The NanoMedicines Innovation Network (NMIN) Advanced Training Certification (ATC)

VALUE PROPOSITION: NMIN Advanced Training Certification (ATC) can be included on Network Trainee CVs, and shows potential supervisors/employers/recruiters that:

- The Network Trainee has actively participated in the NMIN Network of Centres of Excellence
- The Network Trainee has actively engaged in the NMIN Highly Qualified Personnel (HQP) Training Program, ensuring that they have broadened their skills and abilities beyond the traditional technical research and academic skills required as part of a university degree program
- The Network Trainee has developed an extensive network and has connections to leaders within the nanomedicines field (leveraging the “strength of loose ties”)

Program Goals

The goal of the NMIN ATC is to attest and confirm that Network Trainees have engaged in a series of diversified, capacity-building programs offered by NMIN and partner organizations that go “above and beyond” nanomedicine training traditionally provided in university degree program curricula.

Activities will be coordinated and delivered with support from the NMIN Administrative Centre and will span the five (5) Priority Areas and Strategic Goals (Appendix A and B) of the NMIN Strategic HQP Program (Board approved 31 March 2020). It is the responsibility of NMIN Trainees to complete activities that span the range of activities and learning opportunities provided by NMIN and partner groups.

Eligibility

Graduate students and postdoctoral fellows working on NMIN-funded research are expected to work towards NMIN ATC. All NMIN Trainees (including Undergraduate students, research support staff and NMIN HQP Network [NHN] members) are eligible to complete the program and receive NMIN ATC.

Tracking and Reporting

The NMIN Administrative Centre will track completion of eligible activities for certification (see Table 1, below). When a participant completes the required number of credits, an NMIN-branded certificate will be issued. Credits for ATC can be earned until the end of NMIN’s NCE lifetime (31 March 2025).

Experiential Learning Credits

NMIN encourages HQP to attend webinars and learning opportunities that are outside of the traditional academic experience and that support the development of well-rounded scientists. Topics may include, but are not limited to: starting a business; local, national and international partnership development and communication building strategies; social enterprise (organizations that apply commercial strategies to maximize improvements in financial, social, and environmental well-bring); leadership and mentorship skills acquisition; best practices in equity, diversity, and inclusion (EDI) strategies and programming; advanced communications and knowledge mobilization skills; advanced writing skills; emotional intelligence skill development; and other programming aimed at soft-skills acquisition.

Experiential learning credits may be awarded for non-NMIN events and programming if the programing is aligned with NMIN's HQP Program Priority Areas and Strategic Goals (Appendix B) and is delivered by a reputable source that is able to provide organizational confirmation of the HQP's completion of the program. Requests for credit recognition towards NMIN ATC must be made in writing to the NMIN Administrative Centre and must include:

1. A description of the activity and number of credits (Appendix C)
2. A rationale as to how the activity supports the participant's development in one or more of NMIN's Priority Areas and Strategic Goals

To be submitted after completion:

3. Organizational confirmation of the HQP's completion of the program
4. A report on the three main take-aways from the learning opportunity that were relevant to their field of study

To be considered, activities must go above and beyond the traditional academic experience. A maximum of 25% of total credits (5 credits) may be accumulated/recognized from experiential learning. Activities provided by partnered organizations who have an active MOU with NMIN are considered a core activity and do not require approval as an experiential learning credit.

Table 1: NMIN ATC Requirements
Participants must complete at least 20 credits to receive the NMIN ATC.

Credits	Activities Activities/programs in blue are currently available or will be launched no later than 1 April 2021. Activities in grey will be made available post-COVID.
One credit per activity	1. Attend a live NMIN webinar 2. Complete EDI training provided through NMIN 3. Apply to run in the NHN Executive Committee election
Two credits per activity	4. Submit and have accepted an "Identified Gaps in Learning and Opportunities for Improvement" paper (maximum four pages), based on your experience in and needs from the nanomedicines field. Must include a SWOT or situation analysis and action plan to fill the gaps. 5. Present at an NMIN Lecture 6. Complete a self-study utilizing the NMIN IP decision tree 7. Present a poster or oral presentation at an NMIN event

