



Canada-Taiwan

NSERC-NSTC Call for Proposals in Semiconductors and Artificial Intelligence

Presented by: Patrick Suter and Margaret McCarthy

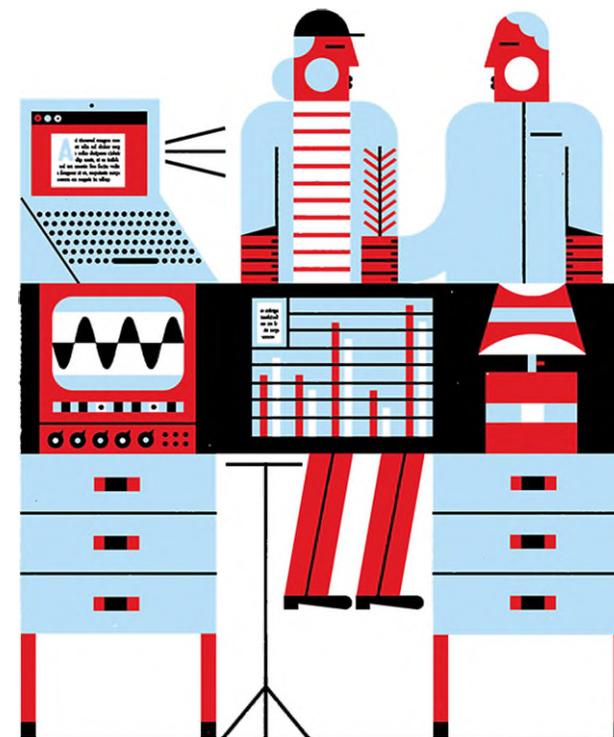


Le CRSNG invite les personnes candidates à présenter leur demande dans la langue de leur choix, soit en français ou en anglais.

NSERC invites applicants to submit their application in the language of their choice, either French or English.

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NSERC-NSTC Call on semiconductors and AI

Opportunity

Canada and Taiwan: long standing cooperation in Science Technology and Innovation (STI)

Canada Taiwan Joint committee on STI:

- Opportunity to enhance scientific collaboration in ICT and net-zero technologies
- Agreement to focus on Semiconductors and Artificial Intelligence
- Combines strengths in Canadian AI and Taiwanese semiconductors
- To address fundamental challenges at the intersection of AI and semiconductors, and
- Explore how can AI advance semiconductor research and how can semiconductors advance AI infrastructure

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Objectives

NSERC and the National Science & Technology Council of Taiwan (NSTC) will partner to fund collaborative research projects

Embedding AI across design, manufacturing and packaging: research on how AI can support chip design, manufacturing and packaging more efficiently and accurately, while making these processes “smarter”

Compound semiconductors for AI technologies: research on how the role and the design of compound semiconductors can enable AI development

AI technologies in semiconductor based Micro-Electro-Mechanical Systems (MEMS) sensors: research on how AI can be embedded in MEMS sensors and how improved sensors can enhance AI applications.

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Funding

Project duration:	Three years
Funding from NSERC to Canadian teams:	Between \$20,000 and \$75,000 per year
Funding from NSTC to the collaborating Teams in Taiwan:	Between \$20,000 and \$75,000 per year (equivalent CA\$)
Funding balance:	maximum 75% of the overall budget attributed to Canadian or Taiwanese research teams

Total funding over 3 years

Canada: \$1M

Taiwan: \$1M
(equivalent)

Expected number of awards:

between 4 to 5

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Who can Apply

NSERC is the Lead Agency: Launches the call, receives applications, administers the merit review on behalf of NSERC and NSTC

In Canada:

- University researchers as the **lead PI** and co-applicants
- NSERC eligibility rules apply
- One application per Canadian researcher as the Applicant, or co-applicant

In Taiwan:

