So much has happened in the last year. I would have never guessed a year ago that the CFE and much of the university would have largely pivoted to remote/virtual learning. The global pandemic has changed how we live, work, teach, and learn. Higher education has been changed forever with the virtualization of programs and courses. I am especially proud of our team’s great work to help our instructors convert their courses to online/hybrid versions and our Fellowships team’s efforts to replace many lost internships. While it has been challenging, these times have also given us unprecedented opportunities to reach out and engage innovators across the globe.

Two great examples of the new opportunities are demonstrated in our Entrepreneurship Hour speaker series and our NSF I-Corps programs. For Entrepreneurship Hour, we have been able to line up speakers from all over the US and abroad. Without the need to travel to Ann Arbor, we have been able to secure speakers who may have not previously been able to attend. In NSF I-Corps, we virtualized our “Introduction to Customer Discovery” short course. Again, by eliminating the need to travel, we were able to pull together a cohort of entrepreneurial researchers from 11 different institutions across the Midwest. This is exactly the type of cross pollination and mixing that can help the best ideas flourish.

The pandemic has also reinforced the need for our students to develop the entrepreneurial mindset more than ever. Being able to demonstrate perseverance, resilience, and react to new opportunities has become an imperative for a successful career.

Our team has achieved many great things during the course of the 2019-20 academic year and the following are just a few of the many highlights.

**CFE Innovators Gathering:** The CFE celebrated 10 years of excellence by bringing together nearly 100 of our students, alumni and partners. This event exemplified our mission to be “an innovation hub where ideas, people, resources, and technology meet and create the future.”

**Tech Commercialization:** In December of 2019 Parabricks, a portfolio company of the Michigan Biomedical Venture Fund, was acquired by Nvidia Corp. This acquisition was the MBVF’s first exit and occurred less than two years after the program’s first investment in the company. The acquisition demonstrates the power of CFE’s programming to take two PostDocs with no entrepreneurial experience and grow them into entrepreneurs.

One of NSF I-Corps major accomplishments during the academic year was pulling together a proposal for the NSF I-Corps Hub solicitation. The new proposal is a 5 year, $15M program that pulls together nearly 20 Midwest institutions around supporting and educating scientists and engineers that have deep technology with commercial applications.

**Educate Broadly:** The CFE’s Graduate Certificate in Innovation & Entrepreneurship saw a 71 percent increase in demand for the Grad Certificate during the past academic year. Enrollment also remained strong during the 2019-2020 academic year with 2,416 students enrolled in CFE’s 58 ENTR course sections. This represents a 104.6 percent increase during the last five years.

**Immersive Experiences:** This marked the first year the Fadell Scholarship was awarded to two ELP students. The scholarship’s purpose is to support underserved students further with a generous $2M gift from U-M alumni and famed entrepreneur, inventor of the iPod, Tony Fadell and Danielle Lambert.

During the 2019-20 academic year the CFE partnered with the Global CO2 Initiative to launch TechLab: Climate Change. The program is an immersive learning experience for students as they work side-by-side with emerging companies making a significant impact on the carbon balance of the planet.

**New Mentoring Platform:** In late spring the CFE launched the U-M Entrepreneurship Mentoring Network to our greater alumni community. This platform allows students and faculty, as well as alumni, to pose questions and request advice from the CFE’s network of founders, startup operators, VCs and innovators.

It has been an amazing year. Thank you to everyone who supported the CFE to help inspire and transform the Michigan community into entrepreneurial thinkers and doers. We look forward to working with all of you in the future.
PANDEMIC RESPONSE

The COVID-19 pandemic changed the way the Center for Entrepreneurship, the College of Engineering, and University of Michigan operated in many ways. Our courses and programming were adapted to best serve the needs of our students, faculty, and partners during these times of dramatic change.

Our staff worked quickly to adapt and forge ahead with our programming and courses in virtual formats to ensure we continued to fulfill the mission of the Center to inspire and transform the Michigan community into entrepreneurial thinkers and doers.

The following are some of the changes the CFE underwent during the Winter semester.

Owing to COVID-19, all ENTR courses emergently pivoted to a remote format. CFE’s lecturers demonstrated flexibility and true professionalism in exploring new modalities to serve students throughout the modified Winter 2020 experience. Some course projects adapted project simulations in response to the global pandemic.

