

Investing in Canada's Nanomedicine Ecosystem

A NanoCanada – NMIN Workshop

Friday, March 19th, 2021

13:30 – 16:00 EDT / 10:30 – 13:00 PDT

NanoCanada and the Nanomedicines Innovation Network (NMIN) are pleased to host a workshop that explores new market potential in the nanomedicine ecosystem. Canada is a proven leader in nanomedicine and the current pandemic has shown the need for a quick response to global challenges. Bringing together key stakeholders in this ecosystem is vital for addressing the current barriers to scale-up.

PROGRAM

Times are given in EDT.

13:30–13:35 **Introductory remarks**

[Marie D'Iorio](#), President, NanoCanada

13:35–14:00 **KEYNOTE TALK**

[John Lewis](#), Founder & CEO, Entos Pharmaceuticals
Ushering in a new era of genetic medicines

14:00–14:40 **Panel Discussion**

Building Canada's Advanced Manufacturing Capacity in Nanomedicine

Moderator: [Nuzhat Tam-Zaman](#), Co-Founder & VP Consumer Health, SinoVeda

- [Lloyd Jeffs](#), Senior Director of Clinical Manufacturing Solutions, Precision Nanosystems
- [Lakshmi Krishnan](#), Acting VP Life Sciences, NRC
- [Trina Racine](#), Associate Director – Vaccine Development, The Vaccine and Infectious Disease Organization (VIDO)

14:40–15:10 **KEYNOTE TALK**

[Tom Madden](#), CEO, Acuitas Therapeutics
Supporting COVID-19 vaccines and perspective on future Canadian pandemic preparedness

15:10–15:40 **Funding Announcement**

Canada's Nanomedicine Cluster

- [Marie D'Iorio](#), President, NanoCanada
- [Stéphane Gagné](#), CEO, Ovensa
- [Ronda Gosselin](#), Industrial Technology Advisor, Atlantic & Nunavut, NRC-IRAP

15:40–16:05 **KEYNOTE TALK**

Pieter Cullis, Scientific Director & CEO, NMIN

The importance of the scientific entrepreneur in the translation of academic discoveries into the commercial world

16:05–16:10 **Concluding remarks**

Diana Royce, Executive Director, NMIN

SPEAKERS



Dr. Pieter R. Cullis, (Ph.D., FRSC, FNAI [USA]) is Scientific Director and CEO of the NanoMedicines Innovation Network (NMIN), Professor of Biochemistry and Molecular Biology at the University of British Columbia, and Founding Director of the Centre for Drug Research and Development.

Dr. Cullis' laboratory has been responsible for fundamental advances in the generation, loading and targeting of liposomal systems for intravenous delivery of conventional and genetic drugs. This work has led to two products that have been approved by regulatory agencies in the U.S. and Europe for the treatment of cancer and its complications, one that is in late stage (Phase III) clinical trials and two more that are about to enter Phase I studies. From 1987 to 1991, Dr. Cullis was President and Director of The Canadian Liposome Company Inc. (CLC), a company he co-founded. CLC was a subsidiary of The Liposome Company Inc. (TLC, Princeton, NJ). Dr. Cullis has also played a founding role in Inex Pharmaceuticals Corp. (Director and CSO 1992-2004), Lipex Biomembranes Inc. (Director and Chairman, 1985-2000), Northern Lipids Inc. (Director and Chairman, 2005 onwards) and Protiva Biotherapeutics Ltd. (Director 2001-2005 and Chairman, Scientific Advisory Board). He has published over 300 scientific articles and is an inventor on over 30 patents.

Dr. Cullis was awarded the Ayerst Award by the Canadian Biochemical Society in 1986, the B.C. Science Council Gold Medal for Health Sciences in 1991, the Alec D. Bangham Award for contributions to liposome science and technology in 2000, the B.C. Biotechnology Association award for Innovation and Achievement in 2002, was elected a Fellow of the Royal Society of Canada in 2004 and was awarded the Barre award for contributions to Pharmaceutical Sciences by the University of Montreal in 2005. Dr. Cullis also received the UBC Alumni Award for Research in Science and Medicine in 2005. In 2011, Dr. Cullis won the prestigious Prix Galien Canada award and the Bill and Marilyn Webber Lifetime Achievement Award.



Marie D'Iorio is the President of NanoCanada and the Director of the Nexus for Quantum Technologies Institute (NexQT) at the University of Ottawa. Dr. D'Iorio obtained a Master's and a Doctorate degree in Solid State Physics from the University of Toronto. After a post-doctoral fellowship at IBM Zurich, she built a research career in quantum materials and devices at the National Research Council (NRC). She led NRC's National Institute for Nanotechnology (2011-2016) and the Institute for Microstructural Sciences (2003-2011). In 2015, she launched NanoCanada, a not-for-profit corporation that connects the

advanced materials and nanotechnology community in Canada and abroad.



Mr. Stéphane Gagné cumulates 25 years of experience in the fields of cosmetics, nutritional supplements, pharmaceutical products and active ingredients. He holds two bachelor's degrees, one in economics, the other is multidisciplinary, as well as a master's in business administration.

