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85 COUNCIL CONSEIL

Canada Research Coordinating Committee Consultation

Summary Report on Proposed Measures to Strengthen Science in Canada

November 2018

Strengthening Canadian Science

The [Canada Research Coordinating Committee](#) (CRCC) launched a national consultation in summer 2018 as part of its efforts to strengthen Canada's support for science and to position Canada as a global leader in research. It was an opportunity for Canadians, the research community and the next generation of scientists, scholars and students to help shape Canada's research landscape by providing feedback and advice on proposals addressing three key priorities:

1. creating a new tri-agency fund for international, interdisciplinary, fast-breaking, high-risk research;
2. strengthening equity, diversity and inclusion (EDI) in Canadian research; and
3. improving support for early career researchers (ECRs).

The consultation is complemented by engagement activities and dialogue with Indigenous communities on a separate path.

Engaging the Research Community

To engage in a wide-ranging and thoughtful national discussion, the CRCC invited Canadian researchers, administrators and stakeholders to contribute in a number of ways:

- **Regional roundtables:** More than 240 researchers and administrators from 47 universities and four colleges participated in eight half-day discussions at institutions across the country. The CRCC is grateful to the host institutions that ensured researchers and administrators from multiple disciplines with varied experience attended each event.
- **Online consultation:** 926 people contributed through the online consultation, which CRCC members, universities, colleges and academic associations promoted on websites and social media.
- **Stakeholder participation:** More than 20 agencies, associations and institutions engaged their members at an organizational level to prepare submissions.
- **Governing councils:** The diverse researchers, administrators and representatives from other sectors of society serving on the governing bodies of CRCC member agencies were engaged through discussions at meetings held in June 2018.

The CRCC and its member organizations are grateful for the participation of researchers, administrators, agencies and associations representing universities and colleges, academic disciplines, university teachers, postdoctoral researchers and graduate students. More than 1,500 people contributed to helping shape policies and programs that promise to strengthen Canadian research. We look forward to continuing this conversation in the years ahead.

Focusing Discussion

To respond to government priorities and to share agency expertise in program design and policy development with the research community, the CRCC focused consultations on draft proposals addressing each of the three priority areas. Participants were asked to respond and provide their feedback on these priorities.

The following sections present short descriptions of the draft proposals, the major issues raised and recommendations made. These will be reflected in the final design of the new tri-agency fund and the EDI and ECR action plans.

Tri-Agency Fund

Proposal

Budget 2018 allocated $275 million over five years, with $65 million per year ongoing, for a tri-agency fund to support international, interdisciplinary, fast-breaking and high-risk research. The CRCC proposed a draft program design that featured two funding mechanisms and a modified review process.

- The first funding mechanism, designed to provide seed funding and support large projects, would be open to interdisciplinary and high-risk projects in any area, with international collaborations strongly encouraged.
- The second funding mechanism would be designed to respond rapidly to urgent national challenges and time-sensitive opportunities for international collaboration.

Learn more about the draft proposal.

Community Feedback

The majority of participants thought the proposed fund could meet its objectives and addressed a substantive need. Many provided informed and constructive suggestions included below.

Defining key concepts and priorities

The following represents the most common feedback received:

- Many recommended that the agencies provide clear definitions, guidelines, evaluation criteria and measures of success for the terms "high risk," "interdisciplinary" and "transformative."
- Most recommended an emphasis on high-risk, high-quality interdisciplinary research that had the potential to transform paradigms and impact society. Many recognized such research might cross disciplinary boundaries within a single agency.
- Researchers insisted on the necessity for quality and equity of interdisciplinary collaborations.
- Views were mixed on the importance of international collaborations for smaller, early stage projects.

Changing the review culture

The majority agreed that the review culture required change to reward international, interdisciplinary, fast-breaking and high-risk research and most concurred that the measures needed include:

- defining key concepts clearly and providing guidelines and criteria incorporating multiple metrics that may be adjusted for university, college and other applicants;
- requiring applicants to show EDI and ECR considerations in research design;

- establishing diverse review committees, with international members and people at different stages of their careers that are familiar with interdisciplinary research;
- training staff, reviewers and researchers in high-risk and interdisciplinary research, EDI and ECR; and
- employing a blind review process.

Refining award size and type

Almost all respondents recommended that funding support a large number of small seed grants that would entice more researchers to submit more high-risk projects, increase diversity among researchers and projects funded, and encourage more ECRs to apply.

