

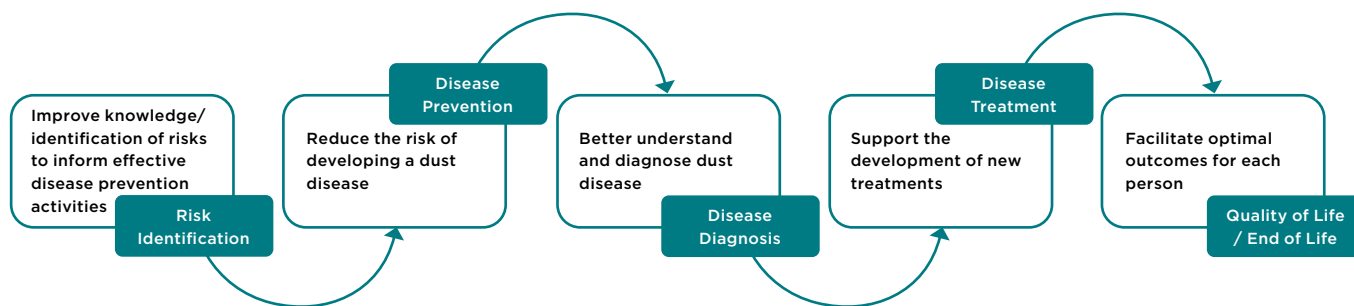


# Dust Diseases Board Grants Program

Year in Review  
2022-2023

# Foreword

The **Disease Lifecycle**, an integral part of the Dust Diseases Board's 2020 – 2024 Grants Strategy, represents the various stages grantees may address as they undertake their project or program of activities. Whilst many researchers supported by the Board's funding investigate dust disease diagnosis and treatment, the Board has funded projects investigating disease prevention as part of its Focus grant funding stream.



## Focus Grant Recipient

### Dust Diseases Board research informs practical ways to protect workers

We are seeing the rise of silicosis and use of artificial stone. Thanks to a research grant from the Dust Diseases Board, Dr Sharyn Gaskin is looking at practical ways to prevent worker exposure as the best form of disease prevention.



Dr Sharyn Gaskin is an Associate Professor in the School of Public Health, Environmental and Occupational Health Sciences Unit at The University of Adelaide. She is also the Director of Adelaide Exposure Science and Health laboratory.

In 2019, Dr Gaskin was awarded a grant from the Dust Diseases Board, administered via icare, for research into 'Improving exposure science and dust control for engineered stone workers'. The research compared engineered stone with natural stone. From this, it identified dust control measures best able to eliminate the risk of silicosis.

### Using science to find practical ways to protect workers

Dr Gaskin's research interest is in exposure science and disease prevention, which involves anything in our work environment or living home environment that can affect human health. She looks for practical ways to prevent illness and disease. With a general interest in respiratory health, her team at The University of Adelaide started looking into silica in 2018.

“My personal ethos is to get out of bed every day and make sure workers get home healthy.”



## Understanding Silicosis

With the rise of silicosis and use of artificial (engineered or manufactured) stone, the unique hazards of this material are not well known. Dr Gaskin was curious to understand the rapid increases in this disease. Her research sought to understand why it's happening and what can be done about it. Her research explored the issue from a public health perspective to understand the hazard better, control exposure and prevent disease. Specifically, it explored:

- the physical nature of the dust, materials and hazards that come from cutting and processing the engineered stone
- toxicology, how the material affected the lungs
- the best way to control exposure to this dust and other materials that are released when cutting and grinding this material.

*“It’s a complex area of science, but it’s really applied, and it can make a difference on the ground, which is really the sort of scientist I try to be.”*

## Findings

The research was completed in 2021 and findings have been published which discuss how to reduce the workers exposure to the hazardous dust. Some of the key findings are mentioned below:

As expected, the dust is most reactive when it is airborne. However, a secondary exposure pathway occurs when the dust is settled on the ground. It is less reactive, but it retains reactivity even up to 20 days later. Given this, the workers cutting the stone and those cleaning the area need to be protected.

Comparing the engineered stone to more traditional materials like natural granites and marbles, her research found the crystalline silica had a more hazardous composition. The crystalline silica had almost 90% mineral in it, compared to 3-30% in natural products.

Overall, the research found that cutting the materials wet is better than dry cutting. It matters where the water connects with the dust at the source and a combination of controls need to be applied to protect the worker.



Characterisation of dust emissions from machined engineered stones to understand the hazard for accelerated silicosis

*“The science is interesting, but it’s all about how we can protect the worker at the end of the day. That’s the whole point of us doing this work.”*

*“You don’t wake up one day with your lungs not working. It’s a slow progression. We need to keep an eye on workers lung health and lung function in order to map that so that we can intervene earlier and not wait until it’s essentially too late.”*

## Critical funding

*“The Dust Disease Board grant funding was critical to do this research. My team are one of only a few looking at prevention in Australia and if we hadn’t received the grant, we would not have been able to fund this work.*

*There really is no comparable scheme to allow for this sort of research. To have a dedicated lung health organisation that funds specifically tailored research, it’s really critical to get those practical outcomes for the workers.”*

## Looking for an alternative.... Next steps

The next step for Dr Gaskin and her team is to explore the next generation of materials and to look for new solutions to control the silica hazard.

The manufacturing industry have started to understand the need to make alternative materials with lower crystalline silica content in the bulk material. Research in this area could help inform the industry of ongoing prevention needs.

*“There is dust disease in lots of areas of work, not just engineered stone manufacturing. So we’re looking at exploring how we can take these learnings and apply them to other industries like construction and quarrying to get benefit to other workforces as well.”*

# Acknowledgement

The Dust Diseases Board acknowledges the Australian Aboriginal and Torres Strait Islander peoples of this nation.

We acknowledge the traditional custodians of the lands on which we conduct our business and their continuing cultural and spiritual relationships to the lands, waters, seas and communities. We pay our respects to ancestors and Elders, past, present and emerging.

# Year in Review highlighting Grant Impact

## Message from the Chair

**W**elcome to the Dust Diseases Board's FY23 Year in Review and Impact Report.

FY23 has been another busy year with the funding of projects across our four funding streams totalling over \$2.3 million in awarded grants. This year, the Dust Diseases Board (DDB) has funded four Ideas to Action grants, two Focus grants, one Fellowship and two Support Organisation grants, with three of these grants based in NSW. Since 2016, the DDB has awarded over \$13 million in grant funding, covering both research into dust diseases, and support organisations offering various types of support services for those with a dust disease.

Our Focus grant round is designed to target specific areas of need arising from data gathered from icare's Dust Diseases Care scheme. Our FY23 Focus grant round was centred on supportive and palliative care needs for people affected by dust diseases. The Board resolved to maintain the focus on Supportive and Palliative Care for individuals with Dust Diseases as the Key Priority Area for our Focus grants round. As one of the Board's principles is also to build capacity and capability in developing dust disease researchers, maintaining this focus for another year, and communicating this to the research community enables researchers working in this specialty field to better plan their projects and research proposals.

Curative treatments for dust diseases remain elusive, not only for malignancies such as mesothelioma and asbestos-related lung cancer, but also for benign diseases including asbestosis and silicosis. Therefore, supportive and palliative care is an important priority for the cohort of over 1300 individuals living with a dust disease who are supported by the icare Dust Diseases Care scheme. The Board aims to fund researchers within this field that will lead to improved care outcomes for affected workers and their families.



At the end of 2022 the DDB performed their annual review of each of the four funding streams. This included the Support Organisation strategy which had undergone significant changes over the course of 2021, to make sure the programs are fit for purpose and will deliver the Board's vision. The Support Organisation review was undertaken to ensure individuals with a dust disease can access support when they need it and via channels that best meet their needs. Support organisations funded by the Board had identified the need for translated information for individuals living with a dust disease from the Culturally and Linguistically Diverse (CALD) community, as well as face-to-face support often preferred by the asbestos impacted cohort, as well as access to the latest scientific and medical information.

