

# PEER REVIEW

## RESPONSE TO THE CONSULTATION PAPER

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# ABOUT RESEARCH AUSTRALIA

**Our vision:** Research Australia envisions a world where Australia unlocks the full potential of its world-leading health and medical research sector to deliver the best possible healthcare and global leadership in health innovation.

**Our mission:** To use our unique convening power to position health and medical research as a significant driver of a healthy population and contributor to a healthy economy.

## Our goals:

### Engage

Australia in a conversation about the health benefits and economic value of its investment in health and medical research.

### Connect

researchers, funders and consumers to increase investment in health and medical research from all sources.

### Influence

government policies that support effective health and medical research and its routine translation into evidence-based practices and better health outcomes.

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# PEER REVIEW

## RESPONSE TO THE CONSULTATION PAPER

### Introduction

Research Australia welcomes the opportunity to make a submission to the NHMRC's consultation on the design of the Peer Review process to accompany the NHMRC's new Grant Program.

Research Australia has chosen to respond only to the consultation paper's questions in respect of using an Expression of Interest as the initial module of the peer review process for Ideas Grants. This is not because Research Australia considers that other areas of the consultation are not important; however, we believe this is the area where Research Australia's submission can add most value.

There is considerable interest within our membership and across the health and medical research sector in a two-stage application process. While there is not yet agreement on adopting such an approach, there has been significant discussion through our membership about the benefits and risks of such a process and it is through this lens we have informed this submission.

It is important to note that there is an appetite for change and Research Australia believes that a two-stage application process for Ideas Grants, incorporating an abbreviated application at the first stage, provides the chance to reduce the burden on applicants and reviewers alike, while better supporting the objectives of Ideas Grants to promote innovative and novel research.

While a two-stage process is used in many grant programs in Australia and overseas, Research Australia recognises that adopting such an approach comes with risks. If not designed and implemented effectively, it could increase the burden for applicants and/or reviewers, the total process may take longer, and the quality of applications and grant outcomes may be poorer than under the current system.

Research Australia also believes however, that a well-designed two-stage process could be significantly shorter and less burdensome, with outcomes that are at least as good as a one-stage application process. In particular, the process could provide the focus on novel and innovative ideas and reduced emphasis on track record that the NHMRC is seeking.

These benefits can only be achieved by implementing a significantly different process and will require a willingness to experiment on the part of the NHMRC and the sector.

Research Australia's submission is made in this spirit.

Research Australia recommends that the NHMRC consults further on a two-stage process for Ideas Grants applications as part of the next round of consultation. As part of our recommendation, we suggest establishing some specific objectives and parameters for this process and setting up some different models for consideration and evaluation.

# A two-stage application process for Ideas Grants

This submission explores the opportunity to adopt a two-stage application process for Ideas Grants. It identifies some key objectives of doing so, and proposes some design features for such a process. It differs from some EOI processes in that rather than Stage 1 providing high level details about the whole application, to be supplemented with more detail at Stage 2, it proposes that full information be provided against a restricted number of application criteria at Stage 1, with secondary criteria only addressed at Stage 2.

## Objectives

Research Australia believes that the design of a new two-stage application process for Ideas Grants needs to be guided by and evaluated against the following objectives:

- significantly reduced burden for applicants and assessors;
- increased focus on innovative and novel ideas; and
- support for blinding of applications.

A significant departure from existing processes can only be justified if it delivers significant improvements.

## Significantly reduced burden for applicants and assessors

A reduced burden for applicants and assessors can only be achieved if the time saved by reducing the number of applications subject to full assessment is more than commensurate with the time and effort required to prepare and assess the Stage 1 applications.

The key variables are:

- The difference in the amount of time taken to **prepare** a Stage 1 application and the time required to prepare a Stage 2 application;
- The difference in the amount of time taken to **assess** a Stage 1 application and the time required to assess a Stage 2 application; and
- The proportion of Stage 1 applications that proceed to Stage 2.

