



Australian Government
National Health and
Medical Research Council

N H M R C

NHMRC Report October 2010

Working to build a healthy Australia

Professor Warwick Anderson

Chief Executive Officer





NHMRC Researcher Support

- **In 2010 NHMRC supports:**
 - 2050 Project Grants
 - 61 Program Grants
 - 391 NHMRC Fellowships:
 - *57 Senior Principal Research Fellows*
 - *74 Principal Research Fellows*
 - *260 Senior Research Fellows*
 - 264 Career Development Award Fellowships:
 - *165 Biomedical*
 - *37 Clinical*
 - *6 Industry*
 - *47 Population health*
 - 347 Early Career Fellowships in Australia
 - 211 Early Career Fellowships overseas.

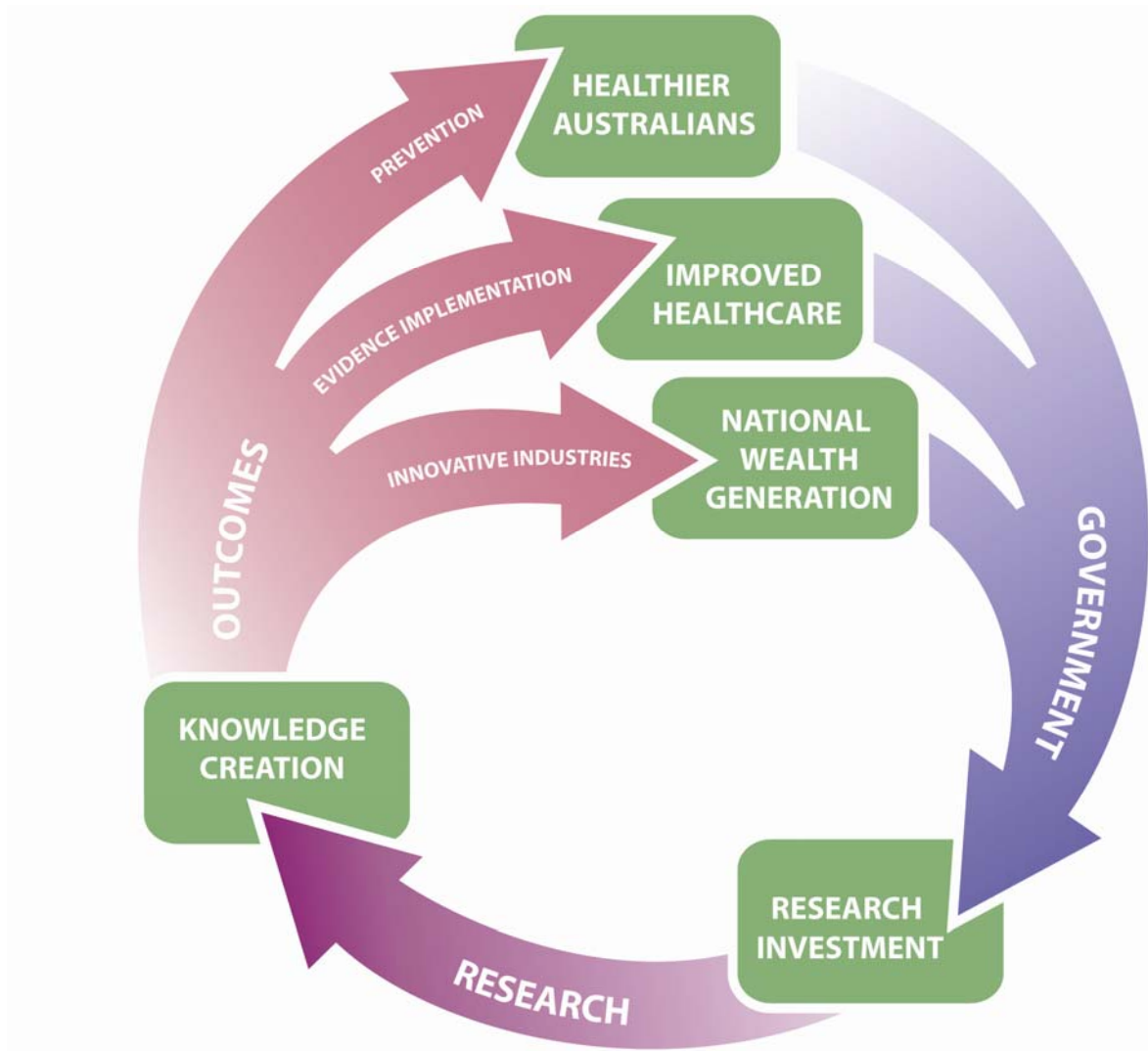


NHMRC Researcher Support

- **And grants at:**
 - 86 research institutions,
 - At which researchers collaborated with 168 health and medical research bodies throughout Australia including:
 - **68 hospitals**
 - **28 clinical or community organizations**
 - **41 research institutes**
 - **27 universities**



The Virtuous Cycle





NHMRC

- 75th anniversary in 2011
 - Research colloquium
 - 1936 – *“research must be actively pursued and as fast as new knowledge is acquired it must be applied” (Health Minister, first Council meeting, Hobart 1936)*
- In 2006, NHMRC Act amended and NHMRC became an independent Statutory Agency within the Health and Ageing Portfolio



NHMRC Objectives

Defined from the NHMRC Act (1992)

Objective 1 Raise the standard of individual and public health throughout Australia

Objective 2 Foster the development of consistent standards between the various states and territories

Objective 3 Foster medical research and training and public health research and training

Objective 4 Foster consideration of ethical issues relating to health

NHMRC Strategic Plan 2010 - 2012

Objective 5 Build a better NHMRC



Major health issues likely to arise

- The *NHMRC Act (1992)* requires the CEO to provide a Strategic Plan that includes an assessment of the major health issues likely to arise, and how he/she will handle these.
 - *Building a self improving health system*
 - *Indigenous health and well-being*
 - *Ageing and health*
 - *Chronic disease*
 - *Mental Health*
 - *Genomic medicine and frontier technologies*
 - *Planning for emerging infectious disease threats*
 - *Examining alternative therapy claims*
 - *Global health*
 - *Health consequences of climate change*

NB: These are not necessarily research priorities



Objective 4: Consideration of Ethical Issues

1. Promote ethical standards in patient care and public health
 - *A national framework*
 - *Community discussion on ethical issues in patient care*
 - *Ethical guidelines related to major health issues*
2. Promote ethical standards and review of animal and human research
 - *Guidance for HRECs and AECs*
 - *Community discussion on ethical issues in human and animal research*
 - ***A national system for single ethical review of multi-centre research***
 - ***Improved scheme for registering HRECs***
3. Responsible conduct and governance of research
 - ***National programs to promote research integrity***
 - ***Administering Institutions policy development***
 - *Regulation of human embryos in research*



Objective 5: Build a better NHMRC

- 1. Recruit research background staff**
2. Establish our own systems, especially Research Grant Management System (RGMS)
3. Further improve peer review
4. Grow international collaborations