The Board has also continued implementation of the grant impact assessment framework. Impact assessment allows the Board to understand the outcomes of the research and support organisation programs and activities it funds. Impact can be measured in many forms, including knowledge, health, economic and social impact. Measuring the impact of the work it funds enables the Board to make informed decisions in regard to future funding, helping to make sure it continues to provide maximum benefit to those with a dust disease and for the people of NSW. As the Board enters its fifth and final year of the current strategy and reflects on its overall impact, we also look ahead as we embark on the development of the new Strategy (FY2025+) to ensure that our strategic priorities and the projects we fund continue to deliver on these outcomes.

The DDB keeps itself updated with the dust diseases research landscape and treatment options both within Australia and overseas and has engaged with various support organisations supporting those affected by dust diseases in order to keep across current issues and trends in the sector.

The Board have also demonstrated compliance with NSW Premier and Cabinet's new Grants Administration Guide (2022), developed to ensure that NSW-based grants programs and administrative practices offer the following:

- Deliver value for public money in achieving their stated purpose or purposes
- Are robust in their planning and design
- Adopt key principles of transparency, accountability and probity
- Deliver a high-quality customer experience

I would like to acknowledge my colleagues on the DDB for their commitment and the spirit they have brought to discussions over the course of FY23, and I thank Ben Kruse for his contribution during his time on the Board (2018 - 2022).

I also extend my thanks to those who have shared their insights and experiences with the Board as we aim to reduce the risk of people developing dust diseases and to optimise health and care outcomes for those affected by Dust Disease. I hope you enjoy reading our Year in Review report for FY23.



Dust Diseases Board Grants

# Board overview

## About the Dust Diseases Board

The Workers' Compensation (Dust Diseases) Act defines the selection process, roles and responsibilities of the Dust Diseases Board (DDB). In accordance with this legislation the DDB consists of:

- three persons appointed to represent employers
- three persons appointed to represent employees
- representatives of dust diseases sufferers' support, advocacy or awareness groups or organisations
- persons involved in research into dust diseases or in academic matters relating to dust diseases
- health professionals and
- an independent Chairperson.



### John Walsh AO

John is Chair of the Dust Diseases Board, a Non-Executive Director of the icare Board, a Member of the icare Audit and Risk Committee, and a Member of the icare Customer, Innovation and Technology Committee. He has a long history of service to others, particularly in the areas of social policy, health, and disability services. He was instrumental in setting up the Lifetime Care and Support Scheme and is a former Australian Actuary of the Year.

### Professor Sanchia Aranda AM

Sanchia was most recently CEO of Cancer Council Australia (2015-2021) and has worked in cancer control for over 40 years. She is a past President of the International Society of Nurses in Cancer Care, (President 2006-2010) and the Union for International Cancer Control (President 2016-2018). She is the inaugural Board Chair for the City Cancer Challenge Foundation. She currently holds a joint appointment as Professor of Health Services Research - University of Melbourne.





# Dust Diseases Board Members

at 30 June 2022

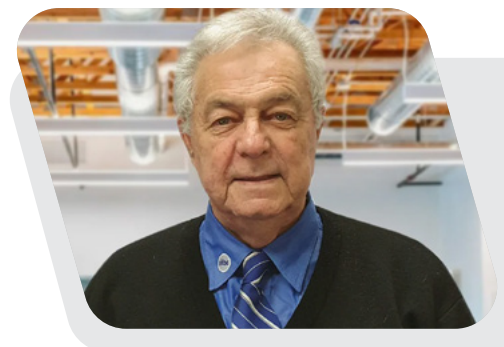


## Professor David Currow FAHMS

David is the Deputy Vice-Chancellor (Research and Sustainable Future) at the University of Wollongong and is still an active researcher. David was the Chief Executive Officer of the Cancer Institute NSW, the state's cancer control agency and the former Chief Cancer Officer of New South Wales (2010-2021). He is a previous president of Palliative Care Australia and, separately, the Clinical Oncological Society of Australia. In 2015, David received the Tom Reeve National Award for Outstanding Contribution to Cancer Care from the Clinical Oncological Society of Australia. He held the chair of Supportive and Palliative Care at Flinders University and more recently of Palliative Medicine at the University of Technology Sydney. David founded the Australian national Palliative Care Clinical Studies Collaborative.

## Barry Robson

Barry is the President of the Asbestos Diseases Foundation of Australia, having been appointed in 2002 and elected in 2003. He became a Union delegate of the Waterside Workers' Federation (later the Marine Union of Australia [MUA]) in 1970 and was elected Senior Vice President of the Union in 1988. He was also Alderman to Blacktown City Council 1991-1995, an Assistant Branch Secretary of the MUA Sydney Branch for two terms until 2003. He has been awarded three lifetime memberships to the MUA, St Mary's Baseball Club and Blacktown Mt Druitt Cardiac Support Group.



## Abha Devasia

Abha heads the national legal team of the Australian Manufacturing Workers' Union. Prior to joining the Union, she worked at the Dubai Chamber of Commerce and Industry in the United Arab Emirates as a legal advisor, providing legal counsel to the executive on migration and workplace law. She also spent several years as a prosecutor in the Fatalities Unit at the WorkCover Authority of New South Wales, the regulator of workplace safety at the time.





## Sylvia Kidziak AM

Sylvia has over 30 years' experience in the field of asbestos-related research, workplace safety and stakeholder engagement. She was a Director of the previous Workers' Compensation (Dust Diseases Board) of NSW and Chair of the Research Grants and Corporate Governance Committees. She was involved in all aspects of the establishment of the Asbestos Diseases Research Institute at Concord NSW and chaired the Board of the Asbestos Diseases Research Foundation. She has received several awards for her work including the Order of Australia, the Bernie Banton Award in recognition of significant contribution in advocating on behalf of those affected by dust related disease, and the National Safety Council Award for distinguished service to occupational health and safety.

## Merylese Mercieca

Merylese is a Business Manager, Co-founder and Occupational Health Nurse at Blue Eco Homes and has a strong interest in the health effects of current building standards. Her background as a senior Respiratory Nurse has given her a different perspective to the health and wellbeing of people. She holds a Master's degree in Health Science from the University of Western Sydney, a Bachelor of Health Science (Nursing), a Graduate Diploma in Respiratory Science and a Certificate IV in Carbon Management.



## Ray Petty

Ray is currently the Director of Antra Group Pty Ltd, Prudential Group Holdings and Squirrel superannuation Services. He has a career in finance, administration and business management spanning some 45 years. In 2010 he was registered to the NSW Prequalification Scheme - Audit and Risk Committee Independent Chairs and Members. He was also an Independent Member of the NSW Safe Work and Support Division, Audit and Risk Committee 2010 to 2015 and served as Independent Chair and member of NSW Health Care Complaints Commission, Audit & Risk Committee 2012 to 2020.





## Natasha Flores

Natasha is currently an Industrial Officer for Unions NSW specialising in Work Health & Safety and Workers Compensation. Natasha started her career as a teacher whilst also studying law at Macquarie University. This led to her shifting her career to industrial law, with her first role seeing her represent outworkers in the clothing industry for the Textile Clothing and Footwear Union. She then moved to the Independent Education Union and provided legal representation for teachers in non-government schools before gaining an interest in work, health and safety which led her to her current role assisting Unions NSW members with workers compensation.

## Ben Kruse

(term on the Board: March 2018 - August 2022)

Ben was employed as a Legal/Industrial Officer for the Construction, Forestry, Maritime, Mining and Energy Union during his term on the DDB. Ben has worked for over 30 years as a solicitor, initially working as a personal injury lawyer in private practice including dust diseases. He has held a range of legal, management and leadership roles with several state based unions. Now, focusing principally on industrial law, Ben has a particular interest in employee representation in work health and safety and the impact of competition on safety standards.





The DDB meets quarterly and is authorised to make grants from the Workers' Compensation (Dust Diseases) Fund. They are also responsible for critically assessing and deliberating on grant applications. These grants support academic research or clinical work relating to the prevention and treatment of dust diseases, as well as for the provision of assistance to groups or organisations that provide support for victims of dust diseases or their families.

