

Life Sciences Ontario Annual Policy Forum

November 1st- 5th, 2021



*Empowering the Life Sciences in
Ontario's Resilient Future*

Summary Report

Lead Sponsor:



Shift
HEALTH

A science mindset.



Executive Summary

This year, we positioned the policy forum to focus on the key learnings and outcomes that the life sciences sector has learned to better prepare Ontario and build a more resilient future. Session topics included: Life sciences as a common goal; Public/Private partnerships; Science communications; Building an inclusive next generation; Global health inequalities; One Health between human, animal, and environmental health; Unlocking life sciences innovation; and Access to capital and the digitization of life sciences.

Some of the key outputs as a result from our policy forum include:

- ❖ Ontario has substantial assets, but they are currently being under-utilized. To optimize how those assets are used, the government of Ontario must implement a provincial framework for life sciences, along with the creation of a science and research agenda.
- ❖ Federal and private investments in Ontario life sciences must increase.
- ❖ The federal and provincial government need to incentivize the adoption of new technologies and new approaches in the healthcare system.
- ❖ The Ontario government should put in place formal mechanisms to ensure the dialogue between industry, government and academia continues post-pandemic.
- ❖ The Ontario government must build trust during times of peace and provide transparency before they are asked for it.
- ❖ If we as a sector want to truly innovate and achieve excellence through equality, then we need to create space for different ways of thinking, being, seeing and asking questions.
- ❖ If we as a sector want a truly inclusive environment, we need to be open and willing to shift power and resources to enact transformative change.
- ❖ Ontario needs to recognize the imperative of a globally interconnected life sciences ecosystem and the need for stronger, more resilient multilateral systems and partnerships.
- ❖ Political leaders and decision makers must approach the life sciences as an intergovernmental file that all ministries need to be aligned on.
- ❖ The life sciences sector should leverage the reputation boost, gained from the pandemic, and build back further; educate government on future challenges to reinforce that long-term resilience is necessary, not just on vaccines but on a broad spectrum of issues.
- ❖ The Ontario and Federal government should create resources that enable domestic companies to remain in the country, scale in an unencumbered way and be globally competitive.
- ❖ Ontario needs clearly defined health data governance frameworks that include ethical principles for data access, for example: accountability, repercussions for breaches, transparency requirements and core processes for the collection, storage, and deletion of health data.
- ❖ Public/private partnerships can be critical enablers, government, and the life sciences sector, need to ensure patients are involved early and often so that we never lose sight of the fact that humans should be at the center of everything we do.

Life Sciences as a Common Goal

The COVID-19 pandemic has thrust the life sciences sector into the public spotlight. Everyday conversation now includes topics like mRNA vaccines and rapid antigen testing for example. But how long will this profile last? How do we maintain this momentum to enhance preparedness for future pandemics and to ensure the life sciences sector is central to future public policy development? Beating COVID-19 has been a common goal for all stakeholders; how do we craft a mission-driven approach for life sciences post pandemic?



Samira Mubareka
 Department of Microbiology
 and Division of Infectious
 Diseases, Sunnybrook
 Health Sciences Centre and
 Research Institute;
 Department of Laboratory
 Medicine and Pathobiology,
 Faculty of Medicine,
 University of Toronto

Key Takeaways

- Canada displayed good communication of severe cases of pneumonia identified in China and other jurisdictions before the first case was discovered in Canada.
- Canada has a very engaged research ethics board that approved the collection of material from first known patient in Canada, they collected serum, respiratory samples, and environmental samples. Respiratory samples confirmed that it was the novel corona virus.
- WHO emphasized open sharing of materials and data - Canada executed 45 agreements to share the virus and share primary materials from patients.
- Some aspects of science that requires more attention in Ontario are:
 - Integrating science into the current list of ministries and developing a provincial framework for science
 - Creating a science and research agenda
 - Appointing a chief science advisor
 - Increasing public and private partnership opportunities
 - Cutting red-tape and creating a regulatory environment that allows businesses to scale and grow

Recommendations:

- We have substantial assets in Ontario, but they have been under-utilized. If we implemented a provincial framework and create a science and research agenda, then we would be able to optimize how those assets are utilized.
- Ontario must increase federal and private investments.
- Ontario must leverage strengths from leading centers across Canada, for example:
 - Li Ka Shing Institute of Virology
 - Vaccine and Infections Disease Organization (VIDO)
 - Canadian Science Centre for Human and Animal Health
 - Medicago
 - Partners Variants of Concern Network
- Ontario needs to fill the gap and hire content expertise, specifically in high consequence emerging viral pathogens/biomanufacturing, and help to attract a highly trained workforce, critical mass, increase federal investments, and appoint senior political leadership to oversee the science and research agenda.

