



December 2022

### What a Network is meant to do

#### Networking the highlight of NMIN's 2022 Scientific Meeting & Trainee Symposium

"After such a long stretch of seeing each other almost exclusively online, it is wonderful to meet in person again. After all, as a Network, networking is what we are meant to do!"

Apt opening words from NMIN Executive Director Dr. Diana Royce, as NMIN's pandemic-delayed second Scientific Meeting and first Trainee Symposium got underway in Toronto.

Indeed, in feedback surveys, participants identified networking as the single most valuable aspect of the combined event, which ran 17-20 November.

The 131 attendees included 89 academics from 10 universities (56% of whom were trainees), as well as 27 industry representatives from 18 different companies, seven government or health agency workers, and eight NMIN personnel.

The events featured 40 presenters who delivered 23 research presentations, three panel discussions, two keynotes and one invited presentation—as detailed in the [program](#).

Thirty-three (33) trainees and three companies exhibited posters as part of the Scientific Meeting; 11 trainees across three academic levels (MSc, PhD, PDF) were granted a total of \$3,500 in prizes for the outstanding quality of their posters.

In addition to scientific and career development sessions, the events featured two receptions, a networking lunch for trainees, over 3.5 additional hours of networking

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*Familiar faces at NMIN's 2022 Scientific Meeting.*

### MESSAGE FROM THE SCIENTIFIC DIRECTOR

It's great to be a part of the NMIN team. Since June, I've had the privilege to work with NMIN's amazing students, staff, researchers, investors and advisors in the role of Scientific Director & CEO. Accomplishments to date illustrate the tremendous depth of talent and dedication among Network participants to advancing the Canadian nanomedicines ecosystem. Our strength stems in part from our continuous team-building. Together, we are making a difference!

Earlier this fall, **Afsaneh Lavasanifar**, Professor, Faculty of Pharmacy and Pharmaceutical Sciences at the University of Alberta, assumed the role of NMIN Associate Scientific Director.

Dr. Lavasanifar and her research group are developing drug-delivery systems to improve the effectiveness of cancer treatment and reduce side effects. Their approach involves the targeted delivery of drug-loaded nanoparticles directly to tumour tissues. Dr. Lavasanifar is also the Chief Scientific Officer and Vice-President of Meros Polymers Inc., a spinoff company established on the basis of technology developed in her lab.

Please join me in thanking Dr. Lavasanifar for helping to develop NMIN's legacy strategy and inform approaches to integrate polymer-based systems into NMIN innovations.

Just a few days ago, **Michel Meunier**, Professor of Engineering Physics and Biomedical Engineering at Polytechnique Montréal, agreed to serve as a co-leader of NMIN's Theme 3, joining Warren Chan, Institute of Biomedical Engineering and Distinguished Professor of Nano-bioengineering at the University of Toronto.

Dr. Meunier and his team have been hard at work creating new nanomaterials and biomedical tools for use in theranostics. A key aspect of their imaging and triggered-release approach has been the integration of laser

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breaks, and a gala dinner in which various recognitions were made—including of NMIN's Founding Scientific Director, Dr. Pieter Cullis, and of eight NMIN trainees receiving Advanced Training Certification for their high level of engagement in Network activities.

The 37% of attendees who completed a post-event evaluation survey assessed the event as excellent in terms of organization, content and networking opportunities. On average, respondents rated the "overall value" of the two events at between 4.3 and 4.6 out of 5, where 5 signified "extremely valuable."

Attendees most appreciated the scientific content and networking opportunities of the Scientific Meeting, and the two career panels of the Trainee Symposium.

Respondent comments included:

"This meeting was very well put together, giving young scientists the opportunity to meet other like-minded individuals and hear about potential industry careers."

"It was great to see the variety and breadth of nanomedicine expertise in Canada."

"Having the opportunity to talk to company leaders and researchers was priceless."

"It was very useful to get an overview of the R&D and company creation activities taking place within NMIN. I really enjoyed the session on spin-out companies."

A [gallery of photos](#) from NMIN's 2022 Scientific Meeting and Trainee Symposium can be viewed on the NMIN website.

NMIN is grateful to its [11 generous sponsors](#), the NCE program, and the Network's host institution, The University of British Columbia, for their support of these events.

The next major NMIN scientific gathering will be the conference planned for 24–27 January 2024 at the Fairmont Waterfront Hotel in Vancouver.

**Save the date!**



processing and plasmonics. Dr. Meunier is a co-founder of Vega Biolmaging. He has been working across research themes in the Network, and is eager to contribute to the development of a national NMIN legacy strategy. Welcome, Dr. Meunier!