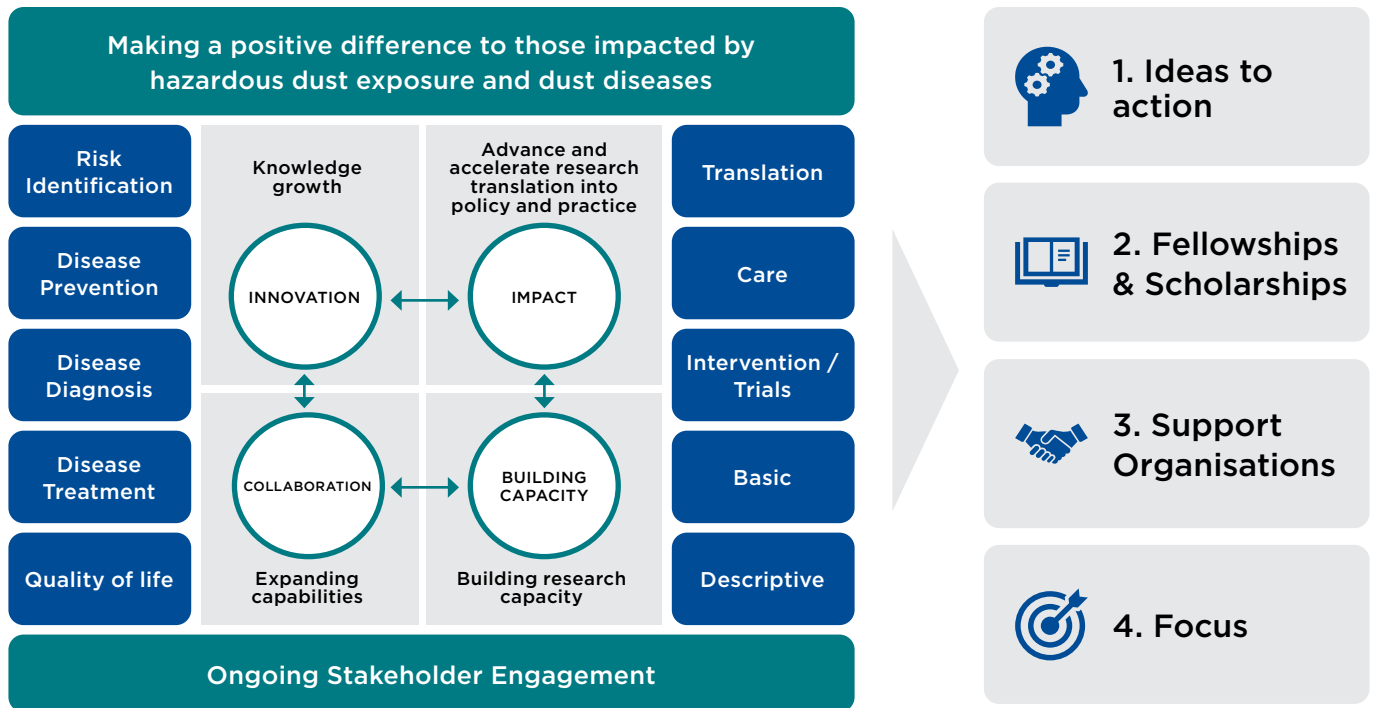
The DDB's annual grants round attracts significant interest from across the country. It is critical, therefore, that the DDB's deliberations be based on a solid strategic framework, and the grants portfolio represent the most diverse and cutting-edge dust disease research in Australia and abroad.

All grants awarded by the DDB must be for the purposes of supporting individuals affected by one or more of the scheduled dust diseases under the Act:

Workers' Compensation (Dust Diseases) Act 1942 - Schedule 1 of Dust Diseases	Causal Dust
Asbestos induced carcinoma - malignant disease of the lower respiratory tract and gas exchange areas of the lung.	Asbestos
Asbestos related pleural diseases - extensive fibrosis of the visceral pleura which is the lining of the lungs and interlobar fissures.	Asbestos
Diffuse dust-related pulmonary fibrosis - fibrotic condition of the lung parenchyma (portion of the lung involved in gas exchange) and is a sub-type of Coal Mine Dust Lung Disease. This condition is distinct from Coal Dust Pneumoconiosis	Coal and Silica
<p>Hypersensitivity Pneumonitis - an immune-mediated disorder that arises due to sensitisation to one or more organic agents in the workplace.</p> <p>Includes:</p> <p>Bagassosis</p> <p>Farmers' lung</p>	<p><i>Thermoactinomyces vulgaris</i> from mouldy sugarcane</p> <p><i>Saccharopolyspora rectivirgula</i> from mouldy hay, grain, silage</p>
Mesothelioma - Malignant disease of the inside lining of the chest wall (pleura) or abdomen (peritoneum).	Asbestos

Workers' Compensation (Dust Diseases) Act 1942 - Schedule 1 of Dust Diseases	Causal Dust
<p>Pneumoconiosis (any form) - Diffuse non-malignant interstitial lung diseases typically caused by inhaling different types of dusts including inorganic dusts such as minerals and metals. These dusts cause inflammation which lead to fibrosis or nodule formation. Exposure typically occurs in an occupational setting.</p> <p>Includes:</p> <p>Aluminosis - may also be classified as granulomatous lung disease.</p> <p>Asbestosis</p> <p>Berylliosis - may also be classified as granulomatous lung disease.</p> <p>Byssinosis - an asthma-like disorder stemming from exposure to organic dust and has a different pattern of abnormality to other pneumoconioses; is sometimes grouped with pneumoconioses or alternatively under the classification "An airway disease due to specific organic dust".</p> <p>Coal dust pneumoconiosis</p> <p>Hard metal pneumoconiosis - may also be classified as granulomatous lung disease.</p> <p>Silicosis - includes acute, accelerated, chronic (simple; complicated) forms.</p> <p>Talcosis</p>	<p>Aluminium</p> <p>Asbestos</p> <p>Beryllium</p> <p>Cotton, flax, hemp or sisal dust</p> <p>Coal dust</p> <p>Primarily Tungsten and Cobalt</p> <p>Silica</p> <p>Talc</p>
<p>Silico-tuberculosis - tuberculosis (an infection that usually affects the lungs) in the presence of silicosis.</p>	<p><i>Mycobacterium tuberculosis</i> infection in association with silicosis</p>
<p>Silica-induced carcinoma of the lung - malignant disease of the lower respiratory tract and gas exchange areas of the lung.</p>	<p>Silica</p>
<p>Systemic sclerosis (also known as scleroderma) - an autoimmune disease that affects connective tissue and can cause damage to the lung.</p>	<p>Silica</p>

# Dust Diseases Board Grants Strategy



## Vision

The Board’s vision is to make a positive difference to those impacted by hazardous dust exposure and dust diseases.

## Mission

- Funding research and other activities into the causes, mechanisms, diagnosis, treatment and prevention of dust diseases, to reduce the risk of people developing a dust disease and to optimise health and care outcomes for people with a dust disease.
- Funding organisations that support people with a dust disease and their families, to inform and educate people about dust diseases and the dust diseases scheme; support people through the compensation process; and optimise the wellbeing of people with a dust disease.

## Principles

1. Benefits NSW workers with dust diseases and their families and contributes to a better quality of life for workers with dust diseases
2. Develops a better understanding of dust diseases in NSW, including epidemiology, to prevent the development of dust diseases among people at risk
3. Contributes to the effective administration and sustainability of the scheme
4. Provides funding for novel and innovative benchtop research, new treatments and pilot programs to improve health outcomes and quality of life
5. Supports early stage innovations and ideas that can be turned into impact
6. Advances and accelerates the translation of research into policy and practice, delivering meaningful outcomes to workers.
7. Fosters collaboration to develop and broaden expertise and leverage investment to increase impact
8. Builds capacity and capability; developing dust disease researchers of tomorrow.

The Strategy puts those impacted by hazardous dust exposure and dust diseases at the centre of all grant funding. The Strategy incorporates four strategic priorities: Innovation, Impact, Collaboration and Building Capacity. All successful grants align with the DDB's vision, strategic priorities and principles.

**Innovation** in research leads to knowledge growth and all research findings, including those that are negative, contribute to a better understanding within the context of disease development and possible treatment approaches for prevention or halting disease progression. As yet, many dust diseases have no cure, with palliative care the only option.

