National Committee for
Cellular and Developmental Biology

A committee of the Australian Academy of Science

Response to Current and Emerging Issues for- NHMRC Fellowship Schemes consultation paper

Issue 1: The balance is changing between the number of research grants available and the number of Fellowships

Question 1: *How should NHMRC's funding balance between research grants and fellowships be adjusted as the total number of Project Grants available falls progressively over the next few years?*

The NHMRC Fellowship scheme provides a tangible career structure for biomedical researchers who are among the cream of Australia's talent. They are the engine that drives innovation in the health sciences sector and are the vehicle for translation of knowledge into heath outcome for Australians. NHMRC Fellows are essential contributors to the continuity of health delivery and an investment in the future of health and health-related industries in Australia.

The Fellowship scheme in its current format rewards excellence, and it is essential that such a structure be maintained to maximise the chances of Australians making transformative discoveries in biomedical science and reaping the rewards of those discoveries through building elite human capacity, and translation of discoveries into clinical outcomes and commercialisation. Because of the competitive nature of science, biomedical researchers operate within a career framework that is highly uncertain. It is undesirable that this sector be further jeopardised through lack of a career path and adequate funding security.

We are concerned that some of the proposals presented in the Consultation Paper do not properly address the current crisis that affects all NHMRC funding schemes. A broader dialogue is essential to address the current crisis. Devolving the responsibility for Fellows' salary support back to the host institution beyond the period of their fellowship does not take into account the differing resources available to the diversity of institutes contributing to medical research in Australia. Loss or serious truncation of the Fellowship scheme would remove the vital element of career structure that selects, recognises and celebrates excellence, and harnesses excellence in the service of the discipline.

NHMRC spending represents only 1.15% of the $70 billion that Australians spend on health. The McKeon Review called for an increase in medical research spending to 3-4% of the total health budget to bring it in line with other developed nations. It is imperative that funding for the NHMRC be substantially increased in the near term and into the future if the Government hopes to retain this important sector. Hopefully, a successful launch of the Medical Research Future Fund will play an important role in alleviating the current crisis.

Response to Question 1: the premise of this question seems flawed as it is not clear why the NHMRC Fellowship scheme should be adjusted as the number of funded Project Grants falls—these schemes have completely different aims.

We recommend:

1. That the NHMRC Fellowship and Grant schemes are retained as separate entities and that if contingencies are implemented they are considered separately within each scheme.

2. With respect to NHMRC Project Grants, we believe that a five-year grant is a healthy framework that brings stability to competitive research programs and allows higher risk research to be undertaken. In the current climate we believe that five-year grants should be awarded if the project warrants an extended period of funding and this is competitively justified. While we support a five-year funding cycle, it seems an inopportune time to mandate this, noting that funding has been flat for many years and therefore effectively declining.

3. To revitalise the Project Grants sector, the NHMRC could consider a temporary measure of a lower limit on the number of grants that can be held and/or a cap on the total annual budget of each grant. The former might be seen as stifling the central tenet of the scheme—competitive funding based on excellence. However, there is already a limit imposed (currently six grants). The latter might include rationalisation of funding allocated to large epidemiological and genome-wide studies that do not provide clear mechanistic outcomes.

4. With respect to the NHMRC Fellowship Scheme, we do not support an up-and-out scheme as long as saving within this scheme are reinvested in the scheme, as discussed under Issue 2, Question 2 below, where we suggest other contingencies such as a narrowing of the funding base and an age limit on holding fellowships.

Issue 2: Is the structure of NHMRC fellowship schemes appropriate for 2015 and beyond?

Question 2: To increase the turnover of NHMRC Research Fellows, should these schemes be seen as 'up and out schemes', whereby Fellows wishing to reapply can only do so at a higher level?

We believe that the structure of the current NHMRC Fellowship scheme is broadly correct. We do not support an 'up-and-out' scheme, particularly if the intention is to create savings flowing from this approach to support the Project Grant scheme. We are strongly supportive of all applications being assessed on an equal footing and relative to opportunity (see response to Question 3). Modifications to the existing scheme are therefore required so that researchers applying for the first time at a new level are not competing against other researchers that have held a fellowship at that level for some time. An up-and-out scheme would create major discontinuities in funding, without obvious contingencies, destabilising career structure and security. Given the current crisis, it may be timely to review science funding more broadly. The expectation would be to build a new scheme that provides both funding continuity based on performance on a competitive scale and natural limits on the number of fellows entering the scheme (see for example, Germain RN *Cell* 2015 161: 1485).

Consideration could be given to an upper age limit for Fellows.

We recommend the up-and-out scheme only if savings are reinvested in the Fellowship scheme to support additional fellows.

Question 3: Are there too many Fellowship levels? Does this structure impede the career progression of rapidly rising stars in health and medical research?

1. We believe the Fellowship scheme structure is broadly correct. Its multiple levels are adequate to reflect the diversity of career stages, research styles, levels of achievement and timing to peak success. We note that there are options for younger, high achieving fellows to obtain accelerated promotion.

We do not recommend reducing the number of fellowship levels if the intention is to generate savings that would be transferred to the Project Grants scheme.

