



National Foundation for Medical Research and Innovation

NFMRI

2013

ANNUAL REPORT

About Us

Founded in 1977, the National Foundation for Medical Research and Innovation is a not-for-profit organization that is entirely independent. It is not affiliated with any university, hospital, government or state body. The Foundation provides financial, together with non-financial support to research projects whilst conserving and building its capital base.

The Foundation is endorsed as a Tax Concession Charity and Deductible Gift Recipient (Item 1).

Our Mission

“To advance innovations in medical research related to the nature, prevention, diagnosis, treatment and incidence of disease and other health problems that have a significant impact on the health of humans”

Our Vision

NFMRI believes that it is more than ‘mere’ funding that is needed to advance discoveries and innovation. Our culture is one where we look to make a social investment in medical research. By partnering with researchers to provide support and knowledge, we aim to maximize the social returns from our grants. The Foundation is looking to become a partner of choice and a national ambassador for medical research innovation.

Our Approach

NFMRI takes a uniquely proactive approach by partnering with our grant recipients to provide support along the innovation pathway. It is a prerequisite that we only fund research of the highest quality. When reviewing applications and research projects, NFMRI looks for more than good science. We also assess the ability and willingness of the researcher and the institution to collaborate, plan and manage research along the innovation pathway.

NFMRI also considers the need and size of any potential impact, the potential for the research and innovation to make a significant difference and whether the opportunity may become attractive to a potential partner who can make a product accessible to the community. To do this, we harness skill sets from a variety of scientific, business development, commercial, industry and financial sources.

The Foundation is looking to increase its impact by partnering with other Trusts and Foundations, Private and Public Ancillary Funds (PAFs and PuAFs) and corporate donors. Of course, we are always happy and grateful to receive donations and bequests.

nfmri.org.au

Message from our Chairman



Established in 1977 on the initiative of the late Dr Frank Ritchie under the auspices of our founding Chairman, Sir Peter Abeles and Lady Sonia McMahon, the Sydney Medical Research Foundation has been a solid and consistent supporter of medical research projects in New South Wales. Over the years, we have sought to bring to life initiatives that would not have otherwise occurred.

Understanding that many years had passed since the establishment of the Foundation, and that the challenges facing medical research in Australia have changed, in 2012 the Board resolved that the Foundation conduct a review of where the future opportunities may lie and how our support could best help deliver community benefits and increase the Foundation's impact.

I am pleased to advise that the Trustees appointed our inaugural CEO, Dr Noel Chambers who commenced in April 2013. Dr Chambers brings a wealth of knowledge to the Foundation, particularly in the areas of medical research and innovation.

Following an analysis of the funding landscape for medical research the Foundation identified specific funding gaps that if supported through philanthropy, could help deliver lasting change and foster innovation. This led to the development of our new strategy, on which you will find more information throughout this report. In addition, for the Foundation to support the best possible research, this also meant that it would benefit from a national presence, hence the recent name change to the National Foundation for Medical Research and Innovation.

I would like to thank my colleagues and fellow Trustees for the dedication and passion they have brought to the organisation. Their leadership, vision and guidance have been, and will continue to be, instrumental to the work and successes of our Foundation. Furthermore, in approving grants for funding, our Board has been grateful to receive the support and advice of our expert Research Advisory Committee (RAC). The RAC meets on a voluntary basis to critically review applications and advise the Trustees.

Similarly, since 2004 Mrs Vanessa Chase has provided financial and administrative support to the Foundation and both our Board and RAC thank her for her continued guidance and assistance.

It is satisfying to see that over \$13 million in grants have been distributed over the past 37 years to numerous researchers across New South Wales. While the need for support is undoubtedly growing, and the future of current funding sources remains uncertain, we are convinced that our new strategy will enable us to address the critical gaps in funding and we look forward to seeing the exciting change and impact this new direction will bring.

A handwritten signature in black ink, which appears to read 'John Harkness'. The signature is fluid and cursive, with a long horizontal stroke at the end.

John Harkness
Chairman

Message from our CEO



It is a privilege to have been offered the opportunity in April 2013 to lead the Foundation during an exciting period of change.

With a thirty-seven year history of supporting medical research, a dedicated Board, Research Advisory Committee and administrative support the Foundation was well placed to explore opportunities, take on new challenges and adopt strategies to increase impact.

