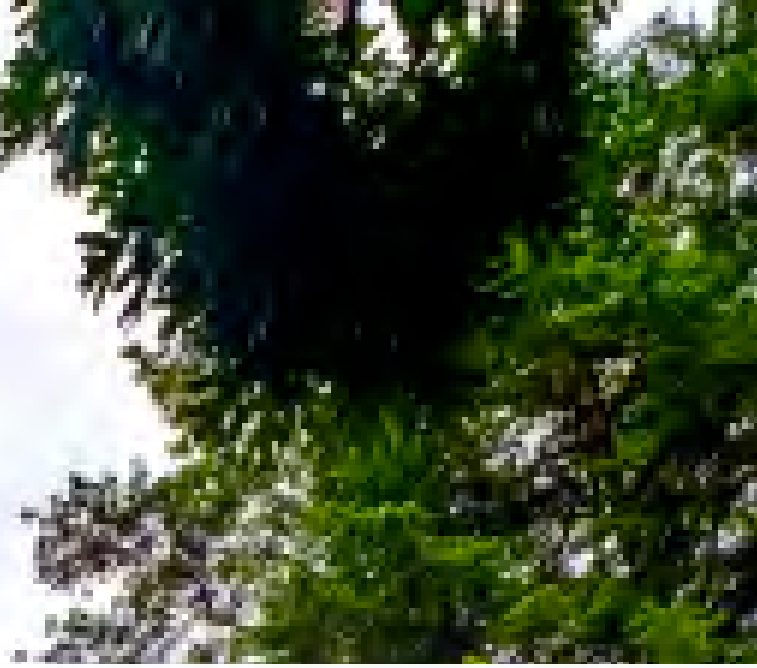
This year's How I Built This cohort formed a professional support network at the summit held in October at San Francisco's Yerba Buena Center for the Arts. The fellowship seeks to discover, empower and elevate promising entrepreneurs with innovative business ideas, perseverance and grit.

About Every Two Minutes

The Ann Arbor-based startup Every Two Minutes creates technology to combat gender-based violence. Its first product, MySideKick, is a comprehensive, trauma-informed, web-based application that addresses issues of sexual violence, with a mobile interface to better engage college students — speaking directly to digital natives in their own language. Every Two Minutes discovered four reasons sexual violence is not properly being addressed on college campuses and created seven powerful components to address and remedy these issues. MySideKick's technology is the future of prevention programming on college campuses.

About Conquer Accelerator

Based in East Lansing, Conquer Accelerator provides selected teams with 10 weeks of intensive programming, focusing on completing tailored, goal-driven benchmarks. Teams work with instructors and mentors on topics such as fundraising, technology, and longevity. Selected teams receive a $20K investment and work through the intensive program. In addition to the monetary investment, Conquer Accelerator teams are provided with one-on-one mentorship and support, a creative working space, and resources to enable them to grow their companies. Conquer Accelerator is a collaborative effort at Michigan State University and is made possible through generous partnerships with MSU Foundation, Spartan Innovations, the MSU Innovation Center and MSUFCU.



MSU entrepreneurship program awarded GCEC prize once again

Michigan State University, represented by the Burgess Institute for Entrepreneurship and Innovation, received 2019's Global Consortium of Entrepreneurship Center's prestigious prize for Outstanding Student Engagement and Leadership.

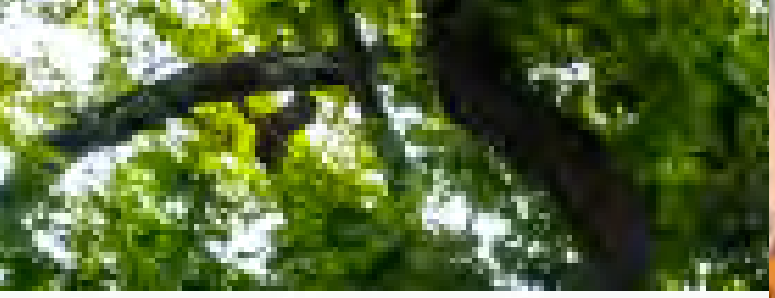
Competing against globally recognized entrepreneurship centers, MSU's entrepreneurship program took center stage for the second year in a row, this time in Stockholm, Sweden. GCEC's annual awards showcase and celebrate the very best of university entrepreneurship, recognizing top programs in seven categories.

