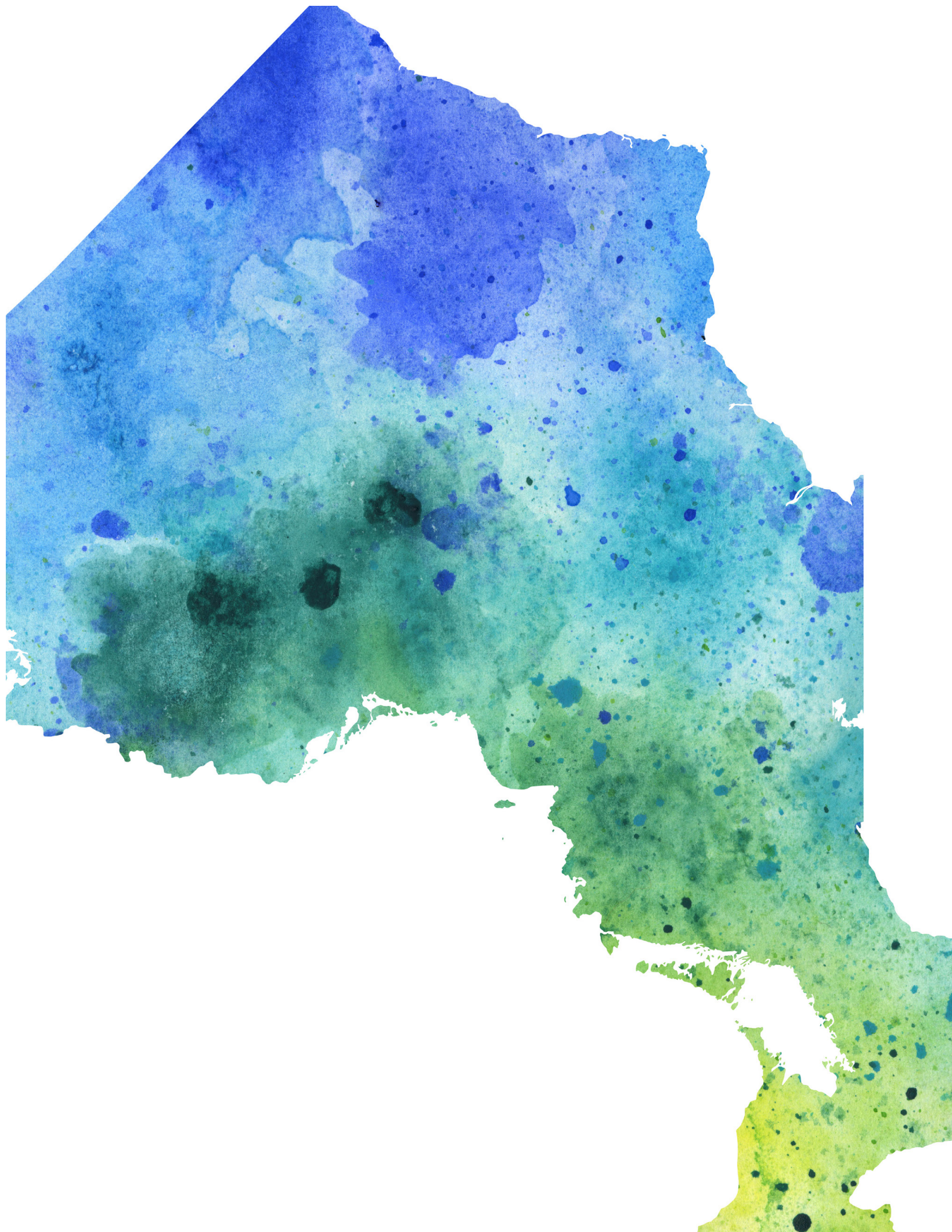


Success Stories



Ontario life sciences companies are producing astounding innovations across our sector. Read about how their businesses are fuelling our economy – and how we can help them reach their full potential to accelerate life sciences into a major economic powerhouse.



Success Stories

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Acorn Biolabs
www.acorn.me

Markets:
Canada

Acorn is a healthcare technology company focused on giving every human being the best chance to experience more healthy years with its easy, affordable and non-invasive stem cell collection, analysis and cryopreservation service. Acorn helps you save your cells today, to live a longer, healthier tomorrow.

Until now, stem cell collection has been expensive, invasive and painful through bone marrow harvesting, liposuction, blood draws and umbilical cord banking. More recent DNA home testing kits only capture dead cells from saliva that are unusable in cell therapy. Acorn gives you live cell collection that is accessible, affordable and viable for regenerative medicine through the simple non-invasive plucking of a few hairs from your head. This makes the future of regenerative medicine, genetics and powerful stem cell therapy accessible to everyone

Milestones: Having just made their service available April 1st of this year, Acorn has done a number of presentations on regenerative medicines and genetics at an educational level. Additionally Acorn has hosted a number of educational lunch and learns at the request of HR Organizations as a way to enhance their wellness programs or benefits to their employee base as a tool to help retain and attract. They are seeing the immense potential of readying employees for the future of healthcare and that is very exciting.

Barriers to success: The regenerative medicine space and all the advancements around CRISPR, iPSCs, genomics and cell and gene therapy is complicated, consumers haven't really gotten their head fully around the impact these advancements are going to have in their lifetime. The real fear is that science is moving faster than consumer understanding - and one day science will have fully commercialized cell and gene therapy and there will be generations of consumers too old to benefit because they haven't preserved their cells at their youngest possible state. By the time they will need these therapies, science will be able to deliver but they will be too ill-prepared, uninformed to benefit. Acorn has a significant role to play in educating on this space and preparing people for the future.

Looking Forward: The future for Acorn is about delivering back actionable health information based on real science, genomics and developments in regenerative medicine that can have a material impact on our clients healthspan. As our abilities grow, clients will naturally be able to benefit from opt-in data analysis through our expertise in big data and machine learning and the immense value that the data in your cells can unlock. All of this will get wrapped together in health information updates and offers that go directly back to benefiting our existing clients. The vision is that we are almost building a cooperative of healthcare - that our clients will feel and see that as an Acorn client they will get access to omics-based approaches to health data that will forever change how they think about their personal healthcare.



ACORN





ACTO

acto.com

Markets:

Canada/US

ACTO is on a mission to disrupt how drugs and devices are promoted and brought to market. ACTO's technology is the only unified cloud platform designed for life sciences that delivers field effectiveness and powerful data insights by combining micro-learning, sales enablement, video coaching, and live events in a single, engaging app.