During 2013, the Foundation continued to seek applications and support high quality research projects, providing \$966,416 in grants.

The Foundation's investment strategy and donations resulted in the growth of its total Accumulated Funds by \$2,251,506 amounting to a total of \$20,334,706.

Following a review of the medical research funding landscape, the Foundation identified a need and opportunity to adopt a strategy to supporting biomedical research that advances innovation and enables collaborations.

It was recognised that funding for biomedical research was becoming harder to attain. Biomedical research and discoveries are important as they underpin potential new benefits arising from innovations including devices, diagnostics, medicines and vaccines.

By working alongside other funding bodies, the Foundation could focus on filling gaps along the innovation pathway. This pathway increasingly requires collaborations and access to additive capabilities and capacity. With this in mind, the Foundation is looking to partner with selected research projects and how it can value add to provide more than financial support.

To attract opportunities and enable collaborations throughout Australia, the Foundation also decided to adopt a national strategy, and effective from January 2014, changed its name to the National Foundation for Medical Research and Innovation (NFMRI).

With a culture of seeking a social return from strategic social investments, the Foundation is looking forward to working with others to implement its strategy, form funding partnerships and grow its ability to deliver impact.

In line with our strategy for collaboration in February 2014, post balance sheet, NFMRI and the NSW Department of Primary Industries announced a new \$400,000 joint funding initiative that will be available for research into new innovations to identify and stop the spread of infectious diseases.

A handwritten signature in blue ink, appearing to read 'Noel Chambers'.

Dr Noel Chambers
CEO

Our Legacy

The Sydney Foundation for Medical Research was originally titled The Sydney Hospital Foundation for Medical Research. In January 2014, it changed its name to the National Foundation for Medical Research and Innovation.

The Foundation was established in 1977 on the initiative of the late Dr Frank Ritchie who had a number of patients wishing to donate to medical research and for the capital to be preserved intact. Fundraising activities were conducted under the auspices of the initial Chairman of the Board of the Foundation, Sir Peter Abeles, and Lady Sonia McMahon.

A patient of Dr Frank Ritchie bequeathed a substantial sum, the Stern Estate, to be divided equally between Sydney Hospital and the Foundation.

The Foundation was to maintain the capital and use income to fund and facilitate ongoing medical research in perpetuity. Over the years, by way of further bequests and donations, the Foundation has built up significant capital reserves to provide income to facilitate continuing important medical research.

The funds of the Foundation and the management of those funds have always been totally independent of the hospital, as has been its management structure.

Past Trustees

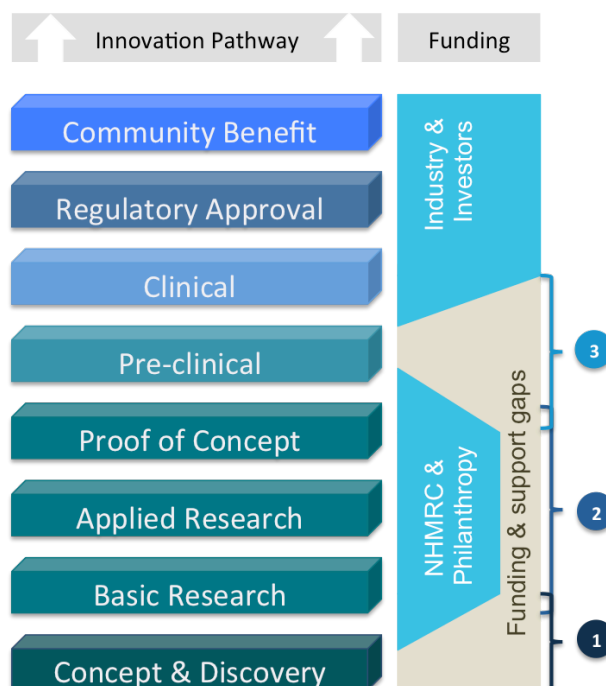
Our Foundation owes its legacy to the following Trustees who have served on its Board over the past thirty-seven years. Without their vision, foresight and commitment to the Foundation, it would not be where it is today.