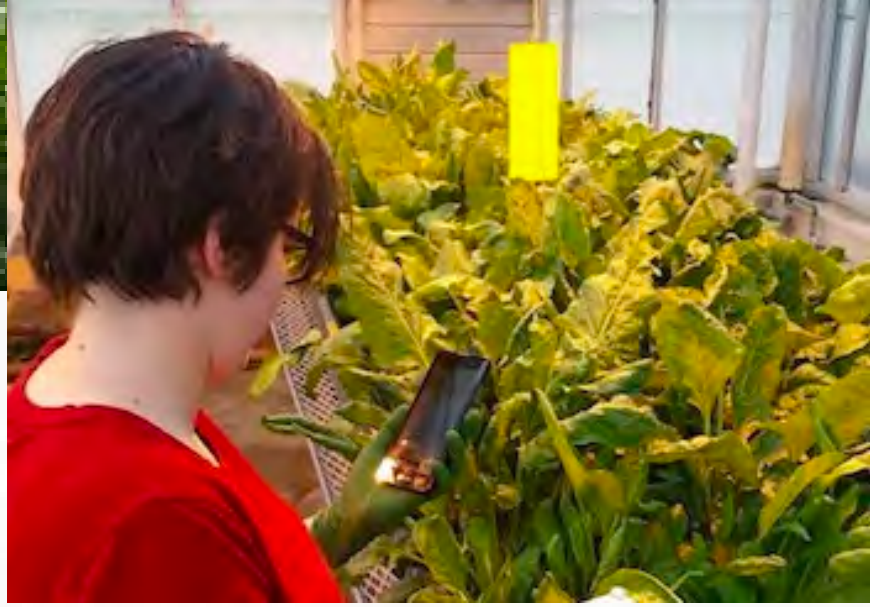
"We're incredibly proud," said Paul Jaques, director of student and community engagement for the Burgess Institute. "For a second year, Michigan State University has been recognized on a global stage as a leader in entrepreneurship education. Together with our partners, we're building a globally competitive program."

This year, GCEC was hosted by the Stockholm School of Entrepreneurship. The annual event focuses on entrepreneurial ecosystems across the globe that support starting and building businesses and harnessing students' entrepreneurial mindset. GCEC received more than 200 nomination proposals and was attended by over 700 leaders in university entrepreneurship. The organization represents more than 250 universities.

This year, Lori Fischer, the Burgess Institute's discovery program manager, served as a GCEC nomination screener.

"I am surprised and humbled; two consecutive years is overwhelming. Every year, we keep refining entrepreneurship and innovation here on Michigan State's campus. We continue to strive for excellence in serving our students."





MSU startup PhotosynQ gives scientists new way to collect field data

PhotosynQ allows plant researchers to collect data on plant health in the field, where it matters most.

PhotosynQ is an MSU Innovation Center startup that gives researchers, educators, farmers and more the ability to collect and discuss photosynthesis data. Their handheld device, the MultispeQ, is a fluorometer, chlorophyll meter and bench-top spectrometer all in one. Researchers can use it to take field measurements, which are collected and saved in the PhotosynQ network on their mobile or desktop applications.