ACTO equips field teams to communicate the clinical story, brand messaging, and speak to marketing assets when they meet with healthcare providers (HCPs) and payors. Before ACTO, field reps jumped between several technology platforms; now they only need to go to one. With ACTO's seamless user experience, field reps now consistently reference learning content in their workflow, such as during pre-call prep or meetings with HCPs.

ACTO spoke with over 900 life sciences companies over two years to design an AI technology for the industry's needs. ACTO is the only life sciences specific, consolidated technology of its kind. With ACTO, over 50 global life sciences companies like AstraZeneca, Teleflex, and Philips Respironics promote on clinical value to increase sales, drive brand alignment, and reduce compliance risk.

Key Wins: This past year, ACTO launched the ACTO Commercialization Cloud and continues to introduce innovative technologies such as the AI-powered ACTO chatbot.

ACTO has won several awards: a Gold Stevie Award in the Cloud Platform category, two Brandon Hall Group awards for its case studies with Philips Respironics and Teleflex, and two eyeforpharma Awards nominations, including one for its case study with AstraZeneca. These awards are a testament to the value ACTO's technology and team have delivered to global life sciences companies.

Since focusing exclusively on life sciences in 2017, ACTO has achieved over 4600% growth. This growth has come from truly meeting a need in the industry and gaining significant market traction.

Barriers to success: Healthcare systems around the world are shifting towards value-based care and selling. ACTO's success will depend on how fast the Canadian and US life sciences industries adopt digital technologies to disseminate clinical value stories in their market access and promotional activities.

Increasingly, the healthcare market demands customized treatments that utilize unique medical innovations. Despite the healthcare system's heavy investments in R&D to meet these demands, many innovations do not make it to the market. In this highly regulated and competitive environment, it is critical that field reps from life science companies are able to have meaningful conversations about these medical innovations' clinical value. Whether it be a healthcare provider or an insurance payor, the conversations must go beyond pricelists and pharmacoeconomic data.

This shifting landscape and ACTO's state-of-the-art technology is encouraging its customers to think differently. ACTO's challenge is in advancing the dialogue with life science leaders on the value of using technology to help field teams break down and deliver complex, clinical information for their promotional activities. The commercial results that ACTO's customers have achieved prove that life sciences companies can elevate conversations with payors and providers by digitally transforming their field force's operations.

Looking Forward: ACTO's vision is to build the world's largest technology, content, and data ecosystem for drug and device commercialization. In 5 years, ACTO will be the world's most intuitive and unified cloud platform that helps life sciences companies seamlessly promote their clinical story to providers, patients, and payors across multiple channels while consolidating various data streams.

ACTO will play a key role in creating data continuity and integrations between technologies geared towards improving clinical research, market access, post-market promotion, clinical decision support systems, and digital health technologies.





AmacaThera
www.amacathera.ca

AmacaThera is focused on the commercialization of a hydrogel platform for sustained drug release. AmacaThera's propriety hydrogel technology can be combined with therapeutic agents to form a product, which can be injected into a tissue to localize the therapeutics to the injection site. AmacaThera's hydrogel is compatible with a wide range of therapeutics and can provide sustained release from a few days up to a month.

AmacaThera's platform technology is a fast gelling physical hydrogel blend of two polymers, which liquefies under shear force and re-gels immediately on extrusion. The hydrogel can be injected from a syringe into small spaces and gels at body temperature. AmacaThera's first product AMT-143 is a HAMC will be injected into a tissue, where it will form an in-situ depot to give a local and sustained release of an active pharmaceutical ingredient.



Key Wins: AmacaThera has recently announced closing of its US \$3.6M seed financing round.

Working with a CRO, AmacaThera has developed a scalable manufacturing method and is ready for GMP production. In collaboration with an Ontario based CRO (NucroTechnics), AmacaThera has developed the analytical methods required for regulatory submission.

Barriers to Success: Regulatory approval presents the greatest barrier to success. To mitigate this barrier, AmacaThera completed a Pre-IND meeting and is working diligently to prepare the regulatory documents for an IND submission. AmacaThera is using a combination of local Ontario consultants and US consultants to prepare a compelling IND with the aim of submission in 2020.

Looking forward: AmacaThera's goal is to use its proprietary technology to develop injectable and biocompatible hydrogels that can enhance the delivery, targeting and release of a diverse range of therapeutic agents. AmacaThera's first product, AMT-143, is being developed to improve post-operative pain control thereby reducing or eliminating opioid use following surgery. AmacaThera is aiming for a Phase I clinical trial in early 2020.



Amgen

www.amgen.ca

Markets:

Global

Amgen discovers, develops, manufactures and delivers innovative human therapeutics. As a global leader in developing and delivering breakthrough biologic medicines that improve the health and well-being of patients dealing with serious illnesses, Amgen is committed to working with stakeholders to develop practical, cost-effective and long-term ways to sustain and improve Canada's healthcare system. Amgen was one of the first companies to realize the promise of biotechnology and Amgen therapeutics have changed the practice of medicine, helping millions of people around the world. Amgen remains committed to advancing science to dramatically improve people's lives. The Amgen Foundation, the main philanthropic arm of Amgen, is also committed to raising the value of science literacy in the community; attracting bright young minds into the field of science by helping educators to teach more effectively; and improving access to science resources for teachers, students and the community at large.



Key Wins: Amgen Scholars Canada was established in 2018 and is part of a global investment of more than \$21 million through 2022, totaling a \$74 million contribution over 16 years. Each summer, Canadian undergraduate students conduct hands-on research alongside top faculty, participate in seminars and networking events, and take part in symposia with their peers and leading scientists.

The Amgen Biotech Experience (ABE) is an innovative science education program that empowers teachers to bring biotechnology to their classrooms. The program provides teachers professional development, curriculum materials, supplies and research-grade equipment on loan to secondary schools, allowing teachers to run labs that incorporate the core technologies used by the biotech industry in the discovery of human therapeutics.

Let's Talk Science: Amgen Canada has been a strategic partner of Let's Talk Science since 2009, helping to shape the public discourse about STEM through public awareness and education campaigns, the volunteer efforts made by Amgen Canada employees, as well as transformational financial investments that support programs.



