

NSERC Emerging Infectious Diseases Modelling (EIDM) Initiative - Call for Expressions of Interest

Sponsor

Natural Sciences and Engineering Research Council of Canada (NSERC)

Program

Emerging Infectious Diseases Modelling (EIDM) initiative

For More Information

Please see [NSERCs program website](#) [1]

Description

NSERC has announced a call for Expressions of Interest to the Emerging Infectious Diseases Modelling (EIDM) initiative. This is a new funding opportunity that will be jointly delivered with the Public Health Agency of Canada.

Background

Emerging infectious diseases (EIDs) are a key public health threat, which we are currently experiencing with COVID-19. EIDs are, for the most part, infectious diseases of animals that have, or evolve, the capacity to infect humans (these are called zoonoses), and can sometimes be transmitted human-to-human without need for animals to be involved in transmission. Zoonoses that acquire the capacity for efficient human-to-human transmission are those most likely to spread in the human population and cause pandemics such as COVID-19. The interaction of animals, the environment and humans in the emergence and spread of EIDs means that understanding EIDs to support risk assessment, prevention and control requires a One Health approach, i.e. one that considers the interactions amongst animals, humans and the environment.

In the context of public health, modelling can recreate the essential components of pathogen transmission cycles from our understanding of the biology of the pathogens and their interactions with their hosts. Models can help public health leaders and organizations understand where and when infectious diseases may emerge or re-emerge, and they can be used to explore the best methods or combinations of methods to control disease outbreaks or

epidemics and protect the health of Canadians.

In responding to the COVID-19 epidemic, mathematical modelling has proven to be an essential tool for researchers and policy advisors to simulate the impact of various interventions or public health strategies, and to provide quantitative predictions of how interventions might affect population health in the future. A wide range of actors in Canada (including federal, provincial, territorial (FPT) and municipal governments, local public health units and organizations, research organizations and universities, and others) are developing models to help inform and guide responses to public health threats such as COVID-19. The COVID-19 epidemic has reinforced the crucial role of modelling and has underscored a need for greater and ongoing capacity to implement and validate a full range of modelling tools required to support decision-making on public health measures and to support the response to epidemics and outbreaks.

At the federal level, since the outset of the COVID-19 pandemic, the Public Health Agency of Canada (PHAC) has identified several opportunities related to improving the capacity and coordination of infectious disease data modelling, a core component of disease surveillance. Through the experience of the COVID-19 pandemic, it has become clear that Canada would benefit from

- additional skilled modelling experts
- improved coordination of experts to support the identification of priority issues and strategic directions
- improved mobilization and collaboration among experts to accelerate research and advance potential solutions

Addressing these gaps will improve Canada's preparedness in the face of public health emergencies, such as pandemics.

The PHAC and the Natural Sciences and Engineering Research Council (NSERC) are working together to strengthen collaborative efforts among the academic community and all relevant stakeholders to conduct and coordinate infectious diseases modelling to better respond to COVID-19 and other similar situations.

Objectives

The funding opportunity has two broad objectives:

- Enhance national capacity of infectious disease modelling that supports public health responses to EIDs in the future by building a national network for collaboration and knowledge mobilization
- Provide direct support to Canada's COVID-19 response by producing modelling products that contribute to public health decisions via risk assessment, impact analyses and decision support such as intervention program design

To achieve these objectives, this initiative aims to establish multi-disciplinary network(s) of specialists across the country in modelling infectious diseases to be applied to public needs

associated with emerging infectious diseases and pandemics such as COVID-19. The network(s) would enhance and formalize existing ad-hoc structures, facilitate new and existing partnerships across institutions as well as the sharing of methodological advancements and strategies; thereby improving and enhancing research efforts and supporting capacity building in infectious disease modelling within Canada.

Applicants are encouraged to establish collaborations that demonstrate integration of the One Health (interaction of humans, animals and environment) approach to understanding infectious disease emergence and transmission, and strategies for prevention and control.