Research Australia acknowledges that there is a tension between limiting the amount of information required in the Stage 1 application while ensuring that sufficient information is provided to enable an assessment to be made as to whether an invitation should be made to proceed to Stage 2.

As much as possible, the Stage 1 application and assessment should be able to be used as part of the Stage 2 application and assessment. Ideally, the second stage application would augment the first-round application with additional information rather than replace it.

## **A focus on novel and innovative ideas**

Research Australia proposes that the first stage application for an Ideas Grant should consist of two elements:

1. Registration information
2. Ideas Grant application

The focus of the Ideas Grant is on innovative and novel research. One threshold criterion therefore is the novelty of the research proposed to be undertaken.

Research Australia proposes that as part of preparing an application for an Ideas Grant, the applicant should be obliged to undertake a literature review to ensure that research proposal is novel and innovative.

While undertaking a literature review requires a significant level of effort, Research Australia does not believe that an applicant can reasonably be satisfied that their idea meets the novelty requirement without undertaking such an exercise. Doing so at this initial stage may well mean that many ideas that are insufficiently novel don't proceed to the application stage at all.

### **Registration Information**

The registration information should be sufficient to establish the identity of the individual and their institution. It should also include some minimum eligibility criteria, such as a commitment from the administering institution that they support the application. The administering institution and applicant should also be required to confirm that a literature review has been conducted and that the research proposal meets the Ideas Grant criteria for novelty and innovation.

### **Ideas Grant Application**

Research Australia proposes that the application should only describe the idea that is to be investigated. It would not include a description of the research team, budget etc. that would normally be included in a full application. Excluding this information ensures that the focus of the assessment is on the idea and not on other considerations such as track record, as is intended by the NHMRC's redesign of the process.

It also helps to significantly reduce the size of the application and both the material and the criteria to be considered by the peer reviewer. This should significantly reduce the burden on both the applicants and the peer reviewer. For peer reviewers, it should not only make the assessment task less burdensome but also more intellectually stimulating, and perhaps even enjoyable. For applicants, it should mean less time taken away from their current research, which ironically is likely being paid for by existing public funding, thus reducing the burden and adding value to already expended funds.

There is also the option to require the literature review to be provided as part of the registration process. Research Australia does not expect that an assessment of the literature review by the peer reviewer should be a routine part of the Stage 1 assessment process. However, having the literature review available to the peer reviewer may assist the assessment of the application in instances where the peer reviewer has concerns about the degree of novelty and innovation of the application.

## **Blinding of applications**

Limiting the Stage 1 application to a description of the Idea provides the opportunity for the Stage 1 assessment to be blinded.

No information about the investigators or the administering institution is required to be able to make the Stage 1 assessment. Blinding of applications supports the NHMRC's objective of focusing on the Idea and giving less emphasis to track record.

# The model for a two-stage application process

Research Australia proposes the following feature of a two-stage process. We acknowledge that this is described below at a relatively high level and does not identify all the key aspects.

Our objective is not to provide a complete model but to identify the possible risks and flaws with a two-stage process and propose ways in which these risks might be overcome.

While there are numerous examples of two stage application processes, for illustrative purposes this model draws on the application process used by the Health Research Council of New Zealand for Project Grants. An overview of that process is provided as an Appendix.

## Stage 1

### Application period

Research Australia proposes that the period in which applications are accepted is relatively short - around 4 to 5 weeks. The dates on which the Stage 1 application process would open and close and the information required would be advised well in advance, so that potential applicants are aware of the timeframe and are able to start thinking about their research idea and undertaking a literature review before applications open.

### Registration Information

Research Australia proposes that a limited amount of information be required as part of the registration process. This would include the identity of the applicants and their administering institution.

It would also require a declaration from the applicant/s that the application was their work, that they had undertaken a literature review and were satisfied that the application met the criteria.

