

4 yearly review of modern awards—Award stage
(AM2014/229 and AM2014/230)

National Tertiary Education Industry Union

Submission in Response to Reply

Part B Research Institutes

Introduction

1. This section of submission is in response to reply submissions of Association of Australian Medical Research Institutes (AAMRI) and the Association for Professional Engineers, Scientists and Managers Australia (APESMA), (the “joint reply”) and comment provided by the Group of Eight (Go8) Universities and the Australian Higher Education Industrial Association (AHEIA) in relation to NTEU application for modern award coverage of researchers and other staff employed in Research Institutes that are affiliated with Universities.
2. The bulk of this response is in reply to submissions of AAMRI/APESMA lodged with the Fair Work Commission on 3 June 2016. We also respond to the concerns of Go8 and AHEIA in relation to the definition of “Research Institute” proposed by NTEU.
3. In addition to this response, we rely on all previous submissions, including submission in reply of 3 June 2016 and submissions and materials from the 2012 application [*Refer links at Attachment 1*].
4. Paragraph numbers from the joint reply are indicated where we make specific response in that submission.
5. [7] It is true that Deputy President Smith did technically “dismiss” the original NTEU application as part of the 2-year Transitional Review and did not determine the merits of the issues. However he did consider and comment on some of the merits in his final determination.¹
6. [19]; [77] NTEU stands by its assertion that there is no evidence, in transcript or decision, that coverage of research institutes was actively considered by the (then) Australian Industrial Relations Commission as part of the award modernisation process. We therefore do not bear an onus of ‘*(providing) cogent reasons for departing from the decision to not cover research*

¹ 4 yearly review of modern awards – Award stage, National Tertiary Education Industry Union Submission in Reply and Witness Evidence, Part B, para. 7; (3 June 2016).

institutes with the Higher Education awards', as we say there is no evidence that this matter was considered. Moreover, it is clear that given no party supports the status quo (that is, the situation that was left following the award modernisation process), all parties are in the same position.

Definition of Research Institutes

7. The NTEU application of 2 March 2015 sought to include the following definition in the *Higher Education Academic staff Award 2010* and the *Higher Education General Staff Award 2010* (respectively the “*Academic Staff Award*” and the “*General Staff Award*”):

Research Institute means a corporate entity,

- *whose primary activity is to undertake medical, health, scientific or social research, and,*
- *which is established for a charitable, educational or other public purpose, and*
- *which is either affiliated to, or has a like formal association with a university; or where employees hold academic titles associated with higher education, and*
- *where the supervision of the research work of postgraduate research student occurs,*

but not including:

- *any entity whose primary business is the provision of medical, health, social, or religious services to patients, customers or clients,*
- *any State, Territory or Commonwealth Department or Agency,*
- *any for-profit corporation.*

8. AAMRI made only limited submissions in response to the proposed NTEU definition of a Research Institute (in their 18 June 2013 closing [51] to [53] and not as they cite, in any document from 2 April 2013). In response we say that the proposed definition establishes the required boundaries around research institutes which are linked to the provision of education.
9. In their reply submissions of 6 June, both AHEIA and Go8 limit their response on coverage of Research Institutes to comments on the proposed definition of Research Institutes. Both of the employer representatives are primarily concerned with the third part of the proposed definition, that relating to affiliation with a University.

10. [153] In the 2012 case, NTEU provided evidence of formal affiliation agreements between research institutes and universities; the AHEIA and G08 objection that such affiliations may be “switched on or off” is overcome by the words ‘*or like formal association with a university or where employees hold academic titles associated with higher education*’ (our emphasis).² Our award coverage definition is reliant on just one of these criteria being met. The definition is strengthened by the fourth part of the definition, **and** ‘*where the supervision of the research work of postgraduate research students occurs*’.
11. [154] The words suggested by AHEIA in their reply submission are unnecessary and inaccurate - a post-graduate research student can be enrolled in a higher education institution other than a University.
12. In any case, the fact that the (then) Baker IDI Institute signed their affiliation agreement with Monash University in 1965, suggests that formal affiliation agreements are not likely to be turned ‘on and off’ very often:
https://www.bakeridi.edu.au/Assets/Files/BHRI_Annual_Report_1965.pdf
The affiliation between the Walter and Eliza Hall Institute and the University of Melbourne goes back even further – to 1947. The most recent renewal of this affiliation was in 2008. The Howard Florey Institute was part of the University of Melbourne from 1963 and was formed as a separate research affiliate in 1971, <http://our-history.unimelb.edu.au/timeline/>. This affiliation was last renewed in 2005.³
13. The affiliations between research institutes and Universities are not ‘fly by night’- they are steeped in the very history, and sometimes the origin of the institutes themselves. The publication of peer review research and the education of future researchers are dependent on these affiliations. It is unlikely that this relationship will change, and in any case what would have to change to disqualify a research institute from higher education award coverage is both the fact of affiliation and the use of academic titles.

Work value and Occupational Award Coverage

14. [49] The NTEU does not need to establish appropriate work value for staff in Research Institutes; this was established more than 25 years ago by consent, via the *Universities and*

² Refer Attachment 2 *Statute 10.1 Affiliation, Monash University Council*.

³ <http://unimelb.edu.au/governance/statutes/c9/s956>; <http://unimelb.edu.au/governance/statutes/c9>

Affiliated Institutions Academic Research Salaries (Victoria and Western Australia) Award 1989, (“the Research Salaries Award”). Along with the modern Academic Staff Award since 2010 and its predecessor awards, these awards provide properly set minimum rates of pay and relativities via their equivalent pay and classification structures. Together, these awards cover the same type of research work.

15. The Higher Education awards take into account the principle of equal remuneration for work of equal or comparable value. The classifications and relativities in the two modern awards already reflect industry practice, as do those in current and past enterprise agreements made with research institutes.⁴
16. We say it is significant that the employers’ are silent in relation to the existence of the *Research Salaries Award* and the exact reflection of Higher Education classifications and relativities in this Award and enterprise agreements in the industry.
17. NTEU considered the employer reply to our claim as part of the 2012 Transitional Review by looking at the occupation- based modern awards put forward. In our view, AAMRI had a half-hearted response that the following modern awards covered staff in Medical Research Institutes:
 - *Nurses Award 2010*
 - *Professional Employees Award 2010*
 - *Clerks – Private Sector Award 2010*
 - *Medical Practitioners Award 2010*
 - *Health Professionals & Support Services Award 2010*
 - *Miscellaneous Award 2010*.

