

Research Canada **UPDATE**

November 2017

NEWS FOR PARLIAMENTARIANS ON CANADIAN HEALTH RESEARCH



from left to right: MP Carol Hughes, The Honourable Senator Kelvin K. Ogilvie, The Honourable Senator Judith Seidman, President and CEO of BIOTECANADA - Andrew Casey, Emerging company of the Year (Health) Winner: Turnstone Biologics - Dr. John Bell and Dr. David Stojdl, and MP John Oliver. Photo credit: Greg Teckles

THE GLOBAL CHALLENGE AND OPPORTUNITY FOR CANADIAN BIOTECH

BIOTECANADA

The world's population is predicted to grow to almost ten billion people by 2050. This means drastic global changes in human health, the environment, food security and economic fortunes have already started to impact our day to day lives. Demands for consumer goods, healthcare, energy and western based diets emanating from ever increasing populations in countries such as China and India are impacting economies, human health, the environment, and food and water supply like never before.

Canada is well positioned with world-class universities, research and scientific capacity to take advantage of biotech's potential. The potential of biotechnology to deliver game-changing and life-changing innovation to the challenges faced by society is significant. Importantly, Canada is home to a healthy and vibrant, pan-Canadian biotechnology ecosystem with clusters located in every province. In this context, the Canadian biotechnology industry is well-positioned to take advantage of the global challenge and deliver very significant economic and

social benefits to this country. Recently, BIOTECANADA was able to enter the second phase of its Canadian Biotech Ecosystem Project - Discover, Innovate, Solve. The Science of Amazing – Canada's Biotech Ecosystem. This platform highlights the central role Canadian biotechnology plays in delivering innovative solutions such as those highlighted on the cover to help societies and economies mitigate and adapt to the reality of challenging pressures. The full ecosystem platform can be found at www.biotecanada-ecosystem.com.

Canadian biotech industry recognizes top performers

On October 16, at the Research Canada Health Caucus Reception on Biotechnology held on Parliament Hill, BIOTECANADA announced winners of the prestigious 2017 **Gold Leaf Awards** (see picture above), which recognize biotechnology excellence. Launched in 2001, the Gold Leaf Awards are given annually to both companies and

Next Event

12:00 p.m. - 1:30 p.m.
December 5, 2017

Health Research Caucus

**Stem Cell Research and Regenerative
Medicine**

Recent Event



Sponsors of the Health Research Caucus event, *Biotechnology in Health Research* included:

- Innovative Medicines Canada
- BIOTECANADA
- Hoffmann-La Roche
- AstraZeneca Canada
- Merck Canada
- University Health Network
- Valeant Canada
- BioCanRx
- Canadian Association of Neuroscience
- Concordia University
- Lawson Health Research Institute
- Medtronic
- the Michener Institute of Education at UHN
- Shift Health
- Stem Cell Network
- York University
- Thunder Bay Regional Health Sciences Centre
- University of Ottawa (The Royal's) Institute of Mental Health Research
- VIDO-InterVac Vaccine and Infectious Disease Organization – International Vaccine Centre

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individuals which/who have made significant contributions to the biotech industry in Canada. The Award's importance to the recipients and the industry more broadly has grown significantly over the years.

"These remarkable individuals and companies serve to demonstrate the value of innovation, leadership and how biotechnology is delivering solutions to the many pressing environmental, health and economic challenges society is grappling with as a result of global population growth. The various clusters of excellence throughout Canada where biotechnology is thriving showcase the

very best we have on offer," commented Andrew Casey, President and CEO of BIOTECanada. "The biotech ecosystem is building globally competitive Canadian companies. Biotechnology is becoming more central to supporting the economic and environmental transformation of Canada's traditional economic cornerstone and job intensive industries, namely: forestry; energy; mining; agriculture; aerospace; manufacturing and resource management. Biotechnology innovation will support these sectors as they transform and compete in the emerging global bio-economy."

Company of the Year:
enGene Inc.

Emerging company of the Year (Health):
Turnstone Biologics

Emerging company of the Year (Agriculture/Industrial):
CO2 Solutions Inc.

