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CANSSI Collaborative Research Teams Program Overview and Review Criteria

CANSSI's premier flagship activity is the Collaborative Research Team (CRT) program. The mandate of the CRT program is to foster research and training interactions that span disciplines and institutions in order to tackle complex problems of broad importance for science, engineering, health, and society. The CRT program emphasizes the co-creation of knowledge, the leveraging of Canada's expertise in the statistical sciences (actuarial science, biostatistics, inferential data science, statistics), and the synergy achieved by embedding partnership into projects at their inception.

Program Overview

A CRT project tackles research of sufficiently broad scope as to require a team of faculty, postdocs, and students spanning a range of specialties during a three-year research and training agenda. A proposed CRT project must have a significant component that is NSERC-fundable, in the sense of developing new fundamental statistical and inferential data science methodology and models and/or applying statistical and data science methods and models in an innovative way to a research problem in an NSERC-funded discipline. The scope of the proposed research and activities must require support that is substantially more involved than is possible to pursue successfully with individual grant funding and the value-added of supported projects must be significantly more than the sum of the parts. Research involving interdisciplinary interactions between multiple disciplines and/or collaborations dealing with geographic and institutional heterogeneity are important for CRT projects. Note that building collaborations between statistical sciences and other fields is a key part of CANSSI's mission.

CRT project funding goes primarily to support HQP involved in the project research and to support the interactions of the CRT team. The training and mentoring of HQP is an important consideration in the evaluation of CRT proposals along with fulfilling the CANSSI equity, diversity and inclusion (EDI) requirements and goals. CRT projects also commit to activities that support substantial communication and dissemination of research results, such as organization of specialized professional meetings, organized presentations at large professional meetings, preparation of short courses, surveys, and notes, software, publicly accessible publications.

Proposal process

The CRT proposal process has two parts: Submission of a Letter of Intent (LOI) and, if invited, submission of a full proposal. Please refer to the documents *CRT LOI Instructions* and *CRT Full Proposal Instructions* for complete details.

The LOI describes the proposed research and research team. LOIs are adjudicated by the CANSSI Scientific Advisory Committee with the input of external reviews. The review of LOI focuses on scientific merit and potential impact of the proposed research, the merit of the collaboration, the justification for support under the CRT program, and the involvement of students and postdoctoral fellows. Only teams with LOIs demonstrating clear potential for eventual success in the proposal competition will be invited to submit a full application.

The full proposal adds two pages of explanation to the original scientific description, providing an opportunity to address issues raised in the review. The scope of review of full proposals includes scientific merit and potential impact of the proposed research, the merit of the collaboration, justification for funding under the CRT program, the involvement of students and postdoctoral fellows, details of collaboration, dissemination and communication, commitment to the CANSSI equity, diversity and inclusion (EDI) goals and policies, budget, partnerships, and additional funding. It includes formal letters of collaboration from partners. Full proposals are evaluated by the Scientific Advisory Committee.

Restriction on applications

Researchers can be listed as a lead on only one Letter of Intent and Full Proposal. In a situation in which a researcher is listed as a lead on one proposed CRT project and as a collaborator on other CRT projects, the applications in question should explain the roles of the researcher on the various projects carefully. Researchers on active CRT projects may be listed as mentors on another project.

Evaluation of CRT Proposals

The general evaluation criteria are the innovation and fundamental nature of the proposed research, the justification of CRT support for the proposed project, the likely effectiveness of the team structure, the HQP training plans, the excellence of the researchers, the potential broader impact of the research in science, engineering and the public interest, commitment to the CANSSI equity, diversity and inclusion (EDI) goals and policies, the potential for long-term sustainability of the collaboration, the national and international scope of collaboration. The plans for communication and dissemination of research results are also a significant part of the review criteria.

It is important that the novelty and impact of the proposed research be made abundantly clear to reviewers. Projects that pursue fundamental research in the statistical sciences motivated by research challenges in an application field, that involve collaborations between statistical sciences and other disciplines, and that involve researchers spanning regions of Canada often review well.

Applications from teams whose leads are new researchers (e.g., assistant professor) may

designate up to two experienced faculty to serve as mentors for the project. The role of mentors is to offer advice on interdisciplinary aspects of the project, advising of students and postdoctoral fellows, and project management.

Below we give a breakdown of some considerations in the review process.

Proposed research

The novelty and difficulty of the proposed research, the likelihood of success of the project, the anticipated outcomes and their potential impact, and the relation of the proposed research to existing and emerging research are evaluated. The description should justify support under the CRT program in terms of the activities to be supported.

Response to reviews

How well the new application responds to reviews of the Letter of Intent.

Investigators

The record of research and highly qualified personnel (HQP) training of the lead investigators and partners is evaluated relative to career stage and ability to conduct the proposed research. If provided, the record of mentors for the project are evaluated for their role.

Anticipated roles of trainees

The plans for including postdoctoral fellows and students in the proposed project are carefully evaluated. This includes evaluation of the role of HQP in the cohesion of the team (e.g. in joint supervision arrangements) and pursuit of the proposed research.

Partners

The suitability and connection to interdisciplinary partners and their role in the proposed research and training program are evaluated. The role of the partners in the training of HQP is another important consideration. Plans for interacting with partners is weighed in the reviews.

Anticipated organization of collaboration

Plans for communication and collaboration among the team members are carefully evaluated as far as effectiveness and sustainability as are the plans for scientific leadership of the project.

Equity, diversity and inclusion

Plans for fulfilling CANSSI EDI policies and expectations.

Communication and dissemination

The plans for communication and dissemination are evaluated in terms of effectiveness and impact. Communication of the impact of CRT projects is critically important for CANSSI.

Suggested reviewers

The investigators must suggest three reviewers with rationale for the choices.

Response to panel

The Scientific Advisory Committee considers the response to the reviews carefully.

CRT Budgets

The budget for a CRT Project starting in the next round is forecast to be \$210,000 for three years. Allowable expenses follow NSERC rules and include student and postdoc support, travel, and expenses related to communication and dissemination of results. Collaborators and trainees may be situated in other countries and their travel to Canada could be supported. Stipends to collaborators and trainees outside the country would be an ineligible expense.