1979-1982	Sir Peter Abeles (Founding Chairman)	1982-2007	Dr J Raftos AM
1979-1983	Mr ED Cameron	1984-1990	Sir Gordon Jackson
1979-1983	Mr JP Ducker AO	1984-1991	Mr TL Lewis
1979-1983	Mr MJ Inglis	1984-1987	Mr JW MacBean
1979-1982	Lady Sonia McMahon	1984-1985	Sir William W Pettingell
1979-1990	Mr TE May (Former Chairman)	1987-2003	Mrs SE Ball
1977-1982	Dr FL Ritchie C.B.E.	1987-1999	Mr RH Minter (Chairman)
1977-1995	Mr BF Rose	1995-2011	Mr PM Bowen
1979-1982	Dr HH Spiegel	2000-2003	Prof AJ Young AO
1979-1982	Sir Ian Turbott C.M.G, C.V.O		

Our Strategy

Historically, funding of medical research in Australia has been determined by outputs – research papers, citations and validated by scientific peer review. Whilst these factors are important, the advancement of innovation, the formation of collaborations and the ability to deliver impact are the outcomes NFMRI's funding delivers.

To maximise our impact NFMRI focuses on advancing innovation. By looking outwards and supporting the gaps along the innovation pathway applying resources, networks and knowledge NFMRI helps philanthropy make a difference. NFMRI supports medical research in three key gap areas, we call social investment portfolios.



1

Original Australian innovation and discovery. Frontier research not competitive for NHMRC grants.

Supporting the validation of new concepts, discoveries and intellectual property creates the foundation for innovations and community benefits of tomorrow. Young researchers, early discoveries and new paradigms need support to become competitive and stand on their own two feet.

2

Support for strategic collaborative research activities focussed on advancing research and validating directions.

Providing access to the additional research skills not available through currently available funding mechanisms.

Support for strategic collaborative research activities focussed on advancing innovations and validating directions is needed. NFMRI is uniquely positioned to value-add to the advancement of research and innovations in preparation for potential collaborations.

By partnering with researchers NFMRI will support collaborative research activities undertaken by other research groups that expedite the advancement of the innovation and are important for attracting potential industry partners and investors.

3

Bridging the 'Valley of Death'. Supporting research required to facilitate collaborator uptake and investment

Often referred to as the 'valley of death' is the area where strategic research studies are required to attract potential investors and industry collaborators.

Traditional funding mechanisms do not support or motivate researchers to contract research activities necessary to answer some research questions necessary to form these collaborations. These research questions are often not attractive to publications as they are "less newsworthy" and not research undertaken by the chief investigator and their team.

By supporting small, incremental studies NFMRI can manage risk and make innovations more attractive to potential commercial partners and investors.

Portfolio Summary

Research Impact & Investment (Grant) Portfolios			Research Asset Portfolio
Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
Original innovation & discovery	Collaborative innovation & advancement	Innovation uptake & transformation	Enabling Tools and technologies
Grants are available for projects and studies that would otherwise not be undertaken.			Faster innovation
Research Focus <ul style="list-style-type: none"> • Original and novel research investigating early innovative concepts and pathways. • "Blue sky" • In need of data to attract future competitive grants. 	<ul style="list-style-type: none"> • Advancement and testing of innovations. • Research conducted by collaborators. • "Key knowledge", "Key directions" and "Killer experiments" 	<ul style="list-style-type: none"> • Prerequisite studies to attract potential collaborators and investors. • De-risk innovations • Advance through the "Valley of Death" • Commercialisation 	<ul style="list-style-type: none"> • Provide access to research tools to support the discovery and validation processes. • E.g. Chemical library to identify new drug candidates • Use of material transfer agreements
Measures & Impact <ul style="list-style-type: none"> • Ground breaking research & knowledge. • Build capability and capacity • Leverage funding • Employment • Invention disclosures • Intellectual Property • Impact on ERA 	<ul style="list-style-type: none"> • Advancing innovation • Intellectual property • Leveraged funding • Collaborations • Stop/go and direction setting • Developing proof of concept • Invention disclosure • Linkage grants 	<ul style="list-style-type: none"> • Pass/fail– resource management • IP advancement • Marketing portfolio • Collaborations • Innovation uptake (industry) • Investment • Linkage grants 	<ul style="list-style-type: none"> • Novel drug targets • Novel diagnostics • Novel drug candidates • Intellectual property • Leveraged funding • Linkage grants • Industry collaborations • Commercialisation
Grant	< \$200,000 p.a. Up to 3 years	< \$100,000 1–2 years	< \$150,000 Up to 1 year
			Negotiable

Joint Funding to Support Infectious Diseases Research

NFMRI understands the need and importance of partnering with others to fund important initiatives that would otherwise have little avenues or sources of support. In line with our strategy for collaboration, post balance sheet, NFMRI and the NSW Department of Primary Industries were pleased to announce a new joint funding initiative that will be available for research into new innovations to identify and stop the spread of infectious diseases.