Panel – Public-Private Partnership: Has Crisis Forged Lasting Trust?

Public/Private partnerships have always played an important role in life sciences. From research to healthcare, manufacturing to food security, these partnerships are critical to Canada's social and economic wellbeing. The pandemic took these partnerships to new levels of collaboration: regulators accelerating reviews, companies working directly with governments worldwide to ensure supply of PPE and vaccines. Private/private collaborations that overcame competitive barriers were also key to responding to the crisis. Have these partnerships forged greater trust between private and public sectors? Will these collaborations continue? What does each side want or need in order to continue this level of partnership?



Key Takeaways

- Our entire health ecosystem is built on public and private partnerships and the goal is to ensure that patients are well cared for and that their outcomes are positive.
- The pandemic put these partnerships into hyperdrive; partners were problem solving and collaborating in real time.
- There was an increased sense of being a collaborator and not simply a supplier.
- Industry relied on government to interpret the science and give direction to ensure that companies were keeping up with health and safety.
- Conversely, the government relied on industry to innovate and develop solutions that would help during the pandemic.
- There is a need to include the end-user in collaboration to verify the need and requirements in day-to-day application of the technology/process/procedure.
- The government has been nimble and efficient throughout the pandemic, they have been open to dialogue and have adapted to new technologies all in a coordinated way.
- The pandemic allowed for a broader group of collaborators than normal, and those relationships have moved further along and have really established the trust.

Recommendations

- During times of peace, it would be essential to build relationships across the ecosystem so that trust is already established before the next pandemic arrives.
- Transparency and mutual goals are critical to forge trust.
- Incentivize the adoption of new technologies and new approaches in the healthcare system.
- Formal mechanisms need to be put in place to ensure the dialogue between industry, government and academia continue.
- Support homegrown industry to make it nimble and efficient.

Public trust / Science Communication Understanding Science

Science communicators and public health officials have gained celebrity status during the past 18 months. But some have also attracted criticism for unclear or changing guidance. Uncertainty is part of science but how do we balance transparency with clear messaging for public consumption on key issues like public health, climate change and GMOs? What have we learned about science communication during the pandemic? How do we apply these learnings to help retain public trust in science and to engage the public in life sciences policy discourse?



Jack Bobo
CEO, Food Futurist,
Futurity Food

Key Takeaways

- When communicating, leading with science is not necessarily the best solution to the problem we face. Science tells the government what we *can* do but ultimately the public tells us what they *should* do.
- Even if the life sciences sector has innovations that can solve challenging problems, we will never get the chance to apply them if the public does not trust us.
- Science polarizes the audience. When science and values conflict, values always win.
- Trust is something that is gained and earned, and if we can earn that trust then the public will trust us and there would be no need to lean on the science to communicate.

Recommendations

- Good science communication is clear, transparent, consistent, relatable, and impactful
- Understand the psychology of science, not just the science of what we are talking about.
- Build trust before it is needed and provide transparency before you're asked for it.

Panel – Building an Inclusive Next Generation

As we emerge from the pandemic, jurisdictions around the world recognize the importance of having a robust domestic life sciences sector. The Canadian government has invested heavily in biomanufacturing for example. But as we aim to grow our global footprint in life sciences, we need to ensure we have the talent to sustain this growth. Moreover, we need to ensure the next generation life sciences workforce is inclusive and diverse to bring new perspectives to address systemic challenges within the life sciences ecosystem.



Key Takeaways

- 7 % of all biotech companies have no dedicated human resources expertise or personnel and as a result 1/3 of the biotech workforce is women and only 20 % are newcomers.
- Only 1% of the workforce identifies as individuals with a disability and only 1% of the workforce is indigenous.
- Those who are underrepresented in the sciences – racial and gender minorities – produce more innovation; however, they are less likely to get their work taken up, have meaningful careers and less likely to have their work cited. National Academy of Proceedings Science, April 2020. This demonstrates a much bigger problem than lack of HR.
- Tokenism means that there is no real change, no power, no upward mobility, no real career path; tokenism simply fulfills a diversity quota.
- There needs to be a real shift in power and there needs to be a critical interrogation of the systems that propagate and sustain oppression.
- When you bring together individuals with different experiences and different perspectives, there will be different priorities that begin to emerge.

Recommendations:

- Power reproduces itself – those who are in positions of power determine who, what and how things proceed. If we truly want to innovate and achieve excellence through equality then we need to create space for different ways of thinking, being, seeing and asking questions.
- If we want truly inclusive environments, we need to be open and willing to shift power and resources to enact transformative change.

Global Partnerships: Are we in it Together?

