



Hamilton Health Innovation Check-up: Meeting Minutes

November 2021

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STANDING AGENDA TOPICS:

- **Guest Speaker Discussion:** insights around the experience and expertise of an invited speaker, focusing on a subject that may be of interest to the broader community
- **Communicate:** share recent successes, upcoming events, innovation pipeline and new products, health innovation trends, etc.
- **Collaborate & Accelerate:** welcome new members to community, partnership opportunities, discover programming and resources available to the community, discuss market gaps and challenges, learn about potential funding opportunities, new RFPs issued, etc.

Facilitator & Note Taker
Virtual Location

Alex Muggah, Director, Synapse Consortium
Join Zoom Meeting: <https://zoom.us/j/405351918>
Dial in: +1-647-558-0588,,405351918#
Register here:
<https://us02web.zoom.us/meeting/register/uZQodOyppzoiQnRwfvVuEJtEMUpKPUZPzg>

Next Monthly Check-up: January 31st 9:00 – 10:00am | McMaster Innovation Park (via Zoom)
Please sign up to our [mailing list](#) to receive meeting minutes and other important updates.

Finding collaborative partners for health companies and researchers can be difficult. Synapse has created the [Hamilton Health Ecosystem Directory](#) and the [Health Innovation Partnership Portal](#) (HIPP) to facilitate finding new partners within Canada's leading health research and educational ecosystem located in Hamilton, Ontario.

Minutes for our monthly check-up meetings are not published and are for reference purposes only. We do our best to ensure all information is accurately portrayed, and that no privileged/private information is inappropriately disclosed. Past meeting minutes can be accessed through a public Dropbox, using the following [link](#).

For additional information on any subject, to contact a presenter directly, or should you have an adjustment to make to the notes made here, please contact: Alex.Muggah@SynapseConsortium.com. Updates will be reflected in a revised version of the monthly minutes.

As a result of the COVID-19, all in-person conferences and meetings have been cancelled. We are trying to track down events that will be held virtually and will try to keep our calendar up to date.

If you have an event that you would like listed here, please contact us at: info@synapseconsortium.com

Hamilton Health Innovation: Calendar Highlights

Check out Synapse's [online calendar](#)

December

- Dec 2: [Monthly Community Meeting](#) (London Life Sciences)
- Dec 3: [Closing the Rare Diseases Gap in Canadian Healthcare](#) (LSO)
- Dec 8, [2nd Annual Canadian Innovation From A to Z](#) (CENE)
- Dec 14: [Industry Sector Meeting: Healthcare](#) (Hamilton Chamber of Commerce)

January & Beyond

- Jan 6: [Monthly Community Meeting](#) (London Life Sciences)
- Jan 31: [Hamilton Health Check-up](#) (Synapse Consortium)
- Feb 8-9: [LSX World Congress](#) (LSX)
- Feb 9-11: [2022 OBIO Investment Summit](#) (OBIO)
- Feb 28: [Hamilton Health Check-up](#) (Synapse Consortium)
- Mar 22-24: [Canada SynBio Conference](#) (Ontario Genomics)
- Mar 23: [Synapse Life Science Pitch Competition](#) (Innovation Factory)
- May: LSO Celebration of Success Annual Awards Presentation (Life Sciences Ontario)
- June 13-16: [BIO International Convention](#) (BIO)

Looking to engage the Hamilton Health Ecosystem?



innovation. Learn more about SOPHIE [here](#)

In partnership with Innovation Factory and Synapse Consortium partners, leverage up to \$100,000 to work directly with an academic or hospital partner in the Hamilton ecosystem. Funding will support collaborative projects for Ontario-based life science firms requiring clinical/research expertise, evidence, or data to commercialize their



clinical trial in one of Canada's leading research hospitals. Learn more about HEALTHI [here](#)

Leverage up to \$15,000 in funding to work directly with the Research Administration groups at Hamilton Health Sciences or The Research Institute at St. Joe's Hamilton to create the pre-trial protocols and documents required to undertake a commercialization project or

Time allotted | 30 Minutes

Topic: **Guest Speaker Discussion**

Insights around the experience and expertise of an invited speaker, focusing on a subject that may be of interest to the broader community

Guest Speaker Discussion

Guest Speaker(s):

- [Rob DeWitte](#)
Co-Founder & CEO, [Elarex Inc.](#)

[presentation slides used, and are available for download from the [Health Check-up website](#)]

Discussion

[the following is a synopsis of the discussion, and has been lightly edited for length and clarity]

Introduction & Overview

Our focus at [Elarex](#) is on vaccines and stabilizing them. Interestingly, we started this 2 years ago (Dec 2019), just before the pandemic, and developed a focus on thermal stabilization of vaccines and vaccine candidates (and now bio-pharmacy drugs as well).

Because many vaccines are stuck in a cold chain, this can lead to tremendous costs in developed economies (for both public health administrators and manufacturers). However, there is a tragedy in the developed world, and we see this now with COVID-19 vaccine distribution rates in countries around the world, which of course creates a reservoir of unvaccinated individuals from which new variants like Omicron arise. This is an incredibly important public health need for everyone globally, to have the cold chain addressed. It's also a interest for livestock, but in the interest of time, we'll skip over that market need.

Our at Elarex mission is to enable biologic drugs and vaccines to escape the cold chain. We partner with manufacturers to help them make better products, so they don't get stuck in fridges and freezers.

We are a spin-out from McMaster University – I see some familiar faces on the call. We are so grateful to our partners, and it was a terrific opportunity to start a company within the tremendous infrastructure that the University and Hamilton offers.

To date, we've managed to raise \$2 million in capital, along with \$1.5 million in non-dilutive funding that has us very excited. We are very customer focused, that is our hallmark. We have our first customer and are working on three programs with them to bring products to market in a more thermal-stable form. We've spoken with the lions share of leaders in vaccine and biopharmaceutical development, which has helped us to understand what they need most from us.