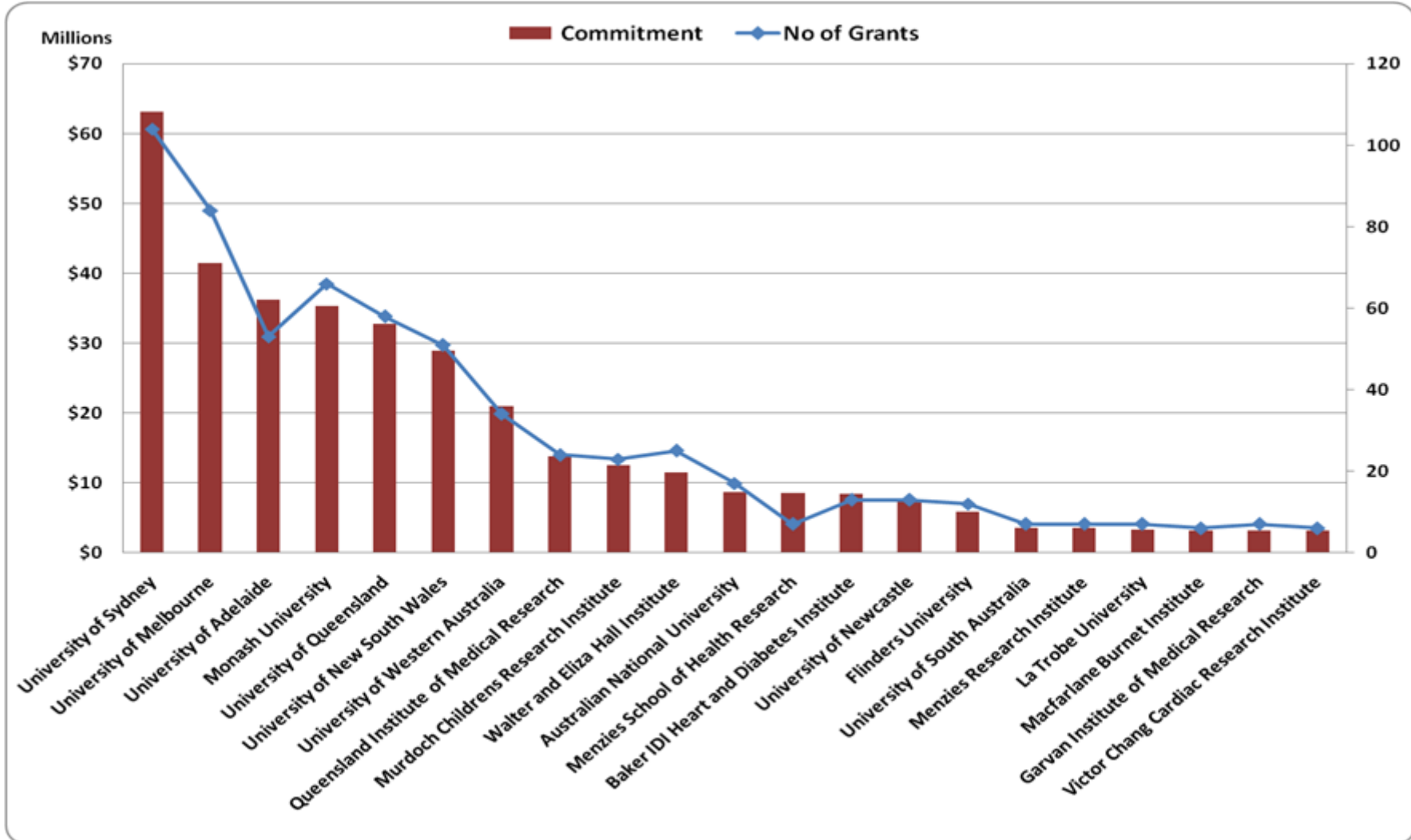
Objective 3: Research and Training

1. NHMRC Strategy for Health and Medical Research
2. National Strategy for Health and Medical Research
(required by NHMRC Act)