In our final submissions NTEU presented a table which set out what the (then) Award rates would be for a Principal Research Fellow under the *Higher Education (Academic Staff) Award 2010* when compared to an equivalent nurse, scientist, doctor or occupational therapist performing research and paid under the above awards; (*NTEU Final Submission in response*, 25 June 2013, NTEU Exhibit 12).

18. In this joint reply, AAMRI/APESMA provide a table at Appendix 1 which sets out the types of employees covered by each of the occupational awards, their coverage and scope. This table is incomplete and does nothing to further an argument that occupational awards cover staff in research institutes. Further the parties have abandoned the previous argument of AAMRI that the *Medical Practitioners Award 2010* could apply.
19. Below is analysis of the Awards cited in the joint reply (Appendix 1).

⁴ An analysis of the *Universities and Affiliated Institutions Academic Research Salaries (Victoria and WA) Award 1989* and past Awards and Agreements in Research Institutes was provided in Final Submission of NTEU to Transitional Review of all modern awards (AM2012/187; AM2012/190), 3 June 2013, paras [67] –[87].

Clerks- Private Sector Award 2010

20. This Award is inadequate to cover specialised administrative roles within research institutes. The scope of the award only extends to '*administrative duties of a clerical nature*' and the definition of '*clerical work*' involves very basic clerical tasks. Roles such as Manager, Corporate Services and Administration (equivalent to a University School Manager); Research Administration Manager; Senior Research Administration Officer or Grants and Funding Coordinator- all roles which have been held by NTEU witness Roy Sneddon – would be award free.
21. The *Higher Education (General Staff) Award 2010* by comparison covers various levels of administrative and technical roles, including specifically in research. For example, at HEW Level 5 (degree level) '*work as part of a research team in a support role*'; at HEW Level 6 (degree level with subsequent relevant experience), typical activities include '*manage a teaching or research laboratory or a field station*', '*set up complex experiments*', and '*assist honours and postgraduate students with their laboratory requirements*' and in professional positions '*work as part of a research team*'. Level 7 describes typical activities in technical manager positions, research positions and administrative positions, and Levels 8-10 cover managerial and senior managerial positions, which include senior responsibility for human resources.⁵
22. These administrative and technical classifications form part of an integrated classification structure based on the work value of positions, fair relativities and as part of an established career path. By contrast, the Clerks Award is not adequate to cover these roles within research institutes.
23. The relevant classification levels described above (HEW5-10) provide an annual salary ranging from \$46,836.05-\$71,984.63 from 1 July 2016. By comparison, the only relevant classification levels under the Clerks Award appear to be levels 4 & 5 – which have current (weekly salaries converted to annual) salaries ranging from \$44,5172.40-\$47,008. The Clerks Private Sector Award 2010 is clearly not adequate in providing a fair standard for the BOOT for a worker undertaking '*clerical*' work at a level beyond routine tasks.⁶

⁵ Refer duties undertaken by David Trevaks – Witness statement [5]; [25] and [43]; Refer Witness statement of Roy Sneddon [29] – [30].

⁶ Refer attached Advertisement *Client Coordinator – Australian BioResources Facility, MossVale*, Garvan Institute as an example of a complex senior administrative role in a medical research institute, [Attachment 3].

Health Professionals and Support Services Award 2010

24. This modern award covers staff who provide health services, it does not cover researchers. Clause 3 of the Award defines health industry as “*employers whose business and/or activity is in the delivery of health care, medical services and dental services*” (our emphasis).
25. Given Clause 4 prescribes coverage for those “*in the health industry*” we submit that researchers are excluded from the award.
26. On this point it is interesting to note that AAMRI/APESMA have not suggested that this Award apply to cover drivers or gardeners or other support staff, but have nominated the *Miscellaneous Award 2010*. This could be because such workers are not part of the health industry – a contradiction which is not resolved.
27. Conversely, the NTEU application resolves such inconsistencies as classifications in the two Higher Education awards cover the range of ‘blue-collar’, trade, technical, administrative and research staff in research institutes.
28. Schedule C to the Award lists “Common Health Professionals”. Employees holding qualifications in many of these occupations could work as researchers in a research institute. However, these occupations are listed as part of the “health professionals” list to cover those who are part of the health *services* industry.
29. The *Health Professionals and Support Services Award* is also inadequate to cover researchers with post-graduate qualifications. If we consider the rate for a Medical scientist- Level 1 pay point 5 is the PhD entry rate – equivalent of \$52,218.40, which could arguably apply to a medical researcher with little experience but a doctorate. Presumably such staff could be paid at Levels 3 or 4 (the top rate of which is \$98,436), however the classification descriptors are focussed on health service provision, not research. For example, at Health Professional Level 3 “*may be a sole discipline specific health professional in a metropolitan, regional or rural setting who practices in professional isolation from health professionals from the same discipline*” or more generically, at Level 4 “*has a proven record of achievement at a senior level*”.⁷
30. Under the *Higher Education (Academic Staff) Award 2010* by comparison the PhD point (A6) is \$56,985 and the top Level E is professorial level with a typically international reputation for leadership in their field, (\$106,098).
31. Medical scientist is just one “Health Professional” listed in the award. The vast majority of occupations are practising health professionals such as dieticians, physiotherapists, art therapists, counsellors and so on. Presumably a qualified physiotherapist who is conducting

⁷ Schedule B- Classification Definitions.

medical research would be paid according to the definitions and rates described above [22], even if they held the title of Professor.

Professional Employees Award 2010

32. NTEU has responded to the relevant classifications and rates of pay suggested by AAMRI/APESM, that would apply if their application were to be successful [NTEU, Submission in Reply, Part B, paras 49-65; 3 June 2016].
33. In response to the employers' proposed amendments to their variation lodged with the FWC on 4 July 2016, these amendments vaguely meet some of the objections of NTEU around the singular focus on 'science' in the employers' application and the need to reflect the *post-graduate* requirements of most medical researchers (amendment to clause 3.7). However they are still amendments to an award which is inadequate to cover the range of research staff in MRIs; the Higher Education awards are an exact fit for these staff and for research staff in RIs who are working in an MRI but do not have a qualification in a 'medical, science or health related discipline', for example, a social scientist working at the Burnett Institute. The amendments of course do not address coverage for technical or support staff.⁸

Nurses Award 2010

34. As noted by the joint reply in the table at Appendix 1, the Nurses Award covers nurses '*who are principally engaged in nursing duties*' and in the '*health industry*'. Health industry is defined as '*employers in the business and/or activity of providing health and medical services and who employ nurses and persons who directly assist nurses in the provision of nursing care and nursing services*' (clause 3). Though some research institutes provide clinical services, they are not entities whose primary purpose is to provide health and medical services and cannot therefore be said to be '*in the health industry*'.
35. The nursing classifications set out at Schedule B of the Award include reference to a "Nurse Educator" role. However, these are nurses who are involved in staff education and professional development programs. Research is referred to only in terms of Nurse Educators undertaking "action research". This term is not specifically defined but is assumed to mean research from within the activities that are occurring in the relevant medical setting, and not academic, peer reviewed research.
36. The most senior registered nurses (Level B5) are described in terms of their management and leadership skills; these classifications could not be readily applied to a Professor of nursing working in a Research Institute. The highest rate (RN – Level 5, Grade 6) is the equivalent of \$98,498.40 per annum.

