



W INNOVATION CENTER



2018-2019 ANNUAL REPORT

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WHAT WE DO

The Western Michigan University Homer Stryker M.D. School of Medicine (WMed) Innovation Center is Kalamazoo's technology entrepreneurship hub. With an abundance of wet labs, engineering labs, private offices, shared equipment, and three unique co-working programs, the Innovation Center is the perfect home for any technology company. For those who don't need physical space yet, the numerous training programs, networking opportunities, and workshops are ideal.

Since 2003 our 69,000 square foot building has been a vital component of the Kalamazoo entrepreneurial community, hosting networking events and providing meeting space for various activities. The Innovation Center is also the Kalamazoo SmartZone, a state-designated area where technology-based firms locate in close proximity to all of the community assets that assist in their endeavors. Through the SmartZone, high-tech startups can access numerous programs including the Business Accelerator Fund, the Emerging Technologies Fund, and the Small Company Internship Award.

The Innovation Center is a founding member of the Greater Kalamazoo Business Resource Network and collaborates with other support organizations such as the Small Business Development Center, SCORE, the WMU Starting Gate, the City of Kalamazoo, the Can-Do Kitchen, the Local Initiatives Support Corporation, and more. If it takes a village to raise a child, it takes an entire ecosystem to raise a startup. Here in the pages of our annual report you will learn about what makes the Innovation Center special.

TOGETHER WE COMMERCIALIZE.



“This is a very good facility that provides great laboratory space and support for start-up and mature companies.”

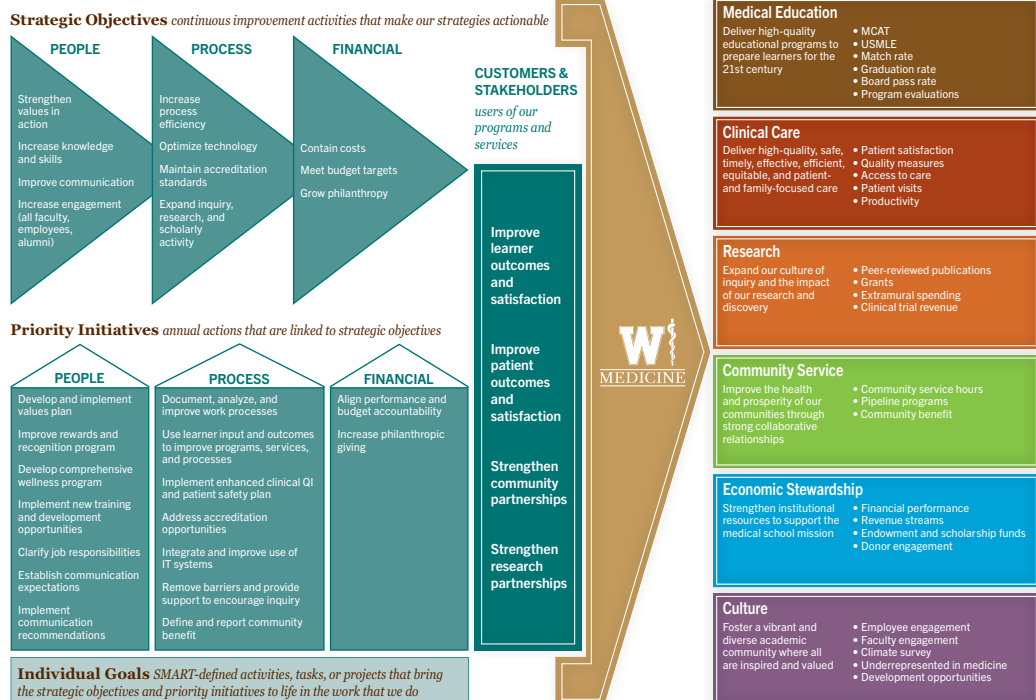


WMed Mission, Vision, and Values

Our Guiding Principles



Strategic Plan 2018-22: Operational Excellence



WMED VALUES IN ACTION

These principles guide
our actions.

TOGETHER WE...