Astellas Pharma Canada

astellas.com

Markets:

Global

Astellas stands on the forefront of healthcare change, turning innovative science into value for patients. Astellas Pharma Canada, Inc. is committed to providing patients, customers, community and employees with a bright future by changing tomorrow. This commitment is made possible because we are a different kind of pharmaceutical company. Headquartered in Markham, Ontario, Astellas Pharma Canada, Inc. is recognized as the first Japanese pharmaceutical company in Canada. Astellas therapeutic areas include, oncology, immunology, anti-infectives, urology.

For the first time ever, Astellas Pharma Canada was named to the 2019 Great Place to Work® Lists of Best Workplaces™ for Inclusion, for Giving Back, for Mental Wellness and for Healthcare. The company was also featured on the 2019 Great Place to Work® List of Best Workplaces™ for Women – the fourth consecutive year the organization has received this recognition.

The culture at Astellas is unique and like none other. The company's positive employee engagement survey results and the recognition it continues to receive from the Great Place to Work® Institute speak to the vibrant culture that Astellas Pharma Canada has developed and why the company is successful.



Key Wins: Astellas took action to provide leadership, value and solutions to Cancer-Related Fatigue (CRF), a persistent and distressing exhaustion related to cancer. The company is proud of the multidisciplinary program they created to address CRF. Through educational materials, both written and web based we strived to provide better patient care and help health care professionals better understand CRF. The program has been endorsed by the Canadian Urology Association (CUA) and Prostate Cancer Canada.

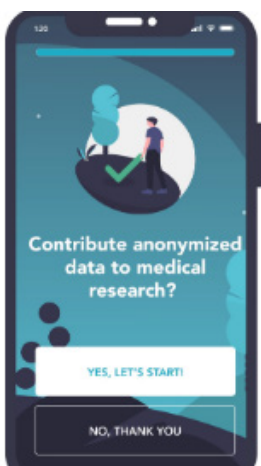
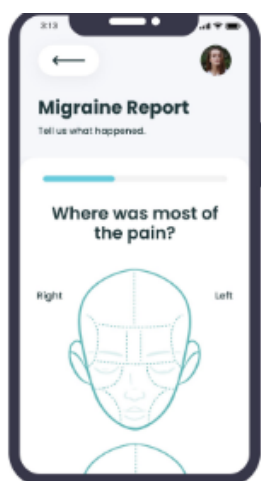


Bowhead Health

bowheadhealth.com

Markets:

Canada, USA



Bowhead Health is a secure, real-time data management platform for personalized wellness putting the individual at the centre of the healthcare ecosystem. The Bowhead platform aims to address issues in health data access, portability and security to help unlock the value and knowledge potential of longitudinal health data. We are using blockchain technology to achieve this, which will enable users to add historical health, wellness and lifestyle data into an encrypted data wallet that they themselves own and manage. Bowhead aims to build a globally interoperable health data management platform that promotes data ownership by the individual, provides researchers with more diverse health data sets, and ultimately gives patients access to better, faster and more personalized care. The mobile app helps people track their symptoms and behaviours; and provides eConsent with a digital signature for people who are interested in sharing or contributing their anonymized health data towards research. The application which aggregates user-controlled data submissions is displayed for pharmaceutical manufacturing researchers can use to make better medicine and gain commercial insights.

Key Wins: The Better App by Bowhead is live in the iOS and Android store with a rating with over 22,000 downloads globally. Bowhead Health has 3 executed agreements, one with a top 5 global pharmaceutical company and two with testing labs. The company has a real world chronic illness program for migraines currently live in Germany, Switzerland and Austria and since the launch of the study in August 2019 they have doubled the number of users on the platform. Bowhead's system has now processed over 620, 000 health data transactions in a production environment in compliance with Health Canada and HIPAA.



Barriers to Success: The largest has been in engineering. Blockchain technology is relatively new and finding engineers has been a challenge. Luckily, Ontario has many leaders in the field who are able to train Bowhead's engineers in the programming language Solidity and advanced concepts in system architecture. The company anticipates that future hurdles for will be more competition in the health data security market, with large incumbents like IBM, Oracle and Microsoft all fighting for space. Bowhead

expects this and is already deploying nimble teams to develop technology around upcoming security and machine vision technology to develop more modules for Bowhead's health data system and a competitive moat around our products and services

Looking Forward: Bowheads goal is to become the global standard in health data security. The company will do this by continuously educating people on the importance of health data security and by relentlessly building the most advanced and easy to use products to empower people to own and control their health data.



CanaQuest Medical Corp
canaquest.com

Markets:

Canada, USA, Europe,
South Africa



CanaQuest Medical Corp is a life science company focused on medical cannabis products, supported by science. The Company is committed to developing novel health products that utilize cannabis, hemp, and botanical extracts, including algae oils. The Company has engaged two prestigious Canadian universities to research and develop formulated products, which the company is in the process of launching. Our research is focused on the use of cannabis derivatives for the development of our novel pharmacotherapies for mental health, such as anxiety, depression, addiction, schizophrenia, and Post Traumatic Stress Disorder “PTSD”.

The company’s unique formulation will enable patients to experience the pleasant “high” many look for immediate relief from their symptoms as well as gain other medical benefits of cannabis-based treatments, while minimizing the short-term side effects of high doses of THC (e.g., anxiety and paranoia). As a result of long-term THC medical cannabis treatment, patients will develop negative psychiatric side effects. CanaQuest formulations eliminate these negative psychiatric side effects. The formulation is applicable to both medical and recreational consumption of cannabis.

Key Wins: The company won the Go Global Awards “Business of the Year – Category of Life Science”, presented by the International Trade Council and has been awarded a cannabis-sales purchase-import-export license from Health Canada. CanaQuest filed an international patent on a first game changing discovery, Mentabinol®, protecting THC users from negative psychiatric side-effects.



Commercial ready:

Mentabinol® addresses four major problems resulting from consuming THC for an extended time.

The application of Mentabinol® in pre-clinical trials at Western University have demonstrated:

- Reversal of depression-like and schizophrenia related symptom effects;
- Complete blockage of memory impairment;
- Complete blockage of hyperactive activity;
- Complete blockage of gene vulnerability.

Mentabinol® provides an alternative to Opioids.

The Company has found a competitive advantage working with Dr. Steven Laviolette, a neuroscientist, with over 13 years of research experience in the field of mental health and cannabis, and his dedicated scientific team of 12 scientists at Western University. This partnership gives CanaQuest a tremendous product development resource in the medical cannabis sector. The completed pre-clinical trials at the Western University lab have demonstrated exciting results.