⁸ Refer correspondence K & L Gates to Commissioner Johns, FWC Re: AM2015/6 – Education Group – Proposed amendments to Application, 4 July 2016.

37. In relation to nurses *providing a health service* as part of a research institute, the *Higher Education (General Staff) Award 2010* classification structure (Schedule B) covers nursing staff [31(c)]. Nurses may be employed in University and other research institutes to take blood or perform other clinical tasks as part of research trials or studies.

Miscellaneous Award 2010

38. There are several problems with nominating this occupational award to cover ‘miscellaneous’ or ‘blue-collar’ staff in RIs. The first, as mentioned above, is why is this Award relevant for these staff, and not the support classifications in the Health Professionals Award? The joint applicants cannot argue that it is because these staff are not working in the ‘health industry’ as defined by that Award. If that definition excludes these staff, then it excludes all medical researchers for the same reason – they are neither providing a health service or employed in the health industry.
39. Clause 4.2 of the Award notes that “*the award does not cover those classes of employees who, because of the nature or seniority of their role, have not traditionally been covered by awards including managerial employees and professional employees such as accountants and finance, marketing, legal, human resources, public relations and information technology specialists.*” The Award therefore has the same limitations in respect to senior administrative, professional and managerial staff as does the Clerks- Private Sector Award.
40. The *Higher Education (General Staff) Award 10* Level HEW structure accommodates all of these staff – building and maintenance staff, cleaning staff, animal technicians, tradespersons, human resources staff, senior research managers, IT staff and so on.
41. [21 (c)]; [61ff] The joint respondents say that the current ‘occupational coverage should not be disturbed’. NTEU contends that current award coverage has *not* been determined, other than via the *Universities and Affiliated Institutions Academic Research Salaries (Victoria and Western Australia) Award 1989*. We reject the claim throughout the joint reply that there is ‘existing’ coverage.
42. It is clear that the occupational awards cited in the joint reply do not have the required scope to cover research, technical and administrative staff in RIs; together these awards do not meet the modern awards objective in contributing to a simple, easy to understand, stable and sustainable modern award systemthat avoids unnecessary overlap of modern awards [s. 134(1) (g)].
43. [64] – [97] The joint reply reference to Institutes that also provide a medical service or whom do not place as much emphasis on publications, or are diverse in varying ways, are each accommodated by the NTEU proposed definition. Further, there is a core and common

purpose, and equal qualifications between those conducting research in Research Institutes and in Universities.⁹

44. By way of contrast, it is APESMA and AAMRI who must establish appropriate work value for their award coverage application in order to show that their claim is necessary for the effective operation of their award. Even if this were achievable, the ‘patchwork’ of other awards which they claim cover staff in research institutes would require more thorough investigation by the Commission.

The Modern Awards objective

45. Current award coverage for staff in research institutes is uncertain. It cannot be said that a fair and relevant safety net of terms and conditions exists and hence NTEU submits that our application in respect of research institutes, should be considered and granted.
46. We agree with the employers’ submission that “*it is contrary to the principle of equal remuneration for work of equal or comparable value [s. 134 (1)(e) of the Act] for employees in the same occupation to not receive the same minimum entitlements*” [114]. If the *Higher Education (Academic Staff) Award* and the *Higher Education (General Staff) Award* coverage is amended to include research institutes (as defined) s. 134(1) (e) is automatically met, with no further amendment required [126]. To this end, the amendments are limited but necessary to achieving the modern awards objective (s. 138).
47. If the NTEU claim is granted, the Commission would also ensure that s. 134 (1) (g) of the Act were met; this would also meet the concern of AIG as expressed in their response to the joint application of AAMRI/APESMA.¹⁰
48. In relation to s. 134 (1)(f) of the Act, the fact is that the market rates and enterprise agreement rates for research institutes are well in excess of those provided in any modern award; the cost impact for employers should be negligible.
49. NTEU Submission in reply sets out the relative minimum rates differences between the minimum rates in the *Professional Employees Award* and the *Higher Education (Academic Staff) Award*; [3 June 2016, [49]]. The above analysis of the occupational awards provides some comparison for technical, administrative and support staff [123].
50. Variations in funding, overlapping collaboration across industries and higher education, the regulatory environment and tax treatments do not and should not impact on the appropriate industrial arrangements for staff in research institutes [121] – [122].

⁹ A 2009 paper identified that of 39,037 total staff in medical research institutes 15,203 held a PhD (and 23,411 were research staff). *Planning the Health and Medical Research Workforce 2010-2019*, Prepared for The Australian Society for Medical Research by Dr. D Schofield, October 2009; [Attachment 4].

¹⁰ Refer correspondence *AIGroup to Commissioner Johns, FWC, RE: AM2015/6 – Education Group (Coverage of Professional Employees Award 2010)*, at (b); 7 July 2016.

51. All the NTEU is seeking is a necessary variation to the scope of the two higher education awards to reflect the *industrial* reality of work in research institutes.

NTEU Research Institute Application

Application to vary a modern award (*Fair Work (Transitional Provisions and Consequential Amendments) Act 2009*, Part 2 of Schedule 5)

AM2012/187 and AM2012/190

Higher Education Industry—General Staff—Award 2010 [MA000007] and the Higher Education Industry—Academic Staff—Award 2010 [MA000006]—seeking to amend the coverage of both awards to include Research Institutes (as defined) into the awards.