- Seek to understand
- Respect one another
- Serve with empathy
- Speak up to inform
- Strive for excellence
- Act with integrity
- Celebrate effort and achievement

DIRECTOR'S STATEMENT

I found myself humming the other day, which is not something I do often. It was an oldie but a goodie, "Something's Coming" from West Side Story. You know how it goes: "It's only just out of reach, down the block, on the beach, under a tree...." I wondered what in the world made me hum that tune, from an old musical I hadn't seen in years. I think it was an unconscious expression of the way I've been feeling lately—eager with anticipation, like something really is just around the corner.

That's what it's like working with innovative entrepreneurs at the Innovation Center. Every day there are new ideas coming through the door, exciting breakthroughs being made, collaborations coming to fruition. Sometimes the energy is tangible, pulsing; other times it is subdued, a gentle vibration barely perceptible. No matter what, it is energizing.

So here's to looking forward with expectation, ardently passionate, ever hopeful, knowing that "if I can wait, something's comin'." I don't know what it is, but it is gonna be great."



Our Team



SANDRA COCHRAN, MBA, Assistant Dean for the Innovation Center. Sandra joined the medical school in January 2017 as the Assistant Dean for the Innovation Center. In her role, Sandra serves as the Innovation Center's Director. She coordinates and oversees all activities at the Innovation Center in support of

entrepreneurship and commercialization, including technology transfer for the medical school. Her work at WMed focuses on growing the Innovation Center into a hub for burgeoning life science, technology and engineering companies. A native of Ann Arbor, Sandra and her family have called Van Buren County home for over twenty years. In addition to holding a National Business Incubator Association's Certificate of Incubator Management, Sandra is a graduate of Michigan State University where she earned a bachelor's degree in English Education and a master's degree in Business Administration.



MADELYN PINDER, Business Services Manager. Madelyn has been with the Innovation Center since 2004. As Business Services Manager for the Innovation Center, she serves as the first point of contact for clients and visitors. Madelyn manages the day-to-day business activities of the Innovation

Center, receives guests for client companies, and serves as the face of the Innovation Center for everyone who comes to the facility, working to ensure that the Innovation Center is a positive experience for all. Madelyn previously served as Community and Investor Relations Specialist at Southwest Michigan First and participated in the planning and build-out of the Innovation Center. She also gained development experience at Kalamazoo College and as Program Manager for a private foundation. Madelyn completed the National Business Incubator Association's Certificate of Incubator Management in 2010.