Drs Lavasanifar and Meunier have also joined NMIN's Research Management Committee (RMC), which works with NMIN's Board of Directors, the Commercialization Advisory Board, and external expert review panels to evaluate and fund projects proposed to NMIN for NCE support.

At NMIN's November Scientific Meeting and Trainee Symposium in Toronto I was excited to see how many representatives and leaders from the Canadian pharmaceutical manufacturing and development sector, as well as investors, came to see what NMIN is doing. These stakeholders contributed to a vibrant and focused discussion on how to grow and scale Canada's budding nanomedicines ecosystem.

Clearly, there is strong "industry pull" for expanding nanomedicine businesses, triggered by the success of the mRNA COVID vaccines whose billions of doses worldwide have saved millions of lives.

There is an opportunity to take advantage of Canada's current nanomedicines leadership by combining the strengths of NMIN with industry and investors. NMIN is well known for its excellent HQP training program and its novel core facilities: NanoCore, for lipid-based carrier formulation; eHTA for early health technology assessment; and PharmaCore, for preclinical scale-up manufacturing and project management.

Supported by NMIN's Board of Directors, NMIN's Research Leaders are working to develop a nanomedicines strategy to ensure NMIN's legacy. This strategy is engaging manufacturing partner organizations and investors who attended NMIN's 2022 Scientific Meeting, along with other NCEs and organizations.

Over the next 10 years, it will be possible to apply nanomedicine approaches to overcome major unmet needs in cancer, inflammation and infection. Advanced nanomedicine-based diagnostics can enable us to treat rare diseases, and NMIN's foundation can be leveraged to help make personalized medicines a reality for patients across Canada and globally.

**Dr. Gilbert Walker, Ph.D.**  
Scientific Director & CEO, NMIN



# Research & Resources

## Strategic Initiatives Funding Available

While NMIN has invested or committed \$10.4 million of its research budget in some 41 projects, including most recently almost \$1.2 million in a Grand Challenge project and \$400,000 in Round 4 follow-on commercialization support projects, there remains \$400,000 available for Strategic Initiatives.

NMIN's *Strategic Initiatives (SIs) – KTEE/Commercialization Support Program* supports Network investigators ready to move forward with commercialization-related and/or knowledge mobilization-related activities.

Budgets may be requested to a maximum of \$50,000. Initiatives must be aligned with NMIN's mission and vision.

[More information.](#)

## New Resources on the NMIN website

Check out these academic career-building articles recommended by NMIN's Board Chair, Dr. Inès Holzbaur, from the series "How to Survive After Graduating in Materials Science" by Federico Rosei and Tudor Johnston:

- [Writing compelling papers](#)
- [Presentations at conferences \(oral and poster\)](#)
- [The peer-review system](#)
- [How to write winning proposals](#)
- [Basic advice for surviving after graduation](#)

Many more career-related resources are available on the [Resources page of NMIN's website](#).

## New Theme 1 Accelerator appointed

NMIN's Theme I: Targeted Drug Delivery research area has welcomed aboard a new Research & KTEE Accelerator

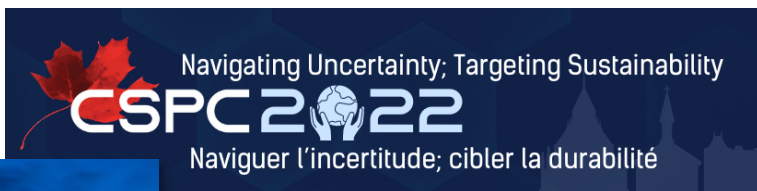
Dr. Quan Le received a PhD in Nanomedicine from the University of Lille, France. Her PhD thesis was a part of a European project aiming to develop an influenza vaccine employing nano-delivery systems.



She subsequently worked for a year as Formulation Scientist for a biotech company in Vancouver, where she led projects about lipid nanoparticles (LNPs) as drug delivery systems, and then for another year as a researcher on the SARS COVID 2 virus-like particles (VLPs) project in the Structural Biology Lab of The University of British Columbia (UBC).

Dr. Le is now a postdoc fellowship in the Li Lab—the Laboratory of Targeted Drug Delivery and Nanomedicine—at UBC. Her current research focuses on the development of LNPs to deliver nucleic acid materials for vaccines and cancer treatments.

As the Theme I Accelerator, Dr. Le will help promote knowledge products, accelerate the commercialization of NMIN research results, and build knowledge mobilization capacity within Theme 1.



## Doing mission-oriented research & innovation right

NMIN Executive Director Dr. Diana Royce shared wisdom gained from helping two highly successful NCEs, in the panel [Proven ingredients to successful mission-oriented program design from the NCE Program](#).

A recording of the panel, which was part of the 2022 Conference of the Canadian Science Policy Centre, can be viewed [online](#).