AMWU and NTEU - Application for review of modern award - see FURTHER AMENDED APPLICATION - 8 March 2012

<https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012110.pdf>

National Tertiary Education Industry Union - Application for review of modern award – 9 March 2012

<https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012190.pdf>

<https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012187.pdf>

Transcript - 27 September 2012

https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012190_270912.pdf

Transcript - 18 October 2012

https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012190_181012.pdf

Transcript - 23 November 2012

https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012190_231112.pdf

AMWU and NTEU - Application for review of modern award – further amended – 1 February 2013

https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012110_furtheramended2.pdf

National Tertiary Education Industry Union - Outline of submissions and witness statements – 4 March 2013

https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012187&190_OutlineSub_NTEU_redactedCV.pdf

National Tertiary Education Industry Union - Outline of submissions - supporting evidence - Research Institute Annual Reports – 19 March 2013

https://www.fwc.gov.au/documents/documents/awardmod/review/NTEU%20Research%20Institutes_links.pdf

National Tertiary Education Industry Union – Correspondence – 10 April 2013

https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012187&190_corr_nteu.pdf

National Tertiary Education Industry Union – Submission in reply – republished – 17 April 2013

https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012187&190_sub_nteu.pdf

National Tertiary Education Industry Union – Correspondence – 23 April 2013

https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012187&190_NTEU.pdf

Transcript - 29 April 2013

<https://www.fwc.gov.au/documents/documents/awardmod/review/290413AM2012187.pdf>

Transcript - 30 April 2013

<https://www.fwc.gov.au/documents/documents/awardmod/review/300413AM2012187.pdf>

Transcript - 1 May 2013
<https://www.fwc.gov.au/documents/documents/awardmod/review/010513am2012187.pdf>

National Tertiary Education Union - Submission – 4 June 2013
https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012187_190_sub_nteiu.pdf

National Tertiary Education Union - Final submission – 4 June 2013
https://www.fwc.gov.au/documents/documents/awardmod/review/AM2012187_190_finalsub_nteiu.pdf

Transcript - 25 June 2013

<https://www.fwc.gov.au/documents/documents/awardmod/review/250613AM2012187.pdf>

Decision – 14 October 2013

<https://www.fwc.gov.au/documents/documents/awardmod/review/2013fwc7947.pdf>



Statute 10.1 - Affiliation

Made by the Monash University Council

Version incorporating amendments as at 17 February 2012

PART I - GENERAL

- 1.1** Institutions may be affiliated to the university in accordance with and subject to the provisions of the parts of this statute which apply to such institutions and to the provisions of this part which shall apply to the affiliation of all institutions.
- 1.2** In this statute 'institution' means any educational, cultural, sporting or other institution, organisation or body
- 2.** The rules of admission to any institution affiliated to the university shall not provide for any religious, racial or political test save that a residential institution sponsored by a religious or similar organisation may, when selecting entrants, give some preference to members of that organisation.
- 3.1** There shall be a standing committee of the Academic Board which shall consider all applications received for affiliation the continuance of any affiliation and all other matters related to affiliation and shall make recommendations thereon to the Academic Board.
- 3.2** A recommendation of the standing committee in relation to an application for affiliation must state which, if any, objects of the university the affiliation would assist in attaining.
- 4.** Every application for affiliation shall contain such information in such form as the Academic Board may require. The governing body of any institution to be affiliated shall undertake that during its continued affiliation it shall supply such information and permit such inspection of its premises on behalf of the Academic Board as the Academic Board may from time to time require.
- 5.** It shall be a condition of the affiliation or of the continued affiliation of any institution that its constitution shall be such as is approved by the Academic Board.
- 6.1** The Council, on the recommendation of the Academic Board, may -
 - 6.1.1** subject to subsection 6.2, grant an application for affiliation subject to any terms and conditions, not inconsistent with the provisions of this statute, the Council determines;
 - 6.1.2** refuse an application for affiliation; or
 - 6.1.3** terminate an existing affiliation subject to the conditions contained in the agreement for affiliation.

- 6.2** Before granting an application for affiliation the Council must be satisfied that the affiliation will assist in attaining one or more of the objects of the university.
- 7.** The affiliation to the university of an institution shall be effected by an agreement for affiliation completed between the university and the institution or its governing body. Each such agreement shall provide that adequate notice of termination must be given by either party.

PART II - AFFILIATION OF RESIDENTIAL INSTITUTIONS

- 8.** The provisions of this part apply to the affiliation to the university of residential institutions which provide residence for members of the university.
- 9** Subject to section 10 it shall be a condition of the affiliation and continued affiliation of a residential institution that it:
- 9.1** shall not permit any person to become or continue to be a resident member unless that person is -
- 9.1.1** enrolled for a course of study leading to a degree or a diploma of the university, or
- 9.1.2** a member of the staff of the university, or
- 9.1.3** engaged in research at the university, or
- 9.1.4** a member of the staff of the institution;
- 9.2** shall allow the institution to be used for residence only by -
- 9.2.1** resident members,
- 9.2.2** permanent or temporary members of the staff of the institution,
- 9.2.3** distinguished visitors invited to reside temporarily at the institution, and
- 9.2.4** members of the family of any such resident members, members of the staff and distinguished visitors;
- 9.3** shall not permit any person to become or continue to be a non-resident member unless that person is -
- 9.3.1** one of the persons referred to in paragraphs 9.1.1 to 9.1.4 of this section, or
- 9.3.2** a graduate of the university, or
- 9.3.3** a member of the governing body of the institution;
- 9.4** has a substantial proportion of the members residing at the institution;

- 9.5** shall be wholly affiliated to the university and shall not reserve or exclude from affiliation any part or activity of the institution;
 - 9.6** shall not require any member, other than a member of its staff, to participate in any religious observance;
 - 9.7** shall inform the Academic Board of the rules or regulations for the maintenance of discipline within the institution which are from time to time in force;
 - 9.8** may establish and maintain a tutorial system for the benefit of resident and non-resident members who are students to complement the teaching of the university provided that the dean of the faculty or chairman of the department concerned, as the case may be, is consulted concerning the appointment of any member of the tutorial staff prior to the making of such an appointment;
 - 9.9** shall obtain the approval of the Academic Board to the facilities for and standards of accommodation, the facilities for study and the arrangements made for the maintenance of safety and health within the institution;
 - 9.10** shall keep the Academic Board informed of and obtain the approval of the Academic Board to any plans which the institution may prepare or propose for development from time to time to ensure that such plans are not inconsistent with the plans for the development of the university;
 - 9.11** shall, by its constitution, provide that one member of its governing body shall be a person representing the university and appointed from time to time by the Academic Board;
 - 9.12** shall not award any academic qualification of any kind whether by way of degree, diploma, licence, certificate or otherwise;
 - 9.13** shall not use the name of the university except as authorised by the Academic Board.
- 10.1** The Academic Board may at any time and from time to time if it thinks fit exempt a residential institution affiliated to the university from any of the provisions of section 9 to the extent, for the period or periods and subject to the conditions specified.
 - 10.2** Notwithstanding the provisions of this part a residential institution affiliated to the university may, during periods on which the university is on vacation, permit the premises of the institution to be used for purposes which are otherwise not authorised or permitted by this statute.