OUR CLIENTS

- **Alteron Therapeutics** is an early stage company researching and developing therapeutic compounds against neurodegenerative diseases and cystic fibrosis.
- **Applied IE** is a leading-edge industrial engineering firm continually developing and implementing new or enhanced industrial engineering methods.
- **Arcadia Supplements, LLC** formulates and distributes fulvic-mineral-based health and wellness products.
- **AureoGen Biosciences, Inc.** is focused on the development of novel chemistry and genetic engineering methodologies for the modification of cyclic peptide-based compounds.
- **BizKlu** is developing a smart signage display unit with IoT sensors.
- **DomelQ** improves public policy outcomes by connecting interests and expertise with elected officials.
- **Drummond Carpenter, PLLC** is a service-disabled veteran-owned small business that specializes in environmental and water resources technical services and applied research.
- **Engineered Vision Solutions** is developing the IcClear system, a vision based system for use in the transportation/safety industry.
- **Garden Solutions** is a nursery and plant development company specializing in sedums and succulents. The company is based out of Hudsonville, MI, but markets plants worldwide. Some of their brands include Sunsparkler® Sedums, Gnome Domes® Orostachys, and Chick Charms® Sempervivums.
- **Hibiskus Biopharma Inc.** is an early stage drug discovery company utilizing proteasome inhibitor technology that may have significant activity in solid tumors; in particular, renal carcinoma.
- **IONTOX, LLC** is a biotechnology company dedicated to providing expertise to the area of in vitro toxicology, with a mission to build improved methods for predicting human adverse effects from chemical exposure.
- **Kalsec** is the leading global producer of natural spice and herb flavor extracts, colors, antioxidants, and advanced hop products for the food and beverage industry.
- **Metabolic Solutions Development Company, LLC** is developing innovative therapeutics to treat and prevent age-related metabolic diseases such as diabetes.
- **Micromyx, LLC** is a microbiology services company specializing in anti-infective discovery and development for the pharmaceutical, biotechnology, and animal health industries.
- **Proteos, Inc.** provides a wide range of expression platforms, purification methods, protein analysis tools and assay services to life science companies and research labs across the world.
- **RealBio Technology, Inc.** provides leading-edge cell and tissue culture technologies that support the growth, expansion, differentiation, and collection of human and non-human cells.
- **SafeSense Technologies LLC** is a sensor technology company providing innovative solutions using flexible hybrid electronics for the Sports Performance, Physical Therapy and Medical Diagnostics markets.
- **Separation Solutions / SepSol Process Solutions** is a manufacturer's representative and distributor of equipment for filtration and separation, powder and bulk processing, dust collection and packaging.
- **Single Source Procurement, Inc.** staffs and stocks an on-site scientific supply storeroom and coordinates ongoing routine procurement for companies, as well as coordinating instrument repair and researching and negotiating one-time purchases.
- **StatLab Medical Products** has been supplying the anatomic pathology laboratory for over 30 years as a leading developer and manufacturer of cost-effective histology, cytology and immunohistochemistry diagnostic supplies.
- **Sunny Box/Thrive Relief** is a subscription box service that strives to aid those dealing with mental health issues, all while using a portion of the revenue to donate to charity and de-stigmatizing mental health as a whole.
- **Tetra Discovery Partners LLC** develops therapeutics to treat memory loss and cognitive impairment by improving how the brain processes and stores information, to improve the quality of life for patients suffering from Alzheimer's disease, dementia, traumatic brain injury, major psychiatric disease, and neurodevelopmental disorders.
- **Thermo Fisher/Epredia** is a global precision cancer diagnostics company working to improve patient outcomes by providing groundbreaking technologies. Powered by trusted brands such as Richard - Allan Scientific, Microm, Shandon, Menzel Gläser and Erie Scientific, Epredia has a wide breadth of solutions that have and will continue to transform the anatomical pathology market.
- **Vestaron Inc.** is a leader in the development and marketing of safe and effective bioinsecticides derived from naturally occurring peptides found in spider venom.
- **Vrbnac Consulting/PharmOcular** is working on a topically active COX-2 inhibitor for treatment of Age-related Macular Degeneration (wet-AMD).

CLIENT SUCCESS



On August 31, 2003, 15 years ago, **PROTEOS** was incorporated and began providing recombinant protein production services to the biopharma industry. Since the beginning, our focus has been on providing high-quality protein reagents that enable our clients to perform superior drug discovery research. We understand that customer satisfaction ultimately determines our success and would like to sincerely thank all of our valued clients, who have made the last 15 years possible.

Since being founded in 2003 by Clark Smith, PhD and Robert Henrikson, PhD, many individuals have contributed to the success of Proteos. We would like to recognize the hard-working employees, both past and present, that have built our reputation for excellence, for which we were awarded the 2018 SmartZone Best Small Business by Michigan Celebrates Small Business.

Earlier this year Proteos announced that the corporation will be transitioning to majority employee-ownership, providing growth opportunities for current and future Proteos employees. This transition aligns with the founders' original vision of providing meaningful employment to talented scientists.

Regarding the 15-year anniversary, current President Mary Shuck stated, "As we celebrate this anniversary milestone we proudly reflect on our history and accomplishments and look forward to the future with renewed focus and enthusiasm."

To all Proteos employees and our valued customers: Cheers to 15 years!



In October 2018 **VESTARON CORPORATION** announced approval from the EPA of its Spear®-Lep bioinsecticide for control of lepidopterans in high-value field crops.

This approval made Spear®-Lep the second peptide-based product developed by Vestaron, following the full EPA approval and subsequent commercial launch of Spear®-T for greenhouse crops in July 2018.