The CFE also identified the opportunity of offering its Entrepreneurship Practicum course during Spring 2020. This replaced the lost summer practicum experiences that had been set up through international experiences.

While the pandemic disrupted many of the internships secured by ELP students during the latter half of the winter semester, the CFE staff was successful in securing paid summer experiences (internships or projects) for all students.

Additionally, Regional and National I-Corps teams pivoted to doing customer discovery through video conferencing and the cohorts switched to an online mode of instruction.

We thank our entire community for their thoughtful and deliberate efforts that enabled us to remain committed to educating and supporting the entrepreneurially-minded at U-M.

THE CFE

WHAT WE DO

The center seeks to install the following in all of its participants:

- Leverage Technology
- Opportunity Identification
- Relationship Building
- Experimentation
- Risk Management
- Perseverance

OUR MISSION

The mission of the Center for Entrepreneurship is to inspire and transform the Michigan community into entrepreneurial thinkers and doers. The CFE is an innovation hub where ideas, people, resources, and technology meet and create the future.

We provide active learning experiences to all students and faculty through classes and programs that are designed to teach the skills needed to successfully translate high-potential projects and ideas into the world.

In learning these skills, individuals become better prepared to identify and act on opportunities to solve problems in any organization, or entrepreneurial endeavor.

HOW EACH PILLAR SUPPORTS OUR MISSION

EDUCATION

Transform the most entrepreneurial students from across the University of Michigan into entrepreneurial leaders and innovators by providing immersive experiences, focused training, and deep connections to Michigan’s global innovator network.

FACULTY/RESEARCH

Inspire the Michigan Community to tackle the world’s most pressing challenges by providing broad access to the best entrepreneurship curriculum and experiences that enable students to develop and apply an entrepreneurial mindset in their career.

IMMERSIVE EXPERIENCES

To meet these challenges, it is essential to provide an experiential education to engineers in academia, industry and society, so they enhance deep technical excellence with creativity, industrial-awareness, and skills in innovation necessary to see their solutions implemented.
The transportation of goods and people in all contexts will be transformed by autonomous technologies.

The prosperity of the human race will be altered significantly if we do not mitigate and transform our materials and energy usage.

With aging and growing populations, we need to find cost effective ways of delivering high quality, accessible care.

Technology has become ubiquitous. This presents new challenges for ensuring the safety and security of the global community.

All programs at the Center for Entrepreneurship are designed to promote ethical leadership. Michigan Engineering seeks to improve the quality of life by developing intellectually curious and socially conscious minds, creating collaborative solutions to societal problems, and promoting an inclusive and innovative community of service for common good.

Since its inception in FY 2008, the Center has developed a rich and diverse set of offerings that cater first to the needs of the students and faculty at the University. Just like a startup, it continues to evolve and grow to meet the increasing demand for entrepreneurial curriculum and experiences.

As part of the U-M College of Engineering, we seek to serve the people of Michigan and the world through preeminence in creating, communicating, preserving and applying knowledge, art and academic values, and in developing leaders and citizens who will challenge the present and enrich the future.
The CFE offers broad access to the entrepreneurial mindset and skills by providing access to an entrepreneurship curriculum that enables students to develop and successfully apply an entrepreneurial skillset in their career.

CFE student Anna O’Neill embodies the entrepreneurial spirit, and has always been drawn to invention and innovation. From the moment of her matriculation to the College of Engineering, to her final year at the University of Michigan, these values have shaped her college experience. They have led her to a Mechanical Engineering degree, her impressive involvement with the CFE, and to seek out leadership positions in other areas of her life.

Like many students involved in the Center for Entrepreneurship, Anna began her CFE journey with E-Hour. “E-Hour provided an interesting contrast to my other engineering classes, and it was interesting to see how entrepreneurs could capitalize on their technological success," she said. Anna, who ultimately became an ELP student, also served as a CFE Instructional Aide each semester after her first experience with CFE. She has assisted with a wide variety of CFE course offerings – ranging from Intro to Innovation to Entrepreneurship Marketing to Project Management and Consulting.