PART III - AFFILIATION OF HOSPITALS

- 11.** This part applies to the affiliation of hospitals to the university.
- 12.** It shall be a condition of the affiliation or of the continued affiliation of a hospital that it shall, to the satisfaction of the Academic Board, provide suitable accommodation or facilities or both for the clinical instruction or clinical examination or both of

undergraduate students of the university or suitable facilities for undergraduate or graduate students or members of the staff of the university to carry out research.

- 13.** Any affiliation agreement entered into by the university with a hospital which is to be or has been affiliated to the university may provide for –
- 13.1** accommodation of members of the staff of the university or of a university department within the hospital;
 - 13.2** the offering of hospital appointments to members of the staff of the university;
 - 13.3** arrangements for conjoint recommendations in regard to certain hospital appointments;
 - 13.4** the maintenance of student discipline within the hospital;
 - 13.5** the payment of fees by students attending the hospital;
 - 13.6** the minimum period of notification on either side to be given of intention to terminate the agreement.

PART IV - AFFILIATION OF RESEARCH AND OTHER EDUCATIONAL INSTITUTIONS

- 14.** This part applies to the affiliation to the university of research or other educational institutions, not being residential institutions or hospitals.
- 15.** It shall be a condition of the affiliation and of the continuation of the affiliation of any research or other educational institution that it shall, to the satisfaction of the Academic Board, provide suitable accommodation or facilities or both for the teaching of or the carrying out of research by persons who are students or former students or members of the staff of the university.

PART V - REGULATIONS

- 16.1** The Council may make regulations for or with respect to any matter or thing necessary, expedient or permitted to be prescribed for the purposes of this statute.
- 16.2** Without limiting subsection 16.1, the regulations may prescribe –
- 16.2.1** the constitution and appointment of the standing committee on affiliation;
 - 16.2.2** the procedure of the standing committee on affiliation;
 - 16.2.3** the form of application for affiliation to the university.

End Notes

1. Table of amendments from 1 November 2011 (as incorporated into this version):

Amendment	Sections Amended	Commencement Date (Promulgation)
Statute 1.4 – University Regulations (No. 7 of 2011)	Section 16	17 February 2012



Client Coordinator - Australian BioResources Facility, Moss Vale

Job No: GC294

Location: Moss Vale, Southern Highlands

At Garvan our research is focused upon understanding the role of genes, molecular and cellular processes in health and disease as the basis for developing future preventions, treatments and cures. Our scientists are researchers who work towards making significant breakthroughs in scientific discovery to positively impact human health.

Like Garvan, The Australian BioResources (ABR) facility based in Moss Vale NSW, is a state of the art centralised facility specialising in the breeding of congenic, mutant and genetically modified mouse lines for Garvan and partner institutes. Our people are talented technicians who focus on providing exceptional services to our Scientists and clients alike.

The Opportunity

We currently have an opportunity for an experienced Client Co-ordinator to join our team based in our Australian BioResources Facility. The focus of this position is to communicate with existing ABR clients and potential clients advising on services offered by the facility. The communication will be multi-faceted, using a variety of communication tools. Key responsibilities of this position include:

- ➔ Delivery of high level support to clients and stakeholders by providing prompt technical and logistical advice on all ABR services
- ➔ Promoting ABR through marketing materials, trade booths and workshops/ seminars
- ➔ Maintaining and updating the ABR website as an attractive client and information portal that promotes ABR; and services the needs of clients
- ➔ Managing customer service agreements and promoting the development of new ABR partnerships

To be considered for this position, you will possess the following key skills and attributes:

- ➔ BSc or equivalent degree in a relevant area of science and experience in animal based research
- ➔ Strong knowledge and experience in the use of rodents in research
- ➔ Strong project management skills
- ➔ Ability to develop, manage and maintain internal and external relationships
- ➔ Highly developed written and verbal communication skills
- ➔ Proficient in use of the Microsoft Word, Excel and Powerpoint
- ➔ Strong problem solving, analytical skills, and strategic thinking
- ➔ Excellent interpersonal skills and the ability to work well and flexibly in small teams and with a wide range of varying stakeholders
- ➔ A current driver's license and the ability to travel as needed is essential

Eligibility

Only applicants with full working rights in Australia are eligible to apply for this role.

How to Apply

Please prepare and submit your application as per the directions below:

- A Cover Letter addressing the Selection Criteria above
- Your Resume including 3 Referees
- Copies of relevant qualifications / Academic transcripts

Closing Date: 30 June 2016

Personal Details

* Required field

First name*

Last name*

E-mail*

Phone*

Mobile

Street*

Street Cont.

City, Town or Suburb*

Postcode or Zipcode*

Country*

State, Region or Province*

Questions

1. **Garvan embraces diversity and inclusion. We are committed to making reasonable adjustments to provide a positive, barrier-free recruitment process and supportive workplace. If you have any support or access requirements, we encourage you to advise us at time of application. We will then work with you to identify the best way to assist you through the recruitment process. Please confirm below if you require any assistance and an HR representative will contact you shortly. All personal information will be kept confidential in compliance with relevant privacy legislation.***

Yes, I do require reasonable adjustments

No, I do not require reasonable adjustments

2. **Garvan Privacy Policy Declaration - Do you consent to the collection and storage of your personal information as follows? The Garvan is committed to handling personal information (including health and other sensitive information) in accordance with applicable privacy laws, including the Australian Privacy Principles set out in the Privacy Act 1988 (Cth). We may collect personal information when we are canvassing recruitment of staff and PhD students. We will collect personal information that you supply to us as part of this process for the purpose of assessing applications and proposals. The Garvan will collect personal information about you such as name, address, telephone, email, your educational / academic history and work history. We will collect personal information about you from third parties, such as your referees, as part of our assessment of your suitability for a position.***

YES - I CONSENT

- 3. What is your area of Specialty / Research / Interest at Garvan? - Tick one:^{*}**

- 4. Please briefly explain how your skills and experience are relevant to this position. Your Cover Letter should address the selection criteria in more detail:^{*}**

- 5. Can you please advise what are your Base Salary expectations for this role? ^{*}**

- 6. Please confirm your eligibility to work in Australia - Tick one:^{*}**

- 7. If you hold any type of "Temporary" work visa for Australia, please provide specific details here, including: Visa type and Subclass Number, Allowable work hours, Expiry Date:**

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PEOPLE MAKE RESEARCH HAPPEN

Planning the Health and Medical Research Workforce 2010-2019

Prepared for

The Australian Society for Medical Research



by

Dr Deborah Schofield

Associate Professor and Director of Research

Northern Rivers University Department of Rural Health (NRUDRH),
School of Public Health,
Faculty of Medicine, University of Sydney



October 2009

Contents

Acknowledgements	2
Foreward	3
Executive summary	4
<hr/>	
Modelling the Health and Medical Research Workforce	5
1. <i>Data used to model the Health and Medical Research Workforce</i>	5
2. <i>Health and Medical Research Workforce</i>	5
<hr/>	
Conclusions	10
References	12

Acknowledgements

This report was prepared by Dr Deborah Schofield, Associate Professor and Director of Research, Northern Rivers University Department of Rural Health (NRUDRH), School of Public Health, Faculty of Medicine, University of Sydney for The Australian Society for Medical Research (ASMR).