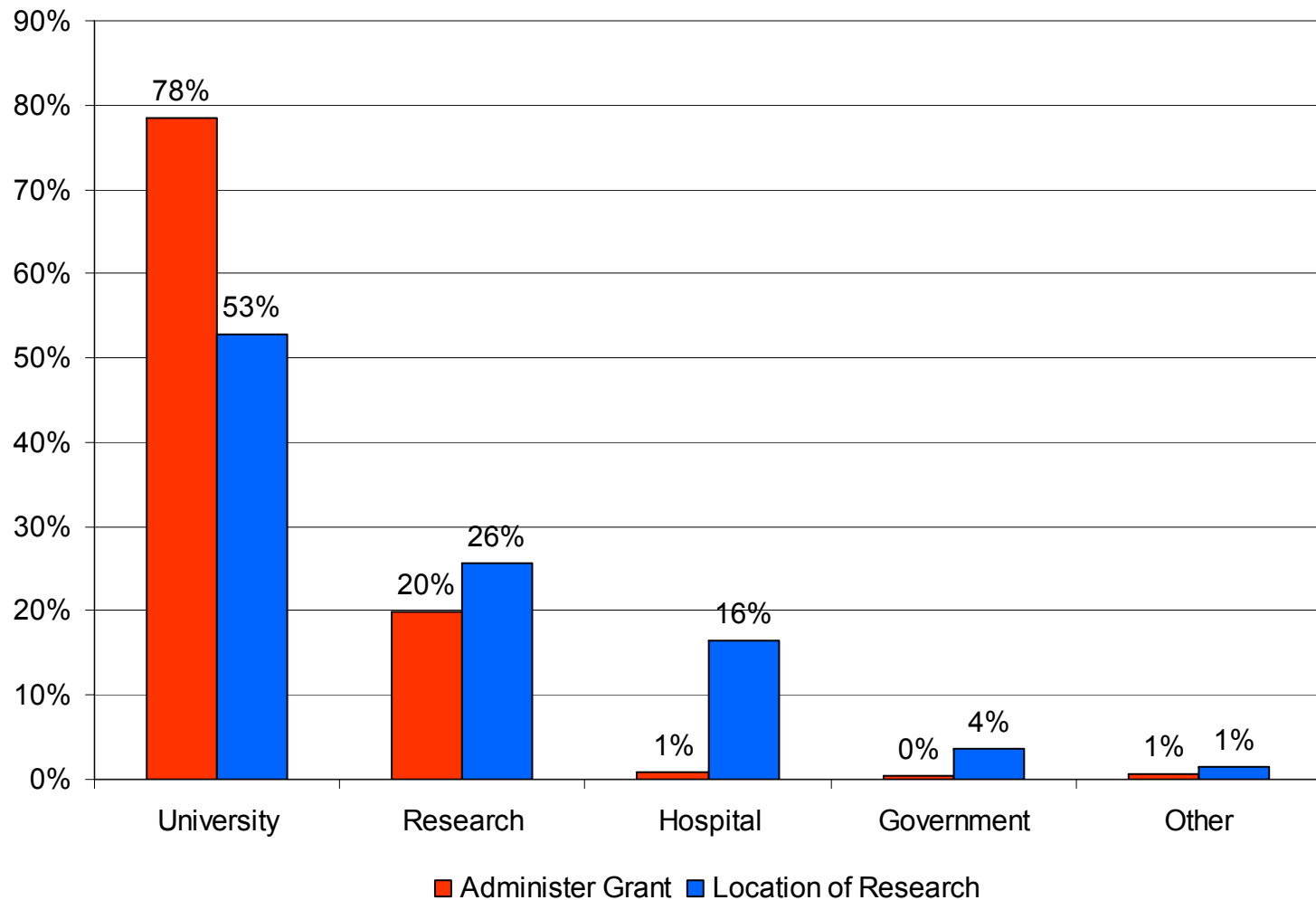
Project Grants 2010

by Institution – *where funding was >\$3m*



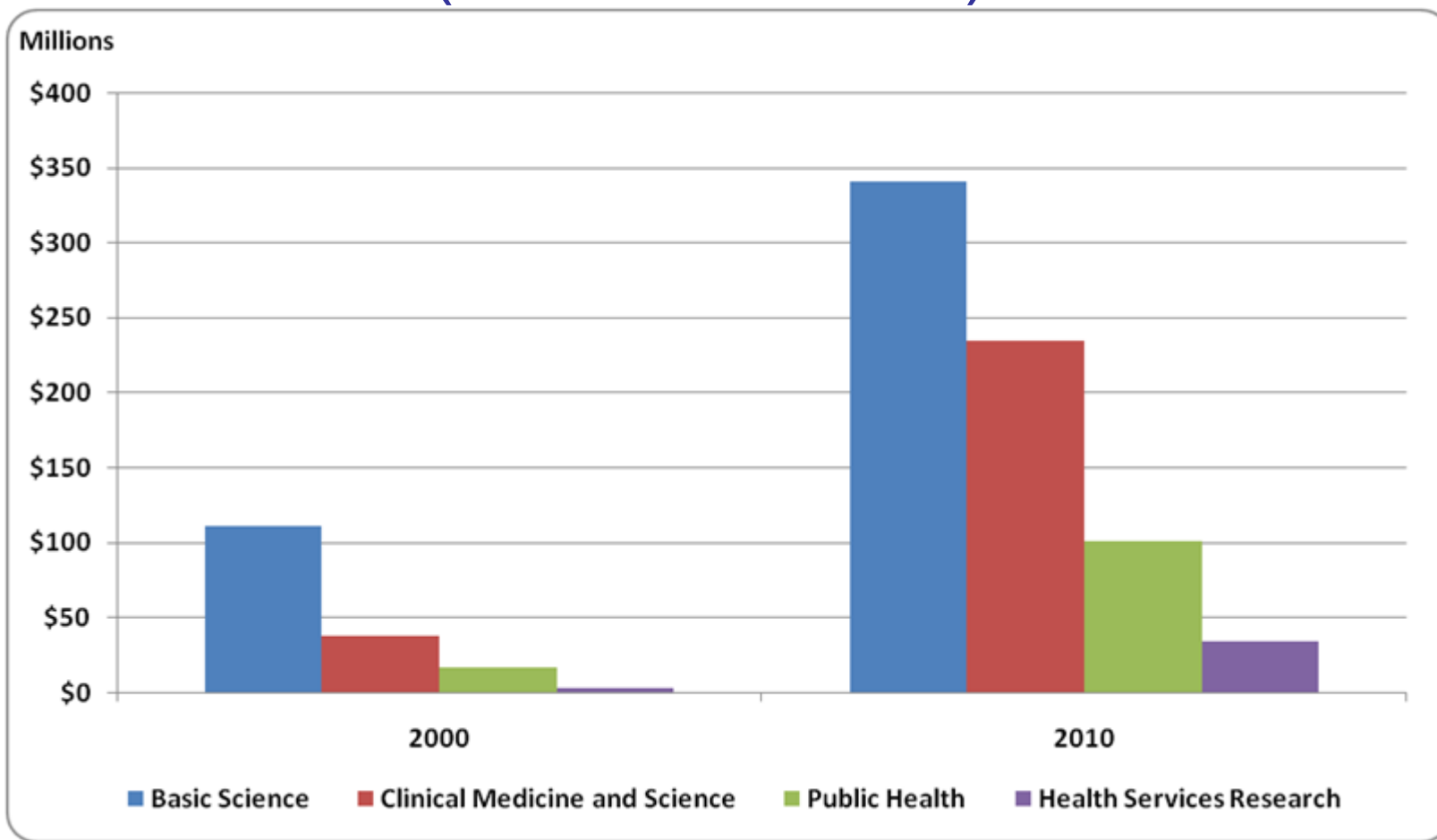


Where Research is Administered and Conducted



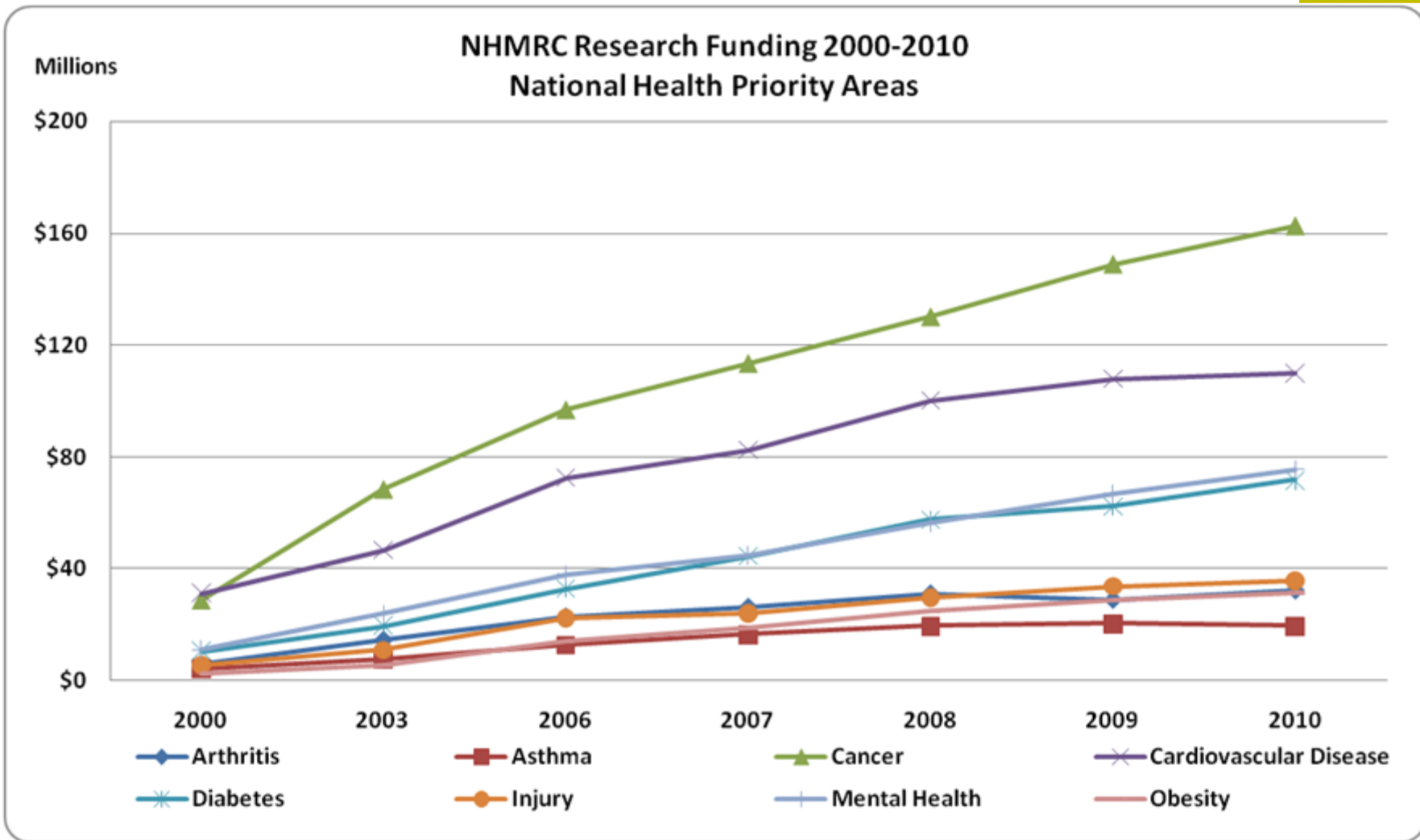


Percentage of Expenditure by Broad Research Area (2000 and 2010)





NHMRC Support for National Health Priority Areas





NHMRC Strategy for Health and Medical Research

- *Creating knowledge* – by investing in research most likely to yield new knowledge through independent research initiated by talented, well trained researchers
- *Translating knowledge* – by supporting funding schemes that help ensure research findings flow into improved policy and practice
- *Building capacity to undertake research* – by supporting, renewing and widening Australia's pool of talented new researchers, from early training through to their most productive years
- *Being a good international citizen* – contributing to the development of health knowledge worldwide and improving health in our region
- *Evolving peer review* – seeking to achieve the highest quality decision making