Barriers to Success: Securing sufficient funding has been a tremendous challenge and the need to obtain funding in the near future would enable the company to execute its full business plan.

Looking Forward: CanaQuest is building its e-commerce website, establishing distribution channels and is gearing up for its global launch in early 2020.



CO2 GRO Inc.
www.co2gro.ca

CO2 GRO ("GROW.TSXV") is a public Canadian company that enables commercial plant growers to supplement with aqueous CO2 using its patented CO2 Delivery Solutions.

GROW's patented CO2 Delivery Solutions dissolve and saturate CO2 in an aqueous solution which is then misted onto the plant's leaf surfaces. Fully saturated, CO2 Delivery Solutions' aqueous CO2 contains two hundred times more CO2 molecules available to plant leaves than atmospheric CO2. Aqueous CO2 is more readily absorbed by the entire leaf surface versus just leaf stomata with CO2 in gaseous form. With greater CO2 uptake, plants are able to increase chlorophyll A production. Chlorophyll A production results in increased plant biomass growth, faster growth and an increase in metabolites such as cannabinoids in the case of Cannabis.



Key Wins: Filed two patents, the first for the discovery that the plant is able to uptake CO2 from the entire leaf surface when exposed to CO2 in an aqueous form. The CO2 solution is targeted directly on to the plant's leaves by misting micro droplets to create an aqueous film around the entire leaf surface. This film isolates the leaf from the atmosphere and creates a diffusion gradient that favors the transport of CO2 into

the leaf and other gasses out of the leaf. The second is for the discovery of pathogen suppression due to fluctuating pH on the plant's leaf surfaces due to acidic aqueous CO2 application which bounces back towards neutral as CO2 is absorbed.

These scientific discoveries proved crucial to securing GROW's first two Commercial customers as well as convincing current Commercial Demonstration customers to evaluate the technology on their plants at their facilities.

Barriers to Success: Expansion funding and increasing awareness and acceptance of this new more efficient patent-protected CO2 delivery technology. Since existing practices gassing with CO2 have been in place for 150 years, there is a natural resistance to change.

Looking forward: To accelerate the education of growers in the market of the merits of aqueous CO2 usage in order to help them understand the value that our technology provides to their operations.

CO2 GRO currently has a number of Commercial Demonstration Proposals out to large greenhouse growers in the US, Canada, the EU and the Middle East where they will be demonstrating CO2 Delivery Solutions on a variety of high value crops including Cannabis, hemp, tobacco, microgreens and flowers. The company's 2020 goal is to successfully install their CO2 Delivery Solutions throughout these customers' facilities.



Edesa Biotech

www.edesabiotech.com

Markets:

Global

Edesa Biotech, Inc. is a clinical-stage biopharmaceutical company developing new ways to treat dermatological & gastrointestinal diseases, including alternatives to topical steroids, which can have serious side-effects. Its lead product candidate, EB01, is a novel, anti-steroidal anti-inflammatory molecule (sPLA2 inhibitor) for the treatment of chronic allergic contact dermatitis which has demonstrated significant improvements in multiple clinical studies. Edesa intends to expand the utility of its sPLA2 inhibitor technology across multiple indications.

Edesa's sPLA2 inhibitor technology is a novel approach to treating inflammation. By targeting the sPLA2 enzyme family, with enzyme inhibitors, the goal is to inhibit the inflammatory process at inception, rather than post-occurrence. This should result in a superior therapeutic effect without the safety concerns of current therapies. Edesa's current clinical pipeline includes: EB01 for the topical treatment of chronic allergic contact dermatitis, which affects 13.2+ million people in the U.S. with \$2 billion in annual costs; EB02, for the treatment of hemorrhoids, which affects approx. 12.5 million adults in the U.S. annually with current treatments providing only temporary relief & EB04, which will focus on the anal fissures & additional GI indications.

Edesa's Executive Team has years of specialized experience in pharmaceutical drug development, biotech research and medical care. The Company was founded by clinician and serial entrepreneur Dr. Par Nijhawan (CEO) and the Executive Team includes: Dr. Michael Brooks (President), Ms. Kathi Niffenegger, CPA (CFO), Dr. Blair Gordon (VP, R&D), & Mr. Gary Koppenjan (VP, Investor Relations & Communications).

Key Wins: Edesa received approval to begin its Phase 2b clinical study of EB01 from the U.S. FDA and completed all the CMC required to support clinical and commercial development.

Is actively enrolling patients in Phase 2b study for EB01 What contributed to these wins? A very focused, experienced, disciplined management team that has been able to achieve milestones with a small team and a limited amount of capital.

Barriers to Success: As with all companies at this stage, access to capital is an issue. The Company was early on able to build a strong syndicate of investors that included Lumira Ventures and a number of Ontario-based family office investors. The Company then successfully completed the public listing which broadens its access to capital.

Looking Forward: Edesa will have completed the clinical development of EB01 and EB02 and successfully partnered these products for commercial development. The Company will have added to its clinical pipeline and will have at least 3 other products in clinical development for unmet or underserved dermatological & gastrointestinal diseases.



FACIT

Cancer Breakthroughs. Realized.

FACIT

facit.ca

Markets:

Ontario/Canada

FACIT Inc. is a unique commercialization venture group for Ontario oncology innovations, and strategic partner of the Ontario Institute for Cancer Research (OICR). FACIT helps anchor competitive biotech companies and innovations to the province by providing Ontario First seed capital, executive management, corporate and market guidance, and access to an industry/investor network. Through this, FACIT increases the value of Ontario's best oncology innovations, attracts additional investment from the private sector, and derives local value from intellectual property (IP). Since its inception, FACIT has invested \$40M into the province's most promising innovations. With this spark, its portfolio of Ontario-based biotechs has grown roots and brought in \$750M+ in additional investment to the province. FACIT has created/seeded some of the most successful Canadian biotechs, including Turnstone Biologics, Fusion Pharma, and Triphase Accelerator. FACIT capitalizes on Ontario's investment in research and healthcare to the benefit of the local economy and patients worldwide.



Key Wins: In January 2019, FACIT portfolio companies Propellon Therapeutics and Triphase Accelerator closed a \$1B USD strategic partnership with Celgene to develop a drug candidate for leukemia. This represents the largest biotech asset transaction for academia/not-for-profits in worldwide history. FACIT led the global business development strategy and invested \$3M in seed capital, which put Ontario IP in a position of strength to negotiate a transaction with maximum regional impact.