A key component of enhancing national capacity is the development of highly qualified personnel who are able to respond to current and future EIDs and pandemics by having knowledge of the needs for modelling to support decisions in public health. These include assessment of the spread of emerging and re-emerging infectious diseases in human and animal populations, and methods of control by medical counter measures and non-pharmaceutical interventions. With this in mind, applications should include research projects in modelling of the type conducted by scientists working on public health responses to EIDs in general and COVID-19 in particular. This research should be designed to fill identified gaps in modelling EIDs in general, and modelling to support responses to COVID-19 in particular by

- incorporating innovation in modelling methods, that are developed to the point of ready-made models for common methods of transmission (respiratory/air-borne, vectors, water/food) that may be readily adapted to new EIDs
- developing models that are capable of exploring transmission amongst domesticated animal, wild animal and human populations, recognizing the zoonotic nature of COVID-19 and many EIDs
- partnering with epidemiologists, biostatisticians, data scientists, surveillance experts and public health practitioners to identify gaps in critical data needed to inform modeling efforts, and also developing plans and prioritizations for mobilizing partners to rapidly and robustly collect needed data elements routinely and during outbreaks
- developing models to explore the complete scope of potential health, social, economic, environmental, societal and seasonal impacts of proposed public health interventions to quantitatively capture a broad range of risks and benefits associated with disease prevention and control strategies
- bringing together complementary expertise to work towards a foundational consensus with regards to contact mixing patterns (mixing), and the transportation network (mobility)

In order to deliver the Emerging Infectious Diseases Modelling initiative, NSERC would award a limited number of grants, totalling \$10M over two years, to eligible researchers with expertise in disease modelling or complimentary disciplines, to undertake a range of activities related to predicting epidemics and outbreaks, assessing socio-economic impacts, and supporting decision-making in health as it relates to emerging infectious diseases. Network(s) will be expected to address equity, diversity and inclusion in their research design, team composition and training of HQP.

Eligibility

In order to be eligible to participate in a full application as an applicant or co-applicant (see the [NSERC eligibility criteria for faculty for more information](#) [2]), researchers must submit an EOI.

Other interested parties, including representatives of interested organizations that could participate as collaborators, are also encouraged to submit an EOI. This will help ensure that all potential participants are identified early on. This will support the NSERC peer review process as well as help foster connections amongst all participants with expertise in infectious diseases modelling.

Please note that given the interdisciplinary nature of infectious disease modelling, a certain percentage of overall costs may be allocated to researchers outside of the natural sciences and engineering (NSE). As such, any eligible researchers that are interested in participating are encouraged to submit an EOI. Individuals representing non-NSE organizations may also participate as collaborators and should also submit an EOI.

Funding Availability

NSERC intends to award a limited number of grants, totaling \$10M over two years.

Maximum Project Value

TBD

Indirect Costs

TBD

Project Duration

2 years

Deadlines

If College-level review is required, your College will communicate its earlier internal deadlines.

Type	Date	Notes
External Deadline	Monday, October 26, 2020 - 5:00pm	All interested individuals are invited to submit an Expression of Intent (EOI) to NSERC by October 26, 2020. To submit an EOI please fill out the EIDM EOI form [3] and submit the

Type	Date	Notes
		completed form to the NSERC secure site [4].

How to Apply

The EIDM funding opportunity will be delivered via a two-stage process. Initially, all interested individuals are invited to submit an Expression of Intent (EOI) to NSERC by October 26, 2020. The purpose of this EOI is to facilitate connections and to enhance collaborations between participants in the development of a full application. EOIs will not be reviewed by NSERC. To submit an EOI please fill out the [EIDM EOI form](#) [3] and submit the completed form to the [NSERC secure site](#) [4].