**Impact** is the degree by which the research conducted affects policies, strategies and the actions of business, governments, non-profit organisations and community groups to maximise and spread the benefits of research more broadly into society. In response to the greater need to measure impact beyond traditional measures (e.g. publication in high-impact academic journals, citation counts), the DDB has developed an Impact Measurement Framework to better understand the impact of its funded portfolio.

**Collaboration** is crucial for the success of research programs, especially between research scientists and clinicians in the hospital setting. Researchers funded by the DDB typically have strong local, interstate and international collaborative networks, which has led to exceptional outputs. This is demonstrated by the ability of DDB-funded researchers to go on to attract highly competitive national grants employing a robust, multidisciplinary approach to dust diseases research.

**Building Capacity** refers to the culmination of the first three strategic priorities in order to provide continued support of dust diseases research. By supporting innovative and impactful research, researchers can attract further funding and collaborative opportunities to expand their knowledge, reach and expertise. In doing so they also provide an opportunity to support and mentor the next generation of researchers, and to ensure that Australian dust diseases research remains relevant and cutting-edge.



# The Dust Diseases Board

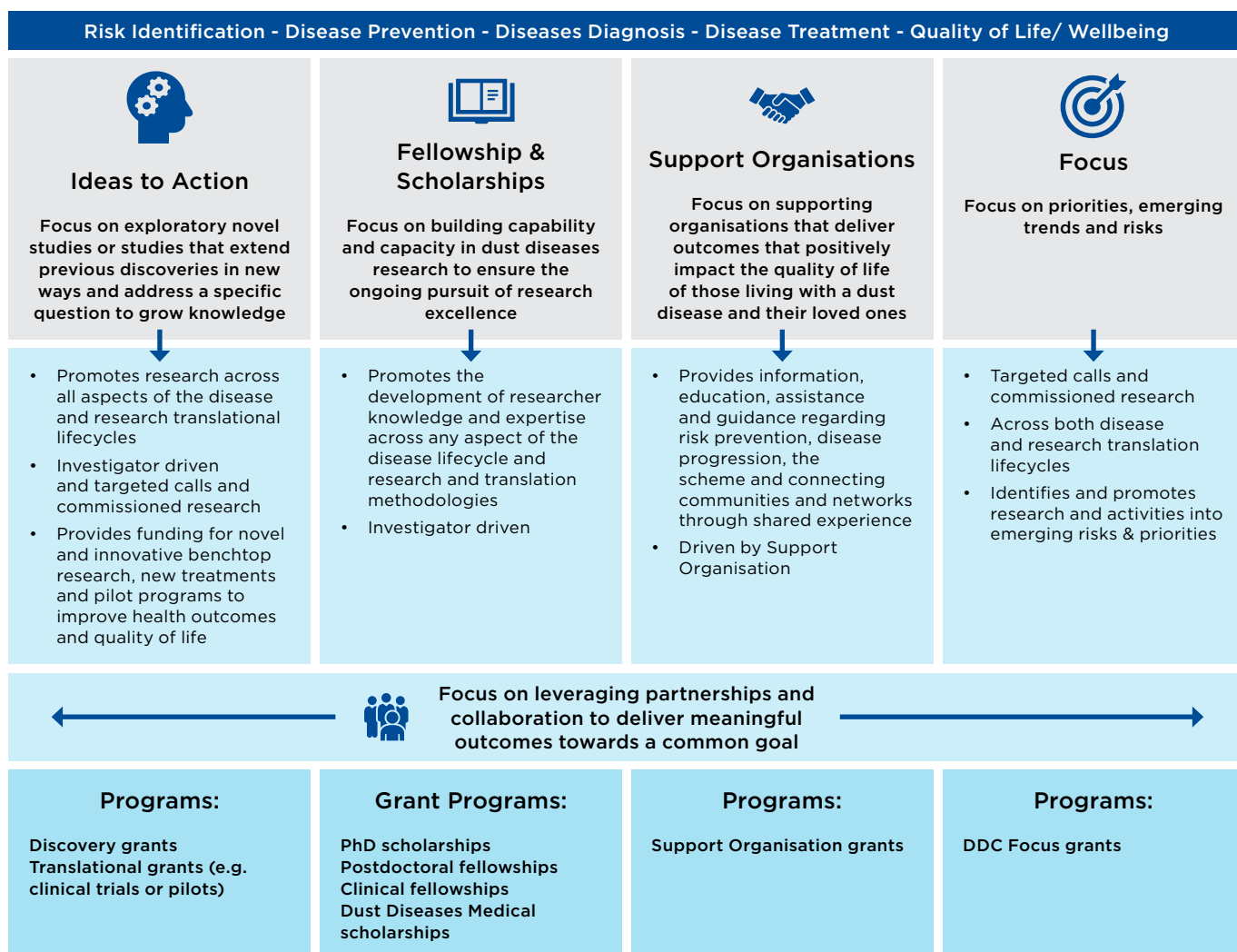
## Grant Framework

The DDB's strategy is delivered by four funding streams covering risk identification, disease prevention, disease diagnosis, disease treatment and Quality of life/wellbeing (the Disease Lifecycle). The strategy also fosters the different types of methodologies used by researchers to perform and validate their investigations from descriptive and basic research through to interventions/clinical trials, care and translation (the Research Lifecycle).

The Disease Lifecycle refers to the progression of a disease and the stage at which a research project may aim to alleviate the burden of that disease. Risk identification, which was incorporated in 2019 to broaden the Board's research grant strategy, aims to detect potential new and emerging hazardous dust exposures across various industries and occupations. The intent is to highlight and prevent workers from being exposed prior to reaching exposure levels that cause disease to develop.

The Ideas to Action and Fellowship & Scholarship grants are investigator driven with knowledge and service gaps identified by the applicant. Focus grants specifically target dust diseases priorities, emerging trends and risks.

Funding rounds for each funding stream are open for applications on an annual basis.



# Focus Grants









## Key Priority Areas and FY23 Grants awarded

The Focus Grant funding stream is agile, allowing for rapid progression of research in response to emerging trends and risks. This funding stream makes targeted calls across both the disease and research translation lifecycles, with the focus area and problem statements decided by the DDB.

For the FY23 grant round, the Board prioritised supportive and palliative care for people affected by Dust Diseases. The specific statements used were:

- To investigate barriers and enablers to accessing supportive and palliative care for those with a dust disease and strategies to improve accessibility.
- To investigate novel methods, programs, treatments or techniques which enhance the lives of those with a dust disease or their carers and families.
- To investigate and address the psychosocial needs of those accessing supportive and palliative care, as well as their carers and families.
- To investigate the unique care needs of younger people with silicosis, with a particular focus on psychosocial health, health literacy and long-term chronic care to optimise quality of life.

For this funding call, two grants have been awarded totalling \$423,741. These projects cover novel treatments or techniques which enhance the lives of those with a dust disease and to identify the unique care needs of people with silicosis. Both projects are underway.





	Duration	Amount	Year Awarded
<p><b>SilicosisCare: Optimising future healthcare and support for people with silicosis</b></p> 	 <p><b>2 year</b></p>	 <p><b>\$195,377</b></p>	 <p><b>FY2022/23</b></p>
<p><b>ISC-TEAM - Integrative Supportive Care Trial for Malignant Pleural Effusion (MPE)</b></p> 	 <p><b>2.5 year</b></p>	 <p><b>\$228,364</b></p>	 <p><b>FY2022/23</b></p>

## Fellowships and Scholarships and FY23 Grants awarded

The Dust Diseases Board’s grants strategy supports building research capacity in dust diseases research to ensure ongoing pursuit of excellence in relevant fields through funding for scholarships and fellowships.

For the FY23 funding call, one fellowship was awarded totalling \$240,000. This research project proposal aligns to the following principles underpinning the Grants Strategy:

- Benefits NSW workers with dust diseases and their families and contributes to a better quality of life for workers with dust diseases.
- Provides funding for novel and innovative benchtop research, new treatments and pilot programs to improve health outcomes and quality of life.
- Supports early stage innovations and ideas that can be turned into impact.
- Builds capacity and capability; developing dust disease researchers of tomorrow.