The ASMR wishes to thank the following organizations for their financial support in the commissioning of this report:

- Association of Australian Medical Research Institutes
- Australian Atherosclerosis Society
- Australasian College for Emergency Medicine
- Australasian Society for Psychiatric Research
- Australian and New Zealand Bone & Mineral Society
- Australian and New Zealand Society for Cell & Developmental Biology Inc
- Australian and New Zealand Society of Nephrology
- Australian Physiological Society
- Australian Rheumatology Association
- Australasian Gene Therapy Society Inc
- Australasian Sleep Association Inc
- Australasian Society for Immunology
- Australian Diabetes Society
- High Blood Pressure Research Council of Australia
- Human Genetics Society of Australasia
- Institute of Health and Biomedical Innovation
- National Association of Research Fellows
- The Royal Australian and New Zealand College of Radiologists
- Thoracic Society of Australia and New Zealand
- Transplantation Society of Australia and New Zealand

Foreward

Australia's vision, as enunciated by the Prime Minister, Mr Kevin Rudd, is "to create the best skilled, best trained and most highly educated workforce in the world", with talented health and medical researchers being part of that grand ambition.

Chartering a well planned workforce is essential to meet the needs of the nation and make the vision a reality. We need an ambitious, innovative investment programme. A program which creates a self sustaining and agile workforce able to meet head on, challenges in indigenous health, the overt diseases associated with the ageing population and the emerging covert health risks associated with climate change.

People make research happen and it is the health and medical research workforce which is and will be, the foundation for prevention and cures, now and in the future. Australia's health and medical research workforce has performed outstandingly on an international scale, and Australia can build upon the health and wealth returns the nation has come to expect and enjoy.

To meet Australia's future health and medical research workforce needs, the sector must be empowered to work better and smarter. This means policy reform in the area of investment mechanisms and it also means new and better international partnerships and collaborations. The European Union (27 countries), Framework 7 Program is an example of what can be achieved in science when governments and scientists co-operate and collaborate. Europe is positioned to eclipse America and Japan in science with a research culture building in momentum.

The creation of a regional Asia Pacific partnership, not unlike the European Union Framework 7 program, could stimulate growth, increase Australia's GDP and sustain investment in the sector at a level greater than that possible for Australia and other countries in the region individually.



**This report highlights new opportunities
for Australia, 'the clever country'.
Investment in human capital is our key
to the future.**

Sarah Meachem PhD
ASMR President, 2009

Executive summary

Purpose

This study projects attrition from the health and medical research workforce over 40 years of age¹ in 2009 to 2019 and draws conclusions about the number of new staff required to replace the workforce lost. Estimates are also made of the number (and related cost) of additional PhDs who would need to enter the health and medical research workforce by 2019 to maintain the workforce as a constant proportion of the total workforce and also to match the level of comparable OECD nations.

The study uses recently collected demographic data (unpublished) from an ASMR survey of Health and Medical Research Workforce organisations which describes the 2009 health and medical research workforce.

Summary of findings

The ASMR survey data represent all staff in Medical Research Institutes and University Departments - 39,037 total staff, with 23,411 reported as research staff and 15,203 of the total staff holding a PhD.

In 2009, 58% of the health and medical research workforce was female and 42% male. The largest cohort was 30-39 years of age and female followed by the 40 to 49 year old male cohort.

Over the decade from 2009 to 2019, it was estimated that about 6,250 members of the health and medical research workforce over the age of 40 years in 2009 would leave the workforce by 2019, with the bulk of these leaving between the ages of 50-69 years of age.

It was estimated that 35% of females and 49% of males aged 40-49 years in 2009 would be retired by the age of 50-59 years, with 85% of women and 70% of men aged 50-59 years in 2009 also projected to retire over the next 10 years.

Of the 6,250 members of the health and medical research workforce over the age of 40 years who would leave the workforce by 2019, about 4,000 would have held a PhD. Replacing these PhD qualified staff would cost about \$570 million in 2009 dollars (excluding the cost of scholarships and supervision).

If Australia were to maintain its current *PhD qualified persons in the health and medical research workforce: working population* ratio to 2019, another 1,700 persons with a PhD and willing to work in the health and medical research workforce would need to graduate to maintain the current workforce at a cost of about \$240 million in 2009 dollars.

To reach comparable levels of PhD completions per 100,000 in the workforce, Australia would require about 5,700 additional health and medical research related PhD graduates to be comparable with US levels, about 22,800 to be comparable with German levels and about 38,000 to be comparable with Switzerland.

¹ The age group at which retirement typically commences being 40 to 50 years of age.

Modelling the health and medical research workforce

1. Data used to model the Health and Medical Research Workforce

The Health and Medical Research Workforce

In 2009, the ASMR conducted a survey of Health and Medical Research Workforce organisations including Medical Research Institutes and relevant University Departments. Of 61 Medical Research Institutes, 55 responded (a response rate of 90%) and of 34 University Departments, 15 responded (a response rate of 44%).

Of those who responded, Medical Research Institutes reported a total of 11,220 staff of those 4,263 held a PhD (38%), with 8,763 of the total engaged in research. University Departments reported a total of 11,626 staff engaged in the health and medical workforce, 4,582 of those held a PhD (39%) and 5,958 engaged in research (51%).

Grossed up to represent all staff in Medical Research Institutes and University Departments, this represents 39,037 total staff (excluding students), with 23,411 reported as research staff (60%) and 15,203 holding a PhD (39% of total staff).

In the latter half of 2006, ASMR invited its members (n=1258) to participate in an online survey. Of these members, 379 completed the survey which constituted a response rate of 30 percent. The questionnaire, designed by University of Queensland Social Research Centre in conjunction with the ASMR, gathered information regarding workforce demographics and perceptions of the current situation of health and medical research in Australia and the factors at play in the movement of medical researchers between Australia and overseas (see Kavallaris et al 2008)ⁱ.