The EOI will request the following information:

- the participant's name (first, middle and last), affiliation and email address
- areas of expertise
- a list of up to 10 keywords
- a short description (3–4 sentences) on how you or your organization can contribute to building knowledge, network and capacity on modelling emerging infectious diseases to support public health actions across Canada in the context of pandemics such as COVID-19
- 1–2 potential peer reviewers
 - given the nature of this funding opportunity, please suggest reviewers that are unlikely to participate in such a network; this will often be reviewers from outside of Canada
 - you are encouraged to suggest potential reviewers with appropriate expertise that have different backgrounds (Canadian, international, established and early-career, members of under-represented groups, from academic and non-academic institutions)
 - **you must not contact suggested external reviewers in advance**
- consent to share information submitted in your expression of interest (name, affiliation, email address, area of expertise, keywords, short description) with everyone else that has also submitted an EOI (optional)

The list of interested individuals (including name, affiliation, email address, area of expertise, keywords and description) will be shared through the NSERC secure portal with all participants in the EOI stage. We encourage all interested individuals to consent to sharing their information. This will be crucial in facilitating connections and enhancing collaboration between participants to develop a full application.

In order to be eligible to participate in a full application as an applicant or co-applicant (see the [NSERC eligibility criteria for faculty for more information](#) [2]), you must submit an EOI. However, other interested parties, including representatives of interested organizations that could

participate as [collaborators](#) [2], are also encouraged to submit an EOI. This will help ensure that all potential participants are identified early on. This will support the NSERC peer review process as well as help foster connections amongst all participants with expertise in infectious diseases modelling.

Please note that given the interdisciplinary nature of infectious disease modelling, a certain percentage of overall costs may be allocated to researchers outside of the natural sciences and engineering (NSE). As such, any eligible researchers that are interested in participating are encouraged to submit an EOI. Individuals representing non-NSE organizations may also participate as collaborators and should also submit an EOI.

Full application

Information related to the submission of the full application and selection criteria will be posted on the NSERC website in the coming weeks.

Preliminary timeline

Date	Activity
October 13, 2020	Launch of funding opportunity
October 26, 2020	Expression of Interest deadline
October 28, 2020	Sharing of list of potential participants to all who submitted an EOI
November 2, 2020	Launch of the full application stage
December 18, 2020	Full application deadline
January 2021	Selection Committee meeting
February 2021	Results announced
March 2021	Anticipated start date of award

Please note that these dates are subject to change.

Information For Co-applicants

Co-appliants are also required to submit an EOI using the same process detailed int the 'How to Apply' section.

Attachment(s)

Attachment	Size
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Attachment

Size

 [EOI Form](#) [5]

180.32 KB

For Questions, please contact

If you have questions about the Expression of Interest for this initiative please contact EIDM-MMIE@nserc-crsng.gc.ca [6].

Please note that more information related to this funding opportunity will be made available at the full application stage.

Office of Research

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Alert Classifications **Category:**

Funding Opportunities and Sponsor News

Disciplines:

Health and Life Sciences

Information and Communications Technology

Physical Sciences and Engineering

Source

URL: <https://www-research.uoguelph.ca/research/alerts/content/nserc-emerging-infectious-diseases-modelling-eidm-initiative-call-expressions-interest>

Links

[1] https://www.nserc-crsng.gc.ca/Media-Media/NewsDetail-DetailNouvelles_eng.asp?ID=1189

[2] https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Eligibility-Admissibilite/faculty-corpsprof_eng.asp

[3] https://www.nserc-crsng.gc.ca/_doc/mid_expression_of_interest_e.pdf

[4] <https://competitions2.nserc-crsng.gc.ca/sites/500009/993/home.aspx>

[5] https://www-research.uoguelph.ca/research/alerts/sites/default/files/attachments/NSERC%20EIDM_mid_expression_of_interest_e.pdf

[6] <mailto:EIDM-MMIE@nserc-crsng.gc.ca>

[7] <mailto:lawsong@uoguelph.ca>