Other suggestions include the following:

- Among those suggesting modifications, many encouraged consideration of a very small funding mechanism to support the development of new ideas and partnerships. Others suggested feedback and mechanisms to facilitate partnership building. Given the time needed to establish partnerships, some suggested allowing three- to five-year seed grants or mechanisms to transition between smaller, early stage projects and large projects.
- To encourage ECR participation, many suggested allowing two principal investigators and providing targeted incentives.
- To encourage diversity, many recommended measures to enable researchers from multiple types and sizes of institutions to participate (e.g., faculty release, onboarding).
- Institutional representatives also recommended including support for infrastructure to promote and report on interdisciplinary, international, EDI and ECR objectives.

Shaping special calls

Most roundtable participants and online respondents recommended the agencies define special calls through open calls on broad themes or other "bottom-up" consultative processes. A minority suggested the use of advisory bodies, proposed specific topics or recommended principles for priority setting. Few were aware of opportunities in which Canadians could participate in international research programs.

Many national associations and individual institutions welcomed the opportunity for the three federal research funding agencies—the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council—as well as the Canada Foundation for Innovation, to collaborate with other agencies and encouraged support for Canadians participating in international programs.

Strengthening Equity, Diversity and Inclusion in Research

Proposal

To redress the structural, institutional and attitudinal barriers that limit researchers in underrepresented groups from accessing agency programs, the CRCC proposed a draft EDI action plan that could change the culture of the research enterprise. The proposal had three strategic pillars:

- **Fair access to research support**: include EDI considerations to strengthen research teams, design and processes; reframe "research excellence;" and provide EDI training for staff and reviewers.
- **Equitable participation:** embed EDI considerations in funding policies, selection criteria and processes; pilot a program in Canada adapted from the United Kingdom's Athena Swan and the National Science Foundation's (NSF) ADVANCE programs; enhance representation through targeted measures; use science promotion to increase EDI awareness; and require institutional adherence to EDI policies.
- **Data for evidence-informed decision-making**: include expanded self-identification questions for applicants with the option "I prefer not to answer;" baseline self-identification for all applicants; and produce annual progress and statistical reports.

Learn more about the draft EDI action plan.

Community Feedback

Respondents largely endorsed the CRCC initiative and focused on ways the agencies should define diversity and research excellence, design programs and implement the review process. Many provided informed and constructive suggestions focused on the following:

Defining "diversity" and "research excellence"

Many respondents recognized that diversity and inclusion were essential ways to achieve research excellence. They recommended giving greater weight to a wider range of selection criteria, including but not limited to: team membership, EDI elements in research methodology, mentorship and training, research integrity (transparency regarding bias and availability of data) and community engagement. A number of respondents encouraged the agencies to include diversity in the size and type of organizations, research partnerships and communities with which they engage.

Nonetheless, a minority argued that "research excellence" was a concept distinct from issues of inclusion. It should remain publication-based and field specific.

Refining research programs

Within existing programs, respondents recommended:

- improving guidance documents;
- offering EDI training and mentoring for researchers, reviewers and staff;
- requiring researchers to detail how they will advance EDI objectives within their research and team;
- that agencies "stop the clock" on awards for those on leave and make it more acceptable to report leaves; and
- increasing investment in investigator-driven research, doctoral and postdoctoral fellowships, ECRs generally and those in underrepresented groups. Defining success, monitoring and reporting on progress is essential.

To increase the engagement of secondary and postsecondary students from underrepresented groups, respondents recommended:

- initiatives to bring the students onto campus and encourage networking;
- funding for research with and about underrepresented groups; and
- measures to encourage an Indigenous lens on research.

All respondents called on the agencies to work with institutions to build on institutional initiatives, or help them develop and implement EDI measures, by establishing standards for institutional eligibility and guidelines for EDI training. Institutional representatives recommended facilitating the implementation of national standards by making provision for the indirect costs of training, promotion and reporting, and supporting Indigenous community research participants.

Changing the review culture

Almost all respondents recognized that a culture change in the review system was the most urgent and greatest challenge. The following represents the most common feedback received:

- The majority strongly recommended diverse review committees with frequent turnover, training for researchers, reviewers and staff, improved guidance documents, substantive feedback and a blind review process.

- To accommodate those taking leave, most recommended either allowing the assessment of performance over a longer period or restricting the assessment period to the time when researchers were not on leave. A number urged reviewers to make similar accommodations for part-time researchers (such as clinicians or those working in other sectors).