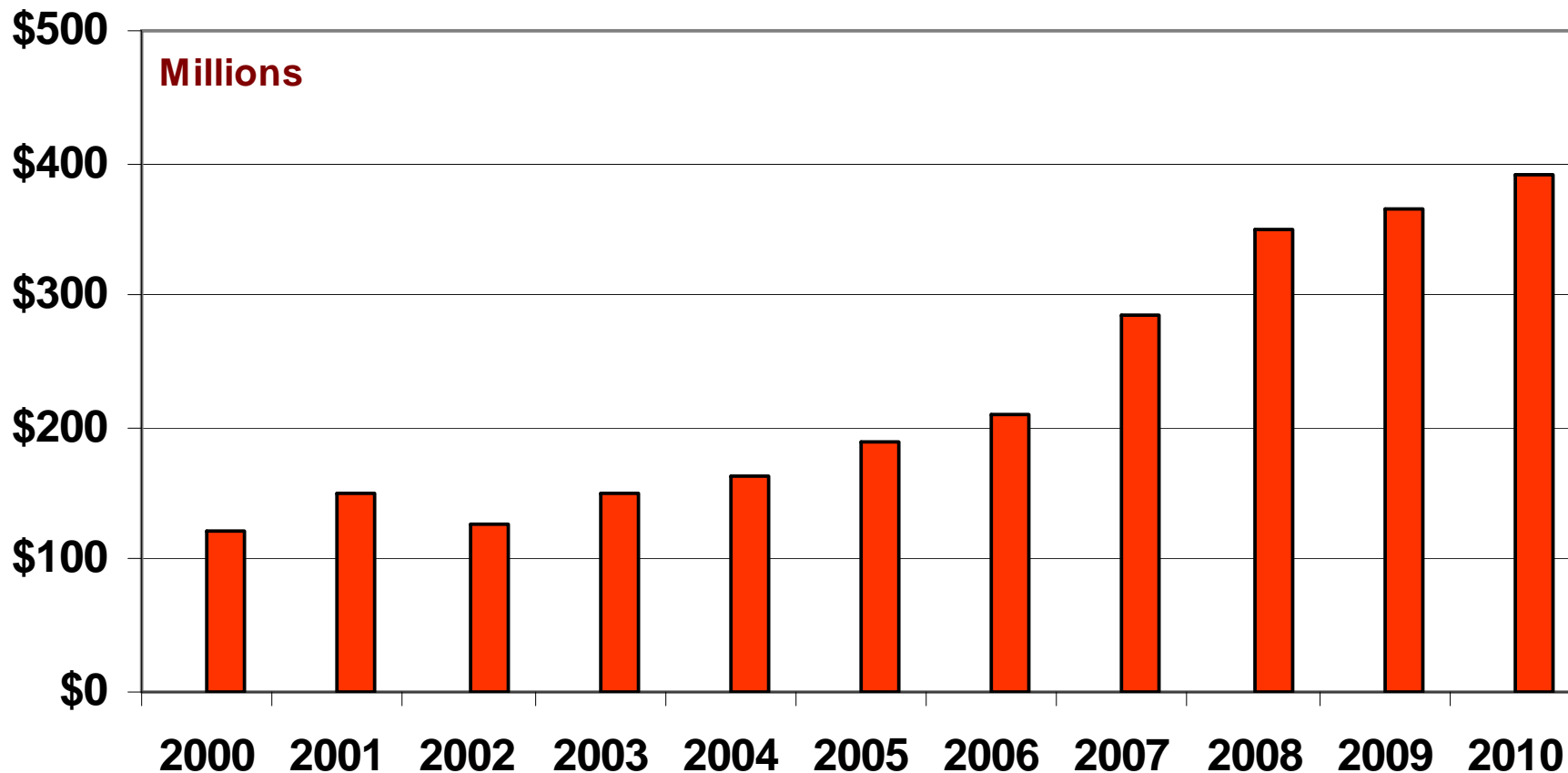
NHMRC Strategy

Creating knowledge

1. Supporting the best research projects by:
 - *Investing around half of the total MREA budget in Project Grants funding*
 - *Funding projects across all 4 “pillars” (biomedical, clinical, public health, health services research) and in any area relevant to health*
2. Support the best research teams working in programmatic research by:
 - *Funding Program Grants that support the best teams of researchers*
 - *Reviewing achievements of the Program Grants Scheme*
 - *Maintaining a balance between Project and Program grants*
3. Support targeted research for priority health issues through:
 - *Targeted Calls for Research to address key questions in major health issues*
 - *Urgent Calls for Research where there is a serious, rapidly evolving threat to public health*



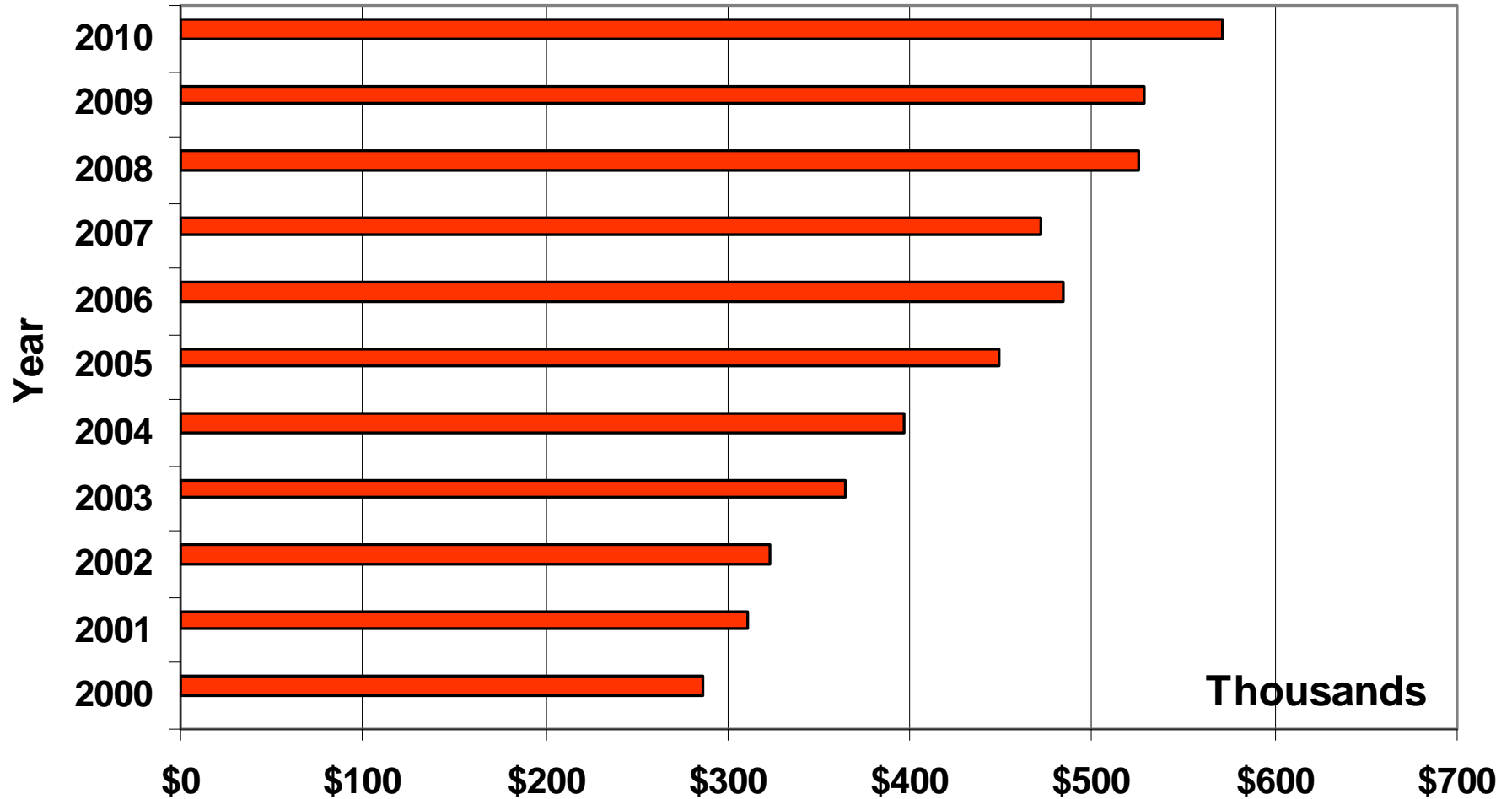
Project Grants Total Annual Commitment 2000-2010



Commitment of funds for research commencing in each calendar year.