Of course, we don't have our head in the sand, and we've seen what's happening with this brand-new class (i.e., mRNA-LNPs) of vaccines that are incredibly effective, and which need to be stored in deep-deep cold chain storage facilities. These are very inefficient and impractical, and we've invested heavily in innovation to stabilize mRNA-LNPs as they have come online.

The Elarex Technology

The technology that came out of McMaster is called a PT120. It is a concoction that you add to your vaccine or drug, which allows you to dry it down. It becomes incredibly stable. The name comes from the two ingredients

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(one is a P and one is a T). It is just as effective at -80 as +40 degrees. Thus, it offers 120 degrees of stabilization. The technology is very simple and uses safe ingredients.

Our technology is active and originated from proof of concept on viruses (vaccines and viral vectors) and was then extended to proteins (vaccines and biopharmaceuticals). Both of these are large markets (\$300 billion combined). We have issued 3 patents (+divisionals, continuations) on our technology.

We're really excited about being able to work with the McMaster Viral Vector Lab, leveraging the SOPHIE program to continue our development work – in particular driving forward with VSV and Adenovirus. These two vectors are the ones that are used for the Ebola vaccine – which is also subject to an ultra-cold chain.

Finally, am really excited about applications around mRNA-LNPs (vaccines and genomic medicine), where we have developed a second technology platform – quite distinct from PT120. This technology shows great promise in stabilizing lipid nanoparticle vaccines. Our ultimate goal is to get them stabilized at room temperature or a standard fridge. This has now been supported by a \$1 million grant from the Bill & Melinda Gates Foundation. We learned earlier in November that we've received the order from them.

Positioning the Technology

To position what the technology offers – in the case of proteins, we've been working with industrial partners who have been dealing with a product that is simply not functional at room temperatures. Through the application of our technology, we've been able to extend the half-life 20 fold, but we're about half of what we need to do. So while we've made progress, we still have some work to do.

Early data on the mRNA-LNPs technology suggests that we'll be able to achieve a projected 1.5 year of half-life stabilization in the fridge, as compared to the deep freeze. This would obviously be a significant advance in getting these products out into the community.

Elarex Team

We're really proud of the [Elarex team](#), which collectively has more than 80 years of experience developing and commercializing technology. We have Brent here with us today (Director, Partnership & Product Strategy) who runs points on grant activities and helps with raising money. Vicki Ringelberg has just joined us as the CFO, and we've got Jody Beecher (VP R&D) who joined from the bay area in California. Geoff Lumby is reaching out to customers constantly to help us stay customers focused as the Manager, Industry Engagement. It's really exciting to be working in such an exciting area with such a strong team.

Success in Raising Capital

There are always some challenges that face companies at our stage. Capital is always a challenge. We were fortunate to have first line capital from a local angel group, which allowed us to leverage some NSERC funding and start the virtual cycle of raising capital. To date, we've raised about \$2 million in pre-seed investment capital.

It's the deep partnership with Wendsley Lake Corporation that has made all the difference for us. They are a family office based in Toronto, who do some biotech investing as part of the venture piece of their portfolio. They have about 12 companies they have invested in – and we're really happy about being one of their partner companies. They see the world we do, and it's important to find investors who have the same value and patience that you have – since standing up a life science company takes time.

We've also had \$1.5m in grants and non-dilutive support. This includes NSERC, FedDev Ontario (through SOPHIE

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program), as well as McMaster University which invested directly in Elarex. These add another layer of our engagement and relationship with the University and the local ecosystem. Additionally, an injection of capital from OCI was the reason we were able to pursue the mRNA-LNP opportunity, which has culminated in the investment from the Bill & Melinda Gates foundation program.

Looking Forward: Elarex Strategic Plan

Our game plan, what is the strategic roadmap to build a company like ours from scratch, takes us from Foundation (2020), through Strength (2021-22), to Scale (2023-25) and finally Exit (2025-30).

2020 was our Foundation year, when we were founded. We got our first customer, our first program going. Very small operations, and very virtual. Bleeding into 2021, we were able to complete a pre-seed capital raise (\$2M) – which allow us to build out our team, strengthen IP and go after the mRNA-LNP opportunity.

We're currently half-way through the next chapter – which we are calling building Strength. This year and next year we're focused on developing a strong beachhead in each of those target markets that we've spoken about (i.e., proteins, viruses and mRNA-LNP). The focus is on product-market fit. We're speaking with our customers so that we know what they're looking for – and what we have (and closing the gap). We're working in the laboratory to close that gap and bring back to the customers exactly what they're looking for. We're using the tremendous facilities at McMaster, and the management team is virtual. We're just in the process of kicking off a \$10 million seed fund raise (hoping that McMaster can be an anchor of this as we build it out), but will take a little while to close this amount.

In addition to advancing the technology and delivering for customers, the big strategic focus is to identify a singular focus for Elarex – a company of our size/scale can't pursue all three target markets at the same time. By the end of 2022, we will select which of the three products that will be our core focus of Elarex going forward. We'll need to determine what to do with the other products, but we don't want to spread ourselves too thin.

That will allow us to be ready to propel us into the Scale phase by the end of the year. We'll be teed up to pursue a Series A, to adapt the business model, focus and scale operations and then prepare for a strategic acquisition (Exit). It'll be busier time operationally, but a little simpler strategically.

Reflecting on the Elarex Story

I would like to take a moment to reflect on some of the challenges bringing a company up from scratch.

I think the first challenge is capital. Without some dollars you can't going, but don't need many to get started. That was the first pivotal moment. We didn't even take the license from McMaster until we had the first capital / soft circle in place. There was a dance to make sure everything was lined up before we took a step together. And it never ends, the search for capital.

The second challenge was how to navigate and tap into the tremendous amount of support that is available in the community (i.e., grants, support from people and institutions like those on this call). It can be a little overwhelming, as it is not always clear how to navigate, how things apply. This takes a lot of time and energy to sift through to identify which priorities that we want to go after.