A similar declaration would be required from the administering institution/s, including that the administering institution had reviewed the literature review and was satisfied that the application met the Ideas Grant criteria; and a commitment to support the research if the grant is provided. (The literature review could be required to be provided as part of the application.) This process and the declarations should help ensure that Ideas Grant applications meet the minimum criteria.

### The application

The application should be limited to describing the Idea which is the subject of the research proposal.

### Number of applications limited to two

The NHMRC proposes to limit the number of Ideas Grant applications a person can make at any time to two. Research Australia believes that this will be an important component of the process, and will help limit the potential for the reduced burden on applicants at Stage 1 to lead to a significantly higher number of applications.

### Assessment of Stage 1 applications

Peer reviewers would be assigned a number of applications to assess based on their area of expertise. Scores would be assigned against a limited number of criteria. Research Australia proposes that only one peer reviewer would review an application at this stage. (If the time and effort required of the peer reviewer is found to be minimal, consideration could be given to having each application reviewed by two reviewers at this early stage.)

Panels of peer reviewers would meet to collectively discuss and review the initial assessments before providing a final score. The identity of the applicants and the administering institution would not be included in the information provided to peer reviewers.

The applications that proceed to the second stage would be based on achieving a minimum score against each of the criteria. In addition, there would be a 'target' maximum percentage of applications that should be allowed to proceed to an invitation to submit a Stage 2 application.

Determining this percentage will need consideration of a number of factors, but the overarching objective will be to ensure that a sufficient number of applications proceed to provide a competitive field. Factors to consider include the attrition rate (not all applicants invited to Stage 2 may do so) and that some applications which score highly at Stage 1 may not fare well at Stage 2 when considered against the full criteria.

Research Australia notes that the HRC NZ Project Grants application process has an objective of 40% of Stage 1 applications proceeding to Stage 2, and that this results in around 15% of Stage 1 applications ultimately being offered grants. However, their Stage 1 application includes more criteria than is proposed in this submission. (Refer to the Appendix for more information.)

Applicants that are successful at Stage 1 will be invited to submit a Stage 2 application. It would be open to the peer reviewers to provide feedback to the applicants on specific aspects or questions that should be addressed as part of the Stage 2 application.

Applicants that are unsuccessful at this stage will be advised that their application is not proceeding to Stage 2. While it would be desirable to be able to provide feedback to the applicants, Research Australia is mindful of the additional burden doing so places on the peer reviewers.

## Stage 2

### Application period

Applicants invited to proceed to Stage 2 should be required to submit the full application within a relatively short period - perhaps 4 to 5 weeks. The exact period will depend on an assessment of how much work is involved in preparing the balance of the application.

### Additional information at Stage 2

The Stage 1 application should form the basis of the Stage 2 application and should only be augmented with the additional information that was not required at Stage 1. Ideally, the components of the application assessed at Stage 1 should not be changed, unless feedback was provided as part of the Stage 1 assessment requesting additional information be provided at Stage 2.

Whether the idea should be described fully at Stage 1 or only in an abbreviated form is an example of the tradeoffs that exist between the two stages. An abbreviated description reduces the work for applicants and peer reviewers at Stage 1 but may limit the peer reviewer's capacity to accurately assess the application, and will require more work of both the applicant and the peer reviewer at Stage 2. This is just one example of many considerations that need to be refined and subjected to modelling as part of any design process.

### Assessment at Stage 2

The new components of the application would be assessed at Stage 2, with the potential for scores provided at Stage 1 to be incorporated without a further review. (The exception to this would be where additional information had been sought as a result of the Stage 1 assessment.) Beyond this consideration, the Stage 2 assessment process would follow the normal NHMRC peer review assessment process. The whole application and the score for each criterion would form part of the final assessment of the application.

## Blinding of applications

The blinding of applications at Stage 2 is likely to be more difficult than at Stage 1 because of the need to provide more information that is specific to the project team etc. However, even if the applications are not blinded at this stage, the blinded assessment of the application at Stage 1 will form part of the final assessment. What proportion of the overall assessment is based on the blinded component will depend on the relative weighting provided to the scores determined in each stage.

