

CARTE Seed Funding Call for Proposals

Background

To address the growing demand for analytics and AI expertise across a range of engineering disciplines, FASE has provided a major investment in the development of Centre for Analytics and AI Engineering (CARTE) through financial, logistic, and strategic support. This funding call seeks proposals to develop new research collaborations for projects beginning on April 1, 2021. The primary goal is to bring together a pair of co-PIs from different departments within FASE to build a high-impact project that will eventually secure large-scale external research funding.

We are seeking proposals that advance the theory of Analytics/AI/ML methods and techniques or their applications in an engineering context. We particularly encourage submissions aiming to create **open datasets** that empower researchers to apply Analytics/AI/ML to solve problems in engineering or closely-related fields, as well as submissions aiming to help solve problems faced by **marginalized populations** with Analytics/AI/ML methods.

PI Eligibility:

- 1) Co-PIs must be eligible to hold tri-council agency grants as PI
- 2) Co-PIs from different FASE departments will be prioritized
- 3) Priority will also be given to teams that include at least one co-PI in their first 10 years as a faculty member

Application:

- 1) **A new opportunity:** PIs have not previously collaborated – CARTE seeks to enable new partnerships across engineering disciplines. A preference will be given to PIs from different departments, or those who can clearly demonstrate different but complementary expertise.
- 2) **A clear overarching goal:** The project should have a clear end goal, such as a key finding, a compelling prototype, or a persuasive data set that paves the way for larger funded projects.
- 3) **Excellence in research:** The researchers should provide evidence of established or emerging leadership in their area(s); they should show how their expertise will compellingly be united to solve an important engineering challenge using analytics or artificial intelligence.
- 4) **A clear plan on collaboration:** Successful applications should demonstrate how the co-PIs and students will work together, and how goals and milestones will ensure a meaningful partnership. The graduate students will be jointly advised by the co-PIs and will work together on an interdisciplinary project, the solution of which will unlock a large partnership or

innovation opportunity. The proposal should also show how research planning, use of CARTE space, use of infrastructure, and supervision would be harmonized across the collaborating team. Accepting CARTE funding requires project participants to commit to regularly using desks in CARTE (see Expectations below).

- 5) **A gateway to a major funded partnership:** Winning proposals will demonstrate that CARTE support paves the way to major externally sponsored research grants. For example, the co-PIs can show how the anticipated results of the project will provide the basis of at least 2 grant applications, to be submitted before end of their CARTE seed project, to programs such as NSERC Alliance or ORF-Research Excellence. Co-PIs should specify the dates of competitions they intend to apply to.
- 6) **Compelling annual milestones:** The project will offer compelling milestones that will form the foundation for continued collaborations and joint funding applications.

Budget:

The base budget for each CARTE project will be \$30,000 CAD/year for 2 years. In exceptional cases, a no-cost extension for an additional year will be considered. The \$30,000 CAD/year amount for each project is the sum of total cash invested by the Faculty of Applied Science & Engineering and each of the participating departments/institutes, according to the following breakdown:

- **\$15,000 CAD/year from CARTE**
- **\$7,500 CAD/year from the Department or Institute of each co-PI.** This must be committed via a letter from the Department Chair/Institute Director attached to the CARTE application.

Notes:

- 1) The department contributions can be conditional on a success application.
- 2) In-kind support, on top of the cash contributions may be expressed in the letters and will be taken into consideration in the adjudication process. In-kind support will not be matched.
- 3) Receipt of funding for the second year is contingent upon on acceptance of a satisfactory progress report. A final report will be due at the end of the project.

Use of funds:

CARTE will prioritize the use of funds to support the stipend and research expenses of co-advised FASE graduate students. The graduate students will be jointly advised by the co-PIs.

Submission process:

Applications including all supporting documentation are due by email to carte@utoronto.ca by close of business February 8, 2021. Please include the term "CARTE Seed" in the subject line. Submissions should include 1) completed application form (attached), 2) CVs of co-PIs (e.g., CCV,

NSERC Form 100 or departmental CV), 3) letters of support confirming cash contributions from each of the collaborating departments/institutes.

Adjudication process:

An adjudication committee comprising members of CARTE's Steering Committee and/or other representatives from participating FASE Departments/Institutes will review proposals received by the submission deadline against program criteria. Decisions will be confirmed in March 2021.

Expectations of Successful Applicants:

- Faculty and students funded by CARTE Seed shall be referred to as CARTE Faculty Fellows and CARTE Student Fellows, respectively, for the duration of their funded project. They should recognize this status and their funding support where appropriate to promote broader awareness of CARTE.
- Fellows will act as ambassadors of CARTE to their home department and FASE more broadly.
- Following the reopening of the UofT campus, fellows will be provided with shared space in CARTE (MY870), which is located in the Myhal Centre for Engineering Innovation & Entrepreneurship. During the first year of the project, Student Fellows are expected to spend at least two days a week in CARTE, interacting with other members of the Centre and the other Student Fellow(s) associated with the same project. Students will be provided with a desk in CARTE. Fellows will also have access to the CARTE meeting room (MY861).
- To help foster a learning environment for all fellows, Student Fellows are expected to give a seminar on their project during the second year of their project. All Faculty Fellows and Student Fellows are expected to attend these seminars.
- Fellows will be expected to attend CARTE events, which may include regular social and lunch/coffee networking sessions, community consultancy/problem solving sessions, seminars, etc.
- Fellows will contribute project summaries that will be highlighted on the CARTE website and in reports provided to the Dean.