Australian Government
National Health and Medical Research Council

BUILDING
A HEALTHY
AUSTRALIA

New Grant Program 2019: Peer Review Factsheet

NHMRC

The importance of peer review

Peer review is integral to identifying the best health and medical research in Australia for support by NHMRC. The peer review of all applications is underpinned by NHMRC's *Principles of Peer Review*, including transparency, probity and fairness. NHMRC is committed to optimising grant application and peer review processes as detailed in our *Corporate Plan*.

We would like to express our gratitude to over 1,000 Australian and international researchers who participated in peer review of the 5,229 applications that were submitted in this first round of the new grant program.

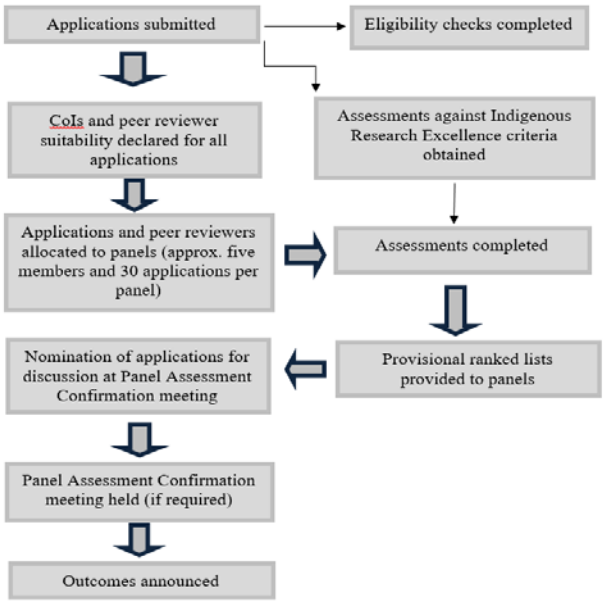
Development of peer review for the new grant program

Following the Structural Review of the previous grant program in 2016-17, extensive consultation was undertaken throughout 2017-18 to develop peer review for the four new schemes of the new grant program: Investigator Grants, Ideas Grants, Synergy Grants and Clinical Trials and Cohort Studies Grants. We sought to engage with stakeholders from across the health and medical research sector through a variety of methods, including:

- calling for written submissions on the strengths and weakness of existing peer review processes
- holding public fora in six capital cities
- hosting a stakeholder workshop at NHMRC's Canberra office
- presenting at conferences, symposia, meetings and information sessions, and
- convening expert Working Groups to advise on the assessment of Track Record, Innovation and Diversity

NHMRC used feedback from these engagements to design a framework for peer review of the new grant program, in consultation with NHMRC's Research Committee and Council, and announced by our CEO via a webinar on 26 April 2018. The importance of finding the balance between burden on the research community and the rigour, transparency and fairness of the peer review process was reiterated in the CEO's webinar.

An overview of the Investigator Grants peer review process is provided below. Paramount in the NHMRC's peer review process is minimising conflicts of interest (CoI) and ensuring suitability of reviewers for applications.



Further scheme-specific details of peer review have been published in the relevant scheme's *Grant Guidelines* and *Peer Review Guidelines*.

This factsheet is intended to supplement the information already provided. Specifically, the factsheet provides details on the following key peer review processes in this first round of Investigator Grants:

1. Recruitment of peer reviewers (process applicable to Investigator, Ideas, Synergy and Clinical Trials and Cohort Studies Grants)
2. Refinement of peer review area groupings (process applicable to Investigator and Ideas Grants only)
3. Application and peer review assignment (process applicable to Investigator, Ideas, Synergy and Clinical Trials and Cohort Studies Grants)
4. Discussion by exception and panel meetings (process applicable to Investigator Grants only)
5. Ranking of applications and budget calculations (process applicable to Investigator Grants only)

Recruitment of peer reviewers

Application numbers for the first round of the new schemes were predicted to be high, particularly for Investigator Grants and Ideas Grants, as researchers tested the new system. Applications to the Clinical Trials and Cohort Studies Grant scheme are not capped and this may have contributed to a higher application number. There was concern that it would not be possible to recruit sufficient peer reviewers to achieve minimum assessment targets (Table 1).