Most important, is the team. Collecting the right people into the organization, with the right mix of experience and values. People who have the joy of the journey, who have the right skills that can be applied in the laboratory. Our team has worked together in the past, which resulted in instant trust, and it makes it easier to go quickly. But you need to add new people to the team, otherwise you get a tunnel vision approach. A very happy

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accident was to meet Jodi who joined us, bringing an external view and different experiences/background to what we are doing. When I look at the quality of the talent for laboratory in the Hamilton region – it's true what has always been said: there is a tremendous amount of skill and a lot of people who want to commercialize IP. We've been impressed by the quality of candidates, which allows us to be selective about who we bring into the team.

Those are some of my thoughts and observations on this journey I've been on for the last two years. Thank you and happy to answer any questions

Question & Answers

Question: As your journey progresses, and you're focusing on one product – do you envision where Elarex will be manufacturing PT120 or mNRA stabilizer in Hamilton or Canada? Or do supply chain considerations and customer considerations means that you'll have a global footprint?

Answer: We are a technology and design supplier. As a result, we don't carry the regulatory burden associated with products that use this technology. That will be the legal responsibility of the manufacturer of the drug or vaccine. We will enter into their supply chain as a design supplier. All of the ingredients in our formulation are already available and accessible in the public markets – and are all on the list of products considered generally safe by the FDA. One of the ingredients is only for oral administration, so we'll have some work on toxicity and with the manufacturer to get them to an insipient grade for injections. After that, our responsibility with respect to the supply chain of goods will end.

Our business model is that we work with the development team to improve the design of their product. Once that is proven, we then help them transfer that design into their manufacturing process. There is a lot of tech transfer, in exchange for license fees, milestone payments and royalties. From an economic perspective, it's a really capital efficient business model – we can have a relatively small team that can impact many drugs over time. This allows us to generate royalty streams on many products over time. The average vaccine will generate \$1b in sales each year (1% of one of those, will keep us going). The investors like that we can position ourselves for big outputs, and we can play the odds - because only 1 in 3 drugs in clinical trials will make it to markets – so we can play with multiple drugs at the same time, without being all in on a small number of companies.

Question: Impact on emerging markets was interesting. Could you speak to how Elarex might support last mile distribution (especially for livestock). Is this social impact playing a part of your strategy in emerging markets?

Answer: The appeal to investors we focus on the economic returns, but also the impact investing component. There is a humanitarian and environmental impact of what we're bring forward – which helps us find the kinds of investors that we want to work with. When we look at go-to-market strategy, we've found that the animal health space (at this stage) is too fragmented for us to efficiently go to market. We want to support them, but contrast that with human vaccines and pharmaceuticals – a largely consolidated industry – where we know who to call, what conversations to have, and if we pick a project it will be meaningful. So give us a couple of years, and in the Scaling stage we can spool that up. One thing that we need will be a partner who works as an integrator/consolidator in that space. Then we can use them as a channel to go to market on a larger number of projects in this fragmented space. We have to focus, and that's where we are right now.

Question: What is the most useful, or valuable, support that you've received from the ecosystem as you started up?

Answer: Innovation Factory, great space and getting connections. MILO (McMaster's tech transfer group) has provided ongoing engagement, especially around managing the IP estate (work that never ends) – we lean on this group, as part of the team.

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At McMaster the facilities are important – we have access to two spaces (BSL1 and BSL2). There is no way we could convince an investor to support us to build this space. It would cost more than all the money that we've raised thus far. Without that sort of hosting arrangement with the university, it would be very difficult to build our company. Perhaps when we're a little more mature, we can rent pre-equipped space (e.g., at the McMaster Innovation Park).

The other thing the University has, in addition to facilities, is expertise and equipment. All of the speciality gear that we need to use once in a while, which we can pay a service fee to have some analysis done. It's all seamless. We don't have to imagine acquiring that capital equipment – which is another thing investors are reluctant to support.

There are a lot of resources that have been critical – but the one that would be hardest to do without, is the hosting at McMaster University. We hope to be good guests and contribute to the ecosystem going forward.

Time allotted | 15 Minutes

Topic: **Communicate**

Recent successes, upcoming events, innovation pipeline, new products, health innovation trends, etc.

Discussion	Presenter
<p>Announcement on new Executive Director of the Research Institute of St. Joe's Hamilton</p> <p>Ms. Sarah Howe will be joining the Research Institute of St. Joe's Hamilton as Executive Director Research, effective Oct. 25, 2021.</p> <p>Sarah is an innovative leader who comes with extensive experience fostering research and innovation in academic and healthcare environments, as well as developing strategic business operations and initiatives.</p> <p>She comes to St. Joe's from York University, where she has held a number of progressive leadership positions through the past decade, most recently as Assistant Vice-President, Innovation and Research Partnerships, and previously Director, Innovation York, and Associate Director, Intellectual Property & Research Agreements. Previous to that, Sarah was in the Business Development Office of The Hospital for Sick Children. She is a strong change agent, who has successfully nurtured industry partnerships, launched commercialization projects and developed entrepreneurship enterprises.</p> <p>Sarah has an MBA in Management of Technology and Innovation from Ryerson University, Ted Rogers School of Management, and Honours BA Psychology from Trent University.</p> <p>Sarah's leadership will be an excellent addition to the repertoire of skills and expertise at the Research Institute, all of which will continue to foster a culture of exploration, innovation and inquiry at the Research Institute of St. Joe's.</p> <p>The Executive Director (ED) Research is instrumental in collaborating with key stakeholders, including its academic affiliates such as McMaster University and Mohawk College, and research community partners such as Hamilton Health Sciences and member organizations within St. Joseph's Health System.</p> <p>The Research Institute of St. Joe's Hamilton is an academic and research community focused on improving the quality of life for our patients and community members, as well as those diagnosed with a diverse range of medical conditions around the world.</p>	<p>Lehana Thabane (St. Joe's)</p>
<p>EmergConnect raises \$350,000 to fund emergency room wait time predictor</p> <p>EmergConnect, a Hamilton startup, has raised \$350,000 CAD in what the company classified as an all-equity, SAFE, pre-seed investment round that closed in September. The financing was led by Loyal VC, a global startup index fund, and saw participation from Maple Leaf Angels and Front Row Ventures.</p> <p>With its mission to "revolutionize emergency care," EmergConnect offers a mobile platform that allows patients to register, triage, and get an individualized prediction of their wait time in emergency rooms (ERs). The app can be accessed by patients at home, in the ER, or in a virtual care setting.</p> <p>Ron Galaev, EmergConnect's founder and CEO, started working on the company in the summer of 2020 with the assistance of Health Ventures, an experiential learning program that introduces</p>	<p>Alex Muggah (Synapse)</p>