## Assessing the implications

It is difficult to determine in advance how much the current burden on applicants and reviewers would be reduced by the two-stage model proposed in this submission. Factors that influence this include the behaviour of:

- Applicants - will they submit more applications?
- Institutions - will they require applicants to provide additional material before deciding whether to allow an application to be lodged?
- Reviewers - will they be comfortable with assessing applications against limited criteria, how long will it take, and how often will they ask for additional information to be included at Stage 2?

## Impact on peer reviewers

It is reasonable to assume that there will be more work for peer reviewers for an application that passes through both stages of the proposed two stage process than there is for an application to pass through the current single stage process.

It also reasonable to assume however that there is less work for the reviewers if an application does not proceed beyond Stage 1.

So what are the differences and is there any real time saving?

Modelling the impact on peer reviewers requires a number of assumptions to be made, all of which are dependent on the specific design of a two-stage process and several variables.

The following is one attempt to model the impact.

### Assumptions:

1. It will take 20% more effort for an application to proceed through both stages of the proposed two stage process than a single stage process. (The two-stage process has a weighting of 1.2 in the calculations below)
2. The effort required for the Stage 1 assessment is the same as the effort required at Stage 2 (each has a weighting of 0.6 of a full application)
3. 40% of applications proceed to Stage 2
4. There is no increase in Stage 1 applications compared to a single stage process.
5. 1000 applications are made (for illustrative purposes)

Process	Reviewer effort per application	Number of applications	Effort	Total Effort
Single Stage	1	1000		1000
Two Stage				
Stage 1	0.6	1000	600	840
Stage 2	0.6	400	240	
<b>Difference</b>				<b>160 (16%)</b>

While this example suggests a 16% reduction in peer reviewer effort, relatively small changes in any of the assumptions can have a significant impact on the final result. For example, assuming the Stage 1 assessment requires less time than Stage 2 increases the time saved, while a higher proportion of applications proceeding to Stage 2 reduces the saving.

Research Australia has no means of assessing the accuracy of this modelling and it is provided for illustrative purposes only; the NHMRC is better placed to model likely scenarios.

## **Impact on applicants**

The reduction in effort for applicants can also be modelled. A key consideration will be the difference in effort to prepare the Stage 1 application, including undertaking the literature review and securing support from the applicant's Administering Institution. Another consideration is that Stage 1 includes the more stimulating and enjoyable part of the application (investigating and describing the idea), whereas Stage 2 involves the more administrative components (budgets, team CVs, project plans).

This could have a bearing on how a two-stage process is received by the research community. For example, the benefit of not having to complete the more onerous parts of the application at Stage 1 could help offset concerns about being assessed on less information.

## **Impact on NHMRC**

Moving to a two-stage process is likely to increase the administrative burden on the NHMRC. The extent of the burden depends on a number of factors, including the capacity of the application system to adopt a two-stage process and whether it is possible to use the same panel to assess stages 1 and 2, meaning applications are only assigned to peer reviewers once.

## **Trial a parallel process**

One way to assess the relative merits of a two-stage process over a single stage process would be to offer the two processes in parallel for one or two funding cycles. Applicants could be given the option of submitting an application under either process (but not both), with the closing date for submission of a single stage full application aligned with the closing date for submitting the second stage application.

This would enable assessment of both applications to be undertaken together by the same review panels. In addition to providing data about the time and effort involved in each process, it might shed light on the preferences of applicants, the impact of blinding at Stage 1 on assessments, and the relative quality of the applications that are received through each process.

Research Australia acknowledges that this would involve an additional burden on peer reviewers and the NHMRC but could be a useful way of comparing the two processes.

## Conclusion

There are many examples of Expression of Interest processes, and of the two-stage process examined by Research Australia in this paper. While such schemes can appear attractive and seem to offer savings in time and effort, whether these benefits are real is heavily dependent on the design of the application process.

This paper has been an attempt to draw out some of the opportunities, implications and risks of a two-stage process rather than to describe in detail a particular model.