ABS Population Projections

The Australian Bureau of Statistics provides projections of the Australian populationⁱⁱ. The ABS produces 3 population projection series with high, medium and low growth. The medium growth series (Series B) was used for this study. Series B assumes medium population growth resulting from lower migration, life expectancy and fertility than the higher growth series (Series A).

This data source was used for population projections of Australians of workforce age to 2019.

2. Health and Medical Research Workforce

In 2009, there was 23,411 research staff (excluding administration staff) in total in the health and medical research workforce. Based on ASMR survey data, the age and sex distribution was estimated (Table 1) and these ratios were applied to the total research staff figure to estimate the age and sex profile of the total health and medical research workforce (Table 2). The ASMR data grouped respondents aged 60 and over together.

The age group 60-64 years was disaggregated from the 65 and over age group based on the ratio of all academic staff in this age group as reported by Hugo (2008)ⁱⁱⁱ.

Based on the 2006 ASMR member survey, 58% of the health and medical research workforce was female and 42% male. However, for those aged 50 years and over there were more men than women, while the younger age groups were predominantly female. This is important for considering the long term future of the health and medical research workforce as women, on average, spend more time out of the workforce, are more likely to work part-time and retire earlier.

There was a small cohort of the health and medical research workforce who continued to work beyond Australia's traditional retirement age of 65 years.

The largest cohort was 30-39 years of age and female followed by the 40 to 49 year old male cohort.

Table 1: Age and Sex Distribution of the Health and Medical Research Workforce, ASMR survey, Australia, 2006

	<25	25-29	30-39	40-49	50-59	60-64	65+	Total
Ratio of total (sex)								
Female	0.09	0.21	0.36	0.19	0.12	0.02	0.00	1.00
Male	0.06	0.12	0.22	0.35	0.18	0.05	0.02	1.00
All	0.08	0.17	0.31	0.26	0.15	0.03	0.01	1.00
Ratio within age group								
Female	0.67	0.7	0.69	0.43	0.49	0.33	0.23	0.58
Male	0.33	0.30	0.31	0.57	0.51	0.67	0.77	0.42
Number of persons								
Female	20	45	79	42	27	4	1	218
Male	10	19	36	55	28	8	3	159
Total	30	64	115	97	55	12	4	377

Source: ASMR 2006 survey of the Health and Medical Research Workforce (i)

Table 2: Health and Medical Research Workforce, Australia, 2009

	<25	25-29	30-39	40-49	50-59	60-64	65+	Total
Female	1,248	2,782	4,927	2,590	1,674	257	51	13,529
Male	615	1,192	2,214	3,433	1,742	514	171	9,882
Total	1,863	3,974	7,141	6,024	3,415	771	223	23,411

Sources: ASMR 2006 and 2009 surveys of the Health and Medical Research Workforce (i)

Ideally attrition would be estimated from longitudinal data. As this was not available for the health and medical research workforce, estimates were made from the cross-sectional ASMR data. It was assumed that the 40-49, 50-59 and 60-69 year old cohorts were approximately the same size prior to retirements commencing. There is some evidence that this is approximately accurate, with data from Hugo (2008)ⁱⁱⁱ indicating that for all academic staff male cohorts in these age groups were of a similar size in 1991.

The younger female cohorts tended to be larger in 1991 as rapid feminisation of the health and medical research workforce began to occur, but this effect was much less evident by 2006. As a check, the rates of retirement were compared with those for nurses, a primarily female workforce, and found to be lower, which is expected as the health and medical research workforce has a higher proportion of males and on average would have more years of education, two factors associated with later retirement (Schofield and Beard (2005))^{iv}.

Attrition from the workforce was projected for persons aged 40 years and over in 2009. Loosely referred to as retirement, this attrition may be a result of permanently leaving the workforce, moving out of the workforce for other reasons including to take up another profession, illness or death. The figures represent net attrition, that is, the balance of exits minus any entrants returning to the health and medical research workforce.

It was estimated that there was net attrition of 35% of the female and 45% of the male health and medical research workforce between the ages of 40-49 and 50-59 over a 10 year period (Table 3). As expected, the rate of attrition was higher for the older age groups, with 85% of women and 70% of men leaving the workforce between the ages of 50-59 and 60-69 years of age. The data grouped all age groups beyond the age of 65 years and it was assumed that all of the health and medical research workforce in this age group retired by 70 years of age and over. While there may be some of the health and medical research workforce working beyond the age of 70, the numbers will represent a very small proportion of the workforce with less than 1% of the health and medical research workforce aged 65 years or more in 2009.

Table 3: Attrition estimates for the health and medical research workforce from 2009

		40-49	50-59	60-64	65+
Females	2019	0.35	0.85	1.00	1.00
Males	2019	0.49	0.70	1.00	1.00
All	2019	0.43	0.77	1.00	1.00

Based on the age/sex-specific attrition rates in Table 3, it was estimated that over the ten years from 2009 to 2019, just over 6,250 members of the health and medical research workforce over the age of 40 years in 2009 would leave the workforce. The bulk of these would leave the workforce between the ages of 50-69 years of age. Of these, about 4,000 would have held a PhD based on the proportion of persons with a PhD in the total health and medical research workforce. Replacing these PhD qualified staff to maintain the current size of the workforce would cost about \$570 million in 2009 dollars based on an estimated \$140,000 (+/- \$57,000) per 4 year PhD (excluding the cost of scholarships and supervision) based on the ASMR survey, 2009.

Table 4. Attrition from the health and medical research workforce by 2019

Age at 2009	<25	25-29	30-39	40-49	50-59	60-64	65+	Total
Female								
2009	1,248	2,782	4,927	2,590	1,674	257	51	13,529
retirements by 2019	0	0	0	917	1,417	257	51	2,641
Male								
2009	615	1,192	2,214	3,433	1,742	514	171	9,882
retirements by 2019	0	0	0	1,692	1,228	514	171	3,605
All								
2009	1,863	3,974	7,141	6,024	3,415	771	223	23,411
retirements by 2019				2,608	2,645	771	223	6,246
Number of PhDs retired (a)								4,056
Cost of PhDs (\$mill) (a)								570

a) Based on ASMR survey data of proportion of research staff with PhDs - \$140,457 per PhD (based on 4 years to completion) excluding scholarships and supervisor time

If Australia were to maintain its current *PhD qualified persons in the health and medical research workforce: working population* ratio to 2019, another 1,700 persons with a PhD and willing to work in the health and medical research workforce would need to be graduated (at a cost of about \$240 million in 2009 dollars for PhD graduates who entered the health and medical research workforce).