The global pandemic has illustrated inequities in access to vaccines while at the same time highlighting the fact that our borders do not protect us against worldwide challenges like COVID-19 or climate change. With growing sentiment around domestic biomanufacturing capacity and sentiments of protectionism and nationalism, how do we ensure that we can respond as global partners to both current and future crisis?



Dr. Githinji Gitahi
Global CEO of Amref
Health Africa

Key Takeaways

- The challenges that we are tackling in the life sciences community are global in nature: climate change, food security and preparing for the next pandemic/biological threat. All these challenges require us to come together as a global community and help each other.
- The longer we delay vaccinations across the continent, the longer that we provide the virus with an incubator for mutation and variants. These variances could become variants of concern and escape our immunity and change the way they operate in the human body, thus changing the way they are diagnosed, which would change the world significantly.
- Multilateralism has been replaced by nationalism.
- Low-income countries need to increase their current health budgets by 67% to be able to vaccinate 70% of their population against COVID-19.
- The vaccine market was driven by the financial abilities of a country and not based on equity; essentially it was a first-come first-serve basis.

Recommendations

- Recognize the imperative of a globally interconnected life sciences ecosystem and the need for stronger, more resilient multilateral systems and partnerships.

Panel – One Health: An All-of-Life-Sciences Challenge

One Health recognizes the linkages between human, animal, and environmental health. From zoonotic diseases to climate change and the social determinants of health, the One Health approach presents a more cohesive view of how we are part of a planetary ecosystem. How will One Health impact public policy, research, and the life sciences sector as we emerge from the COVID19 pandemic?



Key Takeaways

- As a concept, one health brings together a multidisciplinary, multisectoral teams around complex issues that cannot be solved in isolation.
- One Health approach means having everyone together and seeing wins for all parties involved.
- One Health approach requires us to collaborate, to share risk and reward, and to take a bigger-picture, longer-term view-but our research and innovation systems tend to incentivize and reinforce individual achievement and short-term solutions.

Recommendations

- Governments and organizations that include health of animals, people, and the planet as part of their mission must be inclusive of all three in their approach to be effective.
- We need publicly funded, independent, long-term thinkers, thinktanks, future gazers and scenario planners whose primary focus is not the GDP.

Unlocking Life Sciences Innovation

As Canada looks to post-pandemic economic recovery, the life sciences sector is poised for growth. But we have historically struggled to translate our world-class science into globally competitive companies. The federal government has announced a life sciences strategy that promises an all-of-government approach to developing the sector, including enabling innovation by ensuring world class regulation. How can this strategy translate into practical policy to support our growing life sciences sector?



Michelle McLean

Senior Vice-President,
Acting General Manager,
Ottawa, and National
Sector Lead, Health +
Wellness, Hill+Knowlton
Strategies

Key Takeaways

- The life sciences sector enjoyed extensive profile growth because of the pandemic and there have been several significant federal and provincial investments and commitments made, though many are awaiting implementation.
- Recent commitments from the federal government include:
 - Canada's Biomanufacturing and Life Sciences Strategy
 - Canada Advanced Research Projects Agency (CARPA)
 - Pan-Canadian Strategies: Genomics/AI/Quantum
 - New Canada Research Chairs
 - Research Infrastructure: Canada Foundation for Innovation
 - The Strategic Innovation Fund
 - MOU for Moderna
 - Tri-Council Biomedical Research Fund
 - CIHR Clinical Fund
 - The Strategic Science Fun and Venture Capital Catalyst
- Canada's life sciences sector faces a complex regulatory regime, critical talent shortages and capital shortages, causing firms to exit the market
- There is a reactive vs. a proactive and fractured government approach
- Minority parliament means politicians will be after short-term political wins.
- Progress requires sustained, active advocacy and engagement.

Recommendations

- Approach the life sciences as an intergovernmental file that all ministries need to be aligned on.
- Leverage provincial and federal cooperation, particularly in Quebec and Ontario.
- Leverage reputation boost and build back further; educate government on future challenges to reinforce that long-term resilience is necessary, not just on vaccines but on a broad spectrum of issues.
- Cultivate a champion in government (e.g., the new House of Commons Standing Committee on Science and Research).
- Coordinate collective action across the community.
- Build public support – science communication must be a priority.

Panel – Accessing Capital in a Post-pandemic World

Access to capital has been a perennial challenge for growing Canadian SMEs. The pandemic has raised awareness around many areas of life sciences and its importance to our economic and societal prosperity. Has this new profile translated into increased investment opportunities for life sciences companies? Will cash strapped governments retreat from supports for research and early-stage companies? What was the impact of the pandemic on SMEs and what is the outlook for recovery?