Research Australia is not recommending adoption of a two-stage process, but does believe such a process is worthy of further consideration and that now is the time to do so, when the peer review processes for the new grants are being developed.

Research Australia recommends that the NHMRC consults further on a two-stage process for Ideas Grants applications as part of the next round of consultation.

Establishing some specific objectives and parameters for this process would be useful, as would proposing some different models for comparison and evaluation. Variations between different models could be numerous and include, for example, the amount of information collected at Stage 1, the provision of feedback to unsuccessful applicants, and the potential to seek further information from applicants at Stage 1 before making a decision on whether the application will proceed to Stage 2. Looking overseas to the practices of other funding bodies could be instructive, not necessarily for wholesale adoption but to understand the risks and benefits of different models for consideration in the Australian context.

Research Australia would be pleased to contribute further to this consultation process, and to use our convening power to assist in gathering further contributions and testing ideas.

## Appendix – New Zealand Health Research Council Project Grants

The New Zealand Health Research Council (HRC) awards grants for projects that aim to make significant improvements in, or developing knowledge contributing to, health outcomes.

Individual contracts are worth up to NZ\$400,000 per year to a maximum value of NZ\$1.2 million for a three-year term.

The HRC opens for expressions of interest (EOI) for projects for 5 weeks, and takes three months to assess EOI applications and issue invitations to submit a full application.<sup>1</sup>

The EOI application:

- identifies the area of research;
- provides an overview of the proposed study;
- provides an overview of the methodology; and
- provides a description of the research team.

### EOI assessment process

EOI Applications are assigned to a Science Assessing Committee (SAC), which consists of a Chair and 5-12 members. EOI applications are assessed and ranked with the intention that up to 40% will proceed to be invited to submit a full application.<sup>2</sup> Each SAC is assigned between 20 and 40 EOI applications, and each SAC member assesses between 2 and 5 EOI applications. The EOI SAC meeting then sits for 1 to 2 days to make decisions on the EOI applications.

Successful EOI applicants are invited to submit a full application.<sup>3</sup>

### Full Application assessment process

Between 10 and 30 full applications are assigned to a SAC, with each member responsible for reviewing between 2 and 4 applications. External Reviewer reports are sought and a SAC meeting is held over several days to assess the full applications.<sup>4</sup>

The full application includes:

- |   |  |
|---|--|
| • Research locations                      | • Expertise and Track Record               |
| • Total cost of Research                  | • Authors and References                   |
| • Commencement Date and Term              | • Justification of Expenses                |
| • Named Investigators                     | • Previous grants                          |
| • Lay Summary                             | • Co-funding and other financial interests |
| • Summary of Research                     | • Objectives and milestones                |
| • Detailed Description of Research-       | • List of collaborators                    |
| • rationale, design, methods, impact etc. | • CVs                                      |

<sup>1</sup> Health Research Council of New Zealand Project Full Application Guidelines 2018

<sup>2</sup> Health Research Council of NZ Peer Review Manual for Research Applications in the Annual Contestable Funding Round July 2017

<sup>3</sup> Ibid

<sup>4</sup> Ibid

### Success rates in 2017 for each Research Income Stream (RIS):

The following table reports the success rates for Project Grants in 2017. Overall success rates as percentage of EOI applications approximates the success rate for NHMRC Project Grants.

Research Income Stream	EOI applications	Full applications (as % of EOIs)	Funded (as a % of EOIs)
Health & Wellbeing in NZ	128	57 (44%)	18 (7%)
Improving Outcomes for Acute and Chronic Conditions in NZ	167	70 (42%)	22 (13%)
New Zealand Health Delivery	34	14 (41%)	8 (24%)
Rangahau Hauora Māori	15	9 (60%)	6 (40%)
<b>Total</b>	<b>344</b>	<b>115 (33.4%)</b>	<b>54 (15.7%)</b>

**Source:** Health Research Council of NZ *Project Full Application Guidelines 2018*

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