Australia has a relatively low rate of PhD completions in the workforce compared to a number of comparable OECD nations — 8 persons with a PhD per 100,000 in the workforce in Australia compared to 11 persons with a PhD per 100,000 in the workforce in the US (38% higher), 20 persons with a PhD per 100,000 in the workforce in Germany (150% higher) and 28 persons with a PhD per 100,000 in the workforce in Switzerland (250% higher).

If these differences in the rate of PhD completions per 100,000 in the 2009 workforce are reflected in the health and medical research workforce, then Australia requires about 5,700 additional health and medical research related PhD graduates to reach current US levels (at a cost of about \$800 million), about 22,800 to reach German levels (at a cost of about \$3 billion), and about 38,000 to reach the level of Switzerland (at a cost of about \$5.3 billion) (see figure 1 and 2). This is in addition to the approximately 1,700 persons required to maintain Australia's current *PhD qualified persons in the health and medical research workforce: working population* ratio to 2019 due to population growth.

Based on the current ratio of *support staff: research staff*, approximately an additional 1,100 support staff would be needed to support the additional 1,700 persons with a PhD in 2019 to maintain Australia's current *PhD qualified persons in the health and medical research workforce: working population* ratio. Approximately a further 3,800 support staff would be needed if Australia had the same proportion of PhD graduates per 100,000 persons of workforce age as the US, about 15,200 if we had the same proportion as Germany and about 25,400 if we had the same proportion as Switzerland.

Table 5: Estimate of required growth in the health and medical research workforce with a PhD for population growth and international levels

Australian health and medical research workforce with PhDs 2009	15,203
Australian population of workforce age (000s) 2009 (a)	14,601,914
Australian population of workforce age (000s) 2019 (a)	16,223,106
PhDs required after workforce age population growth	16,891
% per 100,000 population in the workforce with PhD Australia 2009 (b)	8
% per 100,000 population in the workforce with PhD US 2009 (b)	11
% per 100,000 population in the workforce with PhD Germany 2009 (b)	20
% per 100,000 population in the workforce with PhD Switzerland 2009 (b)	28
Growth in PhD per 100,000 population to reach US levels 2009	38%
Growth in PhD per 100,000 population to reach German levels 2009	150%
Growth in PhD per 100,000 population to reach Switzerland levels 2009	250%
Additional Health and Medical PhD completions to reach US levels 2009	5,702
Additional Health and Medical PhD completions to reach German levels 2009	22,806
Additional Health and Medical PhD completions to reach Switzerland levels	
2009	38,009

- a) ABS population forecasts (series B) : Australian Bureau of Statistics (2008) Population Projections Australia 3222.0. ABS: Canberra. Source:
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02006%20to%202101?OpenDocument>
- b) Data provided by ASMR 2009: Senator the Hon Kim Carr, Address to ANU Luncheon with Victorian Business Leaders, 26 March 2008. Cited in a Submission to the House of Representatives Industry, Science and Innovation Committee. Inquiry into research training and research workforce issues in Australian universities.
Source: http://www.irua.edu.au/news_archive/2008/InquiryIntoResearchTraining.pdf

Conclusions

If Australia is to have the most highly educated, best skilled and highly trained health and medical research sector in the world, the number of qualified researchers (PhD or equivalent) would need to expand 2.5 fold to be on par with knowledge based workforces such as the European workforce.

A recruitment of human capital is needed to maintain our world class health and medical research workforce over the next 10 years. Specifically the sector must attract 30% more PhD or equivalently qualified researchers with a proportionate increase in support staff.

The projected attrition over the ten year period 2009-2019 is approximately 6250 members of the health and medical research workforce with around 4000 of this number having a PhD (based on the proportion of persons with a PhD in the total health and medical research workforce)

In addition to replacing these 4000 retirees, for Australia to maintain its health and medical research capacity as a proportion of the population of workforce age, another 1700 PhD qualified persons willing to work in the health and medical research workforce, would be needed in 2019.

If Australia were to keep pace with the level of PhD graduates in the workforce of comparable OECD nations, it would require approximately 5,700 additional health and medical research related PhD graduates to reach current US levels, around 22,800 to reach German levels, and about 38,000 to reach the level of Switzerland (see figure 1 for the total health and medical research PhD completions in Australia to reach levels of similar to OECD countries in 2009).

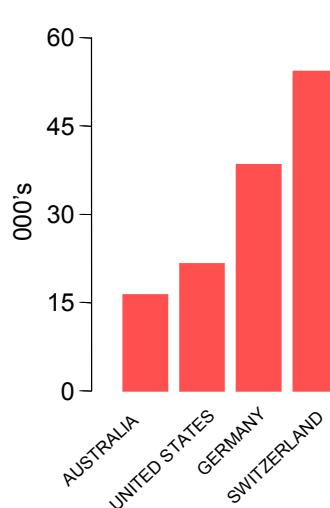


Figure 1. Total health & medical research PhD completions in Australia to reach levels of similar to OECD countries in 2009.

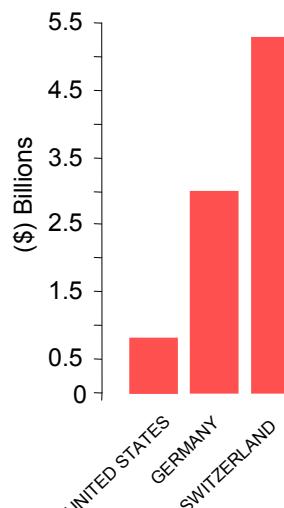


Figure 2. The cost (in 2009 dollars) associated with the additional number of PhD completions to reach levels of similar to OECD countries in 2009.

A number of matters are key to the successful maintenance and expansion of the health and medical research workforce:

- Understand that HMR is a long term commitment requiring long term, sustainable investment guided by informed, innovative and visionary policy reform.
- Understand workforce dynamics - develop, design and implement a viable 'long lasting' career structure which will attract and retain our best, brightest, most productive human capital.
- Expand international partnerships and enhance capacity through development of a regional union. For example, Asia-Pacific.
- Move quickly, building on the current highly skilled workforce so as not to lose the momentum of discovery.

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-
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 - ii Australian Bureau of Statistics (2008) Population Projections Australia 3222.0. ABS: Canberra. Source:
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02006%20to%202101?OpenDocument>.
 - iii Hugo H (2008) The demographic outlook for Australian universities academic staff. Draft Occasional Paper for the Council of the Humanities and Social Sciences University of Adelaide.
 - iv Schofield, D and Beard J (2005) Baby boomer doctors and nurses: demographic change and transitions to retirement. *The Medical Journal of Australia* 183 (2):80-83.