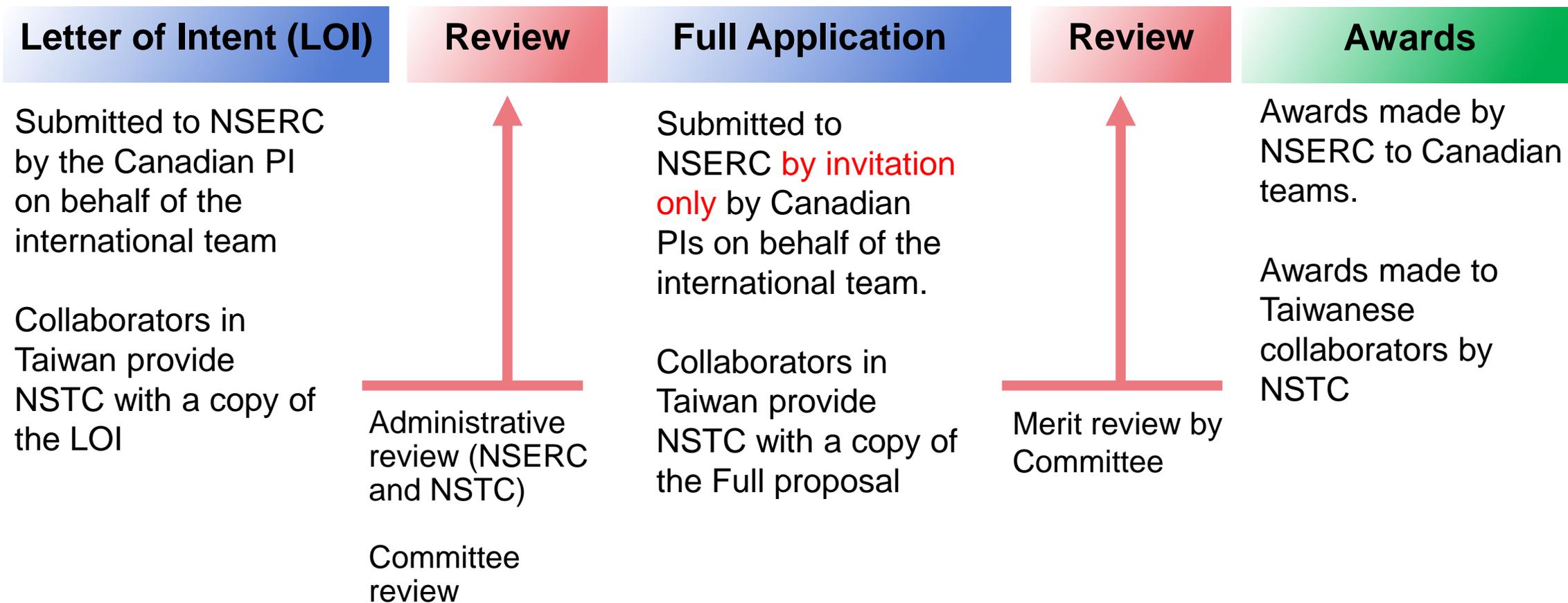
- University researchers as collaborators
- NSTC eligibility rules apply

Non-academic partners or organizations are not allowed.

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Application process

- **No changes in teams between the letter of intent and the full proposal**
- **No non-academic participation**
- **Full proposal by invitation only**



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Application

Combined template

LOI:

- Fill in the LOI section
- 3 pages maximum for this section
- Do not remove the Full proposal section

Full proposal:

- Reuse the LOI template you submitted
- Adjust the LOI section if needed
- Fill in the Full proposal section
- Keep the 3-page limit for the LOI and the 7-page limit for the full proposal

Presentation standards,

Do not remove titles and bullets

Alliance International Collaboration – NSERC-NSTC call on semiconductors and artificial intelligence

Proposal template

Letter of intent (maximum 3 pages)

Relevance and expected outcomes

- Outline the objectives of the proposed collaboration between research teams in Canada and Taiwan and explain the potential outcomes and impacts.
- Explain how the collaboration will address important research challenges in semiconductor and artificial intelligence (AI) within the natural sciences and engineering (NSE) disciplines. Describe how the collaboration will further develop areas of strength and leadership and expertise in semiconductor and AI research in Canada and in Taiwan. Outline the global importance of the topic and how the expected outcomes could benefit Canada and Taiwan.
- Demonstrate how the planned collaborative project aligns with the objectives of the call.