	Duration	Amount	Year Awarded
<p>Harnessing synergy between radiotherapy and immunotherapy to improve outcomes in mesothelioma</p> 	 3 year	 \$240,000	 FY2022/23

## Ideas to Action Grants and FY23 Grants awarded

Grants supporting descriptive and basic research, exploratory and novel studies, high-risk, high-reward studies, and facilitating the rapid transformation of research discoveries into clinical trials.

For the FY23 funding call, four grants have been awarded totalling \$1,242,565. Under the Dust Diseases Board grant program three research projects were Discovery and one Translational. These research projects align to the following principles underpinning the Grants Strategy:

- Benefits NSW workers with dust diseases and their families and contributes to a better quality of life for workers with dust diseases.
- Supports early stage innovations and ideas that can be turned into impact.
- Fosters collaboration to develop and broaden expertise and leverage investment to increase impact.
- Provides funding for novel and innovative benchtop research, new treatments and pilot programs to improve health outcomes and quality of life.
- Advances and accelerates the translation of research into policy and practice, delivering meaningful outcomes to workers.
- Builds capacity and capability; developing dust diseases researchers of tomorrow.

	Duration	Amount	Year Awarded
<p><b>Novel human model for anti-fibrotic drug screening in silicosis</b></p> <p> CI Jane Bourke</p>	<p> <b>3 year</b></p>	<p> <b>\$322,500</b></p>	<p> <b>FY2022/23</b></p>
<p><b>Defining therapies against the pathogenesis of accelerated silicosis</b></p> <p> CI Phillip Hansbro</p>	<p> <b>3 year</b></p>	<p> <b>\$352,879</b></p>	<p> <b>FY2022/23</b></p>
<p><b>Personalised therapy for mesothelioma</b></p> <p> CI Ashleigh Hocking</p>	<p> <b>2.5 year</b></p>	<p> <b>\$318,186</b></p>	<p> <b>FY2022/23</b></p>
<p><b>Phase 1 <i>Leptospermum polygalifolium</i> extract in mesothelioma</b></p> <p> CI Steven Kao</p>	<p> <b>3 year</b></p>	<p> <b>\$249,000</b></p>	<p> <b>FY2022/23</b></p>

## Support Organisations and FY23 Grants awarded

The Dust Diseases Board is authorised to make grants for the purpose of providing assistance to groups or organisations that provide support for victims of dust diseases or their families.









The overall objectives of this funding stream are:

- to optimise the wellbeing and level of support available to people with a dust disease and their families;
- to inform and educate people about dust diseases and the dust diseases scheme; and
- to support people through the compensation process.

With this grant opportunity, the Board intends to benefit a specific target demographic, who are people affected by a dust-related disease sustained while having worked in NSW. It also includes their family members, especially if they provide care and support to the affected person. The beneficiaries are either residing in NSW or, if residing elsewhere in Australia, have sustained their illness while working in NSW.

The Board commenced a review of the Support Organisation funding stream framework in early 2021, with the view to maximise its contribution to the strategic objectives of the 2020 - 2024 DDB Grant Strategy. The Board revised the eligibility criteria with the intent to increase its reach to a broader range of individuals with dust diseases or their families, and to create capacity and capability within the organisations who support them. The proposed program will predominantly support people who acquired their dust disease through working in NSW, or their family or dependents. A minimum of 70% of program recipients should meet this criterium.

For FY23 funding call, two grants have been awarded totalling \$423,450. These projects align with four out of five primary pillars: support, sustainability, innovation and technology and cohort focus.

	Duration	Amount	Year Awarded
<b>Mesothelioma Support Co-ordinators</b>  Asbestos Diseases Research Institute	 <b>1 year</b>	 <b>\$297,490</b>	 <b>FY2022/23</b>
<b>Suite of tailored Dust Disease Information and education resources</b>  Lung Foundation Australia	 <b>2 year</b>	 <b>\$125,960</b>	 <b>FY2022/23</b>

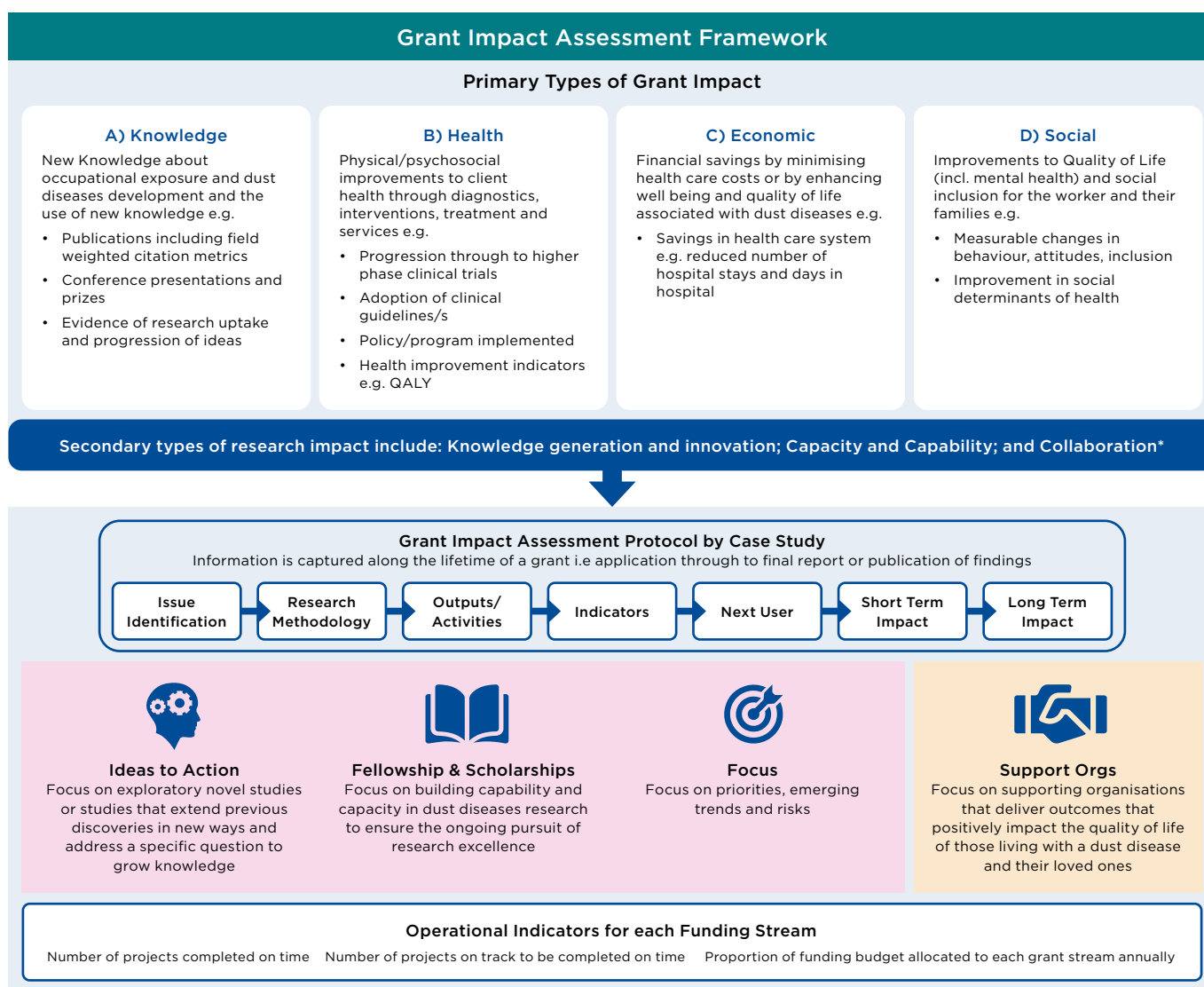
## Discovering the Impact of Dust Diseases Board Grants

“*The Dust Diseases board is committed to supporting the latest research that creates impact that can be translated into tangible benefits to quality of life for workers and families affected by dust diseases.*”

The Board's grant strategy places an emphasis on novel innovative research, which typically has a longer time to impact, whilst also prioritising accelerated research translation into policy and practice.