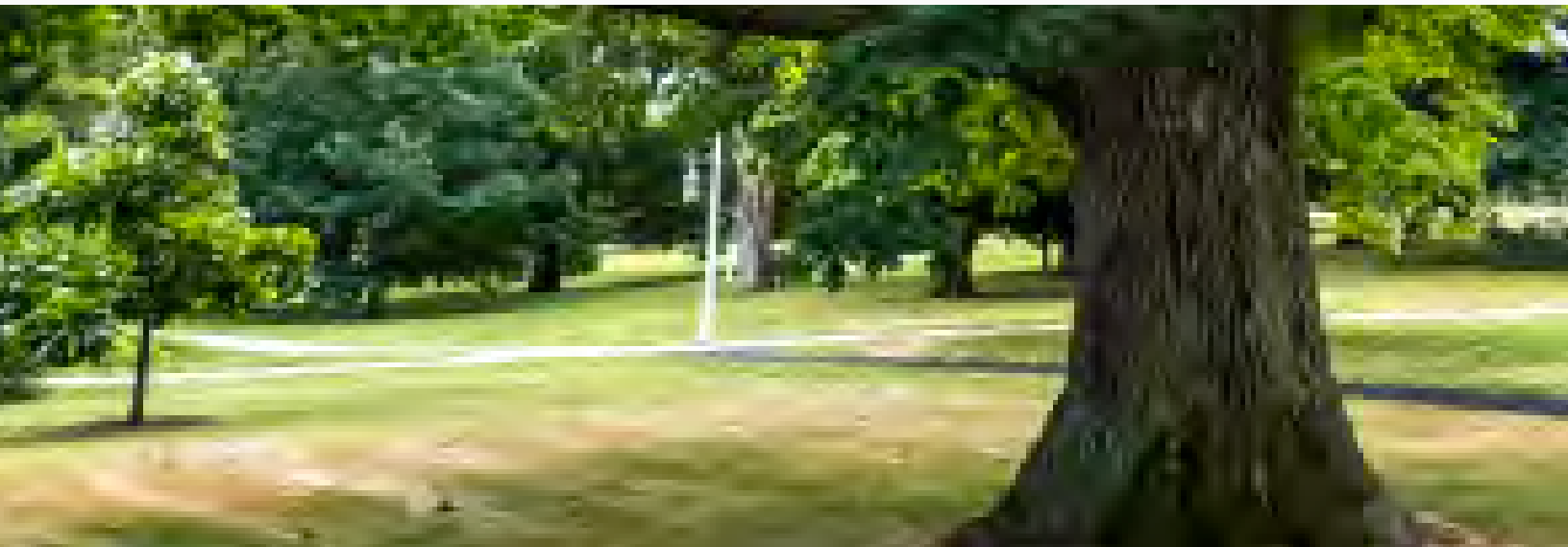
With nearly 5,000 users around the world, PhotosynQ offers a large network for researchers to view, map, share and analyze collaborative research.

David M. Kramer, Hannah distinguished professor in photosynthesis and bioenergetics at MSU, founded the startup, which launched in July 2018.

MSU Technologies, Michigan State University's technology transfer and commercialization office, worked with Spartan Innovations and Red Cedar Ventures to help the PhotosynQ team with the company's formation, launch and scale-up.

MSUT also negotiated the license agreement with the startup and moved the license agreement through the standard process with the MSU Board of Trustees.

To learn more about PhotosynQ, visit their website: https://photosynq.org/



MSU Entrepreneurship Named a Top National Program Rising to Sweet Sixteen

The Princeton Review included Michigan State University on its list of top 25 undergraduate entrepreneurship programs in the nation. Rising from No. 21 to No. 16, this marks the second year MSU is recognized as an entrepreneurial hub and a leading institution for innovation.

MSU's minor in entrepreneurship and innovation launched in 2016 and is considered one of the fastest-growing minors in the university's history, with nearly 600 students currently enrolled. The program welcomes undergraduates from all of MSU's disciplines.

"When we launched the undergraduate minor in entrepreneurship and innovation, we wanted to foster a culture of entrepreneurship at MSU. Being recognized by the Princeton Review for a second year in a row confirms that we are well on our way," said Ken Szymusiak, managing director of the Burgess Institute for Entrepreneurship & Innovation.