The SPEAR® family of bioinsecticides offer an unprecedented insect control solution—providing the efficacy of a synthetic with the safety profile of a biologic. These products have a zero-day pre-harvest interval and are designed to be non-toxic to mammals, birds, fish, honeybees and other beneficial insects.

"We are pleased to add yet another environmentally favorable product to growers' options for highly-effective pest control," said Anna Rath, Vestaron's Chief Executive Officer. "Spear®-Lep will for the first time offer Vestaron's peptide-based, sustainable biopesticides to protect field-grown fruits, vegetables and other specialty crops against lepidopteran pests."

Full commercial availability of the Spear®-Lep launched in 2019.

In June 2018 Vestaron announced a \$40 million Series B Financing, led by Novo Holdings A/S. Novo Holdings joins continuing investors Anterra Capital, Cultivian Sandbox, Open Prairie Ventures, and Pangaea Ventures. The company will use the additional funds to support the commercialization of its Spear family of products, including expansion into new geographies, and to accelerate the development of its pipeline of additional peptide-based biopesticides.



"I'm so thankful our company found the Innovation Center. It has allowed us to build our research and development portion of the business without the large capital investment of building our own lab."

In December 2018 **TETRA DISCOVERY PARTNERS** and Shionogi & Co., Ltd. announced they have entered into a strategic collaboration for the clinical development and commercialization of BPN14770, Tetra's selective phosphodiesterase-4D (PDE4D) allosteric inhibitor, for the treatment of Fragile X Syndrome, Alzheimer's disease and other indications marked by cognitive and memory deficits. The goal of the collaboration is to accelerate the development of an innovative therapeutic for patients in key Asian markets.

In exchange for granting Shionogi development rights to BPN14770 in Japan, Taiwan and Korea, Tetra Discovery Partners has received \$40 million in combined upfront funding, including an equity investment and licensing payment. Tetra will also be eligible to receive up to an additional \$120 million in development and commercialization milestones, as well as royalties on sales if BPN14770 is successfully commercialized. Further financial details of the agreement were not disclosed.

Tetra is developing BPN14770 for the treatment of brain disorders marked by cognitive and memory deficits, including Fragile X Syndrome, Alzheimer's disease and other dementias, learning/developmental disabilities, major depression, and schizophrenia. The company currently is conducting an investigational Phase 2 study of BPN14770 in adults with Fragile X Syndrome, an indication for which BPN14770 has received Orphan Drug Designation from the U.S. Food and Drug Administration. Preparations are also under way to

initiate a Phase 2 trial of BPN14770 in patients with early Alzheimer's disease.

"We are very pleased to join forces with Shionogi, a company that shares our interests in developing innovative medicines for patients with debilitating central nervous system (CNS) conditions," said Mark Gurney, Ph.D., Chairman and Chief Executive Officer of Tetra Discovery Partners. "Shionogi scientists contributed greatly to fundamental discoveries concerning the biochemical pathway modulated by BPN14770. The company's in-depth knowledge of this brain pathway and focus on CNS drug development makes Shionogi a very compelling partner for Tetra. We greatly look forward to collaborating with them to accelerate the development of BPN14770 and to broaden geographic access to a potentially important new therapeutic."

Dr. Gurney noted that the new funding will enable Tetra to complete its ongoing Phase 2 trial in Fragile X Syndrome and to initiate a Phase 2 trial of BPN14770 in patients with early Alzheimer's disease in early 2019.

"This collaboration, if successful, will enable us to move one step closer in realizing a more vigorous society in which patients can be relieved from debilitating central nervous system (CNS) conditions," said Dr. Isao Teshirogi, President and Chief Executive Officer, Shionogi & Co., Ltd. "In addition, the compound will allow us to further strengthen the presence in CNS area that we have built up with Cymbalta and Intuniv."



SAFESENSE TECHNOLOGIES LLC is the poster child for the broad-based support system now available in Michigan to promising high-tech startups spun off from research universities.

SafeSense has developed and patented technology for flexible printed sensors that can be embedded in football, hockey, lacrosse and wrestling helmets and in or on other athletic equipment and apparel to alert parents, coaches and doctors

about the forces generated by contact. The sensors measure impact precisely and wirelessly transmit the data.

