institute for
RESPIRATORY HEALTH

ANNUAL REPORT 2016

“THE COLLABORATIVE NATURE OF MY SCHOLARSHIP ALLOWS ME TO WORK WITH WORLD CLASS LEADERS AND THE POTENTIAL TO TRANSLATE MY RESEARCH FROM BENCH TO BEDSIDE.

ALISHUM ALI, CONQUER CF PHD STUDENT

CONTENTS

WHO WE ARE

The Institute for Respiratory Health is a non-government, not for profit organization and for over 17 years we have been working towards a common goal - to offer the best quality of life for everyone living with a respiratory condition.

OUR VISION

To improve the life of everyone living with a respiratory condition.

OUR MISSION

To bring together world-class researchers and dedicated clinicians to investigate, diagnose, treat and prevent respiratory conditions.

Our work gives hope for a better future to those with respiratory diseases.

OUR OBJECTIVES

RESEARCH EXCELLENCE
We conduct and foster innovative basic and clinical research to prevent and better understand respiratory conditions, and improve their diagnosis and management.

CLINICAL EXCELLENCE
We translate our research into improved treatments for people with respiratory conditions.

CAMPAIGNING AND EDUCATION
We campaign in Western Australia for an increased awareness of, and investment in, respiratory education and research.

CHAIR'S REPORT

Respiratory disease remains one of the top 5 causes of death in Australia and an estimated 7 million Australians suffer from a chronic respiratory condition.

We pride ourselves on our world-class laboratory science, clinical research and clinical practice and continue to focus on a strong, united future for respiratory health in Western Australia.

We are committed to strengthening partnerships and affiliations with other academic and respiratory organisations for the benefit of improving respiratory health.

For over 17 years, the Institute has made a vital contribution to the quality of life of many Western Australians.

It was for this reason that I am honoured to take up the position of Chair of the Board.

In 2016 we welcomed a new Board member, Craig McGown, who brings a wealth of experience to add to the Board's expertise. I would like to thank the Board members as a whole for taking the time away from other work and family commitments to help in achieving the Institute's objectives.

At the beginning of 2016, Prof Geoff Laurent announced his intended retirement in mid 2017. With this in mind the Board established a Directorship Working Party. The Working Party is developing a succession plan for the position of Director, and this is currently being developed in consultation with the other stakeholders who have an interest in respiratory health.

At the end of 2016, the Board introduced a Board fundraising initiative; whereby we will reach out to potential donors who are keen in invest in respiratory education and research. This will help create a framework for attracting the best young scientists from around the state, country and the world.

We continue to have the support of our Patron, the Hon Chief Justice Wayne Martin, and Ambassadors Karen Tighe and Glenn Mitchell. Their willingness to help the Institute at every opportunity is appreciated.

On behalf of the Board, I'd like to thank management, staff and students for their dedication and significant contribution to respiratory health. It is because of such inspiring individuals that the Institute is able to remain at the forefront of respiratory research.

PETER GUNZBURG
CHAIR OF THE BOARD

DIRECTOR'S REPORT

It has been another busy, challenging and inspiring year for our Researchers. Many obtained national and international funding, putting Western Australia at the top of the respiratory research league. See the Research Overview section, which highlights all of the marvelous achievements.

Our Clinical Trials Unit continues to thrive and deliver outstanding results. During 2016 the Unit conducted 19 clinical trials with 240 patients across all studies. We are also exploring opportunities to open additional sites within the Metro area. All of these trials are aimed at finding ways to better care for patients living with respiratory disease.

At the end of 2016, Prof Peter Eastwood and Prof Gary Lee announced they would be stepping down as Deputy and Clinical Directors. I would like to thank them for their input and leadership over the last two years and look forward to announcing our new leadership plan mid 2017.

We continued to support young scientists to embark on a career in respiratory research. This includes grants and scholarships funded by corporate and community groups.

Our strong relationship with the University of Western Australia continued in 2016. I would also like to acknowledge the support we received from Sir Charles Gairdner Hospital, Fiona Stanley Hospital and our partnerships with Notre Dame, Murdoch and Curtin Universities.

We continued to work with the research community by hosting seminars and being actively involved in collaborative groups.

Our community support arm, L I F E, celebrated its 25th anniversary since it was started by the late Edna Brown. It continues to offer both fellowship and information to people living with chronic lung conditions. I am grateful to Jenni Ibrahim, who is a real star of our organisation and provides wonderful support to the community.

We are privileged to have the support of the Melbourne Cup Luncheon Committee and Conquer Cystic Fibrosis. I would like to thank these two volunteer community groups for their tireless effort in raising funds and awareness for research. With the help of Conquer Cystic Fibrosis we have recently employed two new PhD Students, who are working to find ways to improve CF care.

I would also like to thank Westcare Inc for their support and generosity to fund research on infectious diseases over the last six years. This partnership has resulted in $300,000 supporting research within WA.

Finally, I'd like to thank our staff, members, and donors for your continued support and help in achieving our goal - to improve the life of everyone living with a respiratory condition.

PROF GEOFF LAURENT
DIRECTOR

BOARD OF DIRECTORS

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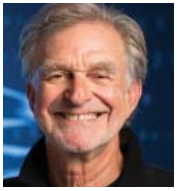

PROF GEOFF LAURENT BSC PHD FRCP(HON) FRCPATH FMEDSCI (DIRECTOR)
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Director of the Centre for Cell Therapy and Regenerative Medicine, University of Western Australia
Honorary Fellow at University College London

SUB-COMMITTEES OF THE BOARD
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Conquer CF Advisory Committee: Prof Gary Lee (Chair), Prof Stephen Stick*, Prof Scott Bell*, Prof Grant Waterer*

*External to the Institute for Respiratory Health

RESEARCH OVERVIEW 2016

The Institute advocates and practices research into a broad spectrum of respiratory conditions which are either scientifically or clinically focused. These projects are funded through a number of grants and collaborations.

CHRONIC DISEASES AND INFLAMMATION

BIOBANK

The Molecular Genetics and Inflammation Unit continued to collect a large sample bank of DNA, serum, and RNA samples of patients with airway diseases such as asthma, COPD, and bronchiectasis. These samples are then used in genetics projects to help better understand the pre-disposition of genetic diseases and the development of future therapies.

ASTHMA

Many physicians are not conscious that there are a number of asthma sub-types and struggle to achieve control using conventional treatments. Our Clinical Trials Unit is involved in a number of studies trialling new medications to treat the different sub-types of asthma.

The Molecular Genetics and Inflammation Unit continued studies on the molecular mechanisms underpinning pro and anti-inflammatory pathways in the lung, in particular, the role of alternative splicing in chronic inflammatory lung disease. New therapeutic approaches to treat severe asthma using antisense oligonucleotides are being explored.

Epigenetic mechanisms may play an important role in asthma as both are heritable, influenced by the environment, and modified by *in utero,* environmental exposures, and ageing. It regulates the expression of a large number of well established asthma associated genes. The Molecular Genetics and Inflammation Unit has identified the differences in genes, regulating these processes in mild and severe asthma. This may explain why some people get asthma and what determines its severity.