“The CFE has provided amazing opportunities for personal growth, and is far from your typical campus involvement." READ MORE

The Certificate in Innovation & Entrepreneurship offers master’s, PhD, and professional students a formal credential that signals to employers, investors, and co-founders that the student has acquired the necessary skills to be a versatile, well-rounded, and experienced employee.

After restructuring the certificate’s tuition model to make it more accessible for interested students, this year saw demand for the certificate increase by 71 percent (from a total of 28 students to 48 students). Over half of the students pursuing the certificate are female.

As a student, it is easy to narrowly focus on your field or subfield, especially for graduate students. It’s all too easy to work on projects with those who have similar skill sets – making it challenging to work with others who are not like-minded after graduation. This is a reality that PhD student Laura Andre has mitigated through participation in the Graduate Certificate in Innovation & Entrepreneurship.

While Laura loves her current work environment, she made the decision to not stay in academia after graduation, a decision that led her on the path to discovering more about business and career paths in industry, and ultimately to the certificate program.

“I learned so much about myself (in the CFE’s Interpersonal Skills course), and Dr. Fretz is an amazing teacher,” Laura said. “It was a great way to start off the certificate program because it isn’t specifically focused on entrepreneurship, but more about learning about yourself and what you might want to do in the future.

“The courses are open to everyone in the University and the teams you get to work on are made up of different types of people," she said. “It was a really great learning experience to work with people outside of my field.

“The coursework reflects how real-world teams work together, which is extremely valuable.” READ MORE

During the 2019-2020 academic year, 2,416 students enrolled in CFE’s ENTR courses. This represents a 104.6 percent increase during the last five years.

The CFE continues to provide broad access to entrepreneurial education to the CoE and U-M community, encouraging students to “think big” and take on large societal problems.

Last year 58 course sections, led by 38 instructors, spanning across topics in entrepreneurial basics, design, new venture creation, legal, team-formation and tech.

During the 2019-2020 academic year, the CFE continued to focus on programs, classes, and opportunities that provide experience and training in entrepreneurship, aligned with the Michigan Engineering 2020 vision.

ENTR courses serve students in all 19 schools and colleges, freshmen through PhD.

Thanks to CFE’s support and encouragement, other schools and colleges have continued to implement and expand their own entrepreneurship courses and programs. This is great news for the U-M community as a whole and creates opportunities for the CFE to shift its focus toward technology, science, and engineering-based innovation.

We already see the beginnings of this shift through the increasing percentage of our students who are engineers, which rose to 51 percent at the undergraduate level from 48 percent in 2019. We expect this trend to continue, and the future strategic direction of the CFE will need to be sensitive to our changing role in the U-M ecosystem.

ENTR courses count toward the College of Engineering’s Intellectual Breadth requirement for Professional/Creative Development as well as toward the University-wide Minor in Entrepreneurship.

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The Center for Entrepreneurship’s Immersive Fellowship programs emerged from a recognition that there was a significant group of students that wanted to develop high impact careers within entrepreneurial ecosystems, but lack the skills, experience or network to “break in.”

Currently, our Fellowship programs consist of TechLab at Mcity, the Entrepreneurs Leadership Program (ELP), and our newly launched TechLab Climate Change.

ENTREPRENEURS LEADERSHIP PROGRAM

The Entrepreneurs Leadership Program provides deep training and mentorship for a select cohort of students to develop the functional, managerial, and leadership skills that differentiate the good from the great entrepreneurs.

This past year, the ELP celebrated graduating the 100th student from the program and securing internships at growing startups for all 23 students in the 2019 cohort, spanning a strategic set of industries including healthcare, advanced mobility, energy and sustainability, artificial intelligence, consumer goods, and financial tech. Students interned in entrepreneurial ecosystems such as Detroit, Ann Arbor, New York City, the Bay Area, and Seattle.

The program also hired two new co-instructors, Nick Cucinelli (CEO and Co-Founder of Endectra, MS and MBA ’05) and Grace Hsia (CEO and Co-Founder of Warmilu, BSE and MS ’13), who boast distinguished careers as serial entrepreneurs to add to the rich support provided to the ELP students. Grace is the first female instructor of the ELP.