Barriers to Success: Dedicated seed capital with a healthcare focus is needed to compete with the incumbent US biotech market, enabling further local development, increasing IP valuation, and anchoring companies to Canada. To address Ontario's seed capital gap and scale FACIT's impact, new public-private partnerships with Canadian philanthropy, Canadian Pharma and other ecosystem stakeholders are needed. Because these partners do not necessarily share FACIT's Ontario First mandate, incentives are needed to retain IP and talent, build companies and invest locally.

Looking Forward: FACIT's goals are based on the fundamental belief that long-term sustainable success of the most promising cancer-related discoveries is best achieved by creating well-capitalized and well-managed commercial ventures in Ontario. FACIT therefore invests in and builds companies with entrepreneurs to accelerate these innovative cancer technologies and attract jobs and additional investment to Ontario. FACIT presents a new model for building R&D, jobs and innovation outcomes in the province that can solve longstanding challenges for stakeholders in the innovation local biotech ecosystem. FACIT's long term goals include continuing to identify and advance Ontario-based technologies with top potential for addressing unmet oncology need, and providing ready access to technical expertise, financial capital and professional management.



GL Chemtec International

www.glchemtec.ca

Markets:

Canada, USA. International.

GL CHEMTEC INTERNATIONAL is a discovery-phase contract research organization, delivering innovative custom solutions and technologies to the pharmaceutical, biotechnology, and materials science sectors.

GL CHEMTEC's team of multi-disciplinary scientists tackle the most difficult drug discovery problems in the synthetic lab, while also creating novel and targeted new materials for innovative applications such as wound-healing, drug delivery, printable electronics, synthetic organoids, and ophthalmic lubricants.

Key Wins: Winner of the 2017 Bell Medium-Sized Business of the Year

Expanded operating/laboratory space from 10,000 sq.ft to just under 30,000 sq.ft.

Implemented ISO 9001:2015 (Quality Standard) and ISO 13485:2016 (Medical Device

Standard) Cultivated an outstanding team of employees, first in class in the industry

Barriers to Success: The biggest challenge so far has been overcoming the long barrier to entry in the Pharmaceutical/Biotech industry. A contract research organization typically needs ~10 years in order to build up its' capacity and establish credibility before being able to grow in a meaningful way. With the help of our strong team, we were able to develop into a recognized innovation house.

Looking Forward: GL CHEMTEC INTERNATIONAL will continue to grow on both the synthetic chemistry and material science fronts. We are currently in the process of building our pilot plant in order to provide our pharmaceutical, biotech, and animal health clients with greater quantities of their important intermediates. We also continue to expand on our product offering to the material science community by building on our combined synthetic expertise as well as in-house analytical capabilities. Our scientists continue to innovate to deliver new hydrogels, new bio-adhesives, new synthetic organoids, and new printable electronics, to name a few, and to bridge the gap between organic and polymer chemistry.





GlaxoSmithKline

ca.gsk.com

Markets:

Global

GlaxoSmithKline (GSK) is a science-led global healthcare company with a special purpose: to help people do more, feel better and live longer. We have three global businesses that research, develop and manufacture innovative pharmaceutical medicines, vaccines and consumer healthcare products.

GSK has the most comprehensive vaccines portfolio in the industry, helping to protect children, teenagers, adults, elderly and travellers against diseases like whooping cough, hepatitis, meningitis and shingles. Fundamental to the success of the next generation of vaccines is the use of adjuvants. They can enhance the body's immune response and are the backbone of many current vaccines, such as SHINGRIX, INFANRIX, and CERVARIX.

An Adjuvant System is a combination of two or more types of adjuvants (e.g. immuno-enhancers) designed to leverage their effect in enhancing and guiding the immune response to the antigen(s). The adjuvant system used in SHINGRIX was critical to delivering the high levels of vaccine efficacy and may also open up new avenues for advancement of vaccine science and development of therapeutic vaccines in aging adults.



Key Wins: SHINGRIX is a vaccine that consists of a single varicella zoster vaccine (VZV) subunit antigen, glycoprotein E (gE), and the adjuvant system AS01B. This vaccine was rationally designed to address the key driver for herpes zoster (shingles), the age-related decline in VZV-specific immunity. The innovative AS01B adjuvant system focused on combining two molecules (monophosphoryl lipid A (MPL) and QS-21) having adjuvant activity, with liposomes, for optimal stimulation of the immune system. The unique combination of these two components was shown to increase cell-mediated and humoral immune responses to the target gE antigen.

On October 13th, 2017, Canada became the first country globally to receive regulatory approval for SHINGRIX for prevention of herpes zoster in adults 50 years of age or older. In clinical trials, SHINGRIX was shown to be highly efficacious and generally well tolerated in adults over 50 years of age. Canada has made an important contribution to a large number of the clinical trials for SHINGRIX, with over 2100 subjects enrolled in the program.

Looking Forward: GSK continues to engage in dialogue with relevant recommending bodies with the aim of expanding access to SHINGRIX in Canada, including in the province of Ontario. Overall, GSK aims to bring differentiated, high-quality and needed healthcare products to as many people as possible with our three global businesses, scientific and technical know-how, and talented people

International Food Focus Limited

International Food Focus Ltd.

foodfocus.on.ca

Markets:

Canada, USA, EU

International Food Focus (IFF), a boutique business, provides regulatory compliance services in both the pre-commercialization and post-commercialization phases of agri-food sector market activity. IFF's pre-market evaluation dossiers submitted to Health Canada, the FDA, and EFSA are known for their completeness. In turn, submissions prepared by IFF are assessed more quickly, resulting in shorter response times. Post-commercialization, IFF provides label and advertising compliance services. Additionally, the company is skilled at management of multi-faceted, cross-functional projects. IFF provides leadership and industry development through regular offerings of seminars, webinars and workshops.

IFF's secret sauce: scientific knowledge shapes and directs all regulatory compliance projects, identifying options which underpin a fine-honed regulatory strategy. A quick grasp of the salient points of a proposition, sometimes at a pace that amazes the client, facilitates efficiency and effectiveness. IFF's business acumen keeps an eye on the ultimate goal of sales and market share. IFF's market assessments and evaluations are supported by a working knowledge of the pertinent regulations, especially where legislation is a market determinant.