The Molecular Genetics and Inflammation Unit is a member of the Australian Asthma Genetics Consortium, which was formed to promote a more rapid progress towards the identification of the genetic causes underlying asthma. This data contributes to the Unit's various studies.

ALPHA 1 - ANTITRYPSIN DEFICIENCY

The Clinical Trials Unit continued to investigate whether a new study drug is safe and effective in slowing down the progression of lung damage in patients with alpha1-antitrypsin deficiency (AATD). The study drug is made from blood plasma donated from humans, and is designed to increase the concentration of AATD in the body to prevent or slow down lung damage in patients with AATD.

BRONCHIECTASIS

The Clinical Trials Unit tested two new inhaled antibiotics targeting bacteria in the airway to reduce airway inflammation. This study is ongoing and both treatments appear to be very promising.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Three COPD trials were carried out by the Clinical Trials Unit. Firstly, a new inhaler to see whether the way it has been developed works better than those currently available for managing COPD.

Secondly, a new medication which was intravenously administered to COPD patients was trialed. This medication has previously been trialled with asthma patients in the Clinical Trials Unit, focusing on treatment to the cellular component of COPD.

Thirdly, an inhaled therapy, combining three approved medications into one. This ongoing trial is looking promising for patients.

The Stem Cell Unit is currently studying the effects of mesenchymal stem cell (MSC) treatment and the role of exosomes on inflammation and immune cells of COPD patients.

The Stem Cell Unit is investigating the role of Tregs and T-cell co-inhibitory receptors (e.g. PD-1, CTLA-4) in regulating anti-bacterial responses of T-cells and monocytes from patients with COPD.

CYSTIC FIBROSIS (CF)

P. aeruginosa is the most common bacterial pathogen affecting adults with CF. Person to person transmission of P. aeruginosa strains can occur amongst individuals with CF. Infection control plays an important role in halting cross transmission. At present, systematic surveillance for cross-infection is not routinely performed in most CF centres, therefore the efficacy of current infection control guidelines is unknown. To address these clinical issues, the Cystic Fibrosis Research Unit has undertaken a study to investigate molecular epidemiology of P. aeruginosa strains in patients with CF attending the WA Adult CF centre at Sir Charles Gairdner Hospital. This project assesses the point prevalence of bacterial strains using established molecular strain typing methods. This project will build up local capacity for systematic molecular surveillance of P. aeruginosa strains, as well as establish a comprehensive biobank of bacterial and sputum samples from individuals for future research. Results of this study will provide important information to evaluate and update the Unit's current infection control policies.

Early detection of pulmonary exacerbations might improve treatment success in CF. To facilitate earlier detection of CF pulmonary exacerbations, the Cystic Fibrosis Research Unit has collaborated with the Physiotherapy Unit in the development of a novel smartphone application that allows patients to report their symptoms to the CF team at Sir Charles Gairdner Hospital. The smartphone application is currently being used in a randomised controlled trial, investigating its impact on the number of respiratory exacerbations requiring intravenous antibiotics in adults with CF.

The Cystic Fibrosis Research Unit is investigating gastrointestinal infection in CF. Patients with CF are often exposed to intensive antibiotics. As a result, patients often suffer from antibiotic related gastrointestinal complications. Clostridium difficile (C. diff) is a gut bacteria which can cause serious gastrointestinal complications in humans. Patients with CF are at increased risk of being colonised or infected with C. diff which has potentially significant clinical implications, particularly post lung transplant. This study investigates the prevalence, molecular epidemiology and clinical impact of C. diff amongst adults with CF, with a view to improve strategies to prevent and eradicate C. diff in CF. The study also investigates the role of gut microbiome in CF and the potential therapeutic role of probiotics.

People with CF have reduced exercise capacity, which is associated with lower self reported health related quality of life and survival. Due to a high daily treatment burden involving medication, nutritional supplementation and airway clearance, it can be difficult for people with CF to incorporate exercise into their daily routine. The Cystic Fibrosis Research Unit and Physiotherapy Department at Sir Charles Gairdner Hospital, in conjunction with Curtin University, are undertaking a randomised controlled trial to investigate the effectiveness of a cycling-based, high intensity interval training (HIIT) program on exercise capacity in people with CF. The HIIT program will comprise of 10 minutes of exercise completed three days per week for eight weeks.

The Clinical Trials Unit in collaboration with the Cystic Fibrosis Research Unit continued clinical trials of drugs that target the protein which is defective in CF as a result of genetic mutations. One of the therapies the Institute was involved with was approved by the Therapeutic Goods Administration in Australia for Delta 508 homozygous patients, and still awaits approval by the PBS. The unit also participated in another CF study for the G551D mutation and successfully completed the study in 2016.

IDIOPATHIC PULMONARY FIBROSIS (IPF)

The Clinical Trials Unit is one of several centres internationally that is conducting a trial of a new medication for IPF. The trial aims to address the efficacy and safety of a new medication that shows potential for treating this ultimately fatal condition.

The Tissue Repair Unit continued to address IPF at a molecular level. The cause of IPF is unknown but it is widely accepted that repeated injury to the epithelium leads to dysregulated healing, initiating a cascade of processes resulting in fibroblast / myofibroblast accumulation and overproduction and deposition of collagen. The Tissue Repair Unit have pioneered studies identifying the gp130-induced signal transducer and activator of transcription STAT3 signalling pathway as pivotal in the development of lung fibrosis. What regulates STAT3-mediate fibrosis is not clear, but their current studies are focusing on understanding the role of mediators known to activate the pathway, cell types that may be regulating the mediator response, as well as a possible breakdown in regulation of the naturally occurring inhibitors that normally control the STAT3 response.

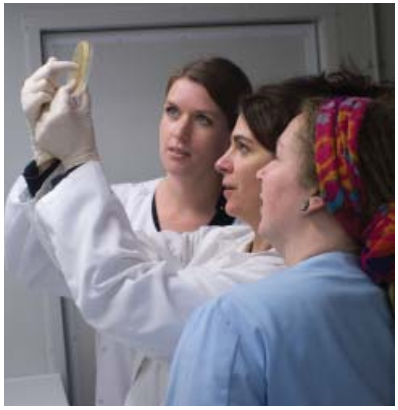
The Tissue Repair and Molecular Genetics and Inflammation Units continue to collaborate on the genetic analysis of IPF samples, with an aim of exploring the mechanisms in the development of IPF.

The Molecular Genetics and Inflammation Unit continues to manage the National biobank for IPF. They collect, process and store samples from IPF patients for an Australia-wide collection. This biobank aims to enrol all Australians with IPF so that the data collected can help researchers learn more about this serious disorder.

In collaboration with Assoc Prof Yuben Moodley, the Molecular Genetics and Inflammation Unit is also exploring the bio-markers for IPF. Using the samples collected in the IPF biobank, they are examining the protein and RNA signatures of the disease progression.