The Board aims to assess impact against four primary types i.e., Knowledge, Health, Economic and Social. Secondary types of impact relate to the benefits in terms of knowledge generation and innovation; capacity and capability building; and fostering collaboration. The nature of the research supported by the Board creates a challenge when attempting to quantify and monetise impact.

In some ways, this is balanced by the Support Organisation funding stream which can have a direct immediate impact for those accessing services, whether that be face-to-face support or engagement via the various online forums. Impact assessment for the activities provided by Support Organisations considers health and psychosocial wellbeing for those engaging with the support services.



\*These align with the DDB Strategic Priorities of Knowledge growth/innovation; collaboration; building capacity; and impact

The Grant Impact Assessment protocol captures and evaluates relevant information throughout the duration of the grant, starting with the application through to the final impact summary. Impact assessment continues until one year after the grant has been finalised for those conducting research, whilst impact assessment for Support Organisations is completed at the end of the grant. Implementation of the impact assessment process is still underway and end-of-grant summaries have been used to identify individual grant impact and has been validated with each grantee. The following grants were completed in FY23.

# Scholarship



## Loss of BAP1 and CDKN2Ap16 in Malignant Pleural Mesothelioma (MPM)

Dr Amber Louw, University of Western Australia

Primary Supervisor: Prof Jenette Creaney

### Project Details



**Disease Stage**  
Disease Treatment

**DDB Principles**

4 5 6 8



**Research Details**  
Basic



**Gender**  
Female



**State**  
WA



**Clinician or Scientist**  
Clinician



**Awarded Amount**  
\$120,000

### Primary Impact(s)



#### Knowledge



Added to the body of knowledge for MPM diagnosis



Identified the functional impact of genetic alterations in MPM



Validated MTAP stain for diagnosis



Found use for material from chest tubes as an alternative diagnostic approach.



Demonstrated an association between BAP1 status and survival in treated patients



#### These resulted in



Improved understanding of malignant pleural mesothelioma, enhanced diagnostic accuracy, personalised treatment strategies, and better early detection methods for improved patient outcomes.



Multiple Journal publications (2019-2022)

### Funding distributed across different research projects completed in FY23.

**\$120,000**

Dr Amber Louw

**\$292,398**

Prof Bruce Robinson

**\$224,866**

Dr Edward Fysh

**\$103,551**

Prof. Fraser Brims

**\$170,000**

Asbestos Diseases Foundation of Australia (ADFA), NSW

### Secondary Impact(s)



#### Collaboration



International collaborations



#### Capability building



Enhanced skills in molecular techniques and bioinformatics analysis; and expertise in histopathological and diagnostic methods



Transitioned from Masters to PhD



## Project summary

Mesothelioma is an aggressive malignancy with few therapeutic options. Diagnosis can be difficult often requiring patients to undergo numerous invasive tests before definitive diagnosis. Tests based on the most common gene abnormalities in the disease have become more widely available for use by pathologists. However, at the time of this research, the role of these tests in diagnosis, and patient management were not well described. This research aimed to determine whether 1) clump samples that collect in chest tubes could improve diagnostic yield, 2) new ancillary tests can be useful in mesothelioma diagnosis, 3) abnormalities are identifiable in patient samples taken years prior to definitive mesothelioma diagnosis, 4) ancillary tests are predictive of response to standard therapies.

Results indicate that collections found in chest tubes can be used as an additional source of diagnostic material and are simple to remove from tubes without requiring further invasive procedures. Ancillary investigations are robust in identifying patients subsequently diagnosed with mesothelioma and abnormalities can be detected years prior to diagnosis. BAP1 loss by immunohistochemistry is a predictive marker for survival after combination platinum and pemetrexed first line therapy. The results indicate that ancillary testing is robust and useful in mesothelioma diagnosis and possibly in prediction of therapy response.



# Ideas to Action Grant



## Boosting Antigen Targeted Therapy Against Cancer (ATTAC) for Malignant Mesothelioma

Prof. Bruce Robinson

Primary Coordinator: Prof. Jenette Creaney, University of Western Australia

### Project Details



**Disease Stage**  
Disease Treatment

**DDB Principles**  
4 5 8 9 10 11



**Research Details**  
Basic



**Gender**  
Male



**State**  
WA



**Clinician or Scientist**  
Clinician



**Awarded Amount**  
\$292,398

### Primary Impact(s)



#### Knowledge



Neoantigens in mesothelioma can trigger an immune response, offering potential for personalised treatments



Found that mesothelioma has a lower mutation burden compared to other cancers.



#### These resulted in

These findings can guide the development of immunotherapies and improve understanding of chemotherapy's impact on the immune system which may lead to more effective treatment strategies.

### Funding distributed across different research projects completed in FY23.

**\$120,000**

Dr Amber Louw

**\$292,398**

Prof Bruce Robinson

**\$224,866**

Dr Edward Fysh

**\$103,551**

Prof. Fraser Brims

**\$170,000**

Asbestos Diseases Foundation of Australia (ADFA), NSW

### Secondary Impact(s)



#### Capacity & Capability Building



Developed expertise in cancer immunology, data analysis, and a novel screening method.



Findings lay the groundwork for future studies in neoantigens and cancer immunology.



## Project summary

Cancer cells carry many mutations which should be 'seen' by the immune system as foreign and attacked by the host anti-cancer T cells. Combining immunogenic chemotherapy with immunotherapies induces spectacular responses in mice with mesothelioma, augmenting tumour specific neoantigen responses and curing otherwise incurable advanced tumours. Recent clinical trials in mesothelioma patients, show that combining chemotherapy and immunotherapy can also improve patient outcomes.

In this project, we studied personalised neoantigen responses in mesothelioma patient blood samples. We demonstrated that less than 10% of computationally predicted neoantigens elicited an immune response in the patient's matched clinical samples. The effect of treatment on the immune response differed between patients but no dramatic broadening of the range of responses was seen. This work will provide a foundation for future studies looking to improve treatment response rates for immunotherapies including the development of personalised neoantigen anti-cancer vaccines.

# Ideas to Action Grant



## AIR Study: A novel minimal-invasive biopsy approach for pleural malignancies

Dr Edward Fysh, University of Western Australia

Primary Coordinator: Prof Y C Gary Lee

### Project Details



**Disease Stage**  
Diagnosis

**DDB Principles**

1 4 7 9 10 11



**Research Details**  
Intervention/Trials



**Gender**  
Male



**State**  
WA



**Clinician or Scientist**  
Clinician



**Awarded Amount**  
\$224,866

### Primary Impact(s)



#### Knowledge



**Novel AIR study protocol** published



**Publication reporting safety, feasibility, efficacy and dissemination** to medical community



**Potential for future grants** to progress knowledge



#### Economic



**Cost-savings** from reduced repeat imaging or biopsies



#### Knowledge, Health, Social, Economic



**Data Analysis** - scoring system development to analyse images to assess safety & feasibility of the novel protocol



**Improved imaging findings** in patients with dust diseases-related thoracic/pleural malignancies could help avoid risks, complications, and costs of invasive thoracoscopic surgeries

### Funding distributed across different research projects completed in FY23.

**\$120,000**  
Dr Amber Louw

**\$292,398**  
Prof Bruce Robinson

**\$224,866**  
Dr Edward Fysh

**\$103,551**  
Prof. Fraser Brims

**\$170,000**  
Asbestos Diseases  
Foundation of Australia  
(ADFA), NSW

### Secondary Impact(s)



#### Capacity & Capability Building



**Novel Protocol Pilot** - successful recruitment across three (3) sites assessing safety & feasibility



**Multiple team members** using the scoring system



**Wider implementation** of the study technique in national/international centres



## Project summary

Mesothelioma is an asbestos-induced cancer of the lining of the chest wall and lung (the pleura). It often presents as multiple small nodules or areas of thickening. It is notoriously challenging to diagnose, often needing multiple invasive biopsy tests, making this first step of the patient journey stressful and unpleasant. Computed tomography (CT) forms part of the workup but often fails to detect pleural nodules. Many patients ultimately need open-chest or key hole surgery to find the nodules for biopsy. This study explored a novel method to make pleural nodules visible on CT, by instilling air into the chest to create an air-pleura interface. Once located, the nodules were biopsied with a small needle (like a blood test) under CT guidance. This study aimed to prove the safety and clinical utility of this exciting approach which can save many mesothelioma patients from invasive surgery, the associated risks and costs.