Key Wins: Regulatory approvals; fueled by complete and well-written dossiers. Compliant food labels, in several jurisdictions, due to a grasp of the detailed regulations which govern each market. Happy, satisfied and loyal clients, due to our "never say die" approach.

Barriers to Success: Loss of clients due to acquisitions in the food industry.

Looking Forward: Find innovative SME's as new clients, to replace those which lost through acquisitions. Provide services at the senior management, board and executive level as subject matter experts and independent advisors.



LAVVAN Canada
www.lavvan.com

Markets:
Canada, USA, EU

LAVVAN is focused on the production of high-quality, low-cost and reliably sourced cannabinoid ingredients for consumer-packaged goods (CPG), cosmetic, food and beverage, nutraceutical and pharmaceutical markets. In collaboration with Amyris, LAVVAN is harnessing biosynthetic technology to unlock the full potential of the cannabinoid family of molecules. LAVVAN is backed by pioneers of the cannabis, food and beverage, and pharmaceutical industries.

Growing cannabis plants to produce cannabinoids through traditional agriculture is an expensive and endogenous process that comes with many contamination risks. We leverage the power of fermentation to produce clinical and consumer valuable cannabinoid compounds at low-cost, high purity (98%+) in a safe, food-grade manufacturing facility. Our platform also allows us to scale the production of rare cannabinoids with consistent results, ensuring all ingredients have precise dosage and potency for safe consumption.



Key Wins: LAVVAN created strategic partnership with Amyris, a global leader in biosynthesis, synthetic biology and large scale fermentation. LAVVAN is also lead by the former executive team of MedReleaf Corp. which, at the time of its \$3.2B acquisition, was Canada's most awarded licensed producer of cannabis and was widely recognized for its scientific leadership, product innovation and operational excellence.

Looking Forward: LAVVAN's next steps are to become a market leader in cannabinoid ingredient production and to continue to develop unique formulations of cannabinoids for specific clinical indications and consumer products.



Medical Education Programs Starmed

Markets:

Canada

Medical Education Programs (MEP) Starmed offers a one stop hub for all undergraduate credit courses for 120 partner medical, dental, veterinary, pharmacy, optometry, and other health care fields and for preparatory courses for licensing in Canada, USA, and UK for international medical graduates or Canadians studying abroad.



The curriculum is focused on preparing students early on for their residency exams and offers all prep courses and advising for residency matching in Canada (CaRMS), USA (ERAS), and UK. 100% of our students have been accepted into medical, dental, and pharmacy schools in Canada, USA, UK, etc. with over \$5.3 million in scholarships in 2015-2019. Medical Education Programs motto “Excellence and diversity in medical education” is represented by the diverse background (150 countries) of our students and IMGs.

For over 23 years Dr. Lorelei Silverman and Dr. Rosalind Silverman have mentored and taught thousand of students in life sciences, and have worked for 20 years in research at York University and University of Toronto. They also noticed the need for focused premedical education especially for new immigrants, African Canadian, Latino, Aboriginal and other underrepresented minorities. The pair have helped over 40 African Canadian and American students get into medical and dental schools, and helped thousands of foreign trained health care professionals (doctors, dentists, pharmacists, and optometrists) to license in Canada.

For those who face barriers in licensing due to the long

duration of exams, age, hardships, MEP also offers short courses in clinical research, telemedicine, pharmaceutical sale, health care management, medical liason, health informatics, teaching, etc. that allows foreign trained porfessionals and recent graduates from life sciences alike to gain meaningful jobs in pharma industry, life sciences, and healthcare sectors.

Key Wins: Their most memorable success to date is helping over 500 students from diverse social, economic, cultural, religious backgrounds get into medical, dental, pharmacy, optometry, veterinary medicine, DO schools and helping thousands of internationally trained doctors and dentists to license in Canada

Barriers to Success: The only challenge they face is the fact that professional education for Canadian students especially if done abroad is expensive. There is more support needed for students from underprivileged backgrounds to reach their career aspirations.

Looking forward: The aim is to continue to provide excellence and diversity in premedical education and help many foreign trained doctors become licensed in Canada. They also want to open a few more centres in areas where they can make a higher impact.



Merck Canada

www.merck.ca

Markets:

Global

Merck Canada Inc. is the subsidiary of Merck & Co., a leading global biopharmaceutical company committed to improving health and wellbeing. Merck employs approximately 680 people across Canada.

Merck offers more than 250 vaccines, innovative medicines, biosimilars, and animal health products. It is a leader in many therapeutic areas, including cardiology, infectious diseases, respiratory conditions, oncology, diabetes, virology, and women's health. The company is one of the top R&D investors in Canada, with investments totaling more than \$1 billion since 2000. Today, Merck is developing medicines and vaccines to address urgent health challenges, including cancer, cardio-metabolic diseases, Alzheimer's disease, and infectious diseases like HIV and Ebola.

Key Wins: Merck is currently investing in 102 clinical trials involving over 440 sites and more than 2,500 patients across Canada, including 90 studies at 157 trial sites spread across 34 academic institutions and private clinics in Ontario. Clinical trials allow Canada's world-leading specialists to take part in cutting-edge research while helping Canadian patients.

Merck's immuno-oncology therapy is an excellent example: Nearly 800 Ontarians were enrolled in clinical trials for this treatment since 2012 and Canada was also one of the first launch countries for this important innovation. Merck also provided Canadians with the first HPV vaccine to help prevent cervical and other HPV related cancers for both males and females. Young Canadians are now being vaccinated routinely to help protect them from this virus and the potentially deadly cancers it causes.

Barriers to success: The regulatory amendments adopted by the federal government to change how the Patented Medicine Prices Review Board (PMPRB) assesses drug prices will have serious negative consequences. The changes will significantly hurt Ontario given the thriving life sciences industry in this province. The reform will make Canada and Ontario a less attractive global destination for launching new medicines and investing in health research, including clinical trials. In practice, this means Ontarians will lose access to new medicines or will have to wait much longer before they can access them, and there will be fewer jobs for Ontarians in this innovative sector. The long and restrictive review process to achieve reimbursement by public drug plans is another key issue of concern. A 2016 report found that Canada ranked 18th of 20 countries with only 37% of new medicines receiving public reimbursement across the country. Canada was also among the slowest to reimburse, ranking 15th of 20 countries.