# NMIN's Highly Qualified Personnel (HQP) Program

## Eleven HQP recognized in NMIN's 2022 Poster Competition

NMIN proudly acknowledges the trainees who won the Poster Awards granted at NMIN's [2022 Scientific Meeting](#).



**Back, L to R:** Josh Friesen, Isabelle Largillière, Parnian Mehinrad, Daniel Berard, Tyler Thomson. **Front, L to R:** Nashmia Zia, Amélie Baron, Samantha McWhirter, Alexandra Birkenshaw, Abishek Wadhwa, Yulin Mo. **Missing:** Michael Valic. [Read more.](#)

## Meet the latest recipients of NMIN Advanced Training Certification (ATC)



**L to R top:** Nancy Dos Santos, Jennyfer Zapata-Farfan, Talita de Francesco Calherios, Tiffany Ho. **L to R bottom:** Nicole Wretham, Fariba Saadati, Jerry Leung and Kelsey Yuan.

All received Silver-level certification, except Nancy and Jennyfer who are the first NMIN HQP to attain Gold-level certification in acknowledgment of their being highly engaged in a range of NMIN activities. [Read more.](#)

# Mitacs

## FUNDING SUPPORT REMINDER

Mitacs Internships and Fellowships are available, earmarked for NMIN HQP to work with non-academic partner organizations on nanomedicine research.

See the [FAQs & application information](#) on the [NMIN website](#).

## HQP Research Presentations

The 11th round of this series highlighting NMIN HQP's research took place on 29 September 2022, encompassing the use of nanotechnology and LNPs for the treatment of pancreatic and colorectal cancer and to enhance platelet function.



**Abdulaziz Alhussan**  
University of Victoria



**Parnian Mehinrad**  
University of Alberta



**Colton Strong**  
University of British Columbia

### VIDEOS & POSTERS

The 12th round took place 1 December 2022 and featured work on modified polymer-based nano-theranostics for non-small cell lung cancer imaging and therapy, a texaphyrin-nanoparticle as potential radiotheranostic agent, and a luciferase reporter mouse model for adenine base editing.



**Alberto Cevallos**  
University of Toronto



**Nasim Sarrafi**  
University of Alberta

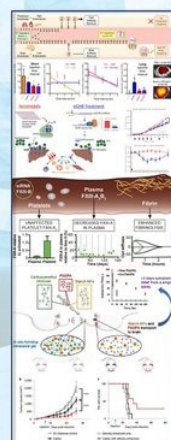


**Tyler Thomson**  
University of British Columbia

### VIDEOS & POSTERS

Check the [NMIN website](#) for information about up-coming rounds of HQP Research Presentations.

For a searchable list of presentations featured in this series, with links to posters and video recordings, see the [HQP Research Presentations Database](#) on NMIN's website.



## NANOMEDICINES TRANSLATED

**NMIN**  
NANOMEDICINES INNOVATION NETWORK  
RESEARCH INNOVATION NANOMEDICINES

**NMIN's NanoMedicines Translated Program** engages NMIN HQP in a hands-on learning process to produce clear-language summaries of their NMIN-supported, peer-reviewed research publications.

Participants in the program produce a communications tool by which to disseminate their research to the broader public and acquire knowledge translation skills.

[Visit the NMIN website](#)

for more information about *NanoMedicines Translated*, including eligibility requirements, benefits of participation, and how to apply.

# Using value assessment to inform R&D priorities:

## An introduction to early health technology assessment (eHTA)

This three-part NMIN webinar series introduces the concepts of health technology assessment (HTA) and early health technology assessment (eHTA), and discusses how assessing value can inform decisions about translating an invention into a commercially viable product.

**Presented by Fernanda Nagase**  
eHTA Core Facility | UBC



### Watch the videos

#### Beyond safety and efficacy:

Why successful commercialization does not depend only on clinical trials data

#### Know your payers:

Will insurers pay for your health technology?

#### Position your health technology for success:

How Early Health Technology Assessment can quantify the potential value & uptake of your novel technology.



### Recent NMIN Lecture



### PRiME Workshop benefits NMIN HQP

NMIN HQP benefited from NMIN's partnership with the Precision Medicine initiative (PRiME) at University of Toronto by gaining access to their recent [\*Jump Start Workshop: How to Accelerate Research and Technology Development with BARDA & JLABS\*](#), on 30 November 2022.

Attendees gained insight into the early activities that researchers should engage in to identify funding and accelerate technology development.



UNIVERSITY OF  
TORONTO

PRiME

### Up-coming NMIN Lectures



**Dr. Sabrina Leslie**

24 January 2023

11 am PST | 2 pm EST



**Dr. Marcel Bally**

16 March 2023

12 pm PT | 3 pm ET