Industry Catalyst:
Dr. Ilse Treurnicht

Ecosystem Builder:
Bioenterprise Corporation

HOFFMANN-LA ROCHE

The Secret to Personalized Healthcare is in the Data

Personalized healthcare is undergoing a revolution - a data revolution. To truly personalize healthcare for patients we need to go beyond our understanding of biology and genetics; we need to complete our understanding of the patient by starting to look at everything including the patient's environment or behaviour. These insights are locked in the enormous amount of health and health-related data that we collect from patients. The ability to leverage these data will truly transform how we do healthcare in Canada, impacting everything from how we conduct research,

to how we deliver personalized healthcare to patients. In collaboration with our community and academic research partners, Roche is entering the burgeoning field of healthcare data science - researching and developing the technologies that will enable us to unlock healthcare data to personalize and optimize care for patients and ensuring a healthy and sustainable healthcare system. Innovations in cloud computing and blockchain technology will transform how we privatize and securitize healthcare data so that data can now become an asset in the delivery of healthcare, rather than an outcome.

INNOVATIVE MEDICINES CANADA

Innovative Medicines Canada members invest in biotechnology partnerships across Canada

In 2016, our members invested \$1.2 billion, representing 9.97% of their gross revenues making the life sciences sector the third largest R&D investor in Canada. We are proud of our far-ranging investment in R&D in this country - just last year, Bayer and Versant Ventures announced they were investing \$225 million (US) to launch Blue Rock Therapeutics, an innovative stem cell technology firm. Blue Rock was co-founded by a leading researcher at the McEwen Centre for Regenerative

Medicine in Toronto and its research centre is headquartered in the MaRS Discovery District. On the West Coast, we have seen another recent exciting example of our members' investment in biotechnology with the \$1 billion (US) collaboration and licensing agreement that GlaxoSmithKline has with Vancouver-based Zymeworks to research, develop and commercialize novel antibody therapeutics.

YORK UNIVERSITY

Matters of the heart: York U researchers create 3D beating heart

Matters of the heart can be complicated, but York University scientists have found a way to create 3D heart tissue that beats in synchronized harmony, like a heart in love, that will lead to better understanding of cardiac health, and improved treatments. York U Chemistry Professor Muhammad Yousaf and his team of grad students have devised a way to stick three different types of cardiac cells together, like Velcro, to make heart tissue that beats as one. Until now, most 2D and 3D in vitro tissue did not beat in harmony and required scaffolding for the cells to hold onto and grow, causing limitations. In this research, Yousaf and his team made a scaffold free beating tissue out of three cell types found in the heart – contractile cardiac muscle cells, connective tissue cells and vascular cells. The researchers believe this is the first 3D in vitro cardiac tissue with three cell types that can beat together as one entity rather than at different intervals. “This breakthrough will allow better and earlier drug testing, and potentially eliminate harmful or toxic medications sooner,” said Yousaf of York U’s Faculty of Science.



York U Chemistry Professor Muhammad Yousaf looks at the 3D heart tissue cells beating together as one. Full story and embedded video by Sandra McLean, York University Media Relations, [here](#).

THANK YOU TO THE SPONSORS OF THE HEALTH RESEARCH CAUCUS EVENT *Biotechnology in Health Research*



Innovative Medicines Canada is the national voice of Canada’s innovative pharmaceutical industry. We advocate for policies that enable the discovery, development and commercialization of innovative medicines and vaccines that improve the lives of all Canadians. We support our members’ commitment to being valued partners in the Canadian healthcare system.



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BIOTECCanada is the national industry association with over 200 members located nationwide, reflecting the diverse nature of Canada’s health, industrial and agricultural biotechnology sectors. In addition to providing significant health benefits for Canadians, the biotechnology industry has quickly become an essential part of the transformation of many traditional cornerstones of the Canadian economy including manufacturing, automotive, energy, aerospace and forestry industries.



AstraZeneca is a global, innovation-driven biopharmaceutical business with a primary focus on the discovery, development and commercialization of primary and specialty care medicines that transform lives. Our primary focus is on three important areas of healthcare: Cardiovascular and Metabolic disease; Oncology; and Respiratory, Inflammation and Autoimmunity. AstraZeneca Canada headquarters are located in Mississauga, Ontario. For more information: www.astrazeneca.ca.



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