LUNG REGENERATION

The ability of tissue is highly variable across species with many amphibians regenerating tails, limbs and even eyes. In humans, this capacity is more limited, although this varies from one tissue to another. The lung's regenerative capacity is now recognised to be much more rapid than previously thought, even in the adult human. Prof Geoff Laurent, together with Dr Cecilia Prêle and Dr Andrew Lucas are investigating the molecular and cellular cues that drive regenerative lung growth and how they differ in young vs ageing lungs. Understanding the mechanisms of this growth and its capacity in humans will open up transformational research programs that may allow us to cure chronic lung diseases that are currently seen as untreatable.



RESPIRATORY CANCER

MESOTHELIOMA

Limited treatment options in Mesothelioma lead to a short median survival, and clinical management is hampered by the lack of molecular bio-markers for diagnosis/prognosis. There is growing evidence that short non-coding RNAs such as microRNA (miRNA), are useful bio-markers in cancer. Studies in the Tissue Repair Unit are trying to determine the diagnostic and prognostic potential of miRNAs in serum and pleural effusion fluids and cells from patients with mesothelioma compared with other diseases. The Unit is working on a project seeking to determine if differentially expressed serum miRNAs are early disease markers. miRNA also have important biological roles within cells, so the Tissue Repair Unit is also looking at the biological significance of certain miRNAs in mesothelioma.

Increasing evidence is pointing to the reactivation and aberrant expression of developmental signalling pathways, such as the hedgehog (Hh) pathway, as critical to the pathogenesis of certain cancers. The Tissue Repair Unit has undertaken a study which demonstrated that Hh pathway signalling is important in the growth of mesothelioma and are examining different antagonists to identify the best possible therapeutic approach to inhibit mesothelioma growth, and to elucidate the mechanisms the Hh pathway uses to promote tumour growth.

The Pleural Disease Unit employs various *in vitro* techniques and preclinical models to investigate novel therapies for benign malignant pleural disease, including malignant pleural mesothelioma (MPM). FGF-9 is an exciting and novel target uncovered from global gene profiling of human MPM samples. The Unit has verified over expression of FGF-9 in MPM over other cancers and benign pleuritis in five separate cohorts of human pleural tissues and effusions. Preliminary *in vitro* work shows that FGF-9 induces mesothelioma cell proliferation and matrix invasion, and knock down of FGF-9 retards MPM growth in mice. This data is the first to suggest a central role of FGF-9 in the biology of MPM. Current studies are aimed at assessing anti-FGF-9 strategies for clinical translation. In addition, findings show that FGF-9 inhibits the anti-tumour immune response in mesothelioma. The Unit is currently determining the mechanism for this novel role for FGF-9.

Malignant pleural effusion (MPE) develops when cancer causes abnormal accumulation of fluid (usually litres) in the pleural cavity between the outside of the lung and the chest wall. Most (95%) MPM patients develop MPE during the disease course. It is commonly thought that the pleural effusion is simply a by-product of cancer involvement of the pleura. The Pleural Disease Unit is currently determining why MPM stimulates the production of such large volumes of fluid and to establish that the malignant pleural fluid produced by MPM significantly enhances tumour cell proliferation, migration, and invasion. These findings will reveal the formation of malignant effusion as part of a biological programme by which MPM facilitates its own growth and spread. It will challenge the conventional belief that the malignant effusion is a by-product of pleural cancers and will have a significant impact on clinical care strategies. The Unit is also investigating the role of MCP-1 in the development of pleural effusions from a variety of etiologies using clinical and pre-clinical models.

No study to date has examined how appropriately tailored exercise could reduce functional decline, and provide a non-invasive supportive intervention for those with malignant pleural disease. The Pleural Medicine Unit are currently investigating the development of an intervention designed to counteract the poor outcomes, enhance quality of life and improve daily functioning in this patient population. The result may have a significant impact on clinical care.

Malnutrition and sarcopenia have been shown to significantly affect survival, quality of life and physical functioning in other cancers, but their role in mesothelioma has not been examined. The Pleural Medicine Unit are currently researching the incidence, progression, consequences and mediators of malnutrition and sarcopenia in mesothelioma.

The Occupational and Respiratory Health Unit conducted a randomised study examining the effects of early palliative care for patients with mesothelioma (RESPECT-meso). The aim of the project was to determine whether a patient's quality of life is improved with the addition of regular early palliative care, in addition to all normal care provided. The study finished recruitment in late 2016 and the results are expected in late 2017.

PLEURAL EFFUSION

The Pleural Medicine Unit is currently conducting the Pleural Effusion and Symptom Evaluation Study (PLEASE). The study aims to identify key factors that underlie breathlessness in pleural effusion patients and develop predictors of improvement in breathlessness following effusion drainage.

An international AMPLE randomized clinical study was conducted during 2015 by the Pleural Medicine Unit.

The study compared indwelling pleural catheter (IPC) with pleurodesis in the management of malignant pleural effusion. The study is now completed and analysis of the data is underway.

The Pleural Medicine Unit also leads the Australasian Malignant Pleural Effusion Trial-2 (AMPLE-2). It is a multi-centre open-labeled randomized trial. Patients with MPEs are randomized to either aggressive (daily) or symptom guided drainage regimes after IPC insertion. The aim is to determine which regime is superior in improving clinical outcomes.

LUNG CANCER

The Occupational and Respiratory Health Unit have developed the LungScreen WA Project. In 2011, the results from the National Lung Screening Trial in the US reported a 20% reduction in lung cancer mortality when CT was used to screen high-risk current and former smokers compared to chest x-ray alone. Many questions regarding implementation of screening in Australia remain unanswered, including how to properly identify high-risk patients and the cost utility of the process.

PATIENT CARE

The Occupational and Respiratory Health Unit completed a randomised controlled patient preference study examining the utility of advanced care planning (ACP) for patients with severe respiratory disease. The project recruited 149 patients and examined their health care utilisation (with particular emphasis on expenditure) with or without bespoke ACPs in place. Nurse-led discussions around end of life care resulted in significantly more ACPs and patients with a higher symptom burden showed greater interest. Final healthcare economic analyses are ongoing.

INFECTIOUS DISEASES

PLEURAL INFECTION

Pleural infection is associated with considerable morbidity and mortality. Effective removal of the infected pleural fluid and efficient delivery of appropriate antimicrobial therapy are the two principles of treatment. The Pleural Medicine Unit has recently shown that the novel treatment tPA and DNase, when given intrapleurally successfully cures, without needing surgery 90+% of patients who failed antibiotic treatment and simple drainage. The Unit is continuing to establish the safety and efficacy of intrapleural tPA/DNase therapy through a comprehensive follow-up program and a multinational patient registry.

Examination into the effects of common bacteria in pleural infection and their biological effects on pleural mesothelium *in vitro* and *in vivo* continued. The Pleural Medicine Unit identified key mediators governing the development of pleural infection and provided proof of concept data that antagonising these mediators can reduce bacterial invasion of the pleural cavity, potentially leading to new therapeutic approaches.

Research on the effects of bacterial infection on the resident mesothelial cells and pleural fluid is also being conducted by the Pleural Medicine Unit. The aim is to better understand the infective process which may lead to therapeutic optimization.