2020 COHORT

130 APPLICANTS

20 ACCEPTED

50% WOMEN

50% MEN

15% URN

10% IMMIGRANT

To support underserved populations further, a generous gift of $2M from U-M alumni and famed entrepreneur, inventor of the iPod, Tony Fadell and his wife Danielle Lambert created the Fadell Scholarship. Two students from the ELP that show exceptional entrepreneurial spirit are awarded each year.

The awardees for 2020 are Sasha Golubova (Business Administration, ’22) and Elis Sholla (Computer and Data Science, ’21), who are both first generation immigrant students.

“We are proud to honor both Sasha and Elis with these scholarships in the hopes that this award allows them to realize their educational and entrepreneurial dreams.” - Tony Fadell
Entrepreneurship, we learned the specifics of what it takes to build a successful startup and many ways to get it done. “One thing we are both certain about is that we would not be at this point onto their personal computers or their company’s database. We are using image processing techniques to quickly and efficiently extract information from documents, licenses, checks, or anything relevant to potential customers. This will save time for workers who manually log the relevant information from these documents onto their personal computers or their company’s database.

“Federal funding to university labs produces a great deal of technological innovation, but it also produces talent in the form of brilliant undergraduates and graduate students who go on to become outstanding inventors and entrepreneurs across multiple ventures,” said Nick Cucinelli. Examples of these students-turned-entrepreneurs cited by Cucinelli included companies such as HSD and SkySpecs.

“The very best universities and national labs are only as good as the innovations they deliver and the real-world problems they solve for humanity,” Nick added.

CFE’s own ELP Instructor Nick Cucinelli had the distinction of testifying as an expert witness at the House of Representatives Subcommittee on Research and Technology, Committee on Science, Space and Technology to discuss how the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs play a critical role in translating Federally funded research into commercial development; create high-tech jobs, build new industries, and fuel economic growth; help federal science and defense agencies meet their respective missions; help maintain the position of the United States as the preeminent global leader in technology innovation; and protect the health, safety, and security of every American citizen.

“With the desire to be serial entrepreneurs in the tech industry, ELP student, Dia Shaari and TechLab at Mcity student, James Boyce launched their startup WebJD to see the changes and improvements that they believe are possible implemented in the tech industry itself, their local community, and hopefully on an international scale. The two are using image processing techniques to quickly and efficiently extract information from documents, licenses, checks, or anything relevant to potential customers. This will save time for workers who manually log the relevant information from these documents onto their personal computers or their company’s database.

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“The very best universities and national labs are only as good as the innovations they deliver and the real-world problems they solve for humanity,” Nick added.

READ MORE

This cohort of students is pursuing degrees in automotive engineering, mechanical engineering, aerospace, computer science, computer engineering, and electrical engineering, and for the first time also has Masters students in the program. The cohort is 21% female and 79% male. The program is also an opportunity for U-M to connect to their traditional large corporate partners with mobility startups. This is accomplished through presentations at the leadership circle of Mcity and also through guest speakers and instructors. The program also took a major step forward by hiring two co-instructors with deep backgrounds in project and product management associated with advanced mobility tech, Eric Wingfield (MS in Nat. Resource and MBA, ‘05), Mobility Strategist at Ford, and Doug Moore (MS Comp. Sci), Product Manager at Ford X.

For the Fall 2019 semester, Refraction AI, an Ann Arbor based food delivery robot startup, joined the program. The Fall 2019 semester was also the final semester for RightHook, which completed two years in the program, working with students to deliver cutting-edge simulation tools that are now in use at Mcity as a service. The development and demonstration of the RightHook simulation technology by the 2018 and 2019 student teams has positioned the company as an acquisition target.

Two additional companies were recruited and joined the program for the 2020 cohort, Seoul Robotics and Point One Navigation. This newest cohort features the most diverse set of companies from both a geographic and tech focus: Humanising Autonomy (automotive stack, London, England), Innoviz Technologies (solid state lidar, Haifa, Israel), May Mobility (full shuttle service, Ann Arbor), Refraction AI (goods delivery robots, Ann Arbor), Point One Navigation (localization and mapping, San Diego), and Seoul Robotics (lidar software, Seoul, South Korea).