The company is about ready to go out to the equity market and raise growth capital from angel and venture-capital investors to equip and staff a manufacturing facility in the WMed Innovation Center, a large incubator in Kalamazoo owned by the Western Michigan University Homer Stryker M.D. School of Medicine,

a private partnership between Western Michigan University, Ascension Borgess and Bronson Healthcare.

In December 2017, SafeSense Technologies became the first member of the Innovation Center's newest co-working space, The Workbench. This past October, the Innovation Center named SafeSense as the best small business of the year in Kalamazoo County and nominated it for the best in Michigan for the annual Michigan Celebrates Small Business event in Lansing this April.

"I have been a supporter of SafeSense Technologies since it was an early project inside the WMU College of Engineering. I really love how the engineering disciplines have been brought to bear on a significant life science problem—traumatic brain injuries. The platform nature of the technology means that it can be used in a wide variety of applications, so the company has potential to be impactful outside of life science as well," said Sandra Cochrane, an assistant dean at the medical school and director of the Innovation Center.

SafeSense's search for capital comes after it raised about \$650,000 in non-dilutive funding from national, state and local sources, including National Science Foundation, the state of Michigan and WMU.

SafeSense grew out of work by Massood Atashbar, one of the company's founders, its chief science officer and director of WMU's Center for Excellence for Advanced Smart Sensors and Structures, and some of his post-doctoral researchers, including Binu Narakathu, who is the company's president. Atashbar was his adviser during his Ph.D. program. The company was spun out as a for-profit company in 2014 and licensed its technology from the university in 2017. It has been granted several patents with another 10 or so in the works. The company has three full-time employees and three part-timers.

Would-be investors might be intrigued by a relationship SafeSense has forged with Xenith Inc., a manufacturer of football helmets that Dan Gilbert invested in and moved to Detroit from Lowell, Mass., in 2015. SafeSense founders began meeting with Xenith before the move to Michigan. Xenith is No. 3 in helmet sales, behind Ridell and Schutt Sports.

Xenith is helping SafeSense test and refine its sensors and plans to become a paying customer of its sensors when they are ready for the market in a year or so. Over the last three years, field tests have been conducted on SafeSense sensors in helmets used by five high school football teams, in Kalamazoo, Grand Rapids and Ann Arbor.

"We've thought a lot at Xenith about how to incorporate new technologies, and SafeSense is very interesting to us. Massood's labs at Western are absolutely cutting edge. They are unparalleled in the country from what I have seen," said Grant Goulet, the vice president of product innovation at Xenith. "We've been very excited to partner with them and take advantage of their expertise," he said. "So far, it's been an excellent relationship."

Goulet declined to give sales totals for Xenith for 2018 but said "we have hundreds of thousands of helmets out in the market place. We're in all the NFL locker rooms, we're in division one college football, in high schools and in youth football."

Goulet said that what differentiates SafeSense's sensors in tests Xenith has conducted is that its technology is much better at precisely pinpointing where on the head the impacts are. Goulet said SafeSense technology is also much better at recording the much less violent, more routine impacts that occur hundreds of thousands of times during a season and often get overlooked. "It gives us a nice holistic picture of what is going on in the head, and how to provide athletes, coaches and parents with useful information and not just overload them with data," he said.

Goulet said there are two steps he envisions that will move the partnership with SafeSense from research to commercial applications. His best guess is that in a year, Xenith's field reps will be using SafeSense sensors in helmets being sold to teams to provide the best tailored fit for each athlete, to make sure there is an even distribution of pressure around the head.

He guessed that SafeSense technology is two years away from being incorporated into helmets to measure impact and communication wirelessly in real time to parents, team doctors and coaches the impact of various collisions.

HIGHLIGHTS AND PARTNERS

Client Satisfaction Survey Highlights

The Innovation Center strives to provide the most supportive environment possible for the most number of clients. While not perfect, the Innovation Center succeeds in meeting the needs of the vast majority of companies in residence. The annual client satisfaction survey completed in September 2019 revealed...