The Pleural Medicine Unit is also taking part in a collaborative study with the Oxford Respiratory Trials Unit, UK. The study is looking at patients who come into hospital with pleural infection. PILOT is an observation study which hopes to determine the capacity of baseline clinical information together with a specific prediction model to anticipate how well patients respond to treatment.

CLINICAL TRIALS

The Institute's Clinical Trials Unit is the largest respiratory trials clinic in Australia. In 2016, the Unit conducted 19 clinical trials with 240 patients across all studies.

The trials were sponsored by a range of Australian and international pharmaceutical and biotech companies for asthma, chronic obstructive pulmonary disorder (COPD), bronchiectasis, cystic fibrosis (CF), alpha 1-antitrypsin deficiency, idiopathic pulmonary fibrosis (IPF), Systemic Sclerosis-Related Pulmonary Arterial Hypertension and people with cardiovascular risk factors.

All of today's standard treatments for respiratory conditions are a result of clinical trials. The trials are completed over years of testing, some of which have been conducted by the Institute for Respiratory Health.

Our medical team is made up of Consultants, Doctors, Registered Nurses and health science professionals.

Patients are closely monitored, with regular health checks in the clinic. The Unit has a collaborative relationship:

- Dr Martin Philips on asthma, COPD bronchiectasis, alpha 1-antitrypsin deficiency and idiopathic pulmonary fibrosis (IPF),
- Assoc Prof Siobhain Mulrennan on cystic fibrosis trials.
- Prof Joe Hung, on a study to assess whether the pneumococcal vaccination protects against cardiovascular disease.
- Assoc Prof Eli Gabbay on a study looking at people with Systemic Sclerosis-Related Pulmonary Arterial Hypertension.

Highlights from clinical trials conducted during 2016 can be found in Research Overview 2016.

L I F E

LUNG INFORMATION AND FRIENDSHIP FOR EVERYONE

L I F E continues to offer both fellowship to people living with chronic lung conditions and information about living well.

With about 80 members, L I F E is the community support arm of the Institute. This year they celebrated 25 years since L I F E was started by the late Edna Brown.

Over the past year L I F E have held 10 regular meetings, as well as the annual Christmas party.

The meetings covered many interesting topics, from early medicines and improving balance, to consumer-directed care, adult literacy tutoring, aged care rights and responsibilities, genetics and lung disease and growing new lungs. In addition L I F E have met for seasonal lunches in autumn, winter and spring at cafes and pubs round Perth.

Jenni Ibrahim continued to publish the quarterly Breath of L I F E magazine and revised the Guide to Flying with Oxygen, downloadable from the L I F E area of the Institute's website. L I F E volunteers have responded to many phone and email enquiries from people seeking information about living with lung conditions.

In November 2016 they promoted lung disease awareness at an expo at Woodvale shopping centre, joining sister group Pulmonary Hypertension Australia Network. L I F E volunteers spoke to people about lung conditions and handed out pamphlets and business cards.

Throughout 2016 a working bee of volunteer members continued to assist the Institute's Clinical Trials Unit, sorting out medical kits and making up patient files.

The Lung Leaders' Network has really taken off after its initial meeting in November 2015. L I F E hosted three more meetings of leaders of other Western Australian respiratory support groups this year.

Thanks to a small grant from ConnectGroups, the peak body for self-help and support groups, a laptop was purchased and lung leaders were reimbursed for out-of-pocket expenses to attend meetings.

The group is looking ahead to strengthening links with the Life of Breath interdisciplinary research project in the UK, investigating breath and breathlessness across scientific, health and humanities. Letter to My Lungs Workshops are set to be held in 2017, based on the work of Elspeth Penny.

PARTNERSHIPS

WESTCARE INC

The Alan King Westcare Grant is made possible by a generous annual donation of $50,000 from Westcare Inc.

The Institute formed the partnership with Westcare Inc, based on a common interest in lung disease and disability. We share a mutual concern about lung infections and in particular tuberculosis, and their continuing impact on the community, our indigenous populations and our neighbouring countries.

The grant is named in honour of Dr Alan King, a pioneering West Australian respiratory physician who was instrumental in establishing Westcare Inc.

Thanks to the support of Westcare Inc, we have been able to award $300,000 towards research into infectious diseases over the past six years.

MELBOURNE CUP COMMITTEE

The Melbourne Cup Luncheon is now in its 14th year and is held at the State Reception Centre at Fraser's, King Park, with over 350 guests in attendance.

The event is run by a small group of passionate volunteers. No one is paid and everything besides the discounted food Fraser's provide is either, sponsored, gifted, begged for or borrowed.

Over the last six years, the fundraising event has raised over $335,000, going towards research into cystic fibrosis.

Janeine Thomas and the MC Committee, (Helen De Brito, Suzanne Sheridan, Pam Barnett, Lisa Fast and Dot McKean) set aside countless hours in planning, preparing and delivering a unique and memorable experience.

Image courtesy of Janine Spinas Photography.

CONQUER CYSTIC FIBROSIS

Established in 2002, Conquer Cystic Fibrosis are dedicated group of volunteers whose goal is to increase awareness of cystic fibrosis (CF) and to raise funds to help support services, treatments and research in the hope of improving life expectancy and, ultimately, finding a cure for children and friends with CF. Just like the MC Committee, no-one at Conquer Cystic Fibrosis is paid.

Commencing in 2016, Conquer Cystic Fibrosis made the extraordinary commitment of donating $200,000 over the next five years, towards developing a CF Research Program here in WA. Coupled with the Institute's own contribution to support research, the new partnership has seen the implementation of postgraduate PhD Scholarships and grant funding.

FUNDING RESEARCH

We are grateful to Westcare Inc, the Melbourne Cup Committee and Conquer Cystic Fibrosis for helping to fund specific areas of respiratory research. The Alan King Westcare Grant for investigation into infectious lung disease, the Glenn Brown Memorial Grant for investigation into cystic fibrosis and bronchiectasis and the Conquer CF PhD scholarship and grant program. The grants and scholarships are administered by independent, voluntary scientific committees which select the winners.

> "THE MOST IMPORTANT THING TO OUR COMMITTEE IS RESEARCH. WHY?
>
> THE LIFE EXPECTANCY IN AUSTRALIA FOR PEOPLE WITH CF IN THE 1960'S WAS FIVE YEARS OLD – TODAY IT'S 35.
>
> CONQUER CF COMMITTEE

GRANTS & SCHOLARSHIPS

WINNERS FOR 2016

ALAN KING WESTCARE GRANT

Dr Holly Clifford, Telethon Kids Institute.
'Environmental dust exposure and bacterial lung infections and their impact in remote Aboriginal Australian communities.'