“I joined as a Mentor for the love of teaching students. I stayed for the lessons I was being taught by them. The more they learned from us, the more we learned from them.” - Lawyer Vaughn, May Mobility Mentor

“Working with the techlab team was a fun and rewarding experience! The team projects laid the groundwork to accelerate several of our most important future projects for Refraction AI.” - Justin Storms, Refraction AI Mentor

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The 2019-2020 academic year saw the launch of the TechLab: Climate Change program. The format of the program is similar to TechLab at Mcity program but with some important differences. First, the TechLab: Climate Change program is a partnership between CFE and the Global CO2 Initiative. This is our first attempt to build an entrepreneurship program around a specific research effort. Second, in TechLab at Mcity the student projects tend to be technical in nature. In TechLab: Climate Change, the problems involved understanding of not only technology, but also policy, environmental impacts, user and societal influences, and economic factors.

Due to the different nature of the problems, the makeup of the cohort contained a different mix of disciplines.


The CFE suite of offerings has expanded this year to include the exciting new program TechLab: Climate Change. This new program supports new carbon use technologies to help counter climate change effects broadly and fits well with the University of Michigan's commitment to carbon neutrality.

“Serving as a mentor for TechLab: Climate Change has been a fun and engaging experience. The interaction has allowed us to provide students with an understanding of some of the challenges facing the renewables industry and see what information and solutions they come up with – looking forward to continuing the project in the fall” - Allan Gao, LanzaTech Mentor

“I joined TechLab: Climate Change because it provides a great opportunity to work with a talented group of students on some exciting projects and establish a mutually beneficial exchange of knowledge and ideas.” - James Kahn, founder and principal of SkyBaron
GLOBAL TREKS

Similar to an entrepreneurship field trip, our Global Trek program takes 20-30 of the most elite entrepreneurship students and immerses them into the world of startups, early-stage ventures, and high-impact companies. During our two to four day treks, students visit companies, hear from the founders, tackle innovation challenges (sometimes even fixing real-world problems), learn to pitch, and more. Our goal is to help these elite students understand the benefits of working at a startup and the challenges of growing and early-stage business.

“Listening to founders’ stories about how they bring their ideas to life and make a positive social impact was truly inspirational. Learning how they apply business principles to achieve scalable and sustainable ventures was very instructive.” – Yingying Zeng (TechLab: Climate Change), Macromolecular Science and Engineering ('21)

“This trek is definitely the top defining moment in my life. I will look back at this experience and realize when I full-heartedly decided to become an entrepreneur. I feel ready and incredibly motivated to change the world.” – Elis Sholla (ELP), Computer Science – Eng & Data Science – Eng ('21)

“This trip was one of the most motivational events I have been in. While we learned about so many success stories, it was invaluable to learn about failure stories and knowing that some of these entrepreneurs are still at it in spite of massive setbacks. It helped me set aside my initial fear of failure, knowing that it is possible to not only recover from but even thrive after failures. I was so impressed with the candor with which the founders and VCs addressed us, it helped me see a channel of meaningful conversation that I am grateful to be a part of.” – Deepti Pandey (ELP), Human Computer Interaction (’21)

Taking elite entrepreneurship students and immersing them into the world of startups, early-stage ventures, and high-impact companies in Washington D.C., New York City, and San Francisco is sure to be an unforgettable experience. The following is what some of our students took away from our two treks last year.

TECH ACCELERATION

NSF MIDWEST I-CORPS NODE (MWIN)

The CFE continues to be a national leader in faculty and graduate student entrepreneurial education through its I-Corps program. In academic year 2019-20, the Midwest I-Corps Node, funded by the National Science Foundation (NSF), started the fourth year of the program in partnership with Purdue University, Purdue Research Foundation, the University of Illinois at Urbana Champaign, and the University of Toledo.

The Midwest Node continues to lead the nation in the number of teams recruited for the I-Corps program. Lastly, thanks to our expertise and leadership with the I-Corps methodology, we continue to be a hub for training new instructors as well as leading new pilot programs for NSF.

This year we took 12 instructors from six institutions through our train-the-trainer program and were chosen to lead the NSF’s virtual program for SBIR Phase I teams.

I-Corps is all about doing customer discovery interviews in-person. The goal is to engage stakeholders in a dialogue and immerse yourself in their environment to get a grasp of the intangibles. In fact, teams get the $50,000 grant to do just that - so they can travel and see the customer (stakeholders) in action.