On the 19th February 2014, NSW Department of Primary Industries Acting Director General, Michael Bullen, announced a collaboration between NFMRI and Biosecurity NSW, providing \$400,000 of joint funding for research to support innovative research into new vaccines, medicines and new and faster diagnosis tools to identify and stop the spread of infectious diseases for emerging human zoonotic disease.

Supporting breakthrough research into infectious diseases that affect human health such as Hendra virus and Australian bat lyssavirus transmitted from animals to humans have been identified as a priority area in need of research support.

With around 75 per cent of emerging human infectious diseases coming from animals, there are around 50 known diseases in Australia that are transmitted from animals to humans.

The Foundation commenced a call for expressions of interest in March 2014. Shortlisted projects will be invited to submit an application for consideration. An announcement will be made late in 2014 for a research project receiving funding from early 2015.

Our Governance

The National Foundation for Medical Research and Innovation (ABN: 85001422895) is endorsed as a Tax Concession Charity and Deductible Gift Recipient (Item 1).

The Directors of the Foundation and management are committed to achieving and demonstrating the highest standards of corporate governance. The Directors of the Foundation continually seek to adopt best practice policies and procedures.

As part of the Board's adoption of the Foundation's new strategic vision and direction in September 2013, the Board appointed a committee of review to consider the framework of the Foundation's existing Governance arrangements.

The Foundation's Governance Charter supplements its Constitution and details the policies, processes and expectations for the Directors, Research Advisory Committee (RAC), staff and contractors of the Foundation.

The review of the Foundation's governance frameworks has considered best practice guides, including those published by the Australian Securities Exchange and Standards Australia.

Amongst the recommendations made to the Directors of the Foundation by the committee are the need to develop consistent and complementary Terms of Reference guiding the Board of Directors and the members of the Research Advisory Committee, and specifically provide guidance as to the

required skills and competencies, as well as composition of both the Board and Research Advisory Committee relative to the new strategy.

Upon formal consideration of the recommendations, those policies agreed by the Board as appropriate and in line with the Foundation's new strategic vision will be implemented as part of the Foundation's continued demonstration of best practice corporate governance.

Board Responsibilities

One of the primary responsibilities of the Board is to be the custodian of the purpose of the Foundation as set out in the mission statement within the Foundation's Constitution.

Mission:

"To advance innovations in medical research related to the nature, prevention, diagnosis, treatment and incidence of disease and other health problems that have a significant impact on the health of humans"

Specific responsibilities include:

- Continually develop and drive the vision of the Foundation;
- Identify any critical gaps in medical research funding in the community;
- Achieve a greater profile within the research community;
- Grant funding to applicants whose research supports the mission of the Foundation;
- Provide guidance to the Research Advisory Committee in respect of the type of research project that the Foundation may fund;
- Attract funding through donations, bequests and any other suitable avenues; and
- Grow and monitor the financial capital base of the Foundation.

Management Responsibility

The Board has formally delegated day-to-day management of the company's operations and the implementation of the Foundation's strategy and policy initiatives to the Chief Executive Officer and senior executives.

Our Funding: 2013 Grants

Following recommendations of our Research Advisory Committee, the Board approved \$966,416 in grant payments towards our following multi-year commitments:

A/Prof. Wendy Cooper Royal Prince Alfred Hospital, Tissue \$125,000 from 2012 to 2013
Pathology and Diagnostic Oncology

Personalised Medicine in Lung Cancer and mesothelioma

There is a revolution underway in cancer management whereby treatment is ‘personalised’ to the genetic changes in each person’s cancer. This promises to maximize the benefit of specific treatments and reduce harmful side effects. A key part of this process is finding biomarkers that predict response to particular treatments. The aim of this research project is to identify biomarkers in lung cancer and mesothelioma that can be used to help select the best treatment for every individual patient. The team is investigating abnormal expression of protein and amplification of genes in lung cancer and mesothelioma that can potentially determine how well a patient will respond to treatment or how quickly or slowly their disease is likely to progress. So far, the team has validated techniques for identifying patients with numerous mutations/alterations in their lung cancer. This will help the patient and their doctor determine the most appropriate treatment for each person.

Dr. Lenka Munoz The University of Sydney, School of \$390,956 from 2013 to 2016
Medical Sciences & Pharmacology

Improving Chemotherapy Response Rates in Brain Cancer

In a search for ways to limit the spread and to stop lethal recurrence of brain cancer, Dr Munoz’ research focuses on the inflammation caused by the tumour as a key to brain cancer progression. This research has found that cells surrounded with inflammation appear to move farther because the inflammation makes it easier for tumour cells to propel themselves through tissue. The more inflammation in the proximity of a tumour cell, the faster glioblastoma cells travel. This project will make this the first group to report that drugs turning off the activity of an inflammatory protein called MK2 are effective in blocking inflammation in brain tumours. Blocking inflammation may prevent the invasive spread of cancer cells into healthy brain tissue, thus preventing the formation of novel tumours and potentially improving patient’s response to temozolomide (Temodal) during chemotherapy.

Dr. Max Conway \$215,000 from 2010 to 2014

A Role for Histone Deacetylases and their Inhibitors in Ocular Melanomas

Eye melanoma is the most common primary intraocular cancer in humans. Up to 60% of patients die due to secondary spread many years after the primary cancer is removed surgically. There is currently no effective treatment for metastatic disease. Recently, a promising new class of anticancer drugs (Histone Deacetylase inhibitors or HDACi that are less toxic than conventional therapies, but can enhance their activity) have been identified. These novel, non-toxic agents may have the potential to improve the management of eye melanoma.

This project aims to examine the potential for these agents to be used in eye melanoma sufferers. There are two aspects to this. Firstly, this research will investigate eye melanoma cells to see if they possess the molecules needed to interact with HDAC inhibitors and, further, see if it is possible to predict which tumours are likely to respond beneficially to HDACi treatment. The second aspect of the project involves testing these new agents on eye melanomas grown in the laboratory to find optimal doses and combinations with existing therapies to improve response rates and potential survival of patients.

Dr. Michael Buckland Brain and Mind Research Institute \$270,000 from 2012 to 2014

Characterising Early Molecular Changes in Gliomas

Gliomas are the most common type of brain cancer and cause many deaths in Australia every year. In order to design effective strategies for the treatment and detection of glioma, it is important to understand the underlying genetic mutations, which lead to disease. Recent studies have found that the isocitrate dehydrogenase (IDH) gene is mutated in 70-80% of some glioma subtypes, suggesting it may be an early mutation that plays an important role in the development of brain cancer. It is thought that IDH mutations may contribute to cancer by changing patterns of methylcytosine and hydroxymethylcytosine on DNA, thereby changing gene expression to favour cancer development. This study aims to validate this theory by investigating how patterns of methylation and hydroxymethylation change in gliomas, and whether they differ between gliomas with and without IDH mutation. The results of this study has the potential to reveal new information about how gliomas arise, the biological role of IDH and hydroxymethylcytosine and give rise to new methods for earlier detection and treatment of gliomas.

Dr. Michele Madigan Save the Sight Institute, Clinical \$180,000 from 2012 to 2014
Ophthalmology

Understanding the Pathogenesis of Dry Age-related Macular Degeneration (AMD)

This research project is directed towards improving understanding of the role of the immune system in normal ageing of the eye and age-related macular degeneration (AMD). This information will also be useful for identifying potential therapeutic targets relevant to AMD patients.

AMD continues to be the major cause of vision loss in our ageing population, with significant social and economic costs to the community. AMD presents clinically as either new blood vessels growing into the retina from the underlying choroid or more commonly as a gradual degeneration of retinal photoreceptors and pigmented epithelium. The cost of AMD in Australia in 2010 was estimated to be approximately \$5 billion, including some \$400 million directly related to PBS-prescribed LucentisTM, a drug that is injected directly into the eye to target new blood vessel growth in wet AMD. There is still no effective clinical treatment for the more common form, dry AMD.

Dr. Nick Shackel

**Centenary Institute, Liver Cell
Biology**

\$225,500 from 2013 to 2015

Discovering Novel Biomarkers in Hepatocellular Carcinoma (HCC)

This research will develop new clinical tests in liver cancer, which will impact on diagnosis and determine outcomes using new genomic technologies. The research is novel and will lead to the development of personalised genomic medicine in which an individual can be uniquely assessed for the likelihood of developing liver cancer, enhance diagnosis, determine the risk of cancer spread and responses to treatment.

Prof. John McAvoy

**Save the Sight Institute, Sydney
Hospital and Eye Hospital**

**\$3,669,902 from 2001 to
2015**

Chair in Experimental Ophthalmology

With approximately 20 million people affected, cataract is the most common cause of blindness in the world today. Currently, the most effective treatment for cataract is surgery, which involves removal of opaque cellular material and insertion of a plastic intraocular lens into the remaining capsular bag. Although initially effective in restoring sight, a complication of surgery is the development of a secondary cataract. A major focus of this research has been to identify ways of maintaining the normal lens cell phenotypes and provide conditions that promote regeneration of normal lens structure and function. To achieve this goal, greater understanding is required on the factors that maintain epithelial cells and promote their growth and differentiation into the highly elongated and oriented/aligned fibres that determine lens optical properties. In other words, the team needs to find out how to recapitulate normal developmental processes in order to successfully regenerate lenses after cataract surgery.

**A/Prof. Sasha
Klistorner**

Save Sight Institute

\$903,531 from 2004 to 2013

Multifocal Visual Evoked Potentials (VEP) in Optic Neuropathies: Understanding the Mechanism of Axonal Loss in Optic Neuritis and enhancing early detection of glaucoma

Save Sight Institute recently reported the first successful simultaneous binocular recording of a VEP from multiple points in the visual field, and established that it could be used to detect blind spots objectively. It has now established a potentially major advance in detecting functional loss by utilising the phenomenon of binocular interaction as a means of enhancing early defects.

This study will explore this concept extensively and lead to a better understanding of the pathophysiology of early glaucomatous damage by comparing subjective thresholds, objective functional signals monocularly and binocularly, with structural changes all in the same individual. The technique will aid in the diagnosis and management of glaucoma – a disease that currently is one of the 3 most common causes of blindness in the western world. Earlier diagnosis of glaucoma and/or earlier detection of progression would enable earlier institution of appropriate therapy to help preserve vision among our elderly, and would be another step toward reducing the burden of glaucoma-related morbidity in the world.

Prof. David Ma	St Vincent's Centre for Applied Medical Research, Blood Stem Cells and Cancer Research	\$292,500 from 2011 to 2013
-----------------------	---	------------------------------------

Role of MicroRNAs as Regulators of Cell Survival and Differentiation in Acute Myeloid Leukaemia

Acute Myeloid Leukaemia (AML) is a cancer of the blood. It is caused by the accumulation of genetic abnormalities leading to uncontrolled cell growth, bone marrow failure and death. While unique gene defects have been discovered in some AML types, the cause of the leukaemic transformation remains unknown in a significant proportion of cases. This shortcoming in understanding AML hampers the ability to cure the disease. Abnormal alterations in small regulatory genes called microRNAs have recently been shown to be involved in the development of many cancers. Studies using gene chip technology have uncovered previously unknown abnormalities in microRNAs in unique subtypes of AML. In this study, the research team postulated that microRNAs contribute to the development of subtypes of AML in two ways: by enhancing cell survival and preventing blood cells from reaching maturity. The new knowledge generated by this research will lead to a better understanding of the biology of this rapidly fatal cancer. This may aid in the invention of diagnostic tests and target specific drugs, thus improving patient survival.

Prof Douglas Joshua and Dr Ross Brown	Royal Prince Alfred Hospital, Haematology Department	\$240,000 from 2011 to 2013
--	---	------------------------------------

The Inhibitors of Immune Effectors in Multiple Myeloma

Tumour cells should be removed and destroyed by the body's own defence mechanisms in a similar way that viruses and bacteria are removed. However, the tumour cells themselves upset this normal process and so the normal process of so-called immune control is destroyed, or at least suppressed.

Prof Joshua and Dr Brown have been trying to identify how this suppression works and to identify ways to allow the normal anti-tumour immune control to be restored. This work has identified several important new mechanisms and has in several cases identified how to correct the deficiencies.

Pathology Museum, University of Sydney	\$82,988 from 2001 to 2014
---	-----------------------------------

Restoration of Pathology Specimens

Support has been provided on an annual basis towards the restoration of pathology specimens to populate the museum's database. This specimen bank is a vital asset to the medical research community as it is accessible to those requiring unique specimens to conduct their research.

Winston Library, University of Sydney	\$166,245 from 1986 to 2014
--	------------------------------------

Support has been provided on an annual basis towards the purchase of medical research books and publications. The Winston Library is one of Australia's most pre-eminent repositories of information and knowledge accessible to medical researchers.

Our Funding: Case Study

Personalised Medicine in Lung Cancer

Project Summary

Lung cancer remains a significant public health problem throughout Australia and is the leading cause of cancer death in our country. About 70% of patients with lung cancer present with advanced stage disease that is not amenable to surgery and overall 5-year survival rates are less than 15%. Increasingly clinicians and patients are acknowledging that the traditional “one size fits all” approach to treating cancer is ineffective.

It has become apparent that many lung cancers harbour activating “driver mutations” that can be targeted with specific therapies that act against the underlying molecular alteration of that tumour. “Personalised medicine” identifies key genetic and molecular alterations in each patient’s tumour to determine the most effective treatment for each patient. This presents a unique opportunity for more significant improvements in both survival and quality of life for patients affected by lung cancer as interventions can then be concentrated on those patients who will benefit, sparing expense and side effects for those who will not.

In order to take advantage of the increasingly large number of agents that target mutations a robust clinical pathway is needed to ensure that targetable molecular alterations are identified using accurate and cost effective techniques.

Project Aim

The aim of our research project is to identify biomarkers in lung cancer and mesothelioma that can be used to help select the best treatment for every individual patient.

Research

There is a revolution underway in cancer management whereby treatment is “personalised” to the genetic changes in each person’s cancer.

This promises to maximise benefit of specific treatments and reduce harmful side effects. A key part of this process is finding biomarkers that predict response to particular treatments. The aim of our research project is to identify biomarkers in lung cancer and mesothelioma that can be used to help select the best treatment for every individual patient.


We are investigating abnormal expression of proteins and amplification of genes in lung cancer and mesothelioma that can potentially help determine how well a patient will respond to treatment or how quickly or slowly their disease is likely to progress. So far, we have validated techniques for identifying patients with genetic alterations of *EGFR*, *ALK*, *ROS1* and *FGFR* in their lung cancer. This will help the patient and their doctor determine the most appropriate treatment for each person.

Project Outcomes

As a result of our research findings, we now offer immunohistochemistry and FISH testing for *ALK* and *ROS1* gene rearrangements for patients with lung cancer as part of our clinical service. We are amongst the first laboratories in Australia to offer these tests.

The results of our *ALK* IHC paper published in *Modern Pathology* 2013 and presented at the Australian Lung Cancer Conference in 2012 have been of interest to the Department of Health and Ageing in their consideration of the codependent diagnostic test required for consideration of funding the targeted cancer treatment crizotinib.

W. Cooper and S.O’Toole have also been invited to serve on advisory boards for MSAC for the DOHA relating to *ALK* testing.



National Foundation
for Medical Research
and Innovation

Chief Investigator:
A/Prof. Wendy Cooper

Co-investigators:
A/Prof. Sandra O’Toole

Research organisations:
Royal Prince Alfred Hospital

Granting organisations:
National Foundation for Medical
Research and Innovation

Amount of grant:
\$130,000

Project timeframe:
2012-2013

Project duration (years)
2 years

Our people

Our Foundation is led by a dedicated Board through assistance and insight of its Research Advisory Committee and its vision is implemented by management.