96%

would most definitely recommend the WMed Innovation Center to another entrepreneur

84%

say the WMed Innovation Center has made a positive difference in their emerging enterprise

100%

say that the involvement of the Innovation Center's staff with their company is "just right"

Our Partners and Sponsors

The Innovation Center is fortunate to have the support of several organizations from across the state of Michigan. These partners and sponsors provide refreshments and snacks for events, content for educational workshops and seminars, and free and reduced cost services to the clients of the Innovation Center. Partners and sponsors enrich our entrepreneurial community.



NEW PROGRAM

1 Million Cups



1 MILLION CUPS is a free, nationwide program designed to educate, engage and accelerate early-stage startups. We believe in the notion that entrepreneurs can discover solutions and thrive when they collaborate over a million cups of coffee. The Kalamazoo community of innovators and entrepreneurship enthusiasts come together each month to connect and support our local startups. Meetings are held on the first Wednesday of every month from 8:00 to 9:00 AM and are always free and open to the public.

WORKSHOPS AND EVENTS



- Monthly Client Lunches and Hangouts
- Warner Norcross + Judd Legal Lunch-and-Learn Series
- SBIR/STTR Workshops
- Introduction to Customer Discovery Program
- Medical Entrepreneur Speaker Series
- Mastering Technical/Scientific Sales
- Coffee & Donuts Open House
- Various SBDC and SCORE workshops including Social Media 101, Team SBA Roundtable, & Intro to SBDC Services
- Kalamazoo Venture Tuesday

ECONOMIC IMPACT

Nothing speaks to success like the hard numbers. We are proud to report the annual economic impact of the Innovation Center achieved through the efforts of our client companies for the past 12 months.

New Companies Created	3
Number of Companies Expanded	6
Number of Companies Served	73
Jobs Created (Number of FTEs)	3
Average Annual Salary of Jobs Created	\$43,250
Jobs Retained	222
Average Annual Salary of Jobs Retained	\$77,011
MEDC Funds Awarded to Companies	\$
SBIR, STTR, and Other Federal Funding	\$0
Venture Capital Raised	\$99,540
Angel Funds Raised	\$610,000
Bank/Loan Financing	\$50,000
Owner Investment Made	\$50,000
New Sales (Increase in Revenue)	\$43,301.360
Total Dollars Invested into Companies	\$44,611,360
People/Companies Attending Events	708
Patents Applied For	0
Issued Patents	1
Licensing Agreements	1
Commercialized Products	9

Data collected from the annual Innovation Center grant report to the MEDC, April 2019



“The WMed Innovation Center is a perfect environment for innovation to grow and become a successful commercial enterprise.”

LOOKING AHEAD TO 2019-2020

In June 2019 the Innovation Center applied for a \$50,000 Growth Accelerator Fund award from the Small Business Administration. An SBA award would supplement the Innovation Center's training budget to provide focused assistance to women in STEM sectors. The end goal would be to hopefully increase the pipeline of future SBIR/STTR applications and STEM-related innovations that will continue to advance this country and enhance the Kalamazoo community. Some of the activities the SBA money would fund in FY2020 include an expansive SBIR/STTR training program, a mentoring program, and a Boundless Women Confab that will feature workshops, a gala, and some terrific women entrepreneurs sharing their stories. While the purpose of these programs would be to reach more women, men are not going to be ignored. There will be plenty of opportunities for them to participate as well.

The number of applications to the Innovation Center is on the rise and several new clients are expected to join the Center in the coming months. Membership in the three co-working programs continues to increase, too, leading to a busy, thriving entrepreneurial environment. While there may be occasional growing pains, everyone takes them in stride, knowing that growth is a key indicator of the health of the innovation ecosystem in Kalamazoo. And as long as there are innovators out there trying to commercialize their brilliant ideas, there will be an Innovation Center for them to call home. So, welcome home, innovators. We're glad you're here!



“Sandra Cochrane’s experience and insights are simply priceless! Sandra Cochrane’s skillset—communication, experience, perspective, commitment and demeanor—are beyond unique and helpful; they inspire!”