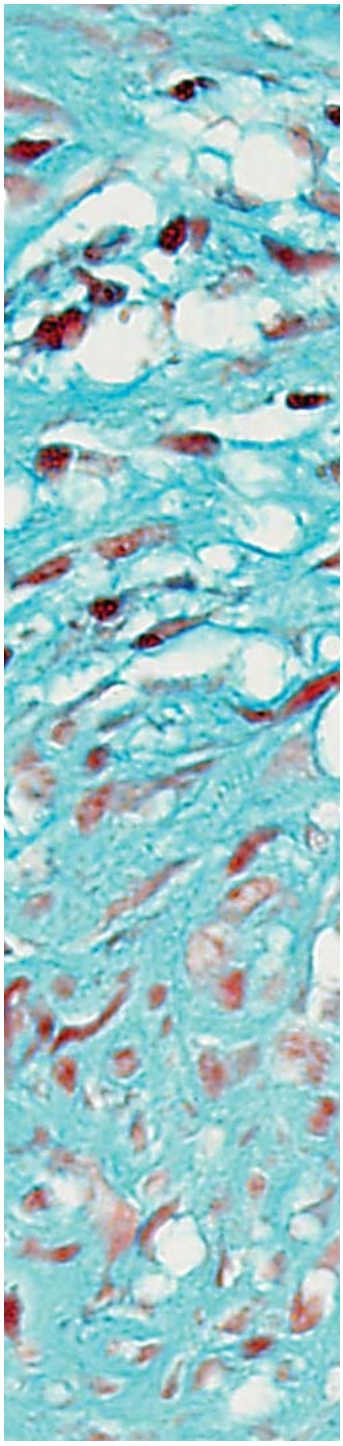
John Mitchell, Westcare CEO with Dr Holly Clifford.

GLENN BROWN MEMORIAL GRANT

Assoc/Prof Graham Hall, Telethon Kids Institute.
'An assessment of sensitive outcome measures for monitoring pulmonary exacerbations in young children with cystic fibrosis'.

Helen DeBrito, MC Committee Member with Dr Andre Schultz (on behalf of Assoc Prof Hall).

Banner mage courtesy of Warnock Imagery .



CONQUER CYSTIC FIBROSIS PHD SCHOLARSHIP PROGRAM

Alishum Ali, University of Western Australia
'Molecular microbiology of complex respiratory infections: in cystic fibrosis and empyema'.

Abbey Sawyer, Curtin University
'What is the most appropriate form of high intensity interval training (HIIT) in the cystic fibrosis (CF) population and does this type of training improve exercise capacity and adherence to exercise in adults with CF?'

Abbey Sawyer with Wendy Endebrock-Brown, CCF Committee Member.

Wendy Endebrock-Brown, CCF Committee Member with Alishum Ali.

CONQUER CYSTIC FIBROSIS GRANT

Dr Anna Tai, Respiratory Consultant for Sir Charles Gairdner Hospital.
'Clostridium difficile infection in adult patients with cystic fibrosis in Western Australia (WA): disease burden and clinical impact'.

Dr Annai Tai with Wendy Endebrock-Brown, CCF Committee Member.

EVENTS

ALAN JAMES LUNG CLUB

Prof Alan James
WASDRI
'I won't retire but I might retread.' (N. Young)

Ms Sophie Sneddon
NCARD, UWA
'The mutational characterisation of human and murine mesothelioma.'

Dr Anna Tai
Sir Charles Gairdner Hospital
'Microevolution of antimicrobial resistance of Pseudomonas aeruginosa in cystic fibrosis.'

Ms Emily Jeffery
Sir Charles Gairdner Hospital
'The nutritional status and body composition of mesothelioma patients.'

Dr Asger Bjerregaard
Bispebjerg Hospital, Denmark
'RAGE signalling in asthma.'

Dr Steven Oo
Princess Margaret Hospital
'Asthma/wheeze and rhinovirus species.'

Mr Joe Jasa
Institute for Respiratory Health
'Assessing the role of the IGF-1 growth factor axis in lung regeneration following pneumonectomy.'

Ms Kath Maddison
Centre for Sleep Science, UWA
'Upper Airway Collapsibility and the Influence of Head Posture, State and Instrumentation.'

Prof Alan James
WASDRI
'Is fixed airflow obstruction due to too much matrix in the airway smooth muscle layer?'

VISITING SPEAKER

Prof Raffaele Dellacà
Department of Bioengineering
Milan Politecnico Di Milano, Italy
'Personalised monitoring of respiratory function in geographically remote locations.'

WORKSHOP

'Multi-disciplinary approaches for biomedical research workshop.'
In partnership with Centre for Cell Therapy and Regenerative Medicine and School of Electrical, Electronic and Computer Engineering, UWA.

PARTNERSHIP EVENT

The Celebrating Research Partnerships event, held in November, provides an opportunity for supporters and members to celebrate coming together for respiratory research. During the evening, the Glenn Brown Memorial Grant, the Alan King Westcare Grant and the Conquer Cystic Fibrosis Research scholarship and grant winners were announced.

RESPIRATORY WELLNESS PROGRAM

During 2016, the Institute ran a pilot Respiratory Wellness Program for members, colleagues, and corporations. The program consisted of a non-evasive health assessment with a wellness team member from Curtin University, who was supervised by an accredited exercise physiologist.

Based on results of the assessment, a tailored three month program was designed for each participant. The final stage of the program was a three month follow up session to assess the health improvements of the participants. A special thank you goes to Tristan Hellings who supervised Curtin Students; Emily Dannie Butcher, Jade Bogle, Emily Tann and Tristan Sherry.

COMMUNITY SUPPORT

Thanks to all of our donors, members and fundraisers for your support in 2016, especially to the people who ran their own fundraising morning tea or family and friend sundowner - we couldn't do it without you!

HBF RUN FOR A REASON

12 different teams and single runners/walkers came together in support of a loved one who has a respiratory condition or to show gratitude to one of our doctors, nurses or scientists. Together, over $21,000 was raised. A sincere thank you goes out to the following supporters who ran or walked:

Team Cahill
Team Girl Stuff
Team Linked
Team Mcgregor
Team Mel
Team Meyrick
Team Poppa Smurf (pictured)
M Dunn
P Wright
B Vfssv

VOLUNTEERS

The Institute is grateful to the volunteers who gave their time and shared their skills during one of the many events, programs and activities run throughout the year.