Table 1. Details of assessments required for new grant program applications in 2019.

Scheme	Application at minimum data	Application at close	Assessment target per application	Predicted number of peer reviewers needed	Actual peer reviewers needed
Investigator Grants	1,984	1,857	5	450	295
Ideas Grants	3,153	2,738	4	870	571
Synergy Grants	73	64	Five per stage	75	50
Clinical Trials and Cohort Studies Grants	669	570	3	120	97
TOTAL	**5,879**	**5,229**	**N/A**	**1,515**	**1,013**

Each year, the recruitment of peer reviewers is coordinated across NHMRC, before invitations are traditionally sent in September/October. In 2018, this was months before any of the new grant program schemes opened for applications. NHMRC modelled applicant behaviour to estimate application numbers and therefore how many peer reviewers needed to be invited. The number of applications progressing at minimum data was a key parameter in this modelling. When the schemes closed, application numbers were lower than modelled and more peer reviewers had been invited than were required.

NHMRC senior research scientists reviewed the research areas of peer reviewers against those of the applications. Peer reviewers whose expertise did not match were invited to participate in the peer review of other schemes. However, in an effort to provide the greatest level of suitability for each application and diversity on the panels, NHMRC invited more peer reviewers with appropriate expertise than required to declare suitability and conflict of interests against applications.

By seeking suitability from a larger pool of peer reviewers whose expertise was aligned with that of the applications, each application was provided the greatest opportunity for the most suitable peer review. While some peer reviewers ultimately

did not participate in reviewing applications, their responses contributed to a higher quality peer review of applications and we greatly appreciate their contributions.

Refinement of peer review area groupings

For schemes that receive a large volume of applications, NHMRC uses superpanels to group together peer reviewers with applications (up to 250 applications) based on related research topics. These large superpanels are later split into multiple smaller panels. This maximises the potential to identify the most suitable peer reviewers for each application.

Each superpanel will be allocated applications from at least one research topic or Peer Review Area (PRA). There are 54 individual PRAs that are combined to determine the research topics of applications allocated to a particular superpanel.

In 2019, for Investigator Grants and Ideas Grants, the superpanel PRA groupings were different to those used historically in the previous Project Grant scheme. The reason for this was that criticism had been received about the relatedness of PRAs in the historical groupings. During the panel planning stages for Investigator Grants and Ideas Grants, NHMRC took the opportunity to re-evaluate the groupings and address these concerns.

We re-evaluated the relatedness of the PRA groupings by building a new "relationship network". In the application form, applicants are required to nominate at least one PRA but can, and often do, nominate up to three. The applicant nominations were used to identify related PRAs, e.g. when "cancer biology" is nominated, "molecular biology" is nominated in x% of applications so these PRAs are related. Critically, the new applicant-informed relationship network showed that PRAs grouped differently to their historic goupings. The superpanel groupings were updated and implemented in Investigator Grants as indicated in 2019 (Table 2).

Table 2. Building a PRA relationship network using applicant nominations.

Scheme	Data sourced from	Applications	Nomination data points (max.)	New superpanel groupings*
Investigator Grants	2014-18 Fellowship schemes	6,418	19,254	7

* Application number for each PRA is a consideration when forming the groupings

Application and peer reviewer assignment

Peer reviewers are assigned applications based on their declarations of suitability and any conflict of interests. Panels are constructed based on these assignments, depending on the scheme's design and taking into account panel diversity characteristics, as outlined in NHMRC's *Guiding Principles for Peer Review Panel Membership Nomination and Appointments*. Recently, we have improved our approach to assigning applications and constructing panels, which has effectively increased the pool of peer reviewers and resulted in a greater level of peer reviewer suitability for applications and minimised peer reviewer conflicts of interest on panels (Table 3).

The suitability and conflict of interest declaration process is critical to the success of any peer review. We appreciate the time and care that all peer reviewers give to every application they declare against; it ensures that every application receives the most suitable review for the available pool of peer reviewers.

Table 3. Superpanel and panel details.

