

Structural Review of NHMRC's Grant Program

Public consultation

Template for written submissions

The NHMRC will consider submissions that address the consultation questions and use the template provided. The consultation questions are listed below for each of the three models canvassed in the discussion paper, with a general question at the end of this template. You may answer as many of the questions as you wish. The questions can also be found on page 22 of the consultation paper.

Name:	
Organisation name: <small>[if submitting on behalf of an organisation]</small>	Australian Bioinformatics and Computational Biology Society Inc.
Email address:	committee@abacbs.org

The Australian Bioinformatics and Computational Biology Society (ABACBS) is Australia's first national scientific society representing bioinformaticians and computational biologists. It was formed in September 2014 following broad consultation with the Australian community, recognising the lack of a peak representative body. ABACBS is a rapidly growing society and currently has over 400 members on whose behalf we are making this submission.

There is no absolute preference for any of the proposed models. From the perspective of ABACBS, there needs to be further consultation with regards to model refinement/considerations.

Alternative model 1

Refer to information about alternative model 1 in the consultation paper and respond to the consultation questions below.

Question 1.1:

How effectively would the model optimise NHMRC's public investment in health and medical research by meeting the aims of this Review, including the major objectives of NHMRC's grant program found on page 12 of the consultation paper? (500 words max)

The tiered funding model (packaged) could simplify the application and review process. No information is provided on potential packages however, so it is impossible to comment on suitability or issues that might arise.

It is unclear given the documentation provided how any of these models will reduce grant review/submission burden. Longer grants, and less grants will clearly effectuate this. However, 1-5 year idea grants are also proposed in addition to people grants. Given the significant cost to the research community, clearer models with regards to reduced burden need to be put forward for all models.

More grant rounds might be suitable for larger multi-disciplinary projects, promoting submission upon maturity of the project (i.e. when the project is ready and thereby reducing burden through review of less applications of poor quality to simply meet an annual deadline).

Promoting excellence should be a given. Promotion of larger multi-disciplinary teams promotes opportunities for innovation and pathways to translation. However, for bioinformaticians there is a

threat that these individuals will be absorbed into larger projects without lead roles and/or opportunities to lead computational research effectively (instead to simply meet a requirement – more below). The identity of bioinformaticians/computational biologists and their ability to further develop within and out of the project needs to be preserved, especially if ECRs are going to be encouraged via this mechanism. This can be dealt with by including bioinformatics experts in the review process.

Question 1.2:

What advantages and disadvantages of this model do you see for you or your organisation if the model was introduced? (For example, what impact would it have on a researcher at your stage of experience? Would it support research in your research area?) (500 words max)

Generally, given the team focus of the proposed model, this would provide some scope for individuals who collaborate inter-institutionally to participate in named and funded research projects that would otherwise be inaccessible as a sole and/or lead investigator (as in model 2).

This model would also promote and support teams of bioinformaticians which is an advantage.

One of the major concerns is the cap of the total number of grants. Many bioinformaticians actively participate in multiple collaborative projects at the same time. In fact, being able to participate and lead multiple projects is a hallmark for a successful bioinformatics researcher whose expertise is applicable to a wide range of biomedical problems. By enforcing a strict limit of two idea grants or one team grant and one idea grant, many productive bioinformaticians will be forced to abandon potentially fruitful collaborations. This is a concern that is common to all the three models.

While bioinformaticians are often essential to a project that deals with large-scale data analysis, which is increasingly commonplace, their involvement in each project is usually focused on 1-2 years of a multi-year grant. Hence the budget allocated to a bioinformatics CI is typically a small fraction of the funded amount.

It is not uncommon that a postdoctoral fellow's salary is supported by multiple projects throughout their 3-5 years of training in a bioinformatics laboratory. By enforcing such restrictive limit on the number of grants, it will potentially limit new collaborations and create more uncertainty to ECR bioinformaticians whose positions are often linked to a project grant.

We recognise the cap on the number of grant is an essential feature to all the alternative models. As a potential solution, we would suggest revising the cap by the total amount of time each CI currently commits or is intending to commit to projects. For example, a model of minimum time allocation to projects in the context of domain expertise could be developed. This will ensure that highly collaborative researchers will not be unfairly penalised by the cap, but also ensure that appropriate time is committed to these projects.

On a more general note, we suggest that grants supporting substantial data generation or analysis must have:

- (i) Suitable investigators responsible for leading the bioinformatics. This should ideally be as Chief Investigators, and there is clear evidence of investment in the project.
- (ii) The substantial research effort associated with innovative computational analysis be recognised with appropriate salary support for bioinformaticians.