However, in the midst of a global pandemic, in-person discovery is just not possible. Hence, the teams have pivoted to doing customer discovery through video conferencing and the cohorts switched to an online mode of instruction.

“Although the platform was completely online, I found that I still effectively learned and applied all the concepts that were taught,” said Carolina Chung, part of the U-M Biomedical Engineering Department and MAGENTA team. MAGENTA is a machine learning model that predicts combination therapy outcomes of antibiotic treatments against resistant bacteria. Carolina said she was hoping to gauge the commercial viability of the team’s technology.

“Having the course online made it easier to read and learn the material at my own pace,” said Purdue’s Jana Vincent, a member of Purdue’s Biomedical Sciences department and part of a wearable technology for MRIs team. “This (online course) was a more flexible design for those who were concurrently enrolled in research, courses, or internships.”

READ MORE
One of the major accomplishments this spring was pulling together a proposal for the NSF I-Corps Hub solicitation. The “Hub” is a redesigned program that will replace both the “node” and “site” programs that existed before.

The new proposal is a five year, $15M program that pulls together the entire Midwest region around supporting and educating academic scientists and engineers who have deep technology with commercial applications. Thanks to the open and collaborative leadership of the Midwest I-Corps Node over the past eight years, almost every school in the region wanted to be part of this proposal.

In addition to the enhanced programming and reach of the Midwest Hub, there are two additional efforts worth noting. This proposal involves a significant expansion of the research effort led by Dr. Aileen Huang-Saad (Purdue). In addition, diversity, equity, and inclusion efforts have been enhanced. Increasing the diversity in I-Corps is often characterized as an outreach and recruitment challenge. Through our new work, we are piloting a coordinated effort to align the outreach, format, instruction, content, and class culture to reach more underrepresented participants.

This proposal significantly expands the number of participants from 90 per year at the nodes/sites to 450 per year at the hub. This comes with a corresponding increase in the number of teams, which will grow from 5 per year at the nodes/sites to 63 per year at the hub.

The Michigan Biomedical Venture Fund (MBVF), formerly Monnroe-Brown Seed Fund, provides necessary early-stage capital to nascent U-M startup companies in the biomedical and life science space. Most importantly, this program provides honest and constructive feedback to our research community on what opportunities will be seen as attractive by the private investment markets.

We work closely with our portfolio companies post-funding by providing mentorship, making connections to our investor networks, and helping them grow and scale their teams. This focus shows in the financial success of the portfolio companies. The Fund has already had one exit via Parabricks that was acquired by Nvidia. Nine out of the other 10 investments remain active and have raised additional funds after receiving an investment from the Fund.

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One of the major accomplishments this spring was pulling together a proposal for the NSF I-Corps Hub solicitation. The “Hub” is a redesigned program that will replace both the “node” and “site” programs that existed before.

The new proposal is a five year, $15M program that pulls together the entire Midwest region around supporting and educating academic scientists and engineers who have deep technology with commercial applications. Thanks to the open and collaborative leadership of the Midwest I-Corps Node over the past eight years, almost every school in the region wanted to be part of this proposal.

In addition to the enhanced programming and reach of the Midwest Hub, there are two additional efforts worth noting. This proposal involves a significant expansion of the research effort led by Dr. Aileen Huang-Saad (Purdue). In addition, diversity, equity, and inclusion efforts have been enhanced. Increasing the diversity in I-Corps is often characterized as an outreach and recruitment challenge. Through our new work, we are piloting a coordinated effort to align the outreach, format, instruction, content, and class culture to reach more underrepresented participants.

This proposal significantly expands the number of participants from 90 per year at the nodes/sites to 450 per year at the hub. This comes with a corresponding increase in the number of teams, which will grow from 5 per year at the nodes/sites to 63 per year at the hub.

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Throughout 2019 and the first half of 2020, MBVF has continued its focus on engaging with potential donors and stakeholders nationwide. MBVF is seeking to raise $4M in donations, which would be matched by $2M from the Monroe-Brown Foundation and $1M from the University of Michigan.

In total, this influx of new donated capital would increase the size of the fund to $10M. This new capital is critical to the fund’s mission of becoming an evergreen philanthropic venture fund.

