International Conference on Peer Review

Canadian Institutes of Health Research
June 29-30, 2017

Discoveries for life / Découvertes pour la vie
Background
Background

CIHR Mandate:

“To excel, according to internationally accepted standards of scientific excellence, in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products and a strengthened Canadian health care system...”

CIHR was designed to respond to the evolving needs of health research and seeks to transform health research in Canada by:

- funding both investigator-initiated research and research on targeted priority areas;
- building research capacity in under-developed areas and training the next generation of health researchers; and,
- focusing on knowledge translation and impact that facilitates and application of the results of research and their transformation into new policies, practices, procedures, products and services.
CIHR’s 2017-2018 budget at a glance

- Investigator initiated research: 54%
- Priority driven research: 23%
- Tri-council programs: 18%
- Operating expenditures: 5%
Challenges with the System
Challenges

Over the years, challenges were identified with the system.

- Growing discrepancy between research evolution and committee structure
- Increasing conservatism in peer review-failure to reward innovation
- Lack of consistency and efficiency in the peer review process
- Workload and costs for applicants
- Peer review burden
- Growing application pressure
CIHR’s investments in constant 2008-2009 dollars

Increasing application pressure
Declining success rates: All CIHR Grant Competitions (2000/01 – 2015/16)

Note: Unless specified, all figures represent **within-sex success rates** to take into account the proportions of applications received from males and females.
Proportion of CIHR Grants Awarded to Early-Career Researchers

- Proportion (%)

- Proportion: 19%, 18%, 17%, 16%, 15%, 14%, 13%, 12%
An increasing number of grants fund multidisciplinary projects

- Since 2007, CIHR funding of interdisciplinary research has increased by 32% overall.
- During the same period, expenditures for CIHR grants that involve have 6 or more disciplines have almost doubled.
Reforming Peer Review at CIHR
Objectives of the Reforms

Funding agencies around the world are being challenged to keep pace with a rapidly advancing research frontier and struggle to reduce the burden on applicants and reviewers.

The objectives of the reform to CIHR’s investigator-initiated programs and peer review processes were to:

- Capture excellence across all four research pillars, from knowledge creation to knowledge translation
- Capture innovative, original and breakthrough research
- Integrate new talent to sustain Canada’s pipeline of health researchers
- Improve sustainability of the long-term research enterprise

In meeting these objectives, the reform was also meant to address a number of operational challenges:

- Workload and costs for applicants
- Peer review burden
- Lack of consistency and efficiency of peer review process
- Growing discrepancy between research evolution and committee structure
- Program complexity
New Design

In reforming the overall peer review system, CIHR changed the program architecture as well as the adjudication process.

1. Two separate, complimentary funding schemes:
   - Project Grant
   - Foundation Grant

2. A peer review process that includes:
   - Application-focused review
   - Multi-stage review
   - Structured review criteria
   - Remote review of applications at the initial stage(s)

3. A College of Reviewers to support excellent peer review across the spectrum of health research
Design Elements

Multi-Stage Competition Process
- Effective screening of applications
- Decrease applicant burden and reviewer burden
- Focus reviewer attention on specific criteria for each stage of review

Application-Focused Review
- Avoid “force fitting” applications into standing committee structure
- Assign appropriate expertise to each application

Structured Review Criteria
- Minimize inconsistent/inappropriate application of review criteria
- Improve transparency of review process
- Decrease peer review burden

Remote (Virtual) Screening/Review
- Facilitate access to expertise, including international
- Improve cost-effectiveness of the process
- Minimize group dynamics and committee culture biases
College of Reviewers

The **vision** of the College is to establish an internationally recognized, centrally-managed resource that engenders a **shared commitment** across the Canadian health research enterprise to support **excellence in peer review**

The College is intended to be a **national resource** that over time will serve the peer review needs of CIHR and its partners

The College will ensure:

- systematic recruitment processes
- a more stable base of experienced reviewers from Canada & abroad
- capacity development through mentorship programs & membership progression
- ongoing learning resources
- inclusion of quality assurance approaches
- a valued recognition program
- collaborative approaches to peer review across health research funding organizations
FOUR FUNCTIONS

The College is structured around 4 main functions

1. Recruitment
2. Learning & Mentoring
3. Performance Management & Quality Assurance
4. Membership Management, Incentives & Recognition

Activities are based on:
- evidence-informed decision-making
- quality of the peer review system
- stakeholder engagement
- professionalizing peer review
Successes, Lessons Learned and the Way Forward
Bibliometric Study - Benchmark Indicators

Figure 3-6 Average of Relative Impact Factors (ARIF) of Health Research Papers from Foundation and Project Grant Programs Applicants and from OECD Countries, 2008-2015

Source: Observatoire des sciences et des technologies (Web of Science, data provided by Clarivate Analytics) - CBD™ Current as of August 2016.
Bibliometric Analysis

Average of Relative Citations (ARC) of Health Research Papers from Foundation and Project Grant Program Applicants and from OECD Countries, 2008-2015

Source: Observatoire des sciences et des technologies (Web of Science, data provided by Clarivate Analytics) - CBD™ Current as of August 2016.
Issues Related to Changes

- Very high expectations of success in the Foundation Grant competitions
- Loss of predictability of review panel composition and hence of the identity of reviewers
- Lack of confidence in the online peer review process
- Difficulties encountered in the delivery of the first Project Grant competition due to unexpectedly high application pressure
- Loss of familiar landmarks in application structure (and, for reviewers, difficulty in assessing ideas)
- Nostalgia that the previous model worked well
Peer Review Working Group

• To address concerns raised regarding the peer review processes, CIHR hosted a Working Meeting with members of the health research community on July 13, 2016.

• Together, we arrived at a consensus on concrete solutions that CIHR would implement to further strengthen our peer review process:

  - Face-to-face discussions restored and virtual discussions no longer be needed.
  - Teams of Competition Chairs and Scientific Officers organized to oversee a group of applications throughout the process.
  - A complementary iterative process implemented for Indigenous focused research.
International Peer Review Expert Panel

- In September 2016, CIHR launched an international Peer Review Expert Panel to examine the design and adjudication processes of CIHR’s investigator-initiated programs.
- Panel members convened in Ottawa in January 2017 for a two-day series of meetings with key stakeholders and scientific community representatives.
- The Panel’s final report was made public in spring 2017.
- Their recommendations will help inform refinements to the investigator-initiated programs moving forward.
## Addressing Peer Review Challenges

### Challenges faced by research funding agencies:

- need for more experienced researchers
- current ad hoc approach to recruitment
- lack of formal support programs to support new reviewers
- inconsistent and non-targeted peer reviewer instruction and training
- peer reviewer workload
  - lack of recognition and incentives to participate
  - lack of systematic approach to evaluate and improve reviewer performance
- reliability and inconsistency of reviews

### The College of Reviewers is addressing these through:

- **Systematized Recruitment & Expertise Management**
- **Learning & Mentoring**
- **Member Support & Performance Management**
- **Review Quality Assurance**
Questions?