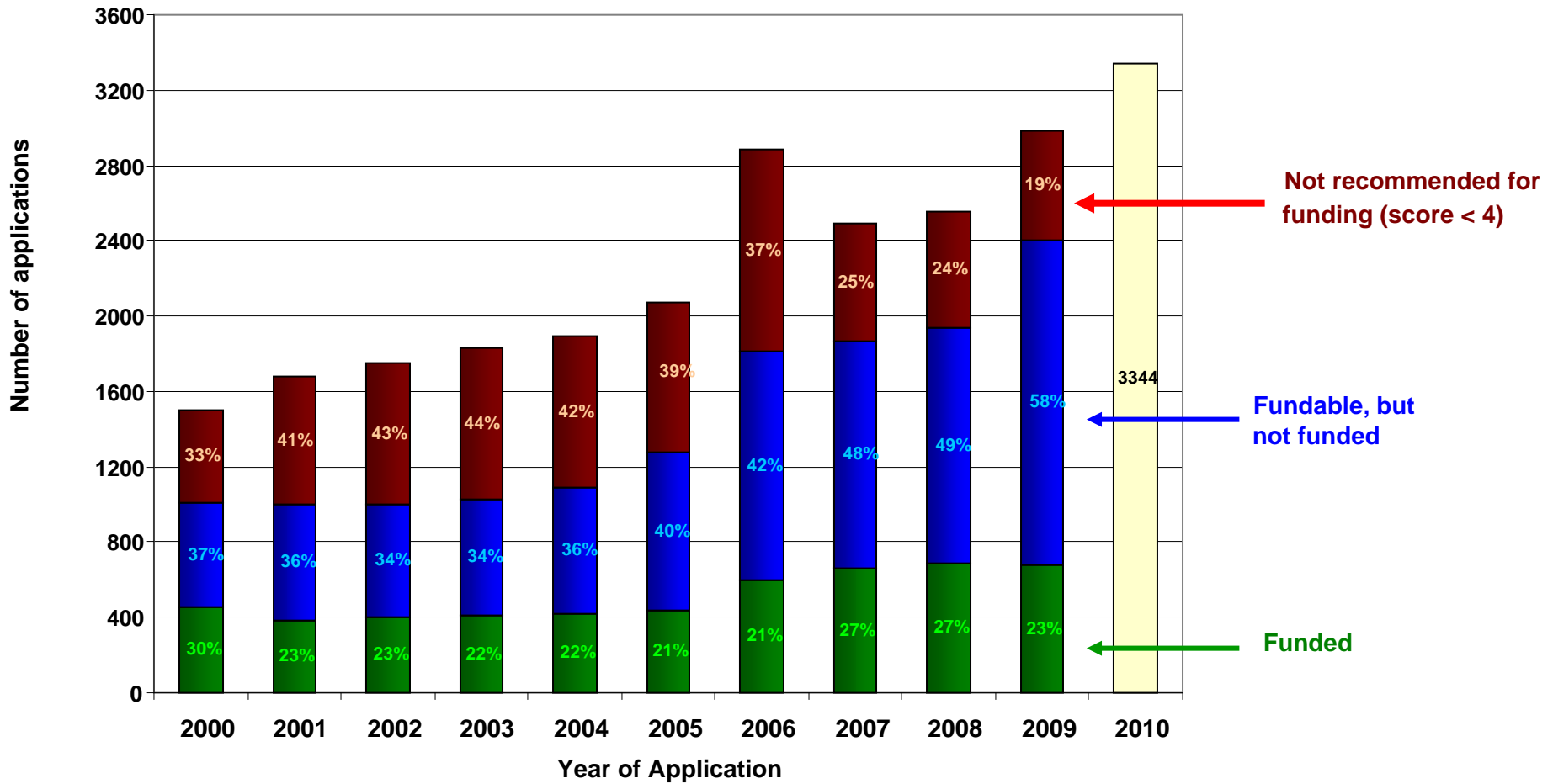
NHMRC Project Grants Average Size



For grants commencing in each calendar year.



Project Grants - Success Rates





Project Grants 2008 Funding Round Success Rate by State

State	No. Apps	No. Funded	% Funded
VIC	946	252	26.6%
NSW	689	197	28.6%
QLD	376	101	26.9%
SA	276	63	22.8%
WA	201	46	22.9%
ACT	51	12	23.5%
TAS	27	7	25.9%
NT	20	10	50.0%
Total	2586	688	26.6%



Project Grants 2009 Funding Round Success Rate by State

State	No. Apps	No. Funded	% Funded
VIC	1060	251	23.7%
NSW	814	188	23.1%
QLD	454	99	21.8%
SA	310	74	23.9%
WA	219	39	17.8%
ACT	83	17	20.5%
TAS	28	7	25.0%
NT	17	7	41.2%
Total	2985	682	22.8%



Project Grants 2010 funding round

- GRPs conducted at NHMRC headquarters in Canberra
- Greater involvement of NHMRC research staff
- Independent Chairs
- Tighter adherence to the selection criteria
- More consistent approaches to budgets (more to be done)
- Introduction of the "Not for Further Consideration" (NFFC) process



Project Grants - 2011

- Some matters that are in need of improvement:
 - budget, better advice to institution RAOs, applicants and GRP panellists
 - external assessments, for 2011, improved assessor database; improved communications with potential assessors; clearer expectations of NHMRC funded researchers
 - better targeting of expertise to GRPs
 - better targeting of applications to panellists



Program Grants Evaluation

- While NHMRC believes this scheme has served Australia well, an RC committee is currently considering:
 - the impacts of research supported
 - any adjustments to the funding policy or grant review process that should be considered by Research Committee
- Once RC has considered the expert committee's recommendations, it will consult the research community on any proposed changes



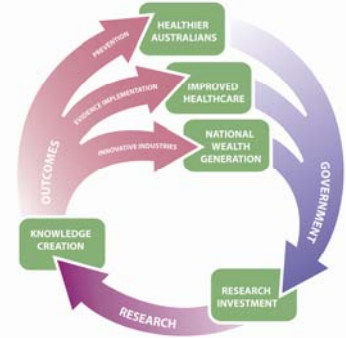
Summary of Funding Recommendations (research grants commencing 2010)

Grant Type	No. Apps	No. Funded	% Funded	Total Budget
Project Grant	2984	683	22.9%	\$390.7 M
Program Grant (from 2011)	20	10	50.0%	\$104.1 M
Development Grants	96	19	19.8%	\$7.4 M
NHMRC Partnership Projects	113	27	23.9%	\$19.7 M
Support for Research	3213	739	23.0%	\$521.9 M
Support for People	1455	411	28.2%	\$165.3 M
TOTAL	4668	1150	24.6%	\$687.2 M



NHMRC Strategy

Translating Knowledge



1. Support partnerships in knowledge translation through:
 - *Partnership Projects for Better Health*
 - *Establishing Partnerships for Better Health and Centres of Research Excellence*

2. Support evidence-based health policy and practice through:
 - *Centres of Clinical, Public Health, and Health Services Research Excellence*

3. Support the uptake of evidence into the clinical setting through:
 - *Practitioner Fellowships for outstanding researchers working to deliver clinical care; Centres of Clinical Research Excellence*