INSERT YOUR TEXT HERE, RESPONDING TO EACH OF THE ABOVE POINTS

Full proposal only (maximum 7 pages – by invitation only):

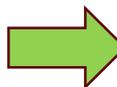
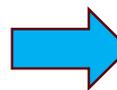
Common research proposal:

Background

- Relate the proposal to current scientific, technical and commercial developments at the intersection of semiconductors and artificial intelligence, referring to the current literature and market conditions, if applicable. Position the research relative to other efforts and to the art. Describe the background research on which the project is built.

INSERT YOUR TEXT HERE, RESPONDING TO EACH OF THE ABOVE POINTS

Detailed proposal



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Application

Sensitive Technology Research and Affiliations of Concern (STRAC)

LOI:

Include the attestations for every named Applicant, co-applicant and collaborator in Canada and Taiwan.

Full application:

Include the attestations again.

Remember: change in the composition of the teams is NOT allowed between the LOI and the full application.

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Review

Letter of Intent

1. Relevance and expected outcomes

- Alignment of the proposed research with the objectives of the call
- Relevance and outcomes for Canada and Taiwan

2. Collaboration

- Appropriateness of the planned collaboration and synergy between Canadian and Taiwan-based collaborator(s)

3. Training plan

- Opportunities for enriched training experiences for research trainees (undergraduates, graduates, postdoctoral trainees)

4. Equity, diversity and inclusion (NSERC internal assessment)

- Consideration of equity, diversity, and inclusion in the research and training environment

- **Fill in the first part of the template (LOI)**
- **Do not delete the second part which will be used for the full proposal**

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Review

Full Proposal – by invitation only

- Reuse the template you submitted for the LOI,
- Complete the second part of the template,
- Adjust the LOI section if needed

1. Relevance and expected outcomes

- Significance of the research and the intended outcomes, and alignment with the objectives of the call, to further develop areas of strength and leadership, and foster expertise in Canada and Taiwan.

2. Collaboration

- Added value of the proposed collaboration for Canada and Taiwan.

3. Training plan

- Opportunities for enriched training and research experiences in both Canada and Taiwan for undergraduates, graduates and postdoctoral trainees to develop relevant research and professional skills, such as leadership, communication, collaboration and entrepreneurship (where possible and relevant, the creation of exchange internships for trainees between Canada and Taiwan is encouraged).

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Review

Full Proposal – by invitation only

- Reuse the template you submitted for the LOI,
- Complete the second part of the template,
- Adjust the LOI section if needed

