

AI PROGRAM REVIEW PANEL – TERMS OF REFERENCE

BACKGROUND

In partnership with the Province of Ontario, the Vector Institute (Vector) has been tasked with supporting Ontario's growing AI eco-system including the goal of accelerating the number of artificial intelligence (AI)-related master's graduates to 1,000 per year, within five years. [Information about program tracks and the essential requirements for AI-related master's programs is publicly available at: vectorinstitute.ai/Almastersguidance.]

Program Review Panels (Panels) will review AI-related programs proposed by universities and make recommendations to Vector regarding which programs should be recognized as providing students with the skills and competencies identified by industry as essential for the AI workforce. Panels will review both core technical AI-related master's programs and complementary AI-related master's programs, defined as:

- **Core technical AI-related master's programs** are science, technology, mathematics and engineering (STEM) programs that will often be in computer science, engineering, mathematics or statistics, but can also be in other fields such as physics or informatics
- **Complementary AI-related master's programs** are STEM, business, social sciences or humanities master's programs that integrate AI-related content into master's programs with a focus of study that applies AI technologies (e.g., business, public health, environmental sciences)

Vector Review Panels will:

- Determine whether the essential requirements for AI-related master's programs are fulfilled;
- Assess whether the AI-related curriculum components¹ of Track 1, 2 and 3 master's programs are of sufficient substance to meet employer needs;
- Provide comments, suggestions and feedback about ways that the proposed program could be strengthened to the program contact for consideration; and
- Consider all submissions as confidential documents.

Panels will not duplicate the formal quality assurance or accreditation processes for master's programs and therefore the documentation required is limited what is needed to fulfill their mandate.

¹ A curriculum component will often be a course (in-person or online) but a program could prepare master's graduates through various combinations of: classroom learning, distance learning, culminating or capstone projects, module(s), summer school, faculty-supervised research projects, etc. For clarity, a curriculum component could be a topic or competency that is developed as a thread through multiple courses as opposed to a stand-alone component.

REVIEWER SELECTION AND PANEL SELECTION

PROGRAM REVIEWERS

Vector will establish a registry of AI-related university experts and employers who hire AI-related talent who have agreed to serve as reviewers.

University Reviewers will be drawn from:

- All Vector faculty, including Vector faculty affiliates with research expertise in AI-related fields including: data science, machine learning and deep learning, computer vision, natural language understanding, intelligent robotics, knowledge representation and reasoning, intelligent agents, intelligent user interfaces, intelligent medicine and other AI-related topics

Employer Reviewers will be drawn from:

- Individual representatives identified by Vector industry sponsors; and/or
- Health sector organizations with existing staff who work in AI-related fields including: data science, machine learning and deep learning, computer vision, natural language understanding, intelligent robotics, knowledge representation and reasoning, intelligent agents, intelligent user interfaces, intelligent medicine and other AI-related topics.

CHAIR AND MEMBERSHIP OF PROGRAM REVIEW PANELS

- Chair: Vector, Head, Academic Partnerships or delegate
- Two (2) [non-conflicted] registered University Reviewers per submission²
- Two (2) registered Employer Reviewers per submission⁴
- Vector staff responsible for recording advice from panelists and taking notes to provide feedback to submitters
- One observer representative from the Ontario Universities Council on Quality Assurance (OUCQA)

When organizing a Panel to review one or more submissions, Vector's Academic Partnerships Unit will invite two registered University Reviewers and two registered Employer Reviewers to participate in the review of each submission. All invited reviewers will have expertise that aligns with the program-related AI field associated with the submission they are reviewing. If one or more of the invited reviewers is

² University and employer reviewers may be involved in the assessment of more than one submitted program.

unwilling or unable to participate or has a conflict of interest, then alternate reviewers will be contacted from the appropriate reviewer group (i.e., university reviewer or employer reviewer).

AUTHORITY OF PANELS

Panels have the authority to make recommendations to Vector as to whether master's programs proposed by universities: i) fulfill the essential requirements for AI-related master's programs; and ii) include AI-related curriculum of sufficient substance to meet employer needs.

CONDUCT OF MEETINGS

The Panel meetings will be conducted following well-established practices for peer-review of grant applications which include:

- Up front declaration of real or perceived conflicts of interest before materials are distributed.
- Conflicted individuals exiting the meeting during the discussion of a submission where they have real or perceived conflict of interest.
- Treating all submitted materials, and the identities of reviewers, as confidential.
- Having the Chair focus discussion time on submissions where there was variation in reviewer scoring to probe the causes of the lack of agreement.
- Having notes taken to keep a record of points raised during the discussion and the panel's recommendation.

PROCESS FOR PANEL REVIEWS

- i) Vector to ensure that each submission includes the required documentation.
- ii) Two university and two employer panelists will be assigned to each submission by the panel Chair or delegate.
- iii) Confirm acceptance of reviewer role and absence of real or perceived conflict of interest.
- iv) Panelists review submissions to determine if the essential requirements have been fulfilled, if the curriculum components are of sufficient substance to meet employer needs, and to provide any comments or feedback to be transmitted to the university contact person associated with the program submitted.
- v) Panelists provide their scoring of submissions and comments to the Chair.
- vi) The 1000AIMs Panel will meet in-person or via teleconference to discuss each submission and provide recommendations on submissions.

- vii) In the event that a recommendation cannot be made due to insufficient information, the Chair will request additional supporting documentation from the submitter.
- viii) Submitters will be notified whether their program will be recognized by Vector and provided with:
 - a. Comments and feedback from the Review Panel including suggestions regarding how their program(s) may be strengthened
 - b. Information about publicly available/open source curriculum components which the submitters may opt to integrate into their program

Initially, and to support programs that will be delivered in fall 2018, Panel meetings will be convened as submissions are received. The plan is to move to regular scheduled meetings after fall, 2018.