4. Support research translation into commercial development by:
 - *Supporting the Development Grants scheme including reviewing its achievements*
 - *Developing an online portal for business to identify research funding opportunities*



NHMRC Strategy

Building Capacity

Flexible conditions on research grants

For full-time researchers:

- *Research Fellowships*
- *Mid Career Fellowships*
- *Early Career Fellowships*
- *Scholarships*
- *Personnel Support Packages on Project and Program Grants*

For researchers in patient care and health policy development:

- *Practitioner Fellowships*
- *Centres for Research Excellence*
- *Personnel Support Packages on Project and Program Grants*

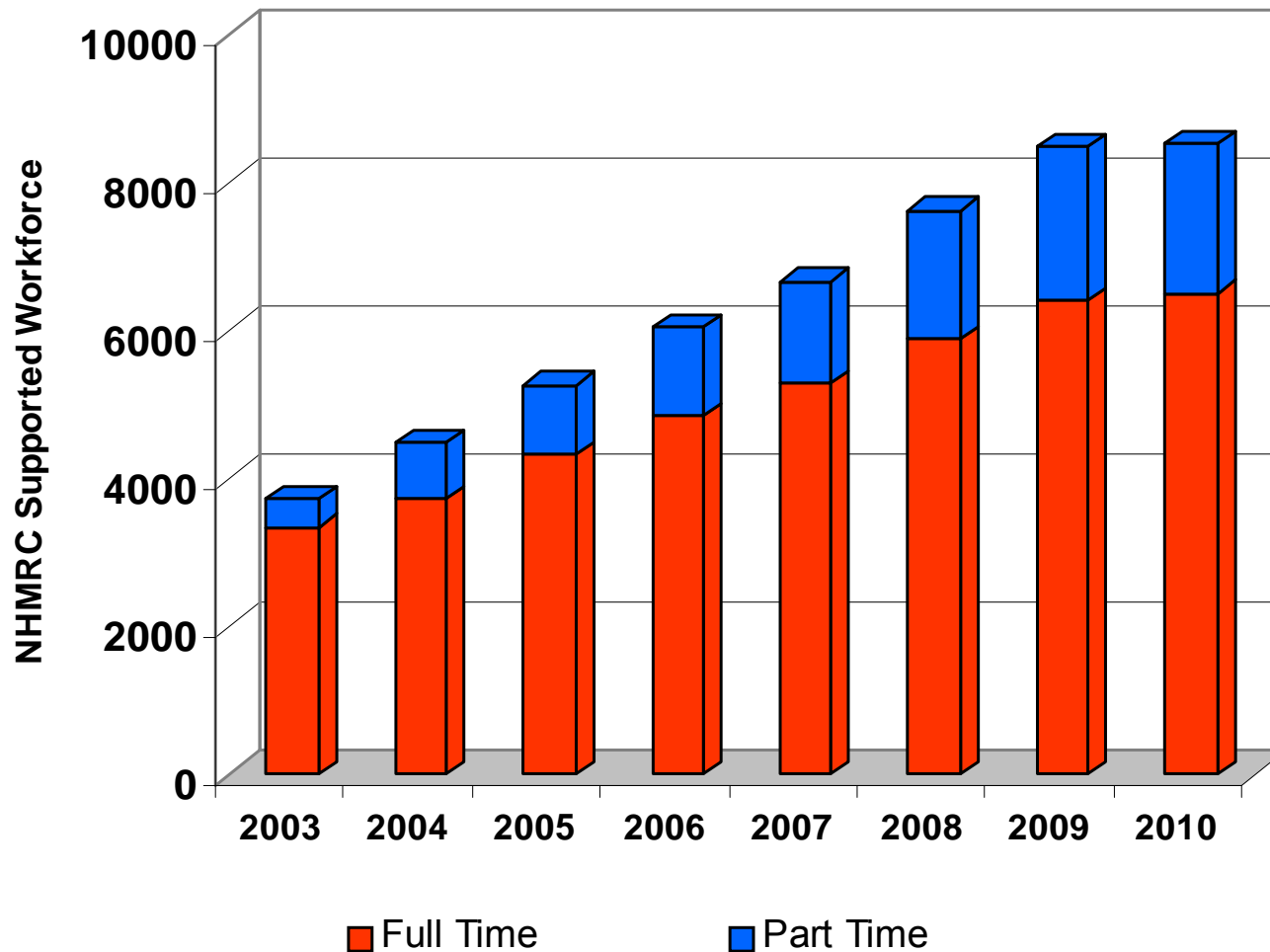
Build Aboriginal and Torres Strait Islander research capacity:

- *NHMRC Road Map II: A Strategic Framework for Improving the Health of Aboriginal and Torres Strait Islander People through Research*