- Others encouraged measures to ensure similar success rates for all groups, adjusting evaluation metrics for women and community researchers, and reducing biases against smaller institutions.

- At the same time, some argued that the review process is not biased and that it should remain exclusively based on accepted understandings of merit and potential.

Model programs

There was great support for a Canadian Athena SWAN initiative, an NSF ADVANCE program, and examples of other model programs already in place in Canada and abroad.

Support for Early Career Researchers

Proposal

The CRCC proposed to define ECRs as those with five years' experience or less, minus leaves, since their first research appointment. In addition, it proposed balancing funding equitably across career stages by equalizing the proportion of funding available at each stage to their proportion in the overall research community. Finally, it proposed a draft policy built on three strategic pillars:

- **Fair access to research support:** increase award values and/or durations for ECRs; dedicate a portion of funding to ECRs—and, over time, to researchers at all career stages—relative to the application pressures they experience; and provide first-time applicants with enhanced feedback;
- **Equitable participation:** provide PhD students and postdoctoral researchers with access to professional development; support experiential leave for doctoral and postdoctoral researchers; and increase the participation of postdoctoral researchers and ECRs in review; and
- **Data for evidence-informed decision-making:** establish a common definition of ECR to serve as the basis to refine definitions of all career stages; collect data, track and report on outcomes for trainees, ECRs and researchers in later career stages; and produce annual reports to inform future changes.

Learn more about the draft ECR action plan.

Community Feedback

Most respondents endorsed the CRCC proposal and focused on how best to define "early career," possible changes to programs and review, and ways to track career progression. Many provided informed and constructive suggestions focused on the following:

Defining career stages and experience

Many thought the proposed definition was fair, although a significant number suggested it should allow some flexibility for part-time researchers. A good number recommended a comparable definition for "mid-career researchers," with consideration given to their particular challenges.

Refining research and training programs

There was general agreement that the agencies should increase funding for ECRs. Suggestions included:

- providing direct support through separate competitions for ECRs or researchers at specific career stages;
- more, higher paid and longer postdoctoral fellowships and Tier 2 Canada Research Chairs for recent doctoral graduates;
- opportunities to serve as co-investigators;
- greater flexibility for postdoctoral researchers in the research location, duration and use of their funds; and
- greater harmonization across training programs, as well as increased support for non-academic professional development and mentoring.

Equalized funding

Many respondents felt "balanced funding" would help ECRs, encourage the retention of talent, and create a more open, competitive and innovative research community. However, most respondents were concerned that this initiative could reduce funding for mid-career and senior researchers, thereby dividing the community and encouraging scholars to leave Canada. Others argued this approach would

have little effect on the funding available to ECRs. Many suggested the agencies equalize the success rates of ECRs with senior researchers.

Changing the review culture

The majority of respondents felt that career stage should be taken into account in review processes. Most suggested ECRs should receive special consideration in open competitions, urged the agencies to include ECRs as observers or members of review panels, or called for more and better feedback from review committees.

Tracking career progression

Although the majority of respondents encouraged data collection as a way to improve understanding of the challenges facing ECRs, there was less certainty regarding the significance of tracking and reporting as a way to materially assist their career progression. They were familiar with persistent unique identifiers (particularly ORCID), which they had used in the past and recommended for producing better data and international recognition.

Future Directions

Inspired by the consultation process and the mandate of the CRCC, many stakeholders and roundtable participants called on CRCC members to be bold, take risks and be open-minded to new ideas in considering future directions.

Most urged the agencies to reduce administrative burdens by further coordinating and harmonizing policies and processes. They recommended doing so by eliminating differences in eligibility rules, simplifying application processes and allowing researchers to apply for funding across agencies.

Suggestions also included developing a critical mass of people who understand interdisciplinary review and considering measures introduced by organizations that fund multiple disciplines or offer better coordination between disciplines. Some encouraged creating bigger and better interdisciplinary funding opportunities, while others supported the general direction but urged a balanced approach.

Researchers and administrators also recommended that the CRCC address issues that cut across multiple disciplines, notably the need for improved access and management of digital research infrastructure, the indirect costs of research and a national effort to strengthen Indigenous research and research capacity.

Finally, participants urged the CRCC to work closely with the research community to sustain a national dialogue regarding these initiatives and the development of national priorities.