# Support Organisation



## 24/7 Helpline

Operator

Organisation: Asbestos Diseases Foundation of Australia (ADFA), NSW

### Project Details



#### Services Offered

Raise awareness of the impact of asbestos-related diseases  
Supports victims of any type of asbestos-related disease, and their families  
Provides support through each of the stages of the disease lifecycle



State  
NSW



Awarded Amount  
\$170,000

### Primary Impact(s)



#### Health & Psychosocial Wellbeing



**Social connections** built amongst peers affected by mesothelioma including carers, families and the bereaved.



**Linkage with other organisations** providing assistance and information.



**Helpline support** for victims and families affected by asbestos-related diseases.

Funding distributed across different research projects completed in 2023.

**\$120,000**

Dr Amber Louw

**\$292,398**

Prof Bruce Robinson

**\$224,866**

Dr Edward Fysh

**\$103,551**

Prof. Fraser Brims

**\$170,000**

Asbestos Diseases Foundation of Australia (ADFA), NSW

### Secondary Impact(s)



#### Capacity & Capability Building



Collaboration by referring to the Asbestos Diseases Research Institute.

## Support services and activities provided by ADFA include:

- Informing and educating people about dust disease and the NSW Dust Diseases Scheme.
- Supporting people with a dust disease and their families through the NSW Dust Diseases compensation process.
- Aiming to optimise the wellbeing of people with a dust disease.
- Supporting the continuity and sustainability of the organisation in its support of NSW workers and residents with a dust disease, and their families.

## DDC Client Story



Mr Crosby and his wife sing “**we’ll grow old together**” not just because his family are well-known country music artists. He recovered from treatment for mesothelioma and is now a passionate advocate for screening to his mates who’ve worked with dust.

Regular screening can identify the early stages of dust disease. It had been fifty years since Glen worked with asbestos when he was diagnosed with mesothelioma. In January 2020 Glen had initial treatment with abdominal surgery, and later with chemotherapy for tumours that arose on his kidneys and liver.

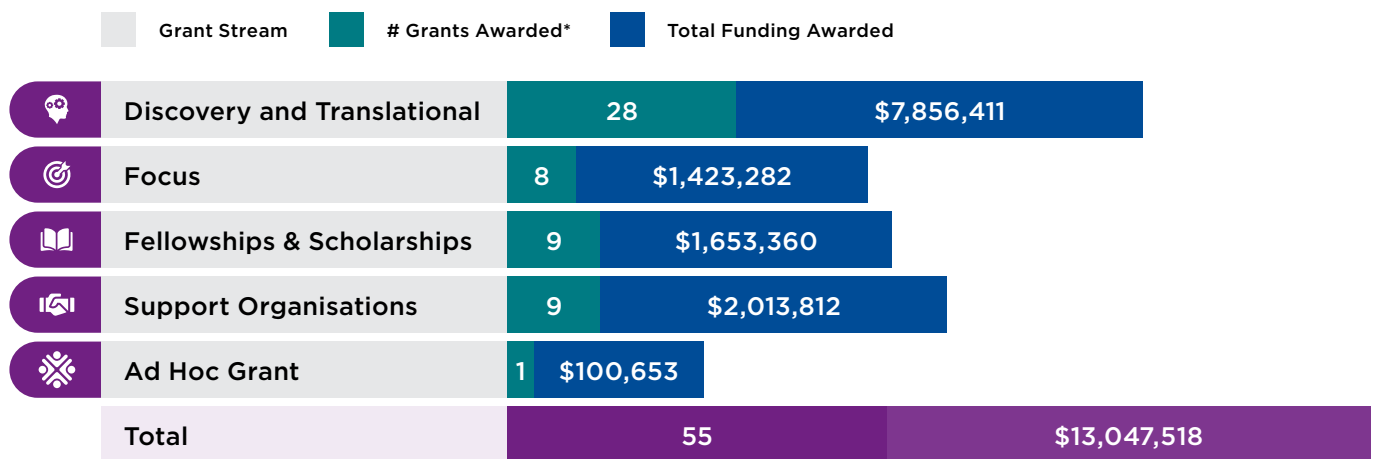
**“It’s going to keep popping up and requiring management”** Glen said, but for the last two years all his tests have come back clear of disease.

Last year Glen performed on stage with his daughters, The Crosby Sisters at the Tamworth Country Music Festival, he enjoys weekly golf with his friends and this year celebrated his 80th birthday with a big party of family and friends. **“I was lucky we got it early”** Glen said.

# Summary of the DDB Grant Portfolio

The Dust Diseases Board grant portfolio covers projects in a number of areas. Projects that utilise basic research techniques with an aim to develop new treatment solutions for dust diseases; projects with an interventional nature, whether it be in optimising quality of care outcomes; diagnostic solutions or improved dust disease related education amongst workers; and programs run by organisations that specifically provide support to workers affected by dust disease and their families.

Many of the projects in the portfolio focus on mesothelioma, although the number of projects investigating silica related disease increased in response to targeted Focus grant funding calls (FY20-FY22). Through funding these projects and measuring their impact, the Board aims to reduce the risk of people developing dust diseases and to optimise health and care outcomes for people with a dust disease and their families.



\*Represents grants awarded since 2016

# DDB Grant Research Profile

The following is a summary of the DDB funded researchers and research initiatives from FY2018 to FY2023. It aims to capture the breadth and depth of these initiatives, focusing on their distribution by various criteria including funding streams, disease lifecycle stages, research methods, and the demographic details of the Chief Investigators. This summary provides an overview of the diverse and multi-faceted research landscape funded by DDB between 2018 and 2023 financial years. It shows an equitable distribution of projects across different genders and career stages, while highlighting the dominant areas of research focus and methodology.

The total number of projects stands at 38 across the research project-based funding streams (Ideas to Action; Focus; Fellowships & Scholarships), overseen by 32 Chief Investigators and Fellowship & Scholarship recipients, and spans across four states - WA, NSW, SA, and VIC.

**Funding Streams:** The largest share of projects (18) falls under the 'Ideas to Action' funding stream, reflecting the emphasis on innovative approaches. Research Grants and Fellowships each account for 6 and 4 projects respectively, whereas Focus and Scholarship are responsible for 7 and 3 projects, respectively.

**Disease Lifecycle:** The majority of the projects focus on 'Disease Treatment' with 20 projects. The remaining projects are distributed across various stages of the disease lifecycle, including diagnosis, prevention and quality of life.

**Research Method:** 'Basic' research dominates the landscape with 26 projects. 'Intervention/Trial' follows with 6 projects, and the remaining categories account for fewer projects.

**Gender of Chief Investigator:** There is a fairly balanced gender distribution among the Chief Investigators and Fellowship & Scholarship recipients, with 17 females leading projects and 15 by males.

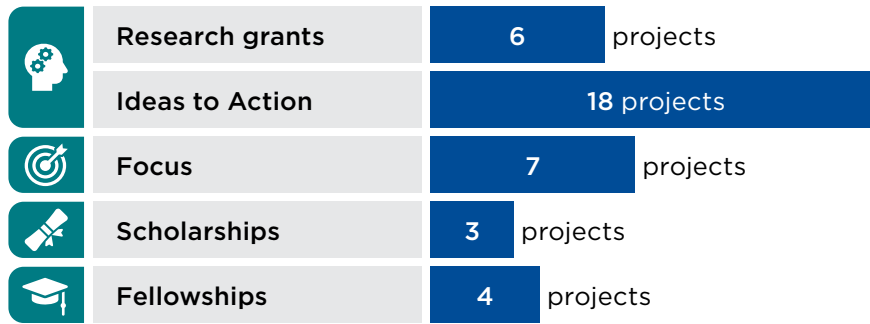
**Role of Chief Investigator:** Most projects are headed by scientists (28 projects), with clinicians leading the remaining 10.