"This recognition highlights the breadth of what we offer students at MSU. From a student incubator and an undergraduate minor in entrepreneurship and innovation to a summer accelerator and a venture capital fund, we're supported by participation from all undergraduate colleges."

Beyond the E&I minor and 50 entrepreneurship-related undergraduate courses, MSU's student offerings include participation in national startup competitions such as South by Southwest, mentoring opportunities with successful entrepreneurial alumni, student organizations and clubs, and facilities for students to innovate and experience the entrepreneurial mindset firsthand.

"We had nearly 4,500 students participate in our academic entrepreneurship courses last year, representing 129 unique majors across all colleges," Szymusiak said. "This breadth is what sets MSU apart."

MSU Medical Student's Invention Brings Mobile Devices into Sterile Settings

Thanks to a student from MSU's College of Osteopathic Medicine, doctors can access critical information on their smartphones without compromising hospital health codes.

CleanCase is the first device-specific, fully FDA-compliant product that allows surgeons to safely bring mobile devices into the operating room.

Surgeons bring mobile devices into the surgical field for two main reasons: to capture media for medical records and to use mobile medical applications. The CleanCase cover, developed with investment from Red Cedar Ventures and Quantum Medical Concepts, uses patented technology so surgeons can have full mobile device functionality without endangering patient safety.

"The CleanCase is a first-of-its-kind product that will empower physicians to use the best and latest medical technology on their mobile devices, without ever compromising safety," said Rob Zondervan, CEO of SteriDev LLC, the Lansing-based medical device company that developed the technology.

Zondervan, who has over a decade of clinical and academic medical experience, came up with the idea when assisting during an operation. In addition to his leadership role at SteriDev, he also serves as the Spartan Innovations Senior Fellow, providing medical advice to startup companies.

"From the company's launch to the development of its groundbreaking product to FDA approval of CleanCase, Rob and his team are taking SteriDev to the next level," said Jeff Wesley, executive director of Red Cedar Ventures.

Launched in 2016, Red Cedar Ventures has deployed more than $3.5 million in pre-seed and follow-on capital into MSU-based startups. Those dollars have raised over $100 million in outside venture capital.

"Startups are challenging," Wesley said. "I admire anyone with the grit and determination to take an idea and forge it into a reality. Watching Rob balance the challenges of a startup with the rigors of a medical residency — that's a feat. We're honored to invest in this Spartan startup team."

The University Corporate Research Park Launches VanCamp Incubator + Research Labs

The University Corporate Research Park, a wholly owned subsidiary of the MSU Foundation, has launched its newest property, the VanCamp Incubator + Research Labs.

The incubator is a 22,000-square-foot multi-tenant facility welcoming emerging companies and researcher groups across the greater Lansing region and beyond. A ribbon-cutting ceremony marking the building's grand opening was held in September. The incubator is now open to companies from the region as well as those coming directly out of the MSU ecosystem.

"This is a much-needed facility for our community," said Gabriela Allum, UCRP project manager. "The growing number of startup companies coming out of Michigan State University in areas like quantitative health, imaging and structural biology now have an off-campus incubator with full wet-lab facilities, instrumentation and services."

The VanCamp Incubator features nine wet labs and 42 office spaces, as well as shared equipment rooms, conference rooms and common areas. Companies coming into the incubator can use the resources and services to grow their businesses until they can move on to their own operations within the community.

The incubator is named in honor of Loretta VanCamp, a MSU microbiologist and researcher, whose work contributed to the development of the world's leading anti-cancer drug, cisplatin.

"Loretta VanCamp was crucial to the research done at MSU, which resulted in the saving of countless lives," said Jeff Smith, UCRP director. "This a milestone moment for MSU, the research community and the regional economy. We are excited for what's ahead."

Smith explained that the innovators using the VanCamp Incubator will now have resources that position them to make dramatic, positive impacts on the physical and biosciences for generations to come.

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