Discussion	Presenter
<p>students to the health innovation landscape based in McMaster University. The company was founded in August that year, and is anticipating to launch its flagship product in the coming months, Galaev told BetaKit.</p>	
<p>Elarex Inc. receives \$1.2 million grant to stabilize liquid mRNA vaccines</p> <p>Elarex Inc. has been awarded a grant from the Bill & Melinda Gates Foundation, for \$1M USD to extend our work in stabilizing liquid mRNA-LNP vaccines.</p> <p>mRNA-LNP (lipid nanoparticle) vaccines for COVID-19 are highly effective and have enabled the prosperous economies to return to a degree of normal economic and social activity. However, they require a sophisticated cold chain involving storage at cold and ultra-cold temperatures due to their intrinsic instability. This cold chain requirement is a barrier to dissemination of vaccines to a large segment of the world’s population, leaving far too many individuals unprotected.</p> <p>Development of liquid thermostable solutions for mRNA-LNP vaccines is an essential breakthrough needed to overcome this cold chain hurdle. This grant will enable Elarex to deliver the essential technological knowledge required to prepare mRNA-LNP vaccines that can be stored in liquid form.</p>	<p>Rob DeWitte (Elarex)</p>
<p>McMaster’s Karen Mossman (VPR Research) named one of the 100 Most Powerful Women in Canada</p> <p>For the two decades she’s been at McMaster, Karen Mossman has forged an international reputation as one of Canada’s finest virologists and emerged as an institutional leader. She was the first woman to hold the position of Chair in the 50-year history of the Department of Biochemistry and Biological Sciences and was the university’s unanimous choice to take on the Vice-President, Research role in July of 2020.</p> <p>Her name has now been added to the list of the 100 Most Powerful Women in Canada, joining a cadre of the country’s highest achieving female leaders in the private, public, and not-for-profit sectors.</p> <p>Mossman has established an internationally recognized research program in virology, with a focus on how viruses infect humans and evade our immune system. Her team — in collaboration with clinical colleagues in Toronto — was among the first in Canada to purify the SARS-CoV-2 virus from an infected patient.</p> <p>This discovery enabled many studies to understand how infection occurs, why our immune response varies among individuals, and how we can use this information to develop next-generation vaccines and antiviral therapies.</p> <p>Read the full article here</p>	<p>Alex Muggah (Synapse)</p>
<p>McMaster Innovation Park Establishes North America Life Sciences Capital Markets Advisory Council</p> <p>McMaster Innovation Park (MIP) today announced the establishment of the North America Life Sciences Capital Markets Advisory Council ("Council", or "the Council").</p> <p>"Canada is prolific in the creation of intellectual property in life sciences, but too often that IP</p>	<p>Ty Shattuck (MIP)</p>

Discussion	Presenter
<p>either never gets commercialized, or it leaves Canada just at the point when life sciences companies are poised to create value. The Council will work on a national stage to develop recommendations to address the capital constraints that limit the potential value creation and economic growth of life science ventures," Shattuck explained.</p> <p>He continued, "the Purpose of the North America Life Sciences Capital Markets Advisory Council is to help identify, attract, grow and retain life sciences companies in Canada by bringing life sciences innovation together with the right sources of capital at the stage when that capital is needed, and in the quantum required. By engaging capital markets leaders, we aspire to better align Canada's diverse life sciences ecosystem and Canadian capital markets in ways that create economic and societal value."</p> <p>"The Council seeks to enhance the connective tissue between life science innovation and domestic capital markets," commented Ty Shattuck, Chief Executive Officer of McMaster Innovation Park. He added, "The North America Life Sciences Capital Markets Advisory Council at MIP will be unique in Canada. It includes individuals and organizations highly experienced in financing activities that support life sciences innovation and scale-up, especially small and medium-sized enterprises with a growth imperative."</p>	
<p>Hamilton POV Podcast: Altus Assessments scales from local start-up to award-winning, national growth!</p> <p>We all want a physician that has exceptional medical skills and education, but we also want to be in the care of someone who embodies empathy and kindness as well as someone who is well respected within the healthcare ecosystem. This is where Altus Assessments steps in with their program management and data analytics solutions specifically for healthcare education. From admissions to graduation, Altus's HigherEd Intelligence platform provides the tools and data needed to run great programs and train even better healthcare professionals.</p> <p>In our second episode of the Innovation Factory, POV Hamilton Takeover, David Carter Executive Director of Innovation Factory joins Kelly Dore, CEO of Altus Assessments to discuss Altus Assessments' recent successes with the company. From bootstrapping only a few years ago to being named as a company to watch on Deloitte's Technologies Company's Fast 50, and most recently gaining their first major acquisition. Find out how they did it all by listening here!</p>	<p>Jen Gauvreau (Innovation Factory)</p>
<p>Ontario Genomics Launches Landing Pad Investment Program</p> <p>Call for genomics or engineering biology start-ups solving global challenges in therapeutics, future of food, biomaterials, biological tools, diagnostics and bioinformatics/AI-based technologies</p> <p>The Ontario Genomics (OG) Landing Pad Investment Program (LPIP) seeks to provide investment and support to help Ontario-based genomics and engineering biology companies to start and scale successfully. To enable this, OG is offering support to start-ups that attend an approved International Accelerator Program and return to Ontario upon completion. The Landing Pad Investment Program partner, IndieBio (San Francisco & New York), offers a minimum of US\$275,000 upon acceptance to their program and is backed by the global venture capital firm SOSV.</p> <p>Program Highlights: (1) \$100,000 investment from Ontario Genomics, (2) mentorship in a variety of areas, and (3) connections to lab space</p>	<p>Britney Hess (Ontario Genomics)</p>