Jenni Ibrahim
L I F E Busy Bee Helpers
Claire Bott
Teresa Le
Sascha Van Wieringen
Natasha Redknap
Caitlin Fiander
Dannie Butcher
Jade Bogle
Emily Tann
Tristan Sherry

MAJOR GIFT GIVERS

Individuals
MA Brown
G Chapkhana
W Darby
J Wilder
A Jha
W Flynn
M Sebbs
B Fitzgerald
WH & N Barratt
J Price
B Vfssy
K Dunn
J Barratt
D Calcei
D Lombardi
J Bontempo
S Jackson-Pike

Corporates
Westcare Inc

Community Groups
Melbourne Cup Committee
Conquer Cystic Fibrosis

Sponsorship
Lotterywest Grant

MEMBERS

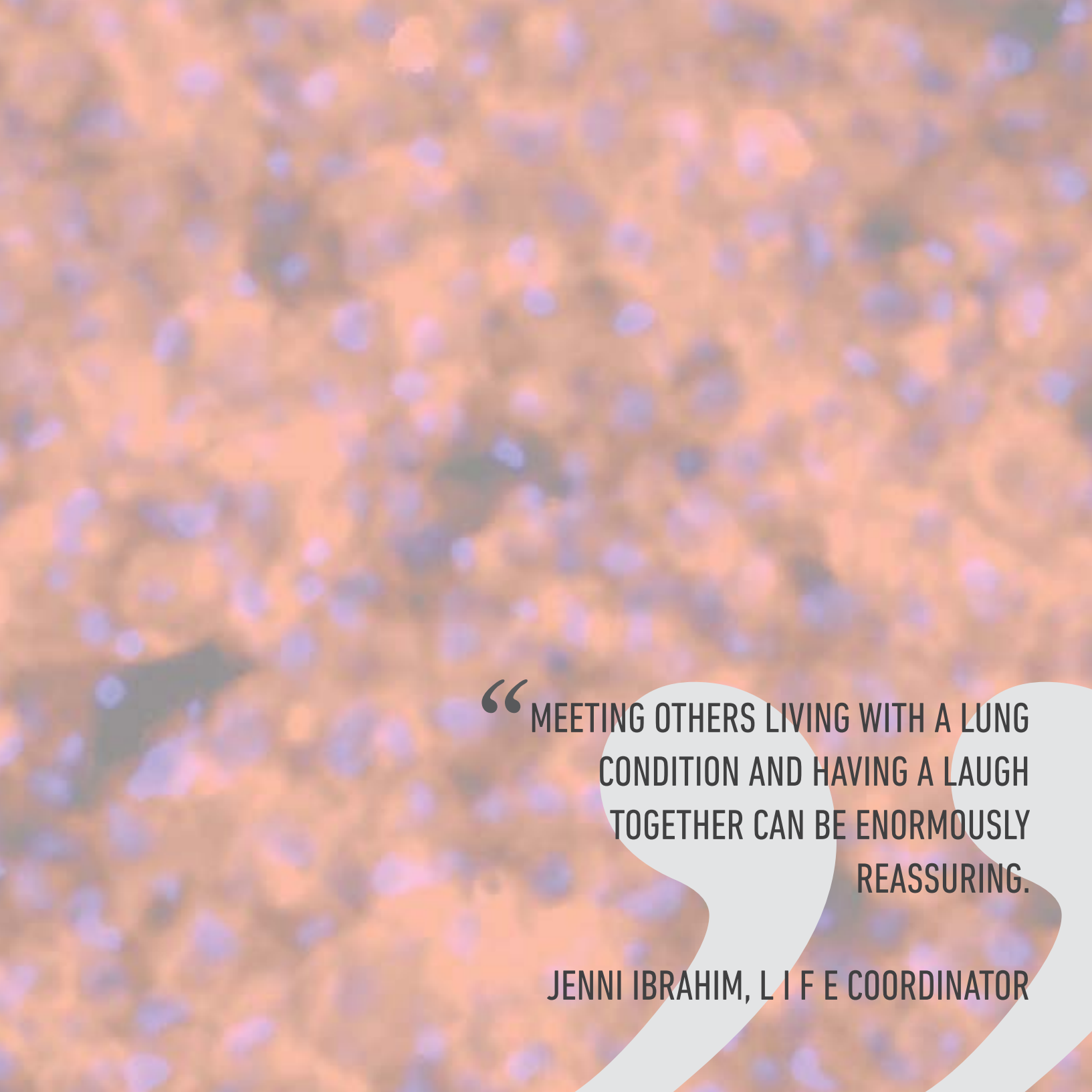
The Institute continues to be well supported by a strong support of members, who represent a wide cross-section of individuals with an interest in respiratory research.

The Institute endeavoured to engage its membership as much as possible during 2016, with sending e-newsletters, social media posts, event invitations and assisting L I F E with its quarterly mailout.

Community, Medical / Scientific, and Corporate members are all valued categories.

Corporate Member
Turner Freeman Lawyers

L I F E Volunteers organising the mailout for Breath of LIFE magazine.



“MEETING OTHERS LIVING WITH A LUNG CONDITION AND HAVING A LAUGH TOGETHER CAN BE ENORMOUSLY REASSURING.

JENNI IBRAHIM, L I F E COORDINATOR

EDUCATION INITIATIVES

PHD SCHOLARS

Alishum Ali, University of Western Australia
Research Unit: Cystic Fibrosis Research.
Project Title: 'Molecular microbiology of complex respiratory infections: in cystic fibrosis and empyema.
Supervised by: A Tai, YCG Lee.

Jesse Armitage, University of Western Australia.
Research Unit: Stem Cells.
Project Title: 'The effects of MSC infusion on inflammation and immune regulation in COPD patients'.
Supervised by: Y Moodley, D Tan.

Kimberly Birnie, University of Western Australia.
Research Unit: Tissue Repair.
Project title: 'miRNA in Malignant Mesothelioma.'
Supervised by: SE Mutsaers, CM Prêle, B Badrian, PJ Thompson.

Hui Min Cheah, University of Western Australia.
Research Unit: Pleural Diseases.
Project Title: 'Biological Activity of Malignant Pleural Effusion in Mesothelioma.'
Supervised by: YCG Lee.

Lengsea Eng, University of Western Australia
Research Unit: Cystic Fibrosis Research.
Project Title: Prospective cross-sectional surveillance of incidence, prevalence and molecular epidemiology of C. difficile infection in patients with CF in Western Australia.
Supervised by: A Tai, S Mulrennan, TV Riley.

Deirdre Fitzgerald, University of Western Australia.
Research Unit: Pleural Diseases.
Clinical Pleural Fellow, MD student.
Supervised by: YCG Lee.

Emily Jeffery, Edith Cowan University
Research Unit: Pleural Diseases.
Project Title: 'Nutritional status, body composition and the effects of an exercise intervention on patients with malignant pleural mesothelioma'.
Supervised by: YCG Lee, R Newton.

Kieran Mulroney, University of Western Australia.
Research Unit: Pleural Diseases.
Project Title: 'Infectious diseases'.
Supervised by: YCG Lee, A Chakera.

Sanjeevan Muruganadan, University of Western Australia.
Research Unit: Pleural Diseases.
Project Title: 'AMPLE-2 and PLEASE study'.
Supervised by: YCG Lee.

Dr Natalia Popowicz, University of Western Australia.
Research Unit: Pleural Diseases.
Project Title: 'Novel Pharmacological Therapy for Pleural Infection'.
Supervised by: YCG Lee.

Abbey Sawyer, Curtin University.
Research Unit: Physiotherapy.
Project Title: 'Effect Of High Intensity Interval Training On Exercise Capacity In People With Cystic Fibrosis: A Randomised Controlled Trial'.
Supervised by: K Hill, V Cavalheri, S Jenkins.

Jamie Wood, Curtin University.
Research Unit: Physiotherapy.
Project Title: Cystic fibrosis: Does the integration of Telehealth with usual care improve health related outcomes?
Supervised by: K Hill, S Jenkins.