**Researcher Status at Time of Application:** The projects are fairly evenly distributed across different career stages, with 13 early-career researchers 12 established researchers and 8 mid-career researchers leading projects.

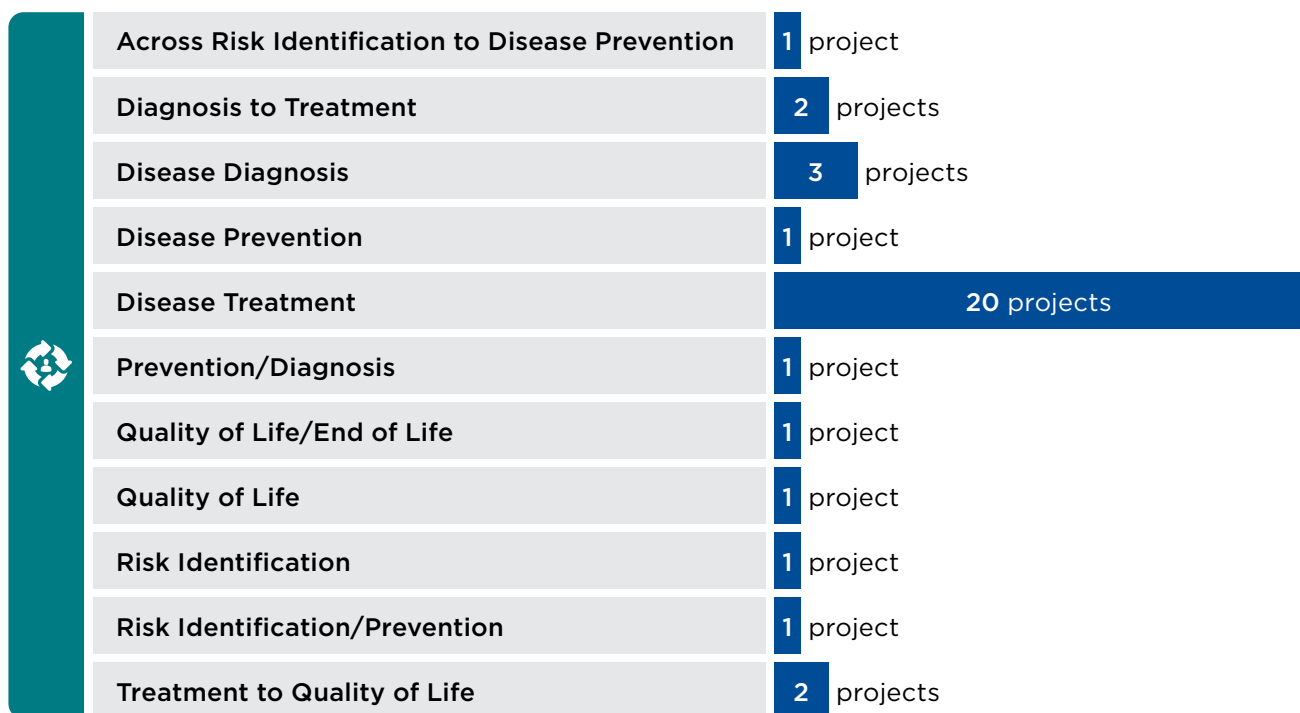
**State:** WA leads in the number of projects with 20, followed by NSW with 13. SA and VIC have fewer projects, with 2 and 3 respectively.



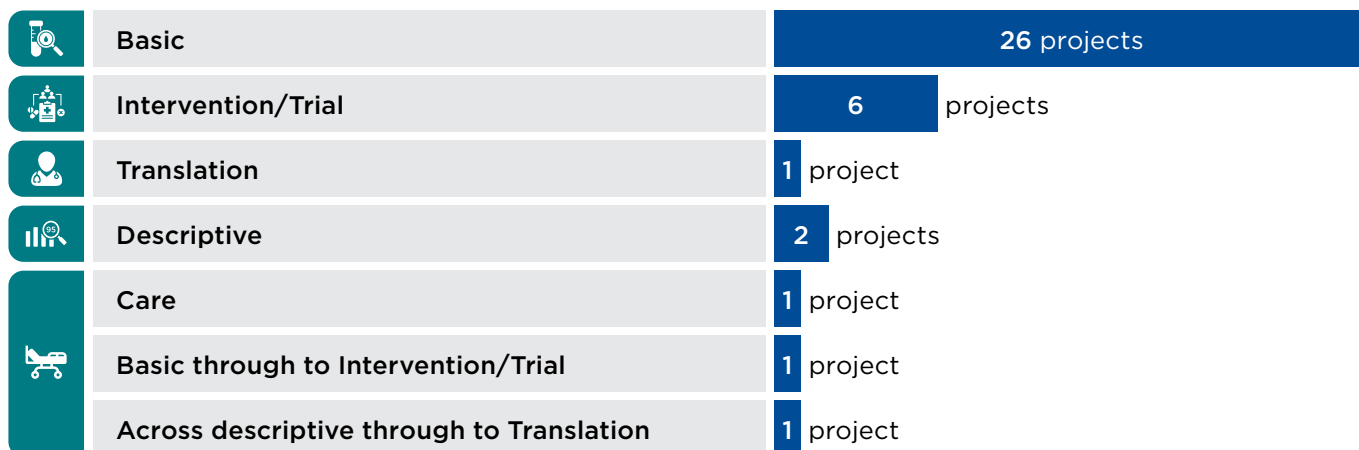
## Funding Stream



## Disease Lifecycle



## Research Method



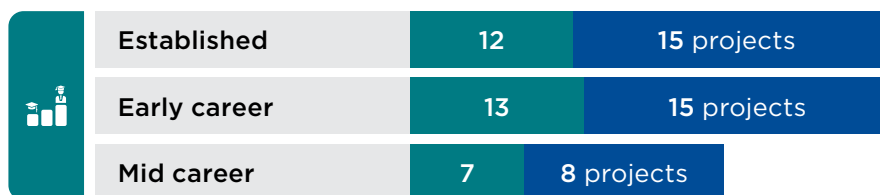
## Gender of Chief Investigator



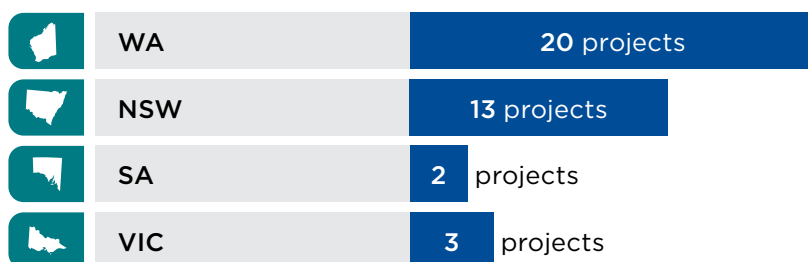
## Role of Chief Investigator



## Researcher Status at Time of Application



## State



## Scientist led research into dust diseases

- More research scientists than clinicians receiving DDB funding
- Most have received DDB funding previously
- Predominantly established chief investigators working with early career project coordinators
- Early career chief investigators more likely to also perform project coordination
- Predominantly female scientists
- Mainly from NSW and WA - aligning with the location of asbestos mines and major asbestos product manufacturing
- Most targeting innovative mesothelioma treatments in a preclinical setting

Notes - information covers the DDB Grants Strategy for 2016 - 2019 (Research Grants) and 2020 - 2023 (Ideas to Action; Focus); Note that some researchers have more than one project).

## Clinician led research into dust diseases

- Over 60% have received DDB funding previously
- Predominantly male clinicians
- Half have an established research career working with project coordinators from across the career stages
- Predominantly from WA
- Most research is targeting Disease Diagnosis and Treatment of Mesothelioma
- Clinical interventions/trials represent over half of the research conducted

## Developing future researchers into dust diseases

- Fellowship and Scholarship recipients are mostly supported by established researchers as anticipated under this funding stream
- Predominantly female recipients
- Most researchers are from WA
- Over 40% investigating silica-related diseases with most projects looking into Disease Treatment using basic research methodologies