Since 2006, Mr. Gagné co-founded 3 companies where he held the role of President & CEO. Mr. Gagné is now the co-founder, President and CEO of Ovensa Inc., a nanomedicine company that has developed a siRNA targeting galectin-1 to fight resistance in head & neck cancer. Ovensa takes advantage

of its proprietary nanoparticle delivery system to help pharmaceutical companies delivering their drugs more specifically to certain tissues and more particularly, to the brain.

Before starting its own companies, Mr. Gagné played a significant role in the growth of several Canadian companies abroad through his international network of contacts and business acumen. He held senior positions in biotech, cosmetic and supplement companies, one being Atrium Innovations where he was VP Sales & Marketing from its inception in 1999. Atrium was acquired by Nestlé in 2017 for 2.3 billion USD.

Mr. Gagné volunteers for not-for-profit organizations and likes to support other entrepreneurs. He volunteered as a mentor for a number of start-ups from Cohort 1, 2 and 3 of District Ventures, a business accelerator based in Calgary for health-related companies.



Ronda Gosselin has an Bsc., MSc. and MBA from Memorial University of Newfoundland and spent most of her career as a Technology Advisor focused on Life Sciences, first with the Genesis Centre at Memorial University followed by the National Research Council Industrial Research Assistance Program (NRC IRAP) for the past 20+ years. In her current role as International Industrial Technology Advisor (ITA) and national program lead for the Canada International Innovation Program with Brazil, she is helping Canadian SMEs connect into global value chains through co-innovation partnerships.



Dr. Lloyd Jeffs, Ph.D., is Director of Clinical Manufacturing Solutions at Precision NanoSystems, Inc. He brings 20 years of experience in the Biotechnology industry working Lipid-based drug delivery systems and has previously worked for Northern Lipids Inc. and Arbutus Biopharma Corporation.

He has expertise in formulation and process development and has played key roles in the Technology Transfer and GMP manufacture of RNA-based Lipid Nanoparticles to support multiple clinical stage product candidates.



Dr. Lakshmi Krishnan: As a globally recognized researcher and expert in the field of infectious diseases and cancer, she is committed to the development of novel vaccines and therapeutics and innovative solutions for the improvement of human health.

Dr. Krishnan joined the NRC in 1998 and, as a research officer, built expertise in immunology research at the Institute for Biological Sciences, in the areas of vaccine adjuvant development and host pathogen interactions. Prior to her current appointment, she was the Program Lead for Vaccines and Immunotherapy (2015 to 2018) and Director of R&D for Immunobiology (2016 to 2018). Possessing extensive research expertise in the fields of vaccinology and therapeutics development, over the course of her career Dr. Krishnan has been the recipient of numerous competitive research grants from various agencies including the Ontario Institute for Cancer Research (OICR), the Canadian Institutes of Health Research (CIHR) and the National Institutes of Health (NIH – USA). She also chairs the Federal Vaccine Research Innovation and Development committee.

Dr. Krishnan received her Master's degree in Bio-medical Genetics from the University of Madras (India) and Ph.D. in Immunology from the National Institute of Immunology in India, following which, she completed post-doctoral studies at the University of Alberta through an Alberta Heritage Foundation scholarship. She serves as an Adjunct Professor in the Department of Biochemistry, Microbiology and Immunology at the University of Ottawa and has mentored many graduate students. She has published over 75 primary research articles in peer-reviewed journals, and is listed as an inventor on several patents. She has received NRC's outstanding achievement award multiple times in various categories such as organizational excellence, partnership and research technology breakthrough. She routinely serves on grant panels, including as Scientific officer and Chair for CIHR, NIH and other agencies, and represents NRC on the Canadian Cancer Research Alliance Board. In addition to her academic training Dr. Krishnan is a Leadership Training Program (LDP®) graduate from the Centre for Creative Leadership, USA.



Dr. John Lewis is CEO of Entos Pharmaceuticals, an Edmonton-based biotechnology company developing genetic medicines using the Fusogenix drug delivery system. Entos is developing DNA-based vaccine and therapeutic countermeasures for COVID-19 using the Fusogenix platform technology.

Dr. Lewis holds the Frank and Carla Sojonky Chair in Prostate Cancer Research at the University of Alberta and is a Professor in the Department of Oncology, where he chairs the Alberta Prostate Cancer Research Initiative. Dr. John Lewis's research interests lie in the areas of nanotechnology and imaging as they relate to infectious disease as well as chronic diseases such as aging and cancer. His group is focused mainly on the study of the spread, or metastasis, of cancer using advanced live imaging techniques.



Dr. Thomas D. Madden (Ph.D. President and Chief Executive Officer, Acuitas Therapeutics obtained his BSc. and Ph.D. in Biochemistry from the University of London, U.K. He has held several senior academic and industry positions including Assistant Professor in Pharmacology at the University of British Columbia. Dr. Madden founded Acuitas Therapeutics in 2009 and has guided the company to a leadership position in the application of lipid nanoparticle (LNP) technology for delivery of nucleic acid therapeutics. In 2009 Acuitas developed the LNP carrier used by Alnylam Pharmaceuticals for Onpattro™.