Joe Yasa, Murdoch University.
Research Unit: Tissue Repair.
Project Title: 'The role of IGF-1 in lung regeneration'.
Supervised by: R Mead, GL Laurent, A Lucas, CM Prêle.

MASTERS SCHOLARS

Maree Azzopardi, University of Western Australia.
Research Unit: Pleural Diseases.
Project Title: 'Improving the Care of Patients with Malignant Pleural Effusions'.
Supervised by: YCG Lee.

Dr David Manners, University of Western Australia.
Research Unit: Occupational and Respiratory Health.
Project Title: 'Developing a patient Decision aid for lung cancer screening'.
Supervised by: F Brims.

HONOURS SCHOLARS

Aleksandar Stranatic, University of Western Australia.
Research Unit: Molecular Genetics.
Project Title: 'Differential expression of splice variants play a vital role in pathogenesis of asthma and asthma severity'.
Supervised by: S Baltic, PJ Thompson, A Currie.

Natalie Vasilevski, Curtin University
Research Unit: Molecular Genetics.
Project Title: 'Novel SETD7 splice variant affects cell response to bacteria'.
Supervised by: S Baltic, PJ Thompson.

RESEARCH ACTIVITIES

AWARDS

Armitage J. TSANZ, TSANZ Best Poster Prize.

Jeffery E. Research Collaboration Travel Award. Edith Cowan University.

Lee YCG. Asian Pacific Society of Respirology. Michiyoshi Harasawa Research Award.

Lee YCG. Slater & Gordon Mesothelioma International Travel Award. Thoracic Society of Australia and New Zealand; Slater and Gordon.

Mutsaers SE. Cancer Council Western Australia, Cancer Research Career Achievement Award, 2016.

Prêle CM. University College London Global Engagement Office, Visiting Academic Award, Global Partnership Award.

Prêle CM. European Respiratory Society Travel Bursary for the ERS Lung Science Conference, Estoril, Portugal.

Mulrennan S, Tai A, Wood J. 'Telehealth: Improving care for adults with CF in rural and remote WA'. WA Health Excellence Awards - Overcoming Inequities Category.

INVITED PRESENTATIONS AND CHAIRMANSHIP

INTERNATIONAL

Armitage J. Invited speaker. 'Mesenchymal stem cell infusion modulates systemic immune responses in patients with chronic obstructive pulmonary disease'. ICI, Melbourne.

Brims F. Invited speaker. 'Global perspectives on the health effects of asbestos'. Sri Lankan College of Pulmonologists Annual Scientific Meeting.

Lee YCG. Invited speaker. 'An upside down view of the future of pleural medicine and results from recent Australian pleural RCTs'. British Thoracic Society Annual Conference, London, UK.

Lee YCG. Invited speaker. 'Pleural ultrasonography for management of pleural diseases'. Hong Kong Thoracic Society Autumn Respiratory Seminar, Hong Kong.

Lee YCG. Invited speaker. 'Pleural diseases: the past, recent advances and what lies ahead'. Asian Pacific Society of Respirology Annual Congress, Bangkok, Thailand.

Lee YCG. Invited speaker. 'Latest multicentered randomized trials in pleural disease'. American College of Chest Physicians Conference, Los Angeles, USA.

Lee YCG. Invited speaker. 'Pleuroscopy/medical thoracoscopy: Updates and advances'. 'Malignant pleural effusion: IPC the final frontier?' 'Breaking news in pleural medicine: Evidence so far'. Malaysian Association of Bronchology & Interventional Pulmonology Annual Meeting. Kota Kinabalu, Malaysia.

Lee YCG. Invited speaker. 'Designing and conducting research in malignant pleural effusion'. European Respiratory Society Annual Scientific Meeting, London, UK.

Lee YCG. Invited speaker. 'Translational advances in pleural diseases: What clinicians need to know'. American Thoracic Society International Conference, San Francisco, USA.

Lee YCG. Invited speaker. 'New strategies in the management of pleural infections'. Hong Kong Medical Forum, Hong Kong.

Lee YCG. Invited speaker. 'What is new in pleural diseases'. Lebanese Pulmonary Society Annual Meeting, Beirut, Lebanon.

Lee YCG. Invited speaker. 'Diagnosis and management of malignant pleural effusion'. CHEST World Congress, Shanghai, China.

Lee YCG. Invited speaker. 'Towards personalized lung cancer management – malignant pleural effusion'. St Luke's Medical Centre 2nd International Lung Cancer Symposium, Manila.

Prêle CM. Invited speaker. 'Jak/STAT signalling in IPF'. Comprehensive Pulmonology Centre, Helmholtz Zentrum, Munich.

Prêle CM. Invited speaker. 'Immune cell regulation in IPF'. Centre for Inflammation and Tissue Repair Meeting Series, UCL Respiratory, University College London, London, UK.

Tan D. Invited speaker. 'Improving anti-bacterial immune responses in patients with COPD by blocking inhibitory T-cell receptors. ICI, Melbourne, VIC.

NATIONAL

Armitage J. Invited speaker. 'Mesenchymal stem cell infusion modulates systemic immune responses in patients with chronic obstructive pulmonary disease'. TSANZ Annual Scientific Meeting, Perth, WA.

Baltic S. Invited speaker. 'Novel SETD7 splice variant induces epigenetic changes affecting the function of asthmatic cells. TSANZ Annual Scientific Meeting, Perth, WA.

Brims F. Invited speaker. 'Occupational lung malignancies'. Postgraduate Occupational Lung Disease Course. TSANZ Annual Scientific Meeting, Perth, WA.

Brims F. Invited speaker. 'Asbestos related lung diseases'. Postgraduate Occupational Lung Disease Course. TSANZ Annual Scientific Meeting, Perth, WA.

Lee YCG. Invited speaker. 'Multi-centre clinical trials in pleural diseases' & 'Intrapleural therapy for pleural infection'. TSANZ Annual Scientific Meeting, Perth, WA.

Lee YCG. Invited speaker. 'Pleural effusion and symptom evaluation (PLEASE) study'. Royal Australian College of Physician Congress, (WA representative) Adelaide, SA.

Lee YCG. Invited speaker. 'Clinical Features of Lung Cancer and Mesothelioma'. Australia-Denmark Exercise Oncology Symposium, Edith Cowan University.

Lee YCG. Invited speaker. 'The Latest on managing pleural diseases'. Respiratory Insight Forum, Melbourne, VIC.

Lee YCG. Invited speaker. 'Pleural infection'. Novartis Respiratory Symposium, Melbourne, VIC.

Lucas A. Session Chair. 6th Margaret River Region Forum on Regenerative Medicine and 9th Australasian Society for Stem Cell Research Annual Scientific Meeting, WA.

Lucas A. Invited speaker. 'Can IGF-1 trigger regenerative lung growth in adult lungs?' School of Biomedical Sciences & Pharmacy, Seminar Series, University of Newcastle, NSW.

Mulrennan SE. Chair of discussion session. 'Pulmonary thromboembolism'. TSANZ Annual Scientific Meeting, Perth, WA.