Discussion	Presenter
<p>Mohawk College Whitepaper: Beyond the prototype: Opportunities for additive manufacturing in low-volume production</p> <p>Beyond the prototype: Opportunities for additive manufacturing in low-volume production. When 3D printing makes the mainstream news, it is usually to showcase highly conceptual products meant to push the limits of the technology. The perception is that the process is dedicated to creating prototypes—one-of-a-kind, often pricey models lacking in mechanical soundness and quality.</p> <p>The reality of additive manufacturing is that it has game-changing potential for manufacturers who are focused on low-volume production, especially when speed or customization are key priorities.</p> <p>So, should your businesses leverage the low-volume opportunities made possible by additive manufacturing? This white paper from AMIC at Mohawk College will help you understand the use cases for when additive manufacturing makes sense for low-volume production- and when it doesn't</p>	<p>Andrea Johnson (Mohawk College)</p>
<p>McMaster Innovation Park CEO part of Innovation - TheAgenda on TVO</p> <p>When compared to other countries, Canada has not been doing well when it comes to innovation. To provide insights as to why, we invite Graeme Moffat, chief scientist, System 2 Neurotechnology; Ty Shattuck, CEO, McMaster Innovation Park; Leah Lawrence, president and CEO, Sustainable Development Technology Canada; and Huda Idrees, founder and CEO, Dot Health.</p>	<p>Alex Muggah (Synapse)</p>
<p>Allarta launched out of McMaster - Every 100 years, the world slays diabetes</p> <p>Exactly a century ago on November 10, 1921, Frederick Banting and Charles Best conducted their first successful experiments with insulin to treat animals with diabetes. A hundred years later, a Hamilton, Ontario company, Allarta Life Science, is working not just to forestall diabetes the way insulin does, but to create a functional cure through cell-based therapies.</p> <p>That work comes not a moment too soon. Diabetes today is truly an epidemic. It now affects more than 34 million Americans (or 10.5% of the US population) and, in the last 20 years, the number of adults diagnosed with diabetes has more than doubled. Globally, the third highest risk factor for premature death, after tobacco use and high blood pressure, is high blood sugar.</p> <p>Allarta is achieving breakthroughs on the road to curing diabetes by using cell-based therapies. Some of the most deadly diseases of our time like diabetes, hemophilia, and rare incurable gene disorders, are caused by the patient's cells not doing what they're supposed to do.</p> <p>Cell-based therapies introduce healthy new curative cells that do the work the body requires, such as producing insulin for diabetes. Once introduced, they can provide much-needed medicine on demand, and perhaps forever. This can make having to live with chronic diseases and their ceaseless daily disciplines, titrations, and life-threats a thing of the past, the way polio and measles are today.</p> <p>Cell-based therapies are in their early stages, and because they are new, there are still many challenges, from making effective cells, to preventing their rejection via the immune system. That said, they are one of the most promising disciplines in modern science and medicine.</p>	<p>Maria Antonakos (Allarta)</p>

Discussion	Presenter
<p>Synapse, Hilvy, NERv and Allarta featured in LSO Success Stories</p> <p>Life Sciences Ontario (LSO) has featured several Ontario life sciences organizations and companies that are producing astounding innovations across our sector. Four organizations with deep connections into Hamilton were profiled, including Synapse, Hilvy, NERv and Allarta. Read about how these businesses are fuelling our economy – and how we can help them reach their full potential to accelerate life sciences into a major economic powerhouse.</p>	<p>Andy Donovan (LSO)</p>
<p>Bay Area Health Trust Seeking Partners for New COVID Specimen Stabilization Medium</p> <p>McMaster Molecular Medium (MMM) is a ready-to-use, temperature-stable sample collection and storage medium that inactivates and stabilizes coronavirus specimens from the collection site to the laboratory. MMM enables safer sample collection, preserves nucleic acid and improves workflow. MMM can also work with other viruses beyond COVID.</p> <p>Bay Area Health Trust is seeking interested parties that have commercial activity in the sample collection kit market including but is not limited to: Manufacturing; Regulatory filing(s); Distribution & sales; and Sub-license</p> <p>Contact John Hands, Director Business Development, for more information: handsj@baht.ca</p>	<p>John Hands (BAHT)</p>
<p>Weston Family Foundation funds \$12M initiative to advance the science of healthy aging</p> <p>The Weston Family Foundation is awarding a \$12-million research grant to the Canadian Longitudinal Study on Aging (CLSA), hosted at McMaster University, for a new initiative that will shed light on the many factors that influence brain health as we age, including lifestyle and the human microbiome.</p> <p>The Healthy Brains, Healthy Aging Initiative will feature a cohort of 6,000 research participants who are currently enrolled in the CLSA. It marks the first time a national study of aging in Canada has introduced both brain imaging and microbiome analyses to investigate cognitive aging in the population over time.</p> <p>The goal of the six-year Healthy Brains, Healthy Aging Initiative is to enhance the CLSA platform with longitudinal data from magnetic resonance imaging (MRI) of the brain and microbiome analyses of the gut, to help researchers examine how diverse lifestyle, medical, psychosocial, economic, and environmental factors as well as changes in the microbiome correlate with healthy aging outcomes. This data will be critical to the future development of screening and prevention strategies that promote brain health for aging Canadians.</p> <p>The Weston Family Foundation has set an ambitious goal of improving and maintaining brain health in its overall efforts to improve the well-being of Canadians. The Healthy Brains, Healthy Aging Initiative and the resulting datasets could prove pivotal in these efforts.</p> <p>With more than 50,000 participants, the CLSA follows Canadian men and women for 20 years to better understand why some people remain healthier than others as they age.</p>	<p>Alex Muggah (Synapse)</p>
<p>ImaginAble Solutions Wins Top Prize at ATS Labs Demo Day</p> <p>ImaginAble Solutions Inc., The Forge client, has been recognized for their valuable contribution to improving the quality of life for people with disabilities using their Guided Hands™ assistive device that enables people with limited fine motor skills to paint, draw, write, and use a tablet</p>	<p>Riley Moynes (The Forge)</p>

Discussion	Presenter
<p>or computer. Lianna Genovese, founder and CEO of ImaginAble Solutions Inc., has won the first-place prize taking home \$5,000 at the 2021 Demo Day pitch competition hosted by ATS Labs. ATS Labs is Canada's first accelerator for accessibility, mental health, and ageing tech startups. During the Demo Day pitch competition, eight graduates of ATS Lab's inaugural three-month cohort program pitched to a panel of expert judges for a chance to win \$7,500 in prizes.</p>	
<p>Hamilton's VoxNeuro tech points to data-driven future of brain health (Canadian HealthcareTechnology)</p> <p>VoxNeuro is ready to change the way brain health is managed and treated across the globe. Today's cognitive assessments are reliant on subjective measures like patient self-reporting and observed behaviour, opening the door for faulty results. The types of brain health assessments using objective measures that are available today, such as MRI or CT, only scan for structural issues (e.g. lesions in brain tissue, brain bleeds, or damage to the skull) and cannot provide an understanding of a brain's cognitive health.</p> <p>Enter VoxNeuro. The Canadian neuroscience and health tech company has developed a 30-minute, non-invasive Cognitive Health Assessment that uses electroencephalography (EEG) to record tens of thousands of data-points from a patient's brain waves while they perform a series of tasks on a computer. The company's medical software, the Cognitive Health Assessment Management Platform (CHAMP), then rapidly analyzes, transforms and compares the patient data to a database of healthy cognitive function. This is a procedure similar to that used with MRI and CT scans, which compares a patient's brain structure to a healthy brain structure database. The result of VoxNeuro's assessment is a report that objectively scores the patient's cognitive function in the areas of attention and concentration, information processing, and memory.</p> <p>With its success in southern Ontario, VoxNeuro now seeks to continue scaling across North America. This fall, the company launched in the USA through a network of diagnostic imaging centers in New York state. It will also soon be deploying at the first of many neurology clinics in the south-eastern United States where its assessment will become available in the next 12 months.</p> <p>VoxNeuro plans to be operational in approximately 100 clinics in North America by the end of 2022. Read the full Canadian Healthcare Technology article here</p>	<p>Gay Yuyitung (MILO)</p>
<p>Engaging Innovation Advisors @ Innovation Canada</p> <p>if you are interested in exploring various government support programs, please reach out to Innovation Canada. Our team of Innovation Advisors are available to connect with you one-on-one. It's a free service to all Canadian companies. You can reach me at Kusala.Jayasuriya@canada.ca.</p>	<p>Kusala Jayasuriya (Innovation Canada)</p>
<p>Hamilton Chamber Industry Sector Meeting on Healthcare on December 14th</p> <p>Join the Hamilton Chamber's upcoming Industry Sector Meeting to connect with others, expand your network and find new business & partnership opportunities. The Industry Sector Meetings bring together companies in similar industries to learn from one another, network, and discuss: Trends impacting the sector; Labour sourcing, training and long-term development; and Policy and regulatory updates</p> <p>Featuring Panellists:</p> <ul style="list-style-type: none"> Lindsay Williams, Vice President Managing Director at Stryker Canada 	<p>Paul Hawkins (Hamilton Chamber)</p>


Discussion	Presenter
<ul style="list-style-type: none"> • Andy Donovan, Director of Member Engagement & Business Development at Life Sciences Ontario • Jessica Lunshof, Co-Founder & President at TAMVOES • Ron Galaev, Founder & CEO, at EmergConnect • Moderated by Alex Muggah, Director at Synapse Life Science Consortium 	
<p>OBIO's Early Adopter Health Network (EAHN) is now accepting applications for 2022 projects (deadline January 7th)</p> <p>Successful applicants are eligible for up to \$250K in funding to support evaluation and procurement activities. Please circulate this call for application and encourage relevant companies in your ecosystem to apply and get funded.</p> <p>EAHN matches Canadian companies that have innovative commercial-ready health technologies (from medical devices and diagnostics to therapeutics and software platforms) with member health organizations (from acute and primary care to long-term and community care) to support evaluation, procurement, and dissemination.</p> <p>Applicants are assessed on the readiness of both their technologies and their organization. The application process selects for companies that are prepared to have their technologies evaluated and procured in a health organization setting and whose technologies will provide value as measured against the Quadruple Aim of health care (improve patient experience, health of populations, per capita cost of health care, and healthcare staff satisfaction).</p> <p>The first round of applications closes on January 7, 2022. Companies can visit the EAHN website for more information and how to apply</p>	<p>Bibaswan Ghoshal (OBIO)</p>
<p>Experience Ventures - Student Placement Experience Building with McMaster University</p> <p>McMaster is part of an initiative to provide paid student placements for short projects (up to 80 hours) with companies. Program is called Experience Ventures, which is funded by ESDC (federal government) to support students with \$825 to work on a project with a company (for-profit and not-for-profit organizations are both eligible). Students can be from any discipline and projects are defined by the company.</p> <p>If you are interested, please feel free to ask me or Manveetha (muddalm@mcmaster.ca) to help you post a job on the student job board.</p>	<p>Gay Yuyitung (McMaster)</p>
<p>Human trials for 2 inhaled COVID-19 vaccines to start in Hamilton in 2022 (CBC)</p> <p>Human trials are set to begin early next year at an Ontario university for two next-generation COVID-19 vaccines that can be inhaled.</p> <p>Fiona Smaill is a professor of pathology and molecular medicine at McMaster University in Hamilton and lead researcher for the clinical trials. She said on Tuesday that both vaccines, which would be the first inhaled vaccines, are "approved for study in Canada." They're designed to combat variants of concern and are delivered by inhaled aerosol, targeting the lungs and upper airways, where respiratory infections begin.</p> <p>"The novel part of our vaccine is that we're administering it by inhaled aerosol, and so the immune response that is generated in the lungs," Smaill told CBC Hamilton.</p>	<p>Alex Muggah (Synapse)</p>


Discussion	Presenter
<p>"Not only do we have the vector that is unique, but we also have the route of administration and the generation of what we call a mucosal immunity, which we believe is a very effective form of immunity against respiratory viruses like COVID."</p> <p>Read the full CBC article here</p>	
<p>MGD-HICE Educational Webinars & DevTank Meetings</p> <p>Operating out of the Michael G. DeGroot School of Medicine at McMaster University, the Michael G. DeGroot Health Innovation, Commercialization & Entrepreneurship (MGD-HICE) aims to accelerate the exploration of health innovation opportunities and creation of socioeconomic impact.</p> <p>Check out the full suite of programming here</p>	Sarra Lal (MGD-HICE)

Time allotted | 15 Minutes

Topic: **Collaborate & Accelerate**

Partnership opportunities, programming and resources available to the community, market gaps and challenges, learn about potential funding opportunities, discuss new RFPs issued, etc.

Discussion	Presenter
<p>Want to Connect with your Ecosystem: Check out the Synapse Health Ecosystem Directory</p> <p>Synapse has created a Director of +200 private- and public-sector organizations in the Hamilton (and regional) health innovation ecosystem which work alongside the Synapse Consortium to support of the commercialization of health innovation. Learn more about what others are up to, and identify potential collaborative partners at: www.synapseconsortium.com/directory</p>	<p>Alex Muggah (Synapse)</p> 
<p><u>Engaging Mohawk College's IDEAWORKS</u></p> <p>IDEAWORKS projects in general (of which, MEDIC is one area) which was provided and may help with identifying if Mohawk College can support our companies with projects. This might be a refresher for some or all of us, but highlighting nonetheless:</p> <p>Tips for Innovation Factory Referrals to IDEAWORKS</p> <ul style="list-style-type: none"> • Our four innovation centres (MEDIC for Digital Health, AMIC for 3D printing, EPIC for energy efficiency related projects and MTIC for Medical Technologies related challenges) are active during this time- but note that due to existing commitments, are often looking at projects one month to three months in the future. • Other areas of expertise are on a case by case basis, especially this year, with a number of our faculty committed to teaching and revamping courses • The ideal applied research partner is one that is in the scaling stage; they have some revenue and can meet a lot of the funding agencies criteria for funding or want to self-fund a research project. Typically what we look for is 2+2; two years in business with two employees • We recommend working with us on projects that aren't mission critical but can help the company explore an innovative idea. <p>What about start-ups?</p> <ul style="list-style-type: none"> • If they require a few tips or advice, we can normally chat with them (or if there is a critical mass -like five or six companies in a space-, we can do a webinar type discussion). • They can see about the availability of capstone projects, where students generally work on projects for a four month period, for free, in order to get course credit. It may help with MVPs. <p>Contact Andrea Johnson for more information: andrea.johnson4@mohawkcollege.ca</p>	<p>Andrea Johnson (Mohawk College)</p>
<p>The CONNECTION - McMaster University Online Partnerships Portal!</p> <p>The Connection is a new program offered by McMaster's Office of Community Engagement (OCE) designed to facilitate online, mutually beneficial partnerships between campus and local Hamilton community organizations. As communities look for ways to adapt and rebuild in response to COVID-19 The Connection will make the process of addressing Hamilton community and University identified needs easier by providing online tools and resources. It's a way for everyone who sees themselves as part of a collective community-campus effort to connect and respond to COVID-19 locally</p>	<p>Gay Yuyitung (MILO)</p>

Discussion	Presenter
<p>Collaborating with McMaster Institute for Infectious Disease Research (New Intake Form)</p> <p>In addition to our ongoing COVID-19 research initiatives at McMaster, the Michael G. DeGroot Institute for Infectious Disease Research is mobilizing its strong research community to assist Canadian researchers and businesses in their attempts to find solutions to the international crisis. The IIDR teams have the capacity to assist with the testing of anti-viral compounds and products, as well as the testing of products or devices aimed at sterilization. This includes new methods for sterilizing personal protective equipment. They are able to offer services in the following areas:</p> <ul style="list-style-type: none"> • BSL2 cell culture infection with representative human coronaviruses; • Testing of methods or products that are designed to inactivate the virus; • Biochemical/enzyme studies with anti-viral agents. <p>Cell culture and small animal models of SARS-CoV-2 infection can be performed in McMaster’s secure biosafety level 3 facility. Availability for BSL3 testing is very limited, and projects requiring this type of work will be screened and prioritized by an internal committee.</p> <p>If you have a product or innovation that you are interested in pursuing further and feel that we could be of assistance to you, please reach out to us through the online form. Each project will be evaluated to determine if McMaster has the capabilities and capacity to perform the required testing.</p>	<p>Gay Yuyitung (MILO)</p>
<p>Hamilton-based technologies available for licensing</p> <p>Each year researchers at McMaster, Hamilton Health Sciences, and St. Joseph’s Healthcare Hamilton make new discoveries that lead to new products, services, or process improvements to help companies expand their pipeline or increase their productivity. The business development team at MILO is here to help you tap into and access these discoveries as efficiently as possible. MILO’s objective is to support effective transfer of these technologies to companies for social and economic benefit and enable the continued growth of research excellence at the institutions.</p> <p>Please contact Glen Crossley, Associate Director, Business Development and IP or search the list to see some of the technologies currently available for licensing or further R&D</p>	<p>Glen Crossley (MILO)</p>
<p>Hamilton Innovation Partnership Portal</p> <p>Synapse has created the Hamilton Innovation Partnership Portal (HIPP) to make the process simpler and more streamlined to find new partners within Canada’s leading health research and educational ecosystem. It is a way for companies to interact with the Hamilton community. A streamlined approach, to have Synapse represent everyone. We’ve set up an intake form for companies to direct request to the portal. Portal is online through the Synapse website: http://synapseconsortium.com/partner/</p>	<p>Michael Jones (Synapse)</p> 
<p>Submit Community Events on the Innovation Factory Calendar</p> <p>Our calendar is home to Innovation Factory workshops and networking events as well as events from the community which help support our local entrepreneurs and businesses. If you have an event which may a fit, please submit it and we will review it within five business days.</p>	<p>Annie Horton (Innovation Factory)</p>

Discussion	Presenter
<p><u>Government Call for Innovative Solutions</u></p> <ul style="list-style-type: none"> • Call for Suppliers (Federal): In support of the Government of Canada’s whole-of-government response to Coronavirus disease (COVID-19), they are asking suppliers about their ability to provide a variety of products and services. • Call for Suppliers (Ontario): request for information from companies able to supply emergency products to help fight Coronavirus • Federal Government Call to Action for Canadian Manufacturers to support businesses to rapidly scale up production or re-tool their manufacturing lines to develop products made in Canada that will help in the fight against COVID-19. Please refer to the product specifications and requirements for Canada’s medical supply needs. • Health Canada will facilitate earlier access to a vaccine, or therapeutic product for COVID-19 to expedite the review of COVID-19 related health product submissions and applications. • Government of Canada is speeding up the importation and sale of medical devices used to diagnose, treat or prevent COVID-19. Here is information about expediting access and authorization for diagnostic devices for use against coronavirus (COVID-19). • Government of Canada will launch specific challenges through the Innovative Solutions Canada (ISC) program and will rapidly select the best projects to accelerate development and testing of promising innovations that can have a direct impact on our health care response. Also use the ISC Testing Stream to become the first customer of these innovative products. • The National Research Council of Canada (NRC) will organize an NRC COVID-19 Challenge Program, composed of teams of government, academic and private sector partners to address a range of medium term PHAC and HC needs, including personal protective equipment, sanitization, diagnostic and testing, therapeutics, and disease tracking technology. The most promising solutions will be selected for procurement, working with Innovative Solutions Canada. • DISRUPT COVID-19, a Government of Canada virtual forum that will include representatives from the National Research Council (NRC), the Industrial Research Assistance Program (NRC IRAP), Health Canada, the Public Health Agency of Canada (PHAC) and Innovation and Science, Economic Development (ISED), is being organised as a pilot initiative with the goal of getting technologies on the ground helping patients and health care professionals as fast as possible. • Next Generation Manufacturing (NGen) will invest \$50 million in Supercluster funding to support companies as they rapidly respond to the COVID-19 pandemic by building a Canadian supply of essential equipment, products, and therapeutics. For more information on NGen’s COVID-19 Response Program, see the full bulletin, review the project guide, and share your capabilities in the form below. • Ontario Website for PPE Suppliers to Post Products for Sale: Review a list of companies that sell personal protective equipment (PPE) and other supplies to keep your employees and customers safe from COVID-19. Apply to be added to the workplace PPE supplier directory <p>The Digital Technology Supercluster has launched the COVID-19 Program is focused on unlocking solutions to protect the health and safety of all Canadians and our economy through the development, deployment, and scaling of digital technologies.</p>	<p>Innovation Factory & Synapse Consortium</p>

Our Synapse Consortium partners are at the forefront of addressing COVID-19 in the City of Hamilton, and across Ontario: doctors and nurses caring for patients, public health officials coordinating city-wide responses, conducting epidemiological research at Canada's leading research hospitals, and innovative companies developing products to provide needed supplies and services.

Throughout all of this, Synapse remains committed to our core goal of facilitating connections across the Hamilton health ecosystem, bringing public- and private-sector actors together to enable innovation and resolve pressing health challenges. While Synapse staff are not in the office, we're still providing support virtually – so please continue to reach out and find out how we can help!

If you want to get in touch, please contact [Alex Muggah](#), Director of the Synapse Consortium. Separately, we've assembled links to information that has been compiled by organizations across Ontario (and Canada) to assist you with navigating the COVID-19 pandemic.

Learn More About COVID-19: Online Resources

Synapse Consortium partners have put together a significant amount of information and updates on the status and activities related to containing and addressing COVID-19 for both businesses and citizens in the region:

Hospitals and Research Centres

- Hamilton Health Sciences: [COVID-19 Updates](#)
- St. Joseph's Healthcare: [Research Institute](#) and [Hospital](#) Update
- McMaster Institute for Infectious Disease Research: [News and Updates](#)
- McMaster University: [COVID-19 Update](#)
- Mohawk College: [COVID-19 Update](#)

Hamilton Community Partners

- Mohawk College [Collaboration Landing Page](#)
- McMaster University [Collaboration Landing Page](#)
- City of Hamilton: [City Response and Resources](#)
- Hamilton Public Health: [Learn more about COVID-19](#)
- Innovation Factory: [COVID-19 Info Centre](#)
- Hamilton Chamber of Commerce: [Resources for businesses](#)
- Hamilton Spectator: [What you Need to Know in Hamilton](#)
- Buy-Local (Hamilton): [Hometown Hub](#)

Government and Agencies

- Health Canada: [COVID-19 Information and Resources](#)
- OCE: [Collaboration Platform](#)
- Government of Ontario: [COVID-19 Information for Ontarians](#)
- Government of Canada: [Business Support](#)

For Companies Making COVID-19 Related Medical Products

- [Call for Suppliers](#) (Ontario)
- [Call for Suppliers](#) (Canada)
- Health Canada: [Expedited Review of Health Product Submissions and Applications for COVID-19](#)
- Health Canada: [Applications for medical devices under the Interim Order for COVID-19 use](#)
- Health Canada: [Expedited Access and Authorization to make COVID-19 personal protective equipment](#)
- Health Canada: [Diagnostic devices for use against coronavirus \(COVID-19\)](#)