Onpattro™ was approved in 2018 in the US and Europe for the treatment of transthyretin amyloidosis and was the first approved RNA interference (RNAi) therapeutic. Recently Acuitas has focused on development of LNP carriers for messenger RNA (mRNA) therapeutics. This includes LNP carriers used in several COVID-19 vaccines including Pfizer-BioNTech's COMIRNATY™ vaccine which was authorized for emergency use in December 2020 and COVID-19 vaccines in clinical development by CureVac (Phase 3) and Imperial College London (Phase 1). Dr. Madden has over 60 publications in peer-reviewed journals including recent publications in Nature. In 2020 Dr. Madden was made a Fellow of the American Institute for Medical and Biological Engineering in recognition of his contributions to the field of nucleic acid delivery.



Dr. Trina Racine received her PhD in Microbiology and Immunology from Dalhousie University in 2010. She then joined the Special Pathogens Program at the National Microbiology Laboratory, part of the Public Health Agency of Canada. While at the NML Dr. Racine worked on the development of vaccines and therapeutics for various emerging and re-emerging infectious diseases, including Ebola, Zika and MERS. Dr. Racine has coordinated clinical trials and has provided diagnostic support to the Ebola outbreak in West Africa in 2014-2016. Prior to joining VIDO, Dr. Racine was a Scientific and Regulatory Affairs

Consultant for GeneOne Life Science, Inc., a South Korean based biopharmaceutical company.



Dr. Diana Royce is Executive Director of the NanoMedicines Innovation Network (NMIN). She has over 30 years of experience in the post-secondary and health sectors related to public consultation and research, program implementation, strategic and operational planning, network administration, national/international partnership and public policy development, advocacy, fundraising, knowledge mobilization, communications, conference planning and meeting facilitation. She has undergraduate and Master's degrees in Political Science from the University of Waterloo and Queen's University,

respectively, and a Doctorate in Education from the University of Toronto.

Dr. Royce began her career in public service as a senior policy advisor on university policy and finance in Ontario, serving on provincial commissions and task forces from 1985 to 1998. From 1998 to 2002 she was the Managing Director and COO of HEALNet, a national Network of Centres of Excellence (NCE) based at McMaster University that focused on improving health research transfer.

From 2002 to 2020 she was Executive Director of AllerGen NCE, an NCE based at McMaster University focused on allergy, genes and the environment. In 2002, Dr. Royce launched The Deerfield Group Inc., a boutique consulting firm specializing in network start-up, management and wind-down; strategic and operational planning; knowledge mobilization; and communications.



Dr. Nuzhat Tam-Zaman, M. Pharm, Ph.D., is a Pharmaceutical Scientist and an entrepreneur. Together with her husband Dr. Y. K. Tam she founded SinoVeda Canada Inc. in 2006. Using a patented technology which identifies and quantifies bioactives in plants, SinoVeda has developed a series of both natural health products and pharmaceutical medicines from plants. Since the inception, she was instrumental in the research and development of all single herb products and is solely responsible for registering SinoVeda products with Non-Prescription Natural Health Product Directorate (NNHPD) in Canada have

received approval (NPNs) for 14 products. She assisted in obtaining self-affirmed GRAS (Generally Recognized as Safe) status for EffectiCal in USA. She is responsible for filing protocols to Health Canada for SinoVeda product clinical trials and has recently obtained the Research License for studying Cannabis for the company. In Canada she has successfully launched two plant-based topical creams; one for pain (Proflexa), one for eczema (Hunaza) and patented and clinically tested Calcium supplement (EffectiCal).

Presently she is heading the business development and the marketing and distribution of SinoVeda Natural Health Products in Canada, US, Asia and UAE. She assists global consultants to register and market SinoVeda products in their respective jurisdictions.

She graduated with a B.Pharm and M.Pharm from University of Dhaka, Bangladesh with distinction and received the most prestigious Commonwealth Scholarship to perform her graduate studies in Canada. She obtained her Ph.D. degree in Pharmacokinetics from University of Alberta in 1996. She is a Board Member and Co-Chair of BioAlberta since 2018, a Scientific Advisory Board Member of Hyasynth Biologicals Inc. since 2017, and received BioAlberta's Scientific Achievement and Innovation Award in 2011. She spoke in numerous International Conferences, received a number of awards and has a patent and published refereed articles. Besides work she loves to travel around the world and play various sports.

About NanoCanada: NanoCanada was launched officially in March 2015 to address the urgent need to translate a decade of scientific breakthroughs into the Canadian marketplace. NanoCanada has an exceptional national and international reputation and network that it uses to showcase and launch Canadian innovators in advanced materials and nanotechnology. NanoCanada delivers significant economic impact thanks to its strong leadership and experience, identifying gaps in the Canadian innovation ecosystem, and developing programs to support its community.

About NMIN: The Nanomedicines Innovation Network (NMIN) is a federal Networks of Centres of Excellence (NCE) that has mobilized a network of experts and organizations from across sectors - academia, healthcare, industry and other not-for-profit enterprises - to strengthen and extend Canada's position as a global leader in developing the next generation of nanomedicines.

Proudly supported by



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

Canada