Mulrennan SE. Invited speaker. 'Transition care in Cystic Fibrosis'. TSANZ Annual Scientific Meeting. Perth, WA.

Prêle CM. Session Chair. 6th Margaret River Region Forum on Regenerative Medicine and 9th Australasian Society for Stem Cell Research Annual Scientific Meeting, WA.

Tai A. Invited speaker. 'Diversity & dynamics of Pseudomonas aeruginosa (Pa) populations in cystic fibrosis (CF) pulmonary exacerbations - A battle of the strains?' TSANZ Annual Scientific Meeting, Perth, WA.

Tai A. Chair of poster presentation for the Cystic Fibrosis Special interest group (SIG). TSANZ Annual Scientific Meeting, Perth, WA.

Tan D. Invited speaker. 'Improving anti-bacterial immune responses in patients with COPD by blocking inhibitory T-cell receptors'. TSANZ Annual Scientific Meeting, Perth, WA.

LOCAL

Armitage J. Invited speaker. 'Mesenchymal stem cell infusion modulates systemic immune responses in patients with chronic obstructive pulmonary disease'. WA TSANZ ASM, AIM WA.

Armitage J. Invited speaker. 'Mesenchymal stem cell infusion modulates systemic immune responses in patients with chronic obstructive pulmonary disease'. WA ASMR symposium, Curtin University, Perth, WA.

Baltic S. Chair of ASMR, Perth, WA.

Lucas A. Invited speaker. 'The quest to grow new lungs!' L I F E group, Perth, WA.

Lucas A. Invited speaker. 'Longitudinal analysis of mouse lung volumes and densities utilising the Bruker Sky Scan microCT'. Multidiciplinary Approaches for Biomedical Research Workshop, Perth, WA.

Prêle CM. Invited speaker. 'Immune cell regulation in idiopathic pulmonary fibrosis'. Centre for Cell Therapy and Regenerative Medicine Annual Research Symposium, Perth, WA.

Tai A. Invited speaker. 'Discussant in the presentation on Antimicrobial resistant bacteria in CF. 'A night with the CF scientist'. Telethon Kids Institute, Perth, WA.

COMMITTEES AND BOARDS

INTERNATIONAL

Laurent GL. American Thoracic Society World Lung Health Committee.

Laurent GL. Long Range Planning Committee of Cell and Molecular Biology Assembly of the European Respiratory Society.

Laurent GL. Chairman for the International Colloquium on Pulmonary Fibrosis, International Lung Fibrosis Foundation.

Laurent GL. Member, WASOG Conference Scientific Committee.

Laurent GL. Editorial Board Member, European Respiratory Society (ERS).

Laurent GL. Editor-in-Chief, International Journal of Biochemistry and Cell Biology.

Laurent GL. Associate Editor, American Journal of Respiratory Cell and Molecular Biology.

Laurent GL. Section Editor, Fibrogenesis and Tissue Repair.

Laurent GL. British Thoracic Society, Advisory Board (Thorax).

Laurent GL. Member of Scientific Committee Board, SAB. Helmholtz Zentrum Munchen. Munich, Germany.

Laurent GL. Member of Advisory Board, BARD1AG.

Lee YCG. Editorial Board Member. Journal of Thoracic Diseases.

Lee YCG. Editorial Board Member. Respirology Case Report.

Lee YCG. Section Editor for Pleural Diseases. Current Respiratory Care Report.

Lee YCG. Editorial Board member. Plevra Bülteni (Turkish).

Lee YCG. Series Editor. Translational Respiratory Medicine.

Prêle CM. Organising and Scientific Committee, The Third UCL-Helmholtz Zentrum-UWA Collaborative Research Meeting, Perth.

Prêle CM. Deputy Section Editor, Fibrogenesis and Tissue Repair.

NATIONAL

Brims F. Member, Australian Mesothelioma Registry Management Committee, Cancer Institute NSW.

Laurent GL. Scientific Advisory Committee for Joint 6th Margaret River Region Forum and 9th ASSCR Annual Scientific Meeting, WA.

Prêle CM. Chair of the Organising Committee for Joint 6th Margaret River Region Forum and 9th ASSCR Annual Scientific Meeting, WA.

Prêle CM. Scientific Committee for Joint 6th Margaret River Region Forum and 9th ASSCR Annual Scientific Meeting, WA.

LOCAL

Armitage J. Member, Local committee, ASMR (WA branch).

Brims F. Chair, WA Mesothelioma Registry.

Baltic S. Member of the WA TSANZ Executive Committee.

Baltic S. Organiser, the Alan James Lung Club.

Baltic S. Chair of ASMR, Perth.

Lansley S. Secretary of the WA TSANZ Executive Committee.

Mulrennan SE. Member of the Drug and Therapeutics Committee, Sir Charles Gairdner Hospital.

Mulrennan SE. Respiratory Health Network Executive Advisory Group and Respiratory Health Network Advisory Group.

Mulrennan SE. Member of the WA TSANZ Executive Committee and organizing committee for TSANZ 2016.

Mulrennan SE. Vice Chair of the Busselton Population Medical Research Institute Board and Member of the Busselton Population Medical Research Institute Research Committee.

Mulrennan SE. Member of the Drug and Therapeutics Committee, Sir Charles Gairdner Hospital.

Mulrennan SE. Respiratory Health Network Executive Advisory Group and Respiratory Health Network Advisory Group.

Prêle CM. Chair of the Organising Committee for Bioengineering Workshop – Multi-Disciplinary Approaches for Biomedical Research Workshop, Perth.

Prêle CM. Organising and Scientific Committee for the CCTRM Annual Research Symposium 2016.

Prêle CM. Organising and Scientific Committee, CCTRM Annual Research Symposium, Perth 2016.

Tan D. Member, Local Committee, ASMR (WA branch).

Tan D. Treasurer, TSANZ (WA branch).

Tan D. Member, Local Committee, ASI (WA branch).

Thomas R. Executive member. WA TSANZ. TSANZ.

COLLABORATIONS

INTERNATIONAL

Prof Celeste Porsbjerg & Dr Asger Bjerregård. Bispebjerg Hospital, Denmark. 'Inflammatory markers in asthma exacerbations'.
Prof David Schwartz. University of Wisconsin. 'Assessing mutations in idiopathic pulmonary fibrosis'.

Prof Selma Kanazir. Institute for Biological Research, Sinisa Stankovic, Serbia. 'Polymorphism in the collagen type 1 alpha gene in premature ovarian failure'.

University of Portsmouth, Oxford Respiratory Trials Unit, University College London, Sir Charles Gairdner Hospital. 'An international multicentre randomised controlled trial examining the effect of early palliative care provision on quality of life for mesothelioma patients'.

University of Portsmouth, UK. 'The presence and provenance of coagulation factors in post-mortem specimens of lungs from fatal asthma and non-fatal asthma and controls'.

Prof Robin McAnulty. University College London. 'STAT3 regulation of cell responses in IPF'.

UWA School of Population Health, Brