National Foundation for Medical Research and Innovation

NFMRI

2014

ANNUAL REPORT

About Us

Founded in 1977, the National Foundation for Medical Research and Innovation is a not-for-profit organisation 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, has recently been classified as a health promotion charity and is endorsed as a Tax Concession Charity (TCC) with Deductible Gift Recipient Item 1(DGR 1) status.

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, and facilitating connections with industry, we aim to maximise 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 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. Most importantly, we analyse the potential commercial and social success of the innovation.

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. We are always happy and grateful to receive donations and bequests.

nfmri.org.au

Message from our Chairman

This has been a year of considerable change for the Foundation. We focused on implementing our new strategy, making social investments across our three key portfolios nationally. With nearly $800,000 in funding approved in 2014 for research projects that will advance innovations and enable collaborations, the Foundation remains mission focused.

During the 2014 calendar year, the Foundation has continued to grow and evolve and has supported medical research projects with potential to improve the lives of many in Australia and beyond. We acknowledge that none of this would be possible were it not for the foresight and generosity of our benefactors, most of whom have contributed to the Foundation by means of bequest. We are very grateful for their support and are confident our donors would be pleased with the high quality, innovative projects their gifts have facilitated.

Recognising the enormous contributions of our current and past Trustees has been important. Mr Peter Bowen, having served on the Board between 1995 and 2011, and who still to this day assists the Foundation with guidance and advice, became our inaugural Emeritus Trustee.

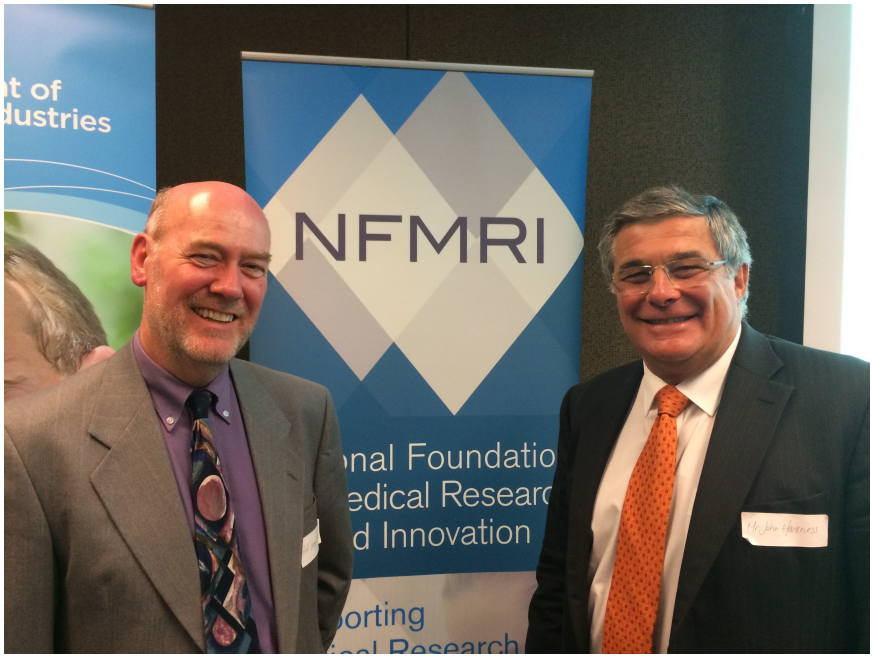
Dr John Dixon Hughes OAM, our longest-standing Trustee and Chairman of our Research Advisory Committee, joined the Foundation in 1977. As a tribute to his commitment and dedication, the Board saw it fit to name our inaugural medical research innovation award in his honour.

We were pleased that this award was presented by Dr Dixon Hughes to A/Prof Guillaume Lessene from the Walter & Eliza Hall Institute in early December.

Our corpus would not be where it is today without sound management from BT Financial. We are appreciative of BT Financial's and in particular Scott Glover's valuable insight and assistance. Similarly, Deloitte has yet again done a fantastic job with our annual audit. Thank you also to Brian Logan and Joshua Tanchel for your assistance.

I would especially like to acknowledge our team's efforts and achievements over the past year. Dr Noel Chambers, with the help of Mrs Vanessa Chase and Mrs Nancy Ranner, has been working tirelessly to implement our new strategy and position our Foundation with a unique capability that will enable it to deliver its mission.

I would like to thank my colleagues and fellow Trustees for the dedication and passion they have brought to the



1Prof Stephen Haswell and John Harkness at the NFMRI Awards Night

organisation. Their leadership, vision and guidance have been, and will continue to be, instrumental to the work and successes of our Foundation. We were pleased to see our board grow through the appointment of Dr Ashley Bates as a Trustee and Ms Alison Choy Flannigan as a second company secretary. Both bring unique skill sets that align with our strategy and complement and enhance our Board. We were also pleased that our long-term Board and Research Advisory Commiteee (RAC) member A/Prof Ray Garrick AM was acknowledged in the Australia Day honours.

Furthermore, our Board has been grateful to receive the support and advice of our expert RAC. This year saw us farewell Professor David Burke AO, who had served on the RAC for an impressive twelve years. We would also like to acknowledge the important contribution of Professor Yvonne Cossart AO who passed away in early 2015. We are grateful for both Professor Burke's and Professor Cossart's exceptional commitment to the Foundation and generous contribution of time and expertise over these years, and our sympathies and thoughts are with Professor Cossart's family.

IL-R: Belinda Hutchinson, Chancellor, University of Sydney; John Harkness, Chairman, NFMRI; Dr Michael Spence, Vice-Chancellor, University of Sydney at the University of Sydney Founders' Circle event

It is satisfying to see that nearly $14 million in grants has been distributed over the past 38 years to numerous researchers across the country. While the need for support is undoubtedly growing, and the future of current funding sources remains uncertain, we are convinced that our strategy will enable us to address the critical gaps in funding and we look forward to seeing the exciting change and impact this new focus continues to bring.

John Harkness
Chairman

Message from our CEO

The 2014 year has been an exciting period of change, with the introduction and implementation of our new strategy.

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

Having recognised the need and opportunity to support high impact biomedical research projects, the Foundation set out implementing its new strategy throughout the year. By focusing on supporting biomedical research that advances innovation and enables collaborations, our research funding will help bring innovations including devices, diagnostics, medicines and vaccines to the community sooner.

During 2014, the Foundation expanded its reach seeking applications from throughout Australia. This resulted in the identification of a significant number of high quality biomedical projects, and the provision of $774,502 in research grants. The importance of our unique strategy is highlighted in this report by some of the researchers receiving funding.

The Foundation's investment strategy also resulted in the growth of its total accumulated funds by $1,004,656 amounting to a total of $21,339,362.

In line with our strategy for collaboration, we awarded $400,000 from our joint funding initiative with the NSW Department of Primary Industries to Professor Stephen Haswell from Deakin University. Professor Haswell's research into a new, low cost lab-on-a-chip technology will be accessible remotely, thereby reducing and helping stop the spread of infectious diseases.

Growing awareness of the Foundation and the benefits of our strategy has been a major focus over the past year. Organisations such as the Private Wealth Network, Deloitte, Knowledge Commercialisation Australia, Life-science Queensland, Ausbiotech, Generosity Magazine, Channel 7 and many others have been instrumental in helping share our Foundation's work, goals and objectives far and wide.

With a culture of seeking a social return from strategic social investments, the Foundation is looking forward to working with others, form funding partnerships and grow its ability to deliver impact. There are some exciting developments that will be announced this year – so stay tuned!

This year also marks our inaugural Medical Research and Innovation conference "Putting Rubber on the Road" to be held on the 9-10th of September at the Australian National Maritime Museum in Sydney. We hope you will be able to come join us, learn from our exciting line up of speakers and contribute to discussions that will better enable the sector to deliver benefits from biomedical research .

Dr Noel Chambers
Chief Executive Officer

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.

Emeritus Trustees

We would like to thank Mr Peter Bowen for his continued support and assistance to the Foundation as an Emeritus Trustee.

Past Trustees

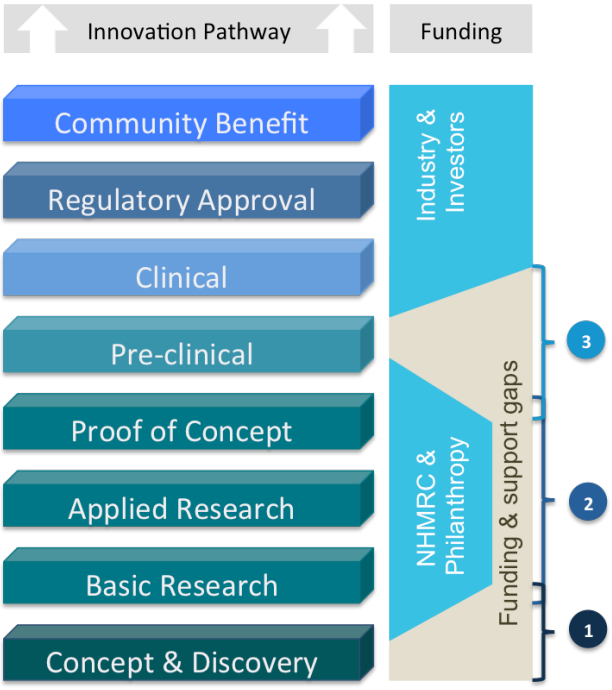
Our Foundation owes its legacy to the following Trustees who have served as part of its Board over the past thirty-eight years. Without their vision, foresight and commitment to the Foundation, it would not be where it is today.

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.

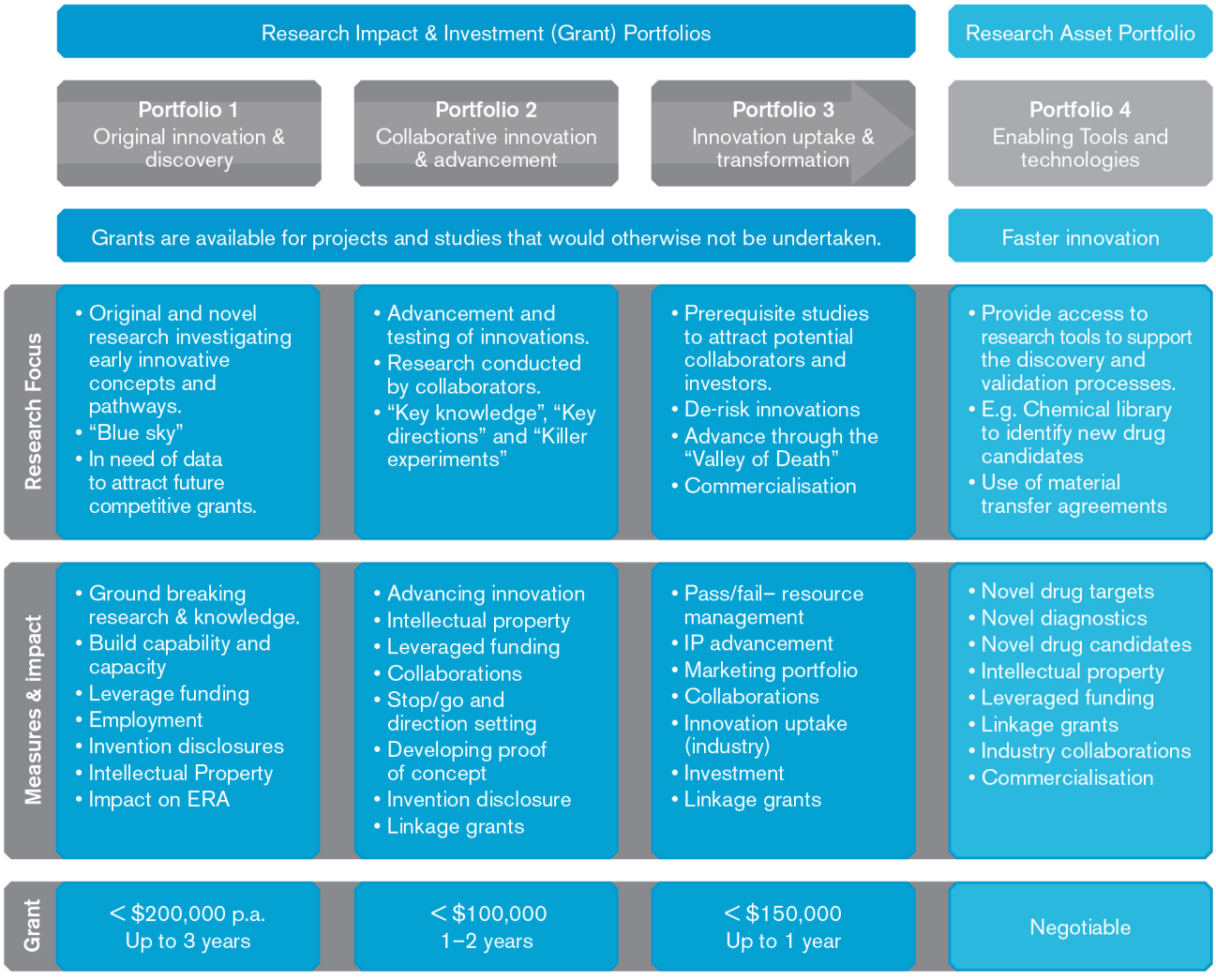
3 Bridging the 'Valley of Death'. Supporting research required to facilitate collaborator uptake and investment

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



Dr John Dixon Hughes Medal for Medical Research Innovation

The National Foundation for Medical Research and Innovation was pleased to award the inaugural Dr John Dixon Hughes Medal for Medical Research Innovation to A/Prof Guillaume Lessene, from the Walter and Eliza Hall Institute.

The Award is named in honour of our longest serving Trustee and Chairman of our Research Advisory Committee, Dr John Dixon Hughes OAM, who was a founding member of the Foundation in 1977. Dr Dixon Hughes OAM, an astute consultant general surgeon with over 55 years experience, remains an active, dedicated and passionate board member to this day and is an avid believer in the potential for philanthropy to support and advance medical innovations.

Nominations from peers were sought for a researcher under the age of 45 judged to be responsible for the best biomedical innovation and development paper published, patent taken out, or commercial-in-confidence report in the previous two calendar years.

A/Prof Guillaume Lessene and Dr John Dixon Hughes OAM at NFMRI Awards Night

A/Prof Lessene was recognised for having broken boundaries in his research to discover and develop drugs that target apoptosis, and for his links with industry in commercialising products for clinical use. Apoptosis is a form of programmed “cell suicide” that normal cells undergo, but that some cancer cells have developed ways to resist.

Having been nominated by pre-eminent peers, A/Prof Lessene’s discoveries have led to a potential new anti-cancer agent that could trick cancer cells into committing suicide. The new class of drugs, the so-called ‘BH3-mimetics’ could have a profound impact on cancer therapy.

The John Dixon Hughes medal is awarded every two years, with the next call for nominations set to take place in 2016.

Joint Funding to Support Infectious Diseases Research

The Foundation would like to acknowledge and thank the NSW Department of Primary Industries for establishing a joint funding initiative with the Foundation.

A proposal to design, manufacture and commercialise a cost effective “lab-on-a-chip” device that can rapidly identify infections and the causative virus was announced the winner of joint support from the National Foundation for Medical Research and Innovation (NFMRI) and the Department of Primary Industries.

The test, which will cost around $20, will take less than an hour to generate results and will be able to be linked wirelessly to a database to produce a range of control and treatment options, including vaccine-specific selections where appropriate.

At the 2014 NFMRI Awards held at the MLC Centre in Sydney on 11 December 2014, DPI Executive Director Biosecurity NSW Bruce Christie announced that Deakin University’s Professor Stephen Haswell would receive $372,000 in support to help advance this technology.

L-R: Bruce Christie (NSW DPI), Dr Jeff Hammond (NSW DPI), Prof Stephen Haswell (Deakin University), John Harkness (NFMRI) at NFMRI Awards Night

“With around 75 per cent of emerging human infectious diseases coming from animals, this technology is particularly relevant to both human health and our $11 billion primary industries sector,” said Mr Christie.

“It is rare that philanthropy and Government partners support research from development through to commercialisation,” Professor Haswell said.

This grant represents more than financial support as it comes with a lot of extras such as contacts, commercial mentoring and the potential use of the DPI’s facilities – which are all valuable components for securing commercial success.

Our Governance

The National Foundation for Medical Research and Innovation (ABN: 85 001 422 895) is endorsed as a Tax Concession Charity and Deductible Gift Recipient (Item 1). The Foundation was also endorsed in 2014 as a Health Promotion Charity.

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.

In accordance with the Foundation's strong focus on sound governance, the Board adopted a Governance Charter in 2014. The Charter supplements its Constitution and details the policies, processes and expectations for the Directors, Research Advisory Committee (RAC), staff and contractors of the Foundation. It outlines a code of conduct, which all members are required to agree to, as well as conflicts of interest disclosures and management procedures.

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 approved by Directors of the Foundation are the new complementary Terms of Reference. These terms guide the Board of Directors and the members of the Research Advisory Committee, and specifically outline the required skills and competencies, as well as composition of both the Board and Research Advisory Committee relative to the new strategy.

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: 2014 Grants

In addition to our existing multi-year commitments, the following new grants with funding commencing in 2015 were approved in November 2014:

Researcher	Institute	Focus Area	Total 2015	Total funding
Prof Stephen Haswell	Deakin University	Infectious diseases	$218,000	$372,000
A/Prof Guillaume Lessene	Walter and Eliza Hall Institute of Medical Research	Cancer	$50,000	$50,000
Prof Michael Good	Griffith University	Rheumatic heart disease	$106,600	$251,000
Dr Andrew Mitchell	University of Sydney	Bacterial meningitis	$28,892	$28,892
Dr Janet Davies	University of Queensland	Asthma and allergies	$61,860	$100,000
Pathology Museum	University of Sydney	General	$20,000	102,988
Dr Lenka Munoz	University of Sydney	Lung cancer	$6,000	$396,956
			$491,352	**$1,301,836**

Following recommendations of our Research Advisory Committee, the Board approved $774,502 in grant payments towards our following multi-year commitments:

Prof Stephen Haswell **Deakin University** **$372,000 from 2015 to 2017**

Advanced zoonotic disease detection through lab on a chip technology

A proposal to design, manufacture and commercialise a cost effective “lab-on-a-chip” device that can rapidly identify infections and the causative virus has received joint support from the National Foundation for Medical Research and Innovation (NFMRI) and the Department of Primary Industries.

The test, which will cost around $20, will take less than an hour to generate results and will be able to be linked wirelessly to a database to produce a range of control and treatment options, including vaccine-specific selections where appropriate.

A/Prof Guillaume Lessene **Walter & Eliza Hall Institute of Medical Research** **$50,000 in 2015**

Dr John Dixon Hughes Medal for Medical Research Innovation

A/Prof Lessene was awarded the inaugural John Dixon Hughes Medal for Medical Research Innvation for the discovery of a new class of drugs, BH3 mimetics, that induce cells to commit suicide by preventing protein-protein interactions. The relevant suite of patents are being commercialised and show great potential for cancer therapy.

Prof Michael Good **Griffith University** **$251,000 from 2015 to 2018**

Producing and testing a GMP grade peptide conjugate vaccine to prevent infections with group a streptococcus

A proposal to manufacture and test a vaccine to prevent infections with group A streptococcus (GAS), which may potentially decrease the global burden of rheumatic heart disease, many forms of chronic renal disease and other streptococcal pathology will commence in 2015. The prevalence of severe GAS disease is estimated to be greater than 18 million cases globally, with 1.7 million new cases each year.

Dr Andrew Mitchell **The University of Sydney** **$28,892 in 2015**

Towards new treatments for bacterial meningitis: determining the role of perivascular macrophages in brain inflammation

Dr Andrew Mitchell, a young research from the University of Sydney, has identified a previously unknown cell type that drives inflammation. The results of his study will form the foundation for developing innovative new therapies for bacterial meningitis.

Dr Janet Davies **The University of Queensland** **$100,000 from 2015 to 2016**

Towards an improved allergen immunotherapy vaccine targeting subtropical grass pollens

Dr Davies has received $100,000 from the NFMRI to advance her research towards developing a standardized vaccine for Bahia grass pollen allergy.

Dr Davies' previous research has shown that subtropical grass pollen allergens are different from temperate grass pollen allergens. With new grass pollen allergy vaccine tablets for temperate grasses having just received regulatory approval as drugs in Australia and the US, Dr Davies' research aims to fill this market need by developing an improved allergen immunotherapy vaccine targeting subtropical grass pollens.

The outcomes will have the potential to meet the growing need of patients in subtropical regions of Australia, Asia, Africa and America. Grass pollens are the major outdoor allergen trigger of hay fever and allergic asthma. These affect up to 500 million people worldwide contributing to severe disease, reduced quality of life and decreased productivity. Allergy vaccines have been shown to diminish symptoms of moderate to severe hay fever and reduce the risk of asthma, but most treatments for grass pollen allergy are based on temperate grasses.

A/Prof. Wendy Cooper **Royal Prince Alfred Hospital, Tissue Pathology and Diagnostic Oncology** **$95,000 from 2014 to 2015**

Personalised Medicine in Lung Cancer – Massively Parallel Sequencing of Lung Tumours Enriches for Actionable Mutations

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.

Dr. Lenka Munoz **The University of Sydney, School of Medical Sciences & Pharmacology** **$396,956 from 2013 to 2016**

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.

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.

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

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.

Dr. Nick Shackel	**Centenary Institute, Liver Cell Biology**	**$225,500 from 2013 to 2015**

Discovering Novel Biomarkers in Heptocellular 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.

Pathology Museum, University of Sydney	**$102,988 from 2001 to 2015**

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.

Our Funding: Case Study

Advanced zoonotic disease detection through lab-on-a-chip technology

It has taken a long academic career consisting of over 60 research grants split approximately 50:50 between government and industry, amounting to around $40m to finally discover a funding organisation that has joined up all the dots in terms of supporting research through discovery, innovation to commercialisation. It is all about the right funding for the right ideas at the right time.

The real striking benefit for me of NFMRI support is the experience, vision and leadership that comes with an organisation committed to turning research into impact.

Having spent most of my academic research career in UK universities, it is not uncommon to take a project to the point of demonstrating novel and exciting ways of exploiting science only to become stranded in a no man's land with funding organisations that will not support commercial development on one side and industry who are hesitant in adopting and developing disruptive technology on the other. Whilst there has been some positive moves over the past decade in Europe to create bridging funding and increase industrial involvement, such funding invariably lacks real business focus and support and expects too much of the academic and typically involves SME industrial partners who are often ill-equipped or resourced to realise a real impact.

In stark contrast, it was a breath of fresh air to discover the funding model adopted by the NFMRI, which pro-actively engages with promising basic research related to the field of medicine and supports its successful development seamlessly through the proof of concept and valley of death to commercially viable investment. This represents a true team effort involving the funding organisation, commercial investors and researchers focused on scientific and economic success. Most importantly for the philanthropic community that supports this type of funding is that it represents money gifted with purpose and managed for success and impact.

One important aspect that the NFMRI recognised is the need to support cross-sector collaborations. Accordingly through a recently awarded *Original Innovation and Discovery Grant* funded via a public-private research partnership between the NSW Department of Primary Industries (NSW DPI) and the NFMRI, our multidisciplinary research will be able to advance to the next stage of commercialisation. The funding will enable an impressive team drawn from chemistry, biology, engineering, manufacturing and end users to work with NFMRI and NSW DPI to develop novel lab-on-a-chip technology that will represent a paradigm shift in the provision of medical diagnostics and care, filling a great unmet need. In order to develop this futuristic technology the team will focus on influenza as a relevant example of so called zoonotic diseases that can transfer between animal and man. With around 75 per cent of emerging human infectious diseases coming from animals, this technology will have major benefits for both human health and the Nation's primary industries.

Whilst the ability to develop low-cost, information-rich diagnostics that interface with smart phone technology and can be used at point of need (e.g. remote field clinics) represents innovative and highly relevant technology, this current research will also address the significant challenges associated with effective device design, manufacture and data management. It is not so much about "will it work", but "what is the best way for fabricate manufacture and package completely new technology with commercial relevance".

As the project progresses we expect to work closely with NFMRI and their associates in ensuring the effective translation of basic research through the establishment of an innovative manufacturing capability that will provide lab-on-a-chip technology for much needed, medically relevant futuristic applications.

NFMRI

National Foundation for Medical Research and Innovation

Chief Investigator:
Professor Stephen Haswell

Research organisations:
Deakin University

Granting organisations:
NSW Department of Primary Industries and the National Foundation for Medical Research and Innovation

Amount of grant:
$372,000

Project timeframe:
2015-2017

Project duration (years)
2 years

Our Funding: Case Study

Producing and testing a GMP grade peptide conjugate vaccine to prevent infections with group A streptococcus

The 'Valley of Death' grant that we recently received from the National Foundation for Medical Research and Innovation (NFMRI) has been a Godsend to our streptococcal vaccine project.

Whist there are many charitable foundations, the NFMRI is unique in that its strategy targets funding gaps and provides value-adding support to advance early biomedical innovations, helping innovations to become attractive to future collaborators and investors. Having said this, the NFMRI appreciates and respects the broad range of funding requirements for medical research. The benefit in specifically targeting their support towards three social investment portfolios is that it will assist our academic discoveries become medical innovations and products of tomorrow, not simply 'die on the vine'.

Over the last 20 years we have received significant funding from Government and charitable organisations to fund the 'discovery' aspects of a novel vaccine candidate that we believe can prevent infections with group A streptococci and prevent the very serious consequences of rheumatic heart disease and deep tissue infections, that collectively result in the loss of over 500,000 lives per year. Australia's Aboriginal population suffer the highest reported rates of streptococcal disease in the world.

To translate these discoveries into a product, we needed to prepare the vaccine at a high standard of quality ('GMP') and such product manufacture is very expensive and usually outside the scope and ability of most funding sources. Our NFMRI grant will specifically fund the vaccine manufacture and we can then use other sources to provide salary support for our trial. Thus, NFMRI is helping us in a substantial way to bridge the 'valley of death'. We expect that success with this trial will position us to then attract major funding from the pharmaceutical industry and indeed, such discussions with Pharma have already commenced.

Support for complementary research such as preclinical safety and manufacturing studies (often performed by external laboratories) with quality systems such as GMP, GLP and ISO is vital in progressing innovations to a stage where they can compete internationally and attract investors and collaborators.

With specific skills, networks and experience around biotechnology, research translation and commercialisation, the NFMRI is helping innovations by supporting research activities that would not normally attract grant funding yet are highly critical for the success of the research and the innovation. These may require activities outside of the chief investigator's laboratories.
We were glad to receive this targeted support, as it not only helps to advance our discovery, but also improve the outcome of the funding received from other bodies.

Professor Michael Good is the Principal Research Leader & NHMRC Australia Fellow, Institute for Glycomics at Griffith University in Queensland, Australia.

NFMRI

National Foundation for Medical Research and Innovation

Chief Investigator:
Prof Michael Good AO

Research organisations:
Institute for Glycomics, Griffith University

Granting organisations:
National Foundation for Medical Research and Innovation

Amount of grant:
$251,000

Project timeframe:
2015-2018

Project duration (years)
3 years

Our people

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

In 2014, the Foundation welcomed Dr Ashley Bates to its Board and RAC and Ms Alison Choy Flannigan as a Company Secretary.

After an impressive twelve years serving on our RAC, Professor David Burke AO resigned from the RAC. Our condelences go to Prof Yvonne Cossart AO's family, who unfortunately passed away in early 2015.

Trustees

Trustees, qualifications and special responsibilities		Experience
Chairman **Mr John Harkness**	1984 -	• 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 Chairman, Research Advisory Committee	1977 -	• Consultant General Surgeon • Research Advisory Committee since 1977 and Chairman since 2000 • Fellow, Royal College of Surgeons (Eng) • Fellow, Royal Australasian College of Surgeons • Fellow, Australian Medical Association • Medical Services Committee NSW Administrator, formerly Chairman. • Foundation member of the Australian Association of Surgeons, formerly serving as Chairman of the NSW State Committee and President of the Association Formerly; • Board Member, Senior Vice President, Chairman Medical Staff Council, and Chairman of Surgical Research Committee at Sydney Hospital. • Chairman of Infection Control Advisory Group NSW Health • Convener (Chairman) Negotiating Committee to negotiate with the NSW Government, on behalf of the medical profession during the "Doctor's Dispute" in 1984.

Dr Vivienne Cowlishaw Shortell	1987 -	• General Dental and Special Oral Services • Fellow, Royal Australasian College of Dental Surgeons • Member, Clinical Oncological Association of Australia • Member, Australian Dental Association • Member, Australian Federation of Graduate Women Inc • Life Member, Fiji Dental Association • University of Queensland Alumni • Otago University Alumni
Dr Kevin Hellestrand	2001 -	• 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
Mr Anthony McGrath	1997 -	• Honorary Secretary of the Foundation since 1997 • Co-Chairman of McGrathNicol • Director, QBE Insurance (Australia) Ltd • Director, Special Olympics Australia • National Rugby League Commissioner • Finance Advisory Committee Member, St Joseph's College, Hunters Hill • Member, Institute of Chartered Accountants in Australia. • Member, Insolvency Practitioners Association of Australia.
Dr John Graham	2002 -	• Emeritus Honorary Consultant Physician at Sydney Hospital Formerly; • Consultant physician on Macquarie Street, Sydney from 1973 to 2010 • Chairman, Medical Staff Council, Sydney Hospital • Chairman, Department of Medicine, Sydney Hospital • President, NSW Council of Professions

A/Prof. Ray Garrick AM	2002-	• Neurologist with over 35 years experience • Fellow, Royal Australasian College of Physicians • Member, Australian New Zealand Association of Neurologists • Associate Professor of Medicine at the University of Notre Dame, Sydney Campus • Head of St Vincent's & Mater Hospital Clinical School of University of Notre Dame Medical School (Sydney) • Fellow and Faculty Board Member, Faculty of Pain Medicine ANZCA and Deputy Chairman of the Education Committee • Senior investigator at Sydney Hospital/Sydney Eye Hospital for the RENEW clinical trials in optic neuritis
Mr Jane Schwager AO	2005 -	• Director, Campbell Page Ltd • Director, The Croc Festival Foundation • Director, Indigenous Festivals of Australia • Director, The Aboriginal and Torres Strait Island Health Practice Board of Australia. • Member, Social Ventures Australia Formerly; • CEO The Benevolent Society • CEO Nonprofit Australia • CEO Olympic Parklands Foundation • Director General of The Department of Ageing and Disability • Executive Director of the NSW Social Policy Directorate.
Mr Keith Drewery	2010 -	• Director, Drewery Consulting Pty Ltd • Consultant, KPMG Private Enterprise Division • Consultant, Private Wealth Network • Trustee, The Balnaves Foundation • Director, Abbott Foundation Pty. Limited • Director, Documentary Australia Foundation • Chair - Sydney Leadership Council, The Funding Network Australia
Dr Ashley Bates	2014-	• Pharmaceutical Industry Executive • Principal, Ashley Bates Consulting • Treasurer and Company Secretary, BioMelbourne Network Formerly: • National Executive, Manufacturing Excellence Taskforce Australia • Head of Product Development and Head of R&D Alliance, GlaxoSmithKline

Ms Alison Choy Flannigan *Company Secretary*	2014-	• Company Secretary since 2014 • Partner, Holman Webb Lawyers • Member, NSW Law Society • Member, Australian Institute of Company Directors • Member, Australian Corporate Lawyers Association • Member, AusBiotech • Member, South Eastern Sydney Local Health District, Research Ethics Advisory Committee

Research Advisory Committee

Chairman **Dr John Dixon Hughes OAM**	Consultant general surgeon with over 55 years experience
A/Professor Ray Garrick AM	Associate Professor of Medicine (Neurology) at the University of Notre Dame, Sydney Campus
Professor Yvonne Cossart AO (2002-2014)	Emeritus Professor of Medicine (Immunology & Infectious Diseases), Central Clinical School at The University of Sydney
Professor David Burke AO (2002 – 2014)	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
Dr Ashley Bates	National Executive, Pharmaceutical and Biotechnology at META, previously Head of R&D Alliances ANZ at GSK
Dr Noel Chambers	CEO with over 25 years experience in biomedical research, innovation, commercialisation and biotechnology.

Management and Administration

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

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