Looking Forward: Merck has a long-term commitment to improving global health through various initiatives, including Merck for Mothers, GAVI and The Vaccine Alliance and Botswana's African Comprehensive HIV/AIDS Partnerships. As part of the Merck for Mothers initiative, Merck is providing \$2.6 million to fund a project on Indigenous maternal and child health in Ontario.





Novo Nordisk
novonordisk.ca

Markets:

Global Markets

Novo Nordisk is a global healthcare company with more than 95 years of innovation and leadership in diabetes care. This heritage has given us experience and capabilities that also enable us to help people defeat obesity, hemophilia, growth disorders and other serious chronic diseases. Headquartered in Denmark, Novo Nordisk employs approximately 41,600 people in 80 countries and markets its products in more than 170 countries.

Medical associations around the world, including the Canadian Medical Association, have recognized that obesity is not a lifestyle choice, it is a chronic disease that requires long-term management. According to Obesity Canada, 25% of Canadian adults are now living with obesity—a condition that may increase the risk of other chronic conditions, such as hypertension, heart disease, and some cancers. Novo Nordisk believes that all Canadians living with obesity deserve to be supported in the management of their condition—just like any other chronic disease. That is why Novo Nordisk is investing in obesity research and educational programs for healthcare professionals and Canadians living with obesity. Let's change the way we think about obesity.

Key Wins: Launched disease awareness programs to further educate healthcare professionals, policy makers, the public, and people living with obesity. This includes working with a professional steering committee to launch The Awareness, Care, and Treatment in Obesity MaNagement (ACTION) Study. This study surveyed attitudes toward obesity in 2,000 individuals living with the condition, 395 physicians and allied health professionals who manage it, and 150 employers who provide private health benefits.

Launched an awareness campaign with ROGERS media on/around World Obesity Day in October 2019 to help spread education and awareness about living with obesity. Partnered with Postmedia on their new healthing.ca platform to share information and awareness about obesity.

Provided funding to Obesity Canada for their work in supporting people living with obesity. This included a grant to support the development of healthcare professional guidelines.

Barriers to Success: Less than 20% of the Canadian population with private drug benefit plans have access to the three medications indicated and approved by Health Canada for obesity treatment. Wait times between physician referral and consultation for bariatric surgery range from 18 to 106 months and continue to hinder its utility as an obesity treatment. No province or territory officially recognizes obesity as a chronic disease, despite such recognition from the Canadian and American Medical Associations and other healthcare authorities. And, while the number of certified obesity medicine physicians in Canada has been rising steadily, it accounts for a very small percentage of all doctors. In addition, there is a lack of interdisciplinary teams for obesity management in Canada, despite their recognized benefits in obesity-treatment guidelines. Contrasting with other chronic diseases, Canadians who may benefit from medically supervised weight-management programs with meal replacements are expected to pay out-of-pocket for meal-replacement products.

Looking Forward: At Novo Nordisk, we are dedicated to making obesity a healthcare priority. Changing Obesity™ is our long-term commitment to improve the lives of people with obesity by changing how the world sees, prevents and treats their obesity. In 2020, the Canadian Novo Nordisk team will continue to focus on increasing private access for anti-obesity medications for those who need it and on disease awareness, research and advocacy initiatives to reduce bias and stigma and to ensure fair and equitable treatment for all Canadians living with obesity.

stryker®

Stryker

www.stryker.com/ca/en/

Markets:

Canada



Stryker is one of the world's leading medical technology companies and, together with our customers, is driven to make healthcare better. We offer innovative products and services in Orthopaedics, Medical and Surgical, and Neurotechnology and Spine that help improve patient and hospital outcomes. In Canada, we have 3 manufacturing sites and over 650 employees.

By focusing on four key values of Integrity, Accountability, Performance and People, Stryker is able to offer a diverse array of innovative products and services that help improve patient outcomes. From ambulance and ER to surgery and outpatient, Stryker are able to help patients get back to living productive lives.

Key Wins: Collaboration with both patients and healthcare professionals helps our R&D teams create meaningful innovations. The company is a high-touch business, working closely with healthcare professionals and patients, which gives deep insights into the patient journey and how they can improve their outcomes. We have placed the first MAKO surgical robot into St. Joseph's Hospital in Hamilton, making hip and knee procedures more precise and allowing patients to recover faster with less opioid use and less pain.

Barriers to Success: The sheer number and complexity of procurement processes, and the slow adoption of value based healthcare makes it challenging for adoption of innovative technology into the Canadian system.

Looking Forward: Stryker has a proud history and a promising future. The company's growth will continue to be built on strategic acquisitions, particularly to deepen our portfolio in orthopedics, medical and surgical equipment and neurotechnology. Stryker's product pipeline is strong and there are significant investments in R&D with industry innovation leadership in robotics, 3-D printing and advanced imaging technology. With the changing demographics, expansion into new markets and the fast pace of innovation, Stryker is dedicated to meeting patient needs and keeping them at the centre of their decisions.