National Health Research Enabling Capabilities Support Scheme

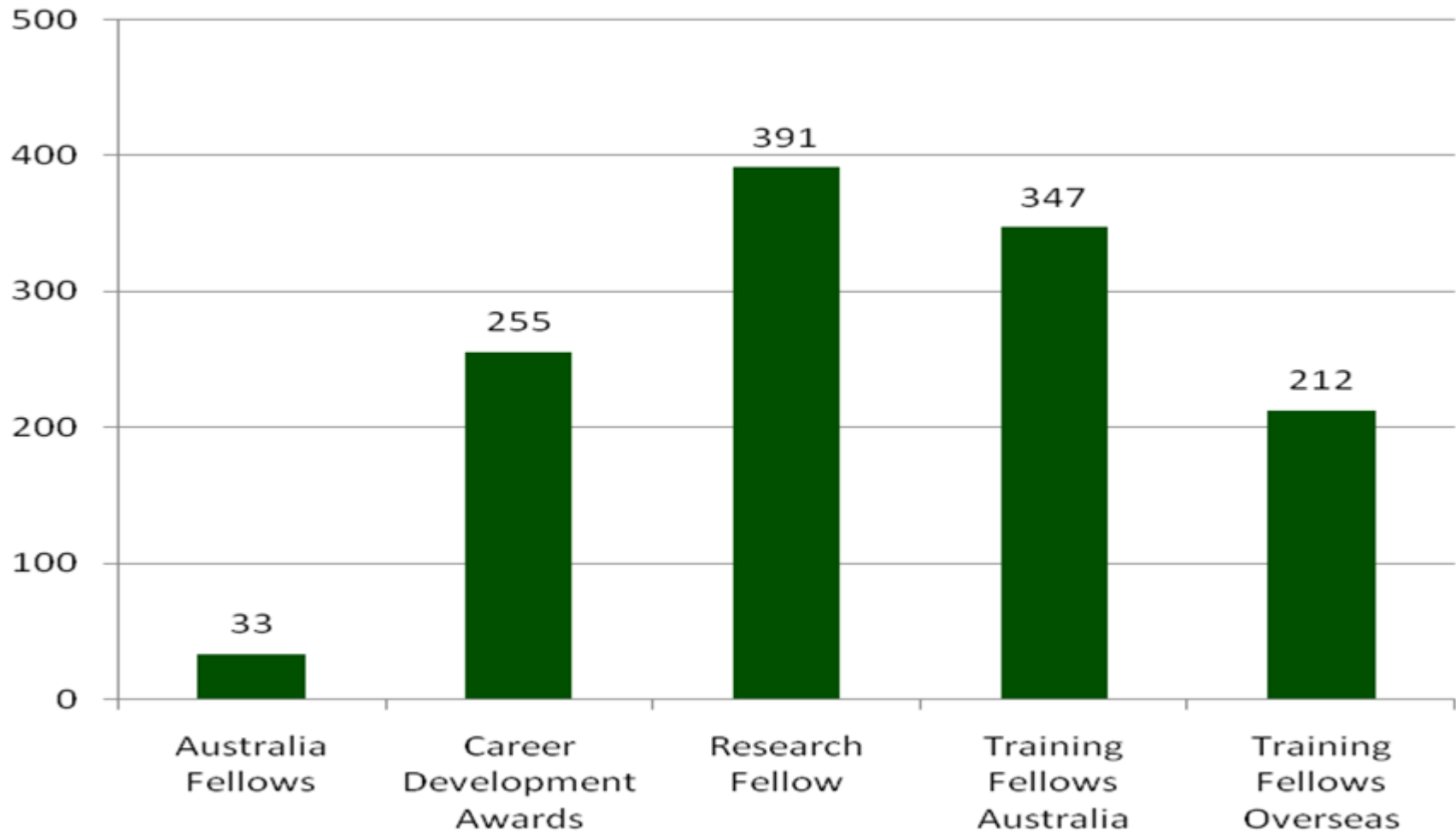


NHMRC Supported Research Workforce



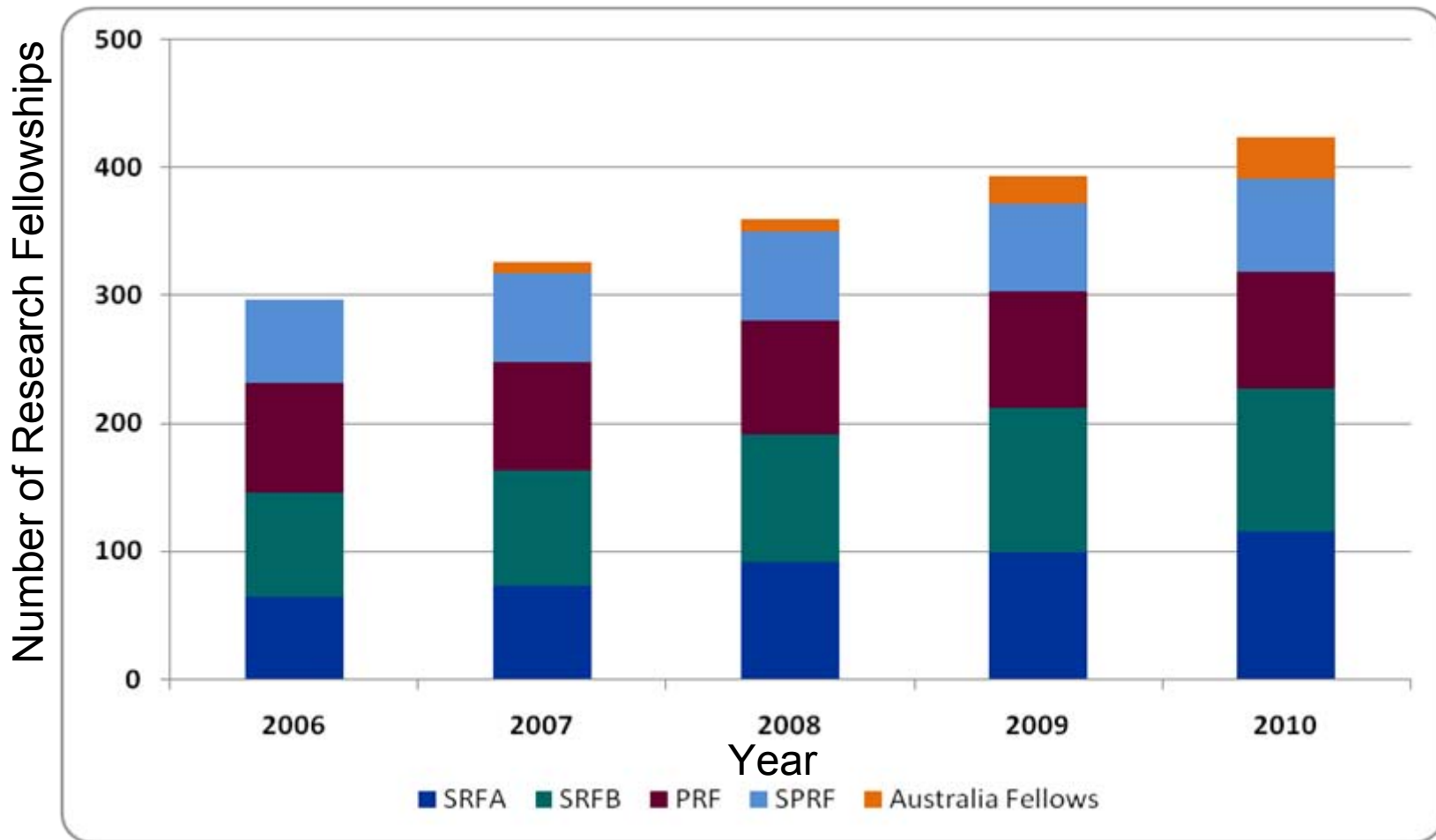


Number of Current NHMRC Fellowships (2010)





Number of NHMRC Research Fellowships (2006-2010)





Practitioner Fellowships Evaluation

- NHMRC will review the policy of the Practitioner Fellowship Scheme
- The proposed topics for review include:
 - the aims of the scheme
 - how well the scheme serves in its current form
 - possibilities for co-funding of Practitioner Fellowships
 - the weighting of selection criteria
 - category descriptors for the five ranking categories
 - levels within the scheme
 - practitioner fellowships for non-clinical researchers?



Summary of Funding Recommendations (Fellowships commencing 2010)

Grant Type	No. Apps	No. Funded	% Funded	Total Budget
Support for research	3213	739	23.0%	\$521.9 M
Research Fellowships	212	75	35.4%	\$50.5 M
Career Development Awards	434	54	12.4%	\$21.9 M
Training Fellowships	389	120	30.8%	\$35.6 M
Postgraduate Scholarships	324	136	42.0%	\$10.7 M
Australia Fellowship	56	10	17.9%	\$40.0 M
Practitioner Fellowships	40	16	40.0%	\$6.6 M
Support for People	1455	411	28.2%	\$165.3 M
TOTAL	4668	1150	24.6%	\$687.2 M



National Health Research Enabling Capabilities Support Scheme

- The NHMRC Enabling Grants scheme is designed to provide partial support for essential infrastructure that underpins the current NHMRC funding system:
 - NHMRC currently has **36** active Enabling Grants in **18** institutions
 - Average grant size is approximately \$2,000,000 over 5 years



NHMRC Enabling Grants *examples*

Biospecimen Banks – *Tissue Banks*

- Australasian Biospecimen Network (Oncology)
 - Ms Lisa Devereux
 - University of Melbourne
 - This facility provides a structured national network to collect, process and disseminate tumour tissue



Registries – *Clinical Trials Networks*

- Australian & New Zealand Clinical Trials Registry (ANZCTR)
 - Professor John Simes
 - University of Sydney
 - This facility plays a valuable role in keeping track of the wide range of clinical trials being conducted in Australia and New Zealand and then conveys this information to a wide range of end users



Data Sharing Networks

- Australian Twins Registry
 - Professor John Hopper
 - University of Melbourne
 - The Australian Twin Registry is a volunteer registry of over 30,000 twin pairs willing to consider participation in health research





NHMRC Strategy

Evolving peer Review

High quality peer review:

- *Ensures all applications receive the best possible review*
- *Is transparent, with independent observers*
- *Is appropriate to the research approaches involved, including multidisciplinary and interdisciplinary research*
- *Utilises internet-based technologies to improve lodgement of applications, and improves use of international peer reviewers*
- *Participation is recognised and acknowledged*



External Peer Review

'Researchers in receipt of public funding have a responsibility to participate in peer review processes'

- *Australian Code of Responsible Conduct of Research*

Improvements for 2011 to ensure that:

- All applications receive good reviews
- Peer review is appropriate to the research approaches involved, including multidisciplinary and interdisciplinary research
- Internet-base technologies are utilised increasingly to improve lodgement of applications and improve use of international peer reviewers
- Peer reviewers are recognised and acknowledged publicly by NHMRC

<http://www.nhmrc.gov.au/grants/peer/reviewers2009.htm>

International scrutiny of our Peer Review processes in 2011



Research Grants Management System

Why did NHMRC implement RGMS?