FUNDRAISING & NATIONAL PRESENCE

To expand the Fund’s national profile, a well-attended fundraising event sponsored by the University of Michigan Office of Development was held in January 2020 in conjunction with the 38th Annual J.P. Morgan Healthcare Conference, the premier life science-focused investor conference.

Several virtual fundraising events (due to COVID-19) are planned throughout the summer and fall of 2020. Excitement about the future potential of MBVF has never been higher.

**MBVF’s Success and Mission**

MBVF, under the leadership of Professor of Pharmaceutical Sciences & Biomedical Engineering, is currently the Michigan Biomedical Venture Fund (MBVF). The team is exploring the commercial potential of a novel implantable diagnostic device for the early detection and diagnosis of metastatic cancers.

“Matthew Okoneski, our mentor for the national I-Corps program and a staff member of the Center for Entrepreneurship, skillfully guided us through the complexities of biomedical technology commercialization and clinical translation. Additionally, his mentorship imparted tremendous insight into conducting tactful stakeholder interviews, which was instrumental for our success in the program.”

- Ravi Raghani & Ian Schrack, PhD students in Dr. Lonnie Shea’s laboratory

**EVOQ Therapeutics**

EVOQ Therapeutics, an Ann Arbor, MI-based cancer immunotherapy company, was selected as the top winner at the 10th annual Accelerate Michigan Innovation Competition (AMIC), a pitch competition that provides critical funding and support for Michigan startups. The company was chosen from 24 semi-finalists as the winner of the $500,000 grand prize.

EVOQ is pioneering the development of cancer vaccine nanodiscs that evoke an immune response 30 times more powerful than other cancer vaccines. It was founded in 2017 by U-M faculty James Moon, Ph.D., John G Searle Associate Professor of Pharmaceutical Sciences & Biomedical Engineering, and Anna Schwendeman, Ph.D., Associate Professor of Pharmaceutical Sciences.

The Michigan Biomedical Venture Fund (MBVF) is currently the largest private investor in EVOQ and has played a key role in EVOQ’s success.

**MTRAC TRANSPORTATION**

The Michigan Translational Research and Commercialization (MTRAC) Innovation Hub for Advanced Transportation program continued to catalyze the development of transportation technology. The program has provided critical gap funding to faculty and student innovators at U-M and other institutions across the State of Michigan.

This year, we also pursued an administrative shift for the MTRAC program into the Office of Technology Transfer (OTT). The CFE has been the catalyst for many positive changes in the entrepreneurship ecosystem at U-M. MTRAC transportation would not be at U-M if not for the work of Volker Sick, Jonathan Fay, and Thomas Zurbuchen. However, the work performed by MTRAC is de-risking technology to the point where the intellectual property can be licensed or a startup formed around the concept. Therefore, this program sits adjacent to CFE’s Entrepreneurial Education mission and is directly in line with OTT’s mission and resources for developing U-M IP. In addition, this shift will reduce the administrative burden within CFE as well as the C&O’s cost share.

The CFE will continue to provide project recruitment and entrepreneurial education support to the program as it is an important funding opportunity for translational research.

In June 2019, the MTRAC Oversight Committee voted to provide 12 month, $100k awards to seven teams out of 13 applicants from four different schools within the State. Some notable teams include:

- Prompt LLC led by Prof. Yanhao Liu from Wayne State University, is developing unmanned aerial system traffic management software that will enable safe and efficient UAS deliveries and other services.

**Material Efficient Extrusions**

led by Prof. Z. Morley Mao and Prof. Scott Mahlke, is an automated software verification solution which efficiently validates the safety rule compliance of autonomous vehicle operating software.

**High-Speed Polymer-to-Metal Direct Joining Method**

led by Prof. Daniel Cooper, is an extrusion tooling solution which reduces scrap generation by 25-50% and is currently being tested by industry through collaborations facilitated by this program.

**EVOQ**

Pingsha Dong, is a system which enables efficient validation of autonomous vehicle traffic management and unmanned aerial system traffic management.

**TrustedAVware**

led by Dr. Fengchao Liu and Prof. Z. Morley Mao and Prof. Scott Mahlke, is an automated software verification solution which efficiently validates the safety rule compliance of autonomous vehicle operating software.

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