Trustees

Trustees, qualifications and special responsibilities	Experience
Chairman Mr John Harkness	1984 - <ul style="list-style-type: none"> • Partner of KPMG for 24 years and National Executive Chairman for five years. • Chairman Reliance Rail • Chairman Charter Hall Retail REIT • Director Goodman Group • Fellow of the Institute of Chartered Accountants in Australia and the Australian Institute of Company Directors.
Dr John Dixon Hughes OAM	1977 - <ul style="list-style-type: none"> • Consultant general surgeon with over 55 years experience. • Chairman and Administrator of the Medical Services Committee NSW. • Foundation member of the Australian Association of Surgeons, distinguished counsellor serving as President, Secretary, Councillor over many years. • Fellow of the Royal Australian College of Surgeons. Formerly; <ul style="list-style-type: none"> • Board Member and Chairman of Surgical Research Committee at Sydney Hospital. • Chairman of Infection Control Advisory Group NSW Health.
Dr Vivienne Cowlshaw Shortell	1987 - <ul style="list-style-type: none"> • An oral health consultant who has worked as a clinician in hospitals and private practice since 1957, in metropolitan and regional Australia, New Zealand, Fiji, Canada and the United Kingdom.
Dr Kevin Hellestrand	2001 - <ul style="list-style-type: none"> • Cardiologist and Cardiac Electrophysiologist for 25 years. • Co-author of more than 50 journal articles, reviews and book chapters. • Fellow of the Royal Australasian College of Physicians, American College of Cardiology, Cardiac Society of Australia and New Zealand, Heart Rhythm Society, European Society of Cardiology. • Member of the North Shore Heart Research Foundation

A/Prof. Ray Garrick	2002 -	<ul style="list-style-type: none"> • Associate Professor of Medicine (Neurology) at the University of Notre Dame, Sydney Campus. • Neurologist with over 35 years experience. • Head of St Vincent 's & Mater Hospital Clinical-school of University of Notre Dame Medical School (Sydney) • Fellow of the Royal Australasian College of Physicians and a member of the Australian Association of Neurologists. • Fellow and faculty board member Faculty of Pain Medicine ANZCA. He Deputy Chairman of the Education Committee. • Senior investigator at Sydney hospital/Sydney eye hospital for the RENEW clinical trial in optic neuritis.
Dr John Graham	2002 -	<ul style="list-style-type: none"> • Consultant physician in Macquarie Street, Sydney from 1973 to 2010. • Emeritus Honorary Consultant Physician at Sydney Hospital <p>Formerly;</p> <ul style="list-style-type: none"> • Chairman of the Medical Staff Council, Sydney Hospital • Chairman of the Department of Medicine, Sydney Hospital • President of the NSW Council of Professions
Mr Anthony McGrath	1997 -	<ul style="list-style-type: none"> • Honorary Secretary of the Foundation since 1997 • Chairman of McGrathNicol, which had its Foundation on 1 July 2004. • Independent expert witness in a range of disputes, including providing expert reports assessing the solvency of particular entities and assessing economic loss claims. • Member of the Institute of Chartered Accountants in Australia. • Member of the Insolvency Practitioners Association of Australia. • Formerly, Head of the Sydney Corporate Recovery division of KPMG
Mr Jane Schwager AO	2005 -	<ul style="list-style-type: none"> • Director Campbell Page Ltd • Director The Croc Festival Foundation • Director The Aboriginal and Torres Strait Island Health Practice Board of Australia. <p>Formerly;</p> <ul style="list-style-type: none"> • CEO The Benevolent Society • CEO Nonprofit Australia • CEO Olympic Parklands Foundation

		<ul style="list-style-type: none"> • Director General of The Department of Ageing and Disability • Executive Director of the NSW Social Policy Directorate.
Mr Keith Drewery	2010 -	<ul style="list-style-type: none"> • Director, Private Enterprise, KPMG Australia • Director, Abbott Foundation Pty. Limited • Chair - Sydney Leadership Council, The Funding Network Australia

Research Advisory Committee

Chairman Dr John Dixon Hughes OAM	Consultant general surgeon with over 55 years experience
Dr Ray Garrick	Associate Professor of Medicine (Neurology) at the University of Notre Dame, Sydney Campus
Prof Yvonne Cossart AO	Emeritus Professor of Medicine (Immunology & Infectious Diseases), Central Clinical School at The University of Sydney
Professor David Burke AO	Professor of Neurology, Sydney Medical School, The University of Sydney and Royal Prince Alfred Hospital
Professor Stan McCarthy AO	Senior Staff Specialist and consultant histopathologist at Royal Prince Alfred Hospital in Sydney

Management and Administration

Dr Noel Chambers	Chief Executive Officer
Mrs Vanessa Chase	Management Accountant and Administrator
Ms Nancy Piche	Grants, Communications and Engagement Coordinator



National Foundation for Medical Research and Innovation

ABN 85 001 422 895

GPO Box 9986

Sydney NSW 2001

W: www.nfmri.org.au

E: enquiries@nfmri.org.au

T: 0413 922 370