2. While we need to build capacity in the sector by encouraging PhD graduates to continue in medical research, it could also be argued that the 600 ECR fellowships has created a system that gives early career researchers the false impression that a career in research is easily achieved. It is evident that there is a reasonably stringent selection going from ECR to CDA. However, consideration should be given to whether the ECR scheme efficiently selects the “winners” capable of independent research careers. Currently, ECR Fellowships may disproportionately reward researchers who were lucky enough to be trained in excellent PhD labs but are yet to prove they are capable of high quality research in their own right.

Narrowing the base of the Fellowship scheme could be considered by reducing the number of ECR Fellowships awards, thus making them more competitive. We recommend maintaining the two-tiered early career scheme so that entry is possible immediately after a PhD (ECR) or after postdoctoral training (CDA). Savings from narrowing the base could be redirected to Career Development Fellowships—level2, which are under-represented. A consequence of narrowing the base would be that fewer fellowships are funded since higher-level fellowships will be more expensive to the scheme: nonetheless additional fellowships above ECR level will be funded.

3. The NHMRC CJ Martin fellowship provides two years of support for overseas training and a further two years at home. Whilst we understand the sentiment underpinning this strategy, it is highly inefficient in achieving its goals. Two years is insufficient time to conduct a competitive high-impact study in the overseas laboratory and get it published. As a result the researcher may have to leave the study before completion and potentially hand it over so someone else, who may co-opt the glory and the opportunities that flow from it. Furthermore, two years at home is insufficient time for researchers to build a portfolio of compelling papers that would make them competitive for a Career Development Fellowship.

We recommend as a compromise that 3 years overseas study is supported, followed by a year at home to complete a study and publish, and to apply for CDA support. This strategy would also encourage the host institution to commit to the Fellow on the basis of their potential for competing successfully for future funding under the ECR scheme rather than the convenience of their current support.

Question 4: Taking into account that awarding longer grants means fewer grants overall in steady state funding, should NHMRC extend the duration of Early Career Fellowships to more than four years? Should the Career Development Fellowship be extended beyond five years to, say, seven or ten years?

We recommend maintaining the cycle at four-year for the time being, with the exception of return to work Fellows wherein those who have undergone significant career disruptions are able to return in a part time fashion such that the total duration of funding should equal four years full-time equivalent. This would avoid a deepening crisis in the scheme due to fewer fellowships being funded in the transition to the five-year scheme. However, if other savings can be made within the scheme (such as by narrowing the base), moving to five-year Early Career Fellowships would be desirable.

Issue 3: Should there be a stronger strategic approach to granting Fellowships?

Question 5: Should NHMRC identify particular areas that require capacity building for the future and maintain support for those areas for long enough time to make a difference? What else should be done to support women and increase participation and success by Aboriginal and Torres Strait Islander researchers?

We believe that the best research should be funded regardless of the field or skill set. This means allocation of fellowships on the basis of excellence. Quality should be assessed relative to the world stage. We understand the need for special initiatives as part of the broad Australian research and health agenda, but without an agreed allocation for such initiatives there is a risk of external influences undermining the allocation of competitive research funding on the basis of excellence. As recommended in the McKeon review, an allocation of money should be maintained for special initiatives.

We recommend that whatever the structure for dispersal of special initiatives, everything possible should be done to assure that the allocation of NHMRC research funds on the basis of excellence does not become the subject of political influence, even if well-meaning. We recommend flexibility in the duration of fellowships that allow women (or men) to return to work in a part-time capacity. We recommend a number of one-two year return-to-work Fellowships for researchers allocated on the basis of excellence in achievement and promise, and fellowships for Aboriginal and Torres Strait Islanders. One consequence of having fewer fellowships available is that more women will leave research. This is a key argument for having return-to-work fellowships committed from special initiative NHMRC funds.

Question 6: Is there a better solution to encouraging diversity in careers than those based on years post- PhD?

Not that we are aware of.

Issue 4: Responsibilities of employing institutions and the health and medical research sector

Question 7: Should employing institutions be expected to provide more certainty to their employees than now?

It is not clear to us how the NHMRC would formally insist that responsibility for salaries of

researchers coming off fellowships devolve to employing institutions. This would be discriminatory in that it would favour more wealthy institutions. Institutions could only guarantee this if “funds were available”, which provides an obvious structural weakness.

We note that several of the larger institutions do guarantee a one or two year safety net for Fellows; however, for many others this may not be possible. While a level of flexibility is desirable, particularly as the current funding crisis begins to have a real impact on employment, in the absence of greatly increased infrastructure funding for research, it will not be possible.

Even in larger universities such a scheme would inevitably be linked to a significantly higher teaching load and examples are already evident. On the one hand, this undermines the philosophy of most universities that excellent research underpins excellence in teaching. On the other hand, we are aware that universities are ranked on the basis of research output not teaching. Devolving fellowships back to host institutions may therefore lead to the retention of excellent researchers who are sub-quality teachers at the expense of retaining their excellent teachers who do less research. Thus, there is impact far beyond the current discussion of the fellowship scheme.

We recommend a larger debate on the issues surrounding research funding in Australia.

Question 8: Would this be achieved if NHMRC required institutions to commit to one or more years of ongoing support for researchers exiting from NHMRC Fellowships?

As outlined above, in the absence of increased infrastructure funding for research this is not possible.

Question 9: Should this be restricted to Early Career and Career Development Fellows?

The challenges facing Fellows at all levels are equally significant. As such, any solution needs to be applied across all levels of the Fellowship scheme.