4. Equity, diversity and inclusion (assessed by NSERC staff)

- Consideration of equity, diversity and inclusion in the research and training

5. Quality of the proposal

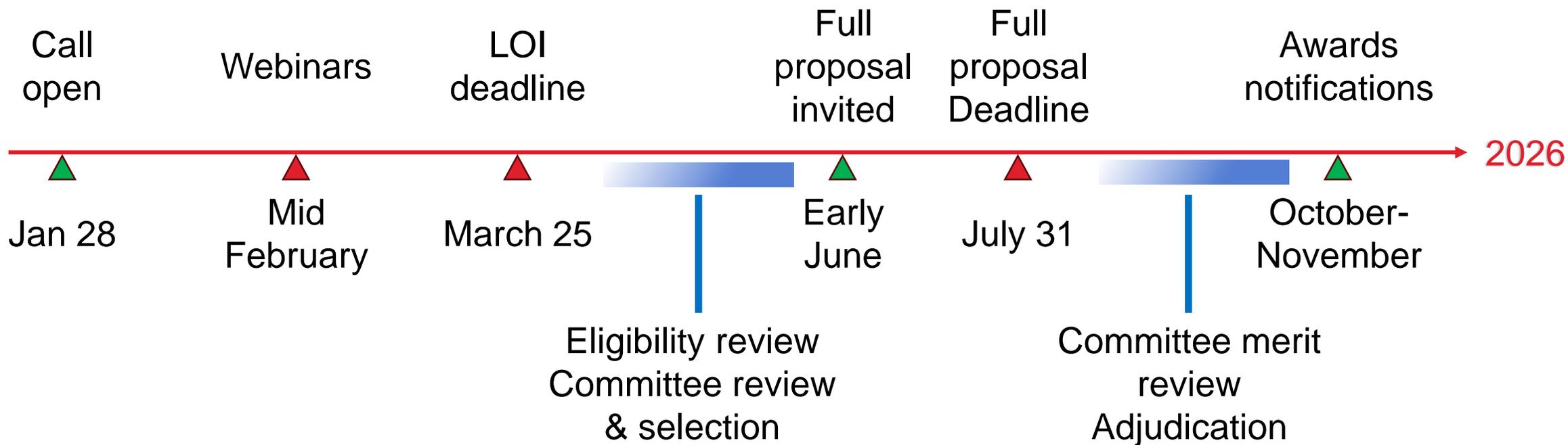
- The need for original research to address the topic and the potential for generating new scientific knowledge.
- Clarity of the objectives and appropriateness of the proposed research to achieve the objectives and expected outcome(s); justification for the planned expenditures; balance and alignment of research efforts between Canadian and Taiwan-based research teams.
- Appropriateness of academic researchers' expertise, and that of the collaborator(s), both for carrying out the planned research activities and in mentoring trainees.

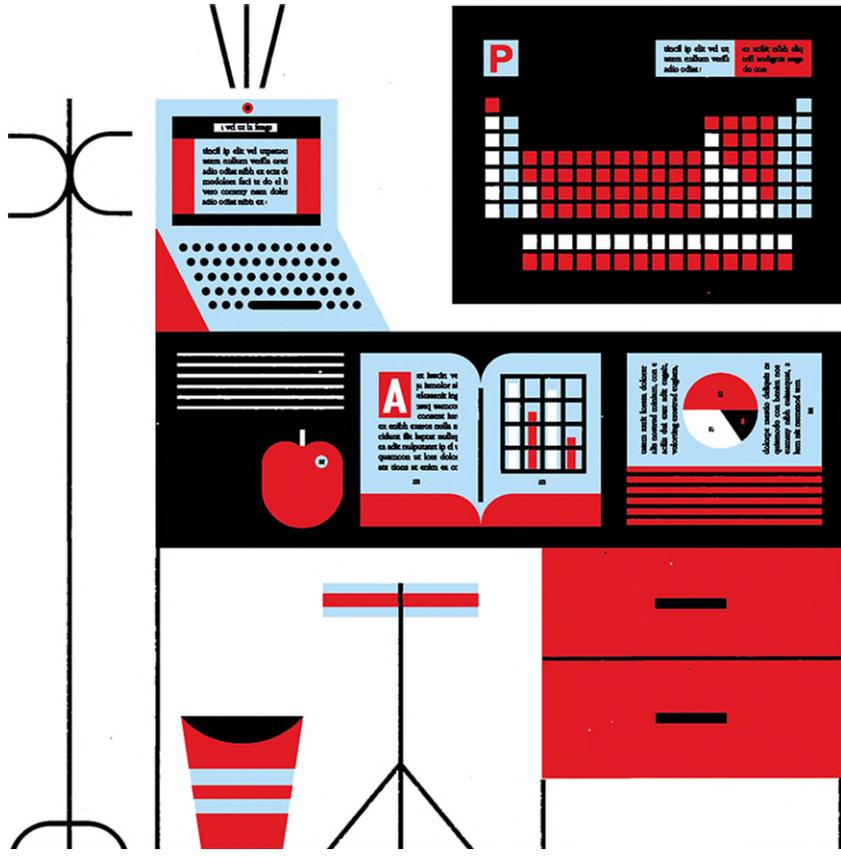
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Timelines

Reminder:

- **No changes in teams between the letter of intent and the full proposal**
- **No non-academic participation**
- **Full proposal by invitation only**





Questions?

Patrick Suter

Deputy Director

Taiwan@nserc-crsng.gc.ca

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