Key Takeaways

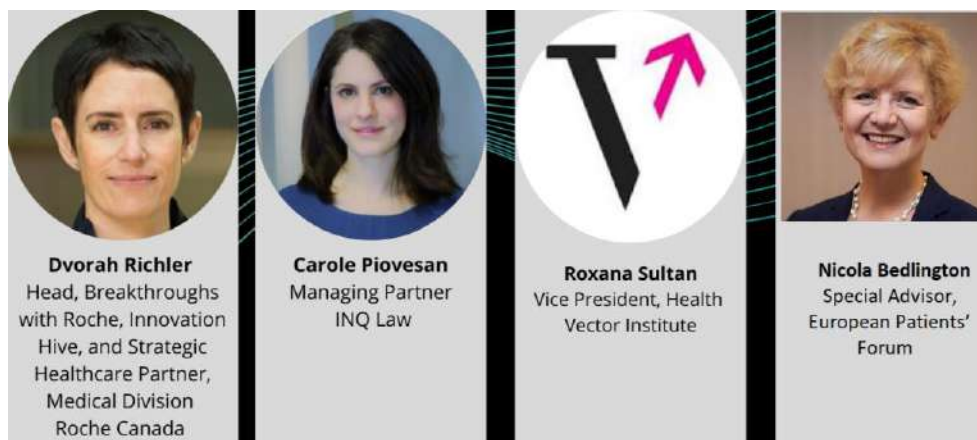
- The pandemic has allowed the life sciences sector to show that it can innovate quickly and address real needs in the marketplace extraordinarily fast.
- The pandemic has changed the lens on how the government views the sector; it's more than just being a cost center, it's about developing innovations that save lives, save the economy, and create high-value jobs.
- The agriculture sector has experienced serious supply chain challenges, given their massive scale and inability to react or pivot to disruptions.
- Quebec is ahead of the curve in terms of investing in the life sciences.
- The biotech sector is a net importer of capital to the country and an important component of the competitiveness of our national portfolio.

Recommendations

- Government should create resources that enable domestic companies to remain in the country, scale in an unencumbered way and be globally competitive.

Panel - An Integrated Digital Ecosystem

The digitization of life sciences, from health to agriculture, is continuing to evolve. Access to health data has been identified as a huge opportunity for both economic and research benefits. But many challenges remain around privacy, interoperability, access, and intellectual property. How do policy makers tie these pieces together and develop digital frameworks that enable collection, sharing and access to data?



Key Takeaways

- Digital literacy is crucial to moving into a more digitized economy; we must develop a better understanding of how information can be used and what safeguards are in place to control information.
- The modernization of our data policy architecture is important. Currently, we have privacy laws which are outdated and need to be modernized to enable innovation.
- Currently, there is a movement to reform some privacy laws at the provincial and federal level, but change is slow.
- Digitized healthcare is a significant change from how we've delivered services for decades; change of this scale can engender mistrust because trust is usually anchored to what is familiar or known.

Recommendations

- First step towards building public trust is transparency: we need to be able to answer questions about who is going to access the data and how that access will be monitored to ensure appropriateness of use.
- We need clearly defined health data governance frameworks that include ethical principles for data access, for example: accountability, repercussions for breaches, transparency requirements and core processes for the collection, storage, and deletion of health data.
- Practitioners who have access to the data need structured and comprehensive training as well as continued stakeholder and public engagement on how the data is being used, by whom, and for what purpose.
- In building trust, patients must be involved in a meaningful way in the design of digital tools.
- Patients and individuals need health literacy support to be able to use digital tools and have confidence in health data.
- Public/private partnerships can be critical enablers, we need to ensure patients are involved early and often so that we never lose sight of the fact that humans should be at the center of everything we do.

Organizing Committee

Bronwynne Wilton, Committee Co-Chair
Wilton Consulting Group

Ryan Wiley, Committee Co-Chair
Shift Health

Jason Field, President & CEO,
Life Sciences Ontario

Benjamin Rovinski,
Lumira Ventures

Ingrid Fung,
Finistere Ventures

Mark Smithyes,
Life Sciences Ontario

Jeffrey Graham,
SkyPower Global

Brian Craig,
Life Sciences Ontario

Sean Kelly,
Lundbeck Canada Inc.

Andy Donovan,
Life Sciences Ontario

Sean McBride,
Bayshore Specialty Rx

Charlini Nicholapillai
Life Sciences Ontario

Anne Mullin,
Shift Health

Elizabeth Voss
Life Sciences Ontario

Andrew Retfalvi,
Global Public Affairs

Thank you to our Event Sponsors

Lead Sponsor



A science mindset.

Premium Program Sponsors



Program Sponsors



Exhibitors



ONE HEALTH INSTITUTE



Thank You to Our Corporate Sponsors

Platinum



Gold



Silver



Visit us at www.lifesciencesontario.ca