Question 1.3:

Can you identify negative consequences for Australia's health and medical research system if the model was introduced and how might these be mitigated? (500 words max)

Question 1.4:

Could the model be adjusted to optimise its impact? If so, how? (500 words max)

Question 1.5:

Do you have other comments about the model? (500 words max)

Alternative model 2

Refer to information about alternative model 2 in the consultation paper and respond to the consultation questions below.

Question 2.1:

How effectively would the model optimise NHMRC's public investment in health and medical research by meeting the aims of this Review, including the major objectives of NHMRC's grant program found on page 12 of the consultation paper? (500 words max)

Question 2.2:

What advantages and disadvantages of this model do you see for you or your organisation if the model was introduced? (For example, what impact would it have on a researcher at your stage of experience? Would it support research in your research area?) (500 words max)

A major advantage of this model is that individual researchers are supported. Under this model, funding for bioinformatics research groups will support the development of novel methods needed to drive state-of-the-art research, while freeing chief investigators from the need to apply for individual Project grants, leading to greater efficiencies.

We note that track record will be a major criterion in the assessment of the investigator grant. We would like to highlight our **concern when track records of bioinformatics CIs are assessed**:

Bioinformatics career paths are frequently non-typical. Bioinformatics research is multi-disciplinary. Many leaders in the field of bioinformatics started in other disciplines, such as statistics, mathematics or computer science. These backgrounds are an advantage in providing a solid basis for solving complex analysis questions in medical research, but often lead to delayed career timelines due to changing fields and consequently post-PhD deadlines for fellowships and awards are often missed. This is not currently recognised and represents a significant

disadvantage. In addition, those pursuing a career in bioinformatics can follow a career path of “service”, developing domain expertise, and then transition to research. Recognising these career attributes/paths and providing appropriate funding under the streams will assist in retaining and developing bioinformaticians.

Track records of bioinformatics researchers look different. Medical research needs bioinformatics researchers who are willing to collaborate or jointly lead projects part of their time, but the grant and fellowship review system values independent research. Bioinformaticians’ track records, even independent researchers, typically have many collaborative middle author publications. These often represent critical research contributions in high impact publications. Meanwhile, first and last author publications on bioinformatics methods are often in field-specific journals with comparatively low impact. In fact, the variety of factors that influence a bioinformatician’s track record need to be considered in all models proposed.

Grant and fellowship review panels lack bioinformatics expertise. For example, NHMRC Project Grant Review Panels typically have only a handful of bioinformatics researchers sitting on two extremely broadly focused panels and little to no representation on other panels. This is a major disadvantage given the confusion about research versus service roles, requiring expert panel members to dissect this appropriately. We propose that grant proposals supporting substantial bioinformatics efforts must be reviewed appropriately and utilize adequate numbers of review panel members specialising in bioinformatics. Further to this, given the atypical nature of applications from bioinformaticians, it is suggested that a bioinformatics specific fellowship panel be constructed.

Question 2.3:

Can you identify negative consequences for Australia’s health and medical research system if the model was introduced and how might these be mitigated? (500 words max)

Question 2.4:

Could the model be adjusted to optimise its impact? If so, how? (500 words max)

Question 2.5:

Do you have other comments about the model? (500 words max)

Alternative model 3

Refer to information about alternative model 3 in the consultation paper and respond to the consultation questions below.

Question 3.1:

How effectively would the model optimise NHMRC's public investment in health and medical research by meeting the aims of this Review, including the major objectives of NHMRC's grant program found on page 12 of the consultation paper? (500 words max)

Question 3.2:

What advantages and disadvantages of this model do you see for you or your organisation if the model was introduced? (For example, what impact would it have on a researcher at your stage of experience? Would it support research in your research area?) (500 words max)

Model 3 appears to be closest to the current project grants. It is unclear how this model improves upon the current project grant scheme and thereby will continue to exacerbate a lack of opportunities for bioinformaticians and appropriate recognition in a multi-disciplinary research environment.

Question 3.3:

Can you identify negative consequences for Australia's health and medical research system if the model was introduced and how might these be mitigated? (500 words max)

Question 3.4:

Could the model be adjusted to optimise its impact? If so, how? (500 words max)

Question 3.5:

Do you have other comments about the model? (500 words max)

General

Question 4:

Do you have comments on the other issues discussed in this paper? (500 words max)

There is no absolute preference for any of the models proposed. Model 3 sees no obvious improvements. A hybrid of model 1 and model 2 could be worth investigating and releasing for further consultation, opposed to being mutually exclusive.

The biggest challenge for bioinformaticians in the current funding environment is simply being recognised given their atypical track records/career paths. Limiting the availability of diverse opportunities for research involvement/funding is therefore a critical factor.

From the perspective of ABABCS, there needs to be further consultation with regards to model refinements/considerations.