- Previous system (RMIS)
 - outdated
 - did not contain all the information required to administer grants and
 - was outside NHMRC's control
- RMIS could only be supported on the Department of Health and Ageing's infrastructure
 - DoHA support for RMIS being withdrawn
- Australian National Audit Office (ANAO) audit of NHMRC's grant administration (October 2009) included significant criticism of NHMRC's current systems (RMIS and a number of stand alone databases) and recommended enhanced systems
 - ANAO noted progress with RGMS



Research Grants Management System

What happened with RGMS in 2010?

- RGMS was developed during 2009, including piloting in the Development Grants and Centres for Research Excellence schemes. Load testing was performed during the second half of 2009.
- RGMS was opened for most NHMRC funding schemes in December 2009.
- During January to March 2010, researchers experienced significant problems with RGMS performance, including slow response times, difficulties with logging in, unscheduled outages, and with the useability of RGMS.
- This resulted in applicants having to spend much more time than usual to complete and submit their applications. NHMRC apologises to the research community for the impact of this on researchers and their families.



Research Grants Management System

What has NHMRC done to improve RGMS?

- NHMRC commissioned an independent review of RGMS and a second technical review of the performance of the system and databases.
- These recommendations in these reviews were used to implement a range of actions, including -
 - Working with suppliers to ensure the infrastructure, applications and databases are upgraded and perform adequately.
 - Engagement with the research community and using feedback from the RGMS use to date. This has included establishment of the RGMS User Reference Group (RURG).
 - Better communication with and support for the research community.

Research Grants Management System



What is NHMRC doing to improve RGMS?

- Seeking feedback from researchers and research administration offices.
- Obtaining advice from RURG and improving the usability of RGMS for applications, *Curriculum vitae*, Profiles and snapshots.
- For peer review, NHMRC is analysing feedback and advice in order to make improvements, including-
 - Identifying and engaging assessors
 - Supporting the Academy
 - Managing conflicts of interest
 - Supporting the work of panel members and external assessors
- RGMS is not available during October, while the improvements to infrastructure and software are implemented and fully tested.



Research Grants Management System

What changes to RGMS can be expected?

- Data for all currently held grants uploaded from RMIS into RGMS. Grant holders and RAOS will then be able to manage their grants through RGMS.
- Changes include-
 - Better accessibility and performance.
 - Research Help Centre – professional staff; longer opening hours.
 - Team members no longer required to certify applications through RGMS. All team members and RAOs have read access.
 - Simplified snapshots.
 - Changes to CV/Profile.
 - Simplified and better focussed application forms.
 - Applicants to upload track record, executive summary (for fellowships), and research plan as pdf files attached to the application.
 - Improvements to the RAO dashboard



NHMRC Strategy

International Commitment

- Continued international research collaborations such as:
 - *International Cancer Genome Consortium*
 - *Human Frontier Science Program*
 - *Global Alliance for Chronic Disease*
- New collaborations and activities designed to strengthen regional research capacity and improve health in neighbouring countries



National Strategy for Health and Medical Research

Required by the *NHMRC Act*:

Supporting knowledge creation through health and medical research:

- Where health and medical research is conducted
- Who conducts health and medical research
- The role of other bodies – charitable funding bodies, Universities, hospitals, medical research institutes, State and Territory governments, professional bodies, NGOs, DIISR

Building the health and medical research workforce:

- Estimated around 110,000 Australians involved in health and medical research
- Balance – fulltime/part-time (education, health care), gender, the “4 pillars”

Promoting translation and implementation:

- Mechanisms, barriers, other players, health reform

Developing health research capabilities:

- Equipment and facilities



Australia's health and medical research infrastructure

- What does the Australian health and medical research sector require on a major research infrastructure scale?
- National Research Infrastructure Council (NRIC)
- NHMRC has identified three areas, integrated or separated, that could be enhanced by NRIC funding:
 - Bioinformatics and Health Informatics
 - Biobanking
 - Clinical registries

Other suggestions?



Issues for a National Strategy

Collaboration – Advanced Health Research Centres concept

- *To build Australia's capacity to undertake collaborative research on our major hospital campuses*
- *To promote and accelerate research translation into improved benefits for patients and for a "self-improving" health system*

Improving Administrating Institutions Policy

- *Policies and procedures to ensure that institutions:*
 - *maintain the highest standard of research and ethical governance*
 - *comply with the requirements in the NHMRC Funding Agreement*
 - *hold responsibility for the conduct of research, through employment agreements*



Challenges

- Success rates
- Indirect costs of research
- Australia Fellowships
- Major infrastructure



NHMRC 2010 Awards

Highest Ranked Program Grant - Professor Sam Berkovic, University of Melbourne

- His group, together with molecular genetic collaborators in Adelaide and Germany, discovered the first gene for epilepsy and subsequently have been involved the discovery of many of the known epilepsy genes.

Highest Ranked Project Grant - Professor Rob Parton, University of Queensland

- Molecular cell biological analysis of caveolin secretion

Top Ranked NHMRC Research Fellow - Professor Jonathan Sprent, Garvan Institute

- T cell immunobiology with emphasis on T cell formation, lifespan, activation, and the formation of memory cells. He is also interested in immunoregulation and the role of cytokines in controlling T cell homeostasis and survival

Top Ranked NHMRC Practitioner Fellow - Professor David Paterson, University of Queensland

- Infectious Diseases Physician and Clinical Microbiologist, Deputy Director (Clinical). Research includes antibiotic resistance in Gram negative bacilli and infections in immunocompromised patients

Outstanding Contribution - Professor David Weisbrot, Macquarie University

NHMRC Ethics Award - Professor Don Chalmers, University of Tasmania



NHMRC 2010 Awards Career Development Awards

Dr Angela T Morgan, Murdoch Children's Research Institute

- New insights into 'genes, brain and behaviour' in childhood speech and swallowing disorders

Dr Marc Pellegrini, Walter and Eliza Hall Institute of Medical Research

- Host dynamics preventing immune clearance of chronic infections

A/Prof Karen L Jones, University of Adelaide

- Role of the gut in postprandial hypotension

Dr Terry Haines, Monash University

- Prevention of falls and injuries amongst older adults

A/Prof Penelope E Schofield, University of Melbourne

- Quality of life and supportive care research in cancer

Dr Aaron Jex, University of Melbourne

- Molecular technologies to detect and characterise food and water-borne infectious diseases in humans

Dr Yong Li, University of New South Wales

- Head of Cancer Research Program, St George Hospital

Dr Mark Shackleton, University of Melbourne

- Melanomas development and progress - identifying better methods of preventing and treating disease

A/Professor Josephine M Forbes, Baker IDI Heart and Diabetes Institute

- Biochemical process of advanced glycation and its contribution to diabetes and its vascular complications



Australian Nobel Prize Winners – Physiology or Medicine



1945 – Sir Howard Walter Florey



1960 – Sir Frank Macfarlane Burnet



1963 – Sir John Carew Eccles



1996 - Professor Peter Doherty



2005 - Professor Barry Marshall and Professor Robin Warren

2009 – Professor Elizabeth Blackburn





Health and Medical Researchers Australians of the Year



1963 – Sir John Carew Eccles



1960 – Sir Frank Macfarlane Burnet



2003 - Professor Fiona Stanley



2000 – Sir Gustav Nossal



2006 – Professor Ian Frazer



2005 - Professor Fiona Wood



2010 – Professor Patrick McGorry