Scheme	Superpanels	Panels	Gender of members (female%/male%/undeclared%)	Independent assessments per application
Investigator Grants	14	59	51.9 / 47.5 / 0.7	100% received at least four
				87% received five

Discussion by exception and panel meetings

Applications for Investigator Grants were independently scored by up to five peer reviewers. A total of 295 assessors formed 59 panels, with Emerging Leadership applications peer reviewed separately from Leadership Level applications. After initial scores were submitted, peer reviewers were provided an opportunity to review all scores submitted for applications they had reviewed. Peer reviewers were then able to nominate applications for discussion at a panel assessment confirmation meeting. For applications nominated for discussion, peer reviewers were given the opportunity to adjust their initial scores following panel discussion.

After reviewing initial scores, 73 peer reviewers nominated just over 5% of all applications for discussion, noting that a maximum of 31.7% of applications could be nominated due to the limit of two nominations per peer reviewer. A total of 240 peer reviewers attended one of 49 panel meetings held via videoconference. Each panel meeting had an independent chair and NHMRC secretariat; many of the panels were also observed by a community observer who reported back to NHMRC on the process.

Nearly 95% of applications were not nominated for discussion (Table 4). The discussion by exception and re-scoring process affected the funding outcome for <1% of applications.

Table 4. Impact of panel meeting on Investigator Grant applications.

Impact of panel meeting	Applications	Applications (%)
Rescored at panel meeting	84	4.5
Not rescored	21	1.1
Not nominated for discussion	1,752	94.4
TOTAL	**1,857**	**100.0**

Budget calculations and ranking of applications

Investigator Grant budgets comprise a salary component (if requested) as well as a Research Support Package (RSP). The level of salary and RSP awarded depends on a number of factors including, but not limited to, level applied, overall score, current grant portfolio, and workload. Individual application budgets were calculated using information provided in the application, such as what other grants would be held on 1 January 2020. A census date was needed to determine any salary and RSP reductions that needed to be applied in order to calculate the application budget. Prior to the census date, all active grant variation requests involving Investigator Grant applicants were finalised. For the first round of Investigator Grants the census date was 1 May 2019. The census date for the next round will be provided in the Grant Guidelines.

Following the finalisation of peer review and budget calculation processes, applications were separated into three lists (EL1, EL2 and LL) and ranked by the final overall weighted score. Each ranked list had a pre-determined total budget within the scheme's $335 million budget allocation. The three ranked lists represented early, mid and senior career stages and this was intended to ensure that researchers are funded across all career stages.

Funding recommendation approval

All funding recommendations for expenditure from the NHMRC's Medical Research Endowment Account require Ministerial approval.

Investigator Grants

Due to the complexity of the budget calculations and separation of the applications into three ranked lists (effectively requiring three funding recommendations), the process of finalising the Investigator Grant funding recommendation requires significant time, care and quality assurance to ensure accuracy.

NHMRC Research Committee

The role of Research Committee is to consider the outcomes from peer review and to make funding recommendations to Council. Research Committee determines the total number of applications that it considers appropriate to recommend for funding, based on the available budget. In recommending funding, Research Committee members do not have access to any information about specific grants and operate according to strict conflict of interest guidelines at all times. For example, members who are applicants to the Investigator Grant scheme do not receive the relevant committee paper and are required to leave the room during discussion and decision on the recommendations. No changes to any scores are made at this or any other time after peer review is complete.

Under the new grant program a portion of each scheme's budget is allocated for strategic priority funding. In framing its final recommendations to Council, Research Committee considers additional applications in specific strategic priority areas. The strategic priority areas for the 2019 Investigator Grant round were Aboriginal and Torres Strait Islander Health research and researchers, health services research and gender equality. Additional applications may be recommended that are high quality and address one or more of these priorities, but fall below the funding line.

NHMRC Council

Research Committee's recommendations are provided to NHMRC Council for endorsement. Like Research Committee, Council does not have access to information on individual grants to avoid any potential conflict of interest.

Ministerial approval and announcement

Acting on Council's recommendations, the NHMRC CEO submits formal documentation seeking the Minister's approval to expend public monies on the recommended grants. If accepted, the Minister approves both the release of outcomes under embargo and the lifting of the embargo after an announcement.