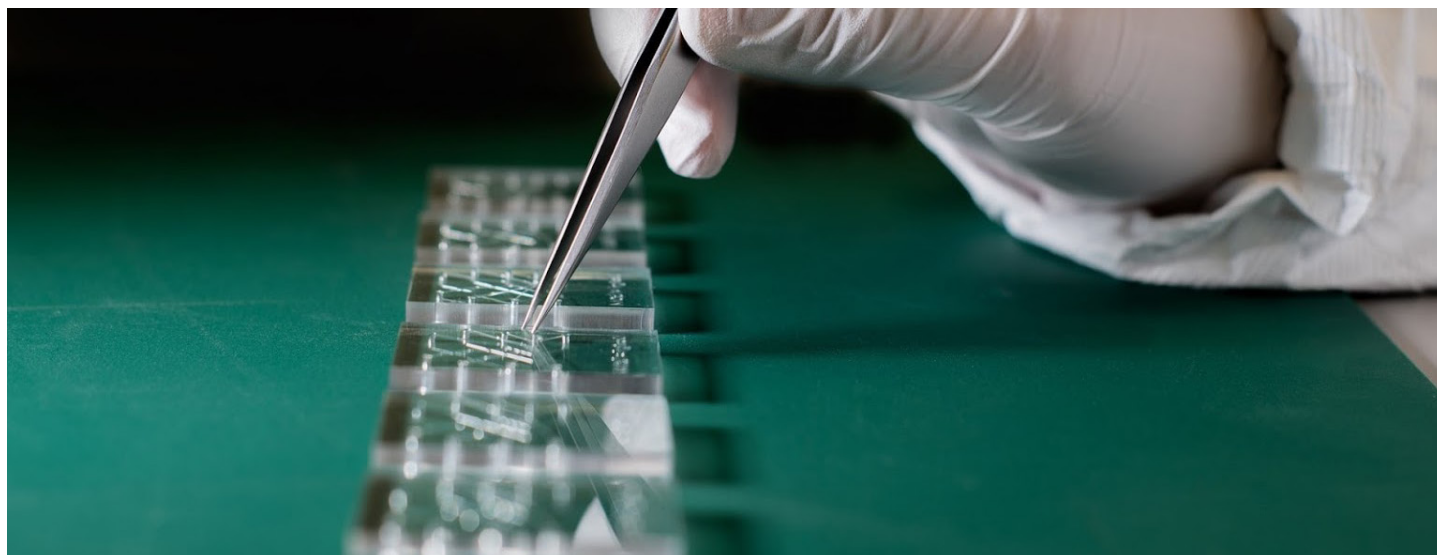


uFluidix
ufluidix.com

Markets:
Global

uFluidix develops, manufactures and sells Lab-on-a-chip (LOAC) devices that use microfluidics technology. LOAC is an emerging field that enables the analysis of small amount of liquid, less than fraction of a droplet. So far, LOAC has been widely explored to develop Point-of-care diagnostics systems for the detection of pathogens such as virus or bacteria in small amount of bodily fluid such as blood prick or urine. LOAC also being increasingly used for organ-on-chip, tissue engineering, single cell sequencing, gene editing and CRISPR, cancer cell capture, fertility aid, and many other applications.

uFluidix owns very specific and enabling know-hows that allows mass production of Lab-on-a-chip devices made of transparent silicone and glass. Its unique manufacturing technology and process result in reliable and reproducible platforms, which is of most importance to its clients. The combination of reliability, low cost, and fast turnaround in the fabrication of prototypes or mass production of microfluidic devices has positioned uFluidix as a top international supplier, directly as a result of its innovative manufacturing technology.



Key Wins: What perhaps makes uFluidix unique is that it has been cash flow positive since early on, and all proceeds have been invested in the company to develop and retain talent, and to equip the company with cutting edge manufacturing and research hardware and software. uFluidix is currently a leading supplier and developer of lab-on-a-chip and microfluidic devices to hundreds of international clients including large pharmaceutical or medical device companies to leading academic institution. uFluidix has established Ontario and Canada as a leader in this domain and continues to grow. uFluidix appears as a top competitors in most market research reports along with European, American and Australian counterparts.

Looking Forward: uFluidix aims to maintain its current market leader position in manufacturing of lab on a chip and microfluidics devices. Seeing the market trend, we are on a 10x growth path in terms of facility, intellectual property, and headcount to be able to keep up with demand.



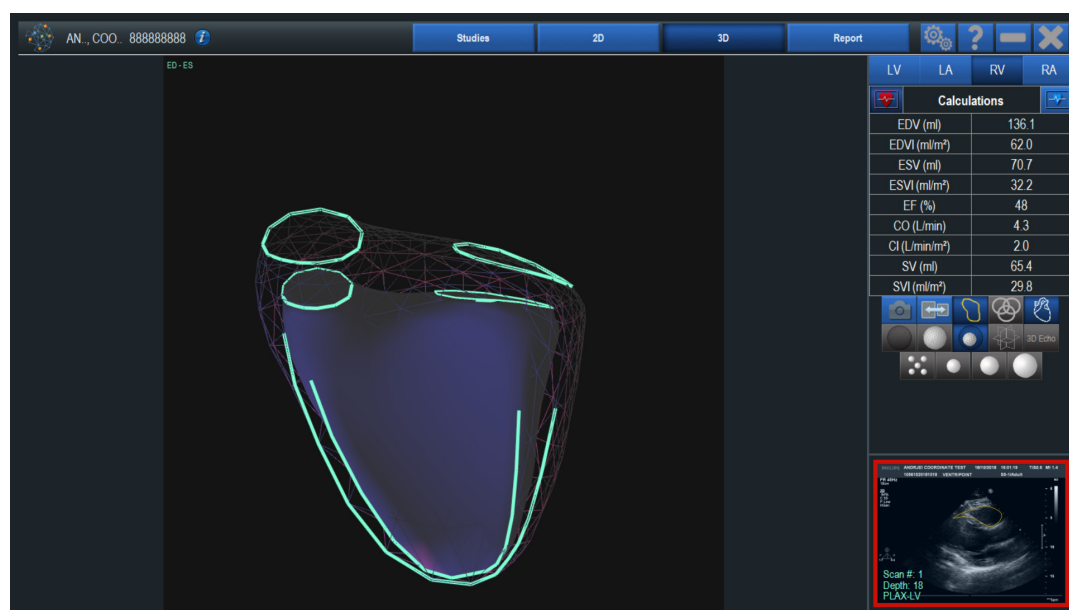
Ventripoint Diagnostics

Markets:

USA, Europe



Ventripoint's VMS+ 3.0 system connects to standard echo machines, the most widely used cardiac imaging technology globally. The system uses a proprietary Knowledge Based Reconstruction (KBR) technology to create 3D images of the heart and calculate volumes & ejection fraction with accuracy equivalent to MRI. With heart disease being the leading cause of death for men and women worldwide, our goal is to become the premier cardiac imaging tool.



Ventripoint is the only company that can provide volumetric measurements for all four chambers of the heart including the difficult to image Right Ventricle using standard 2D echocardiogram images.

Ventripoint is initially focusing on three markets, including pediatric and adult congenital heart disease patients; pulmonary hypertension and oncology.

The system can be used to provide volumetric measurements for cardiac patients rather than sending them for an MRI, which can require sedation and that can be especially overwhelming when the patient is a child.

Key Wins: The company recently received a licence from Health Canada and has already begun selling its system to hospitals across Canada. Ventripoint has also received FDA Clearance and a CE Mark - this is an exciting time for the organization as it launches their global sales & marketing efforts for the VMS+ 3.0 system. Receiving regulatory clearance is a great achievement for the whole team and speaks to their commitment and dedication to the success of the product.

Looking Forward: Having Ventripoint's VMS+ 3.0 system adopted across North America, Europe and into the Middle East.



To learn more about LSO, visit:

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