Table 1: NMIN ATC Requirements Participants must complete at least 20 credits to receive the NMIN ATC.	
Credits	**Activities** Activities/programs in blue are currently available or will be launched no later than 1 April 2021. Activities in grey will be made available post-COVID.
Four credits per activity	8. Attend and complete Sessions 1-4 of the NMIN *Connect and Communicate with Confidence* (C^3) Workshop Series 9. Attend and complete NMIN 2020 Workshop Series *Designing Effective Commercialization Plans for Grant Proposals* 10. Complete an *NMIN Nanomedicines Translated* research sketch - a lay summary of a recent research publication from your lab 11. Participate in the NMIN HQP Research Presentation Series (including participating in the HQP Teams formative feedback session) 12. Attend an in-person NMIN event (conference, scientific meeting, etc.)
Five credits per activity	13. Partner and work with a mentor or mentee in the NMIN Mentorship Program 14. Attend and present an NMIN-relevant poster or oral presentation at a national or international event under the NMIN Travel Award Program
Six credits per activity	15. Complete one Mitacs Internship or Fellowship 16. Serve on the NHN Executive Committee for a one-year term 17. Attend an in-person Trainee Symposium

Appendix A: Learning Opportunities through NMIN

Broadly speaking, the NMIN HQP Program provides HQP opportunities to:

- Apply the scientific, ethical, entrepreneurial, and communication skills imparted by this program to contribute to the discovery, development, and evaluation of nanomedicines.
- Contribute to the discourse on nanomedicine between academic, industry and government professionals by gaining proficiency in communicating science to different audiences.
- Become active as professionals, entrepreneurs, and emerging leaders in the area of Nanomedicines.

More specifically, the NMIN HQP Program works to prepare HQP to:

- Contribute to the discovery, development, and evaluation of nanomedicines.
- Meaningfully contribute to social, political, and economic outcomes as professionals, entrepreneurs, and leaders in the area of nanomedicine.
- Describe in accessible terms the design, formulation, and evaluation of nanomedicine for the transformation of a candidate into a finished clinical/therapeutic product.
- Understand the regulatory processes that support nanomedicine discovery, development, and outcomes.
- Participate in nanomedicine research to international standards.
- Understand and debate nanomedicine use, ethics, economics, commercialization, and contributions to society from multiple scientific, social, political, and economic perspectives.
- Provide solutions to scientific and commercial issues through sourcing and synthesizing information and applying critical thinking.
- Communicate effectively in a scientific environment through person-to-person interactions, scientific writing, and presentations.
- Communicate effectively in a professional environment through person-to-person interactions, meetings, and effective use of remote networking technologies.
- Demonstrate teamwork and professional and ethical behavior.
- Demonstrate leadership, mentorship, and entrepreneurial skills.

Appendix B: NMIN HQP Strategic Program

The Priority Areas and Strategic Goals of the overarching NMIN HQP Program include:

Priority Area 1: Nanomedicine Research Skills and Experience

- Strategic Goal 1: Equip trainees with core, cutting-edge research skills in a world-class research environment (*also addressed through the Research Program*)

Priority Area 2: Intellectual Property (IP) Creation and Commercialization Skills and Experience

- Strategic Goal 2: Provide specific training in IP creation, identification, protection, and commercialization

Priority Area 3: Entrepreneurial and Leadership Skills and Experience

- Strategic Goal 3: Provide opportunities for hands-on/experiential learning opportunities for the development of entrepreneurial and leadership skills

Priority Area 4: Communication and Knowledge Mobilization Skills and Experience

- Strategic Goal 4: Provide specific training on knowledge mobilization to prepare trainees for communicating their research to the public, policy makers, and industry.

Priority Area 5: Genetics, Ethical, Environmental, Economic, Legal and Social (GE^3LS) Issues Awareness and Understanding

- Strategic Goal 5: Provide specific training on GE^3LS issues and increase trainees' awareness and understanding of these concepts.

Appendix C:

Experiential Learning Credit Rates	
Length of the learning opportunities	**Credit Value**
Two hours or less	One credit
Four hours or less	Two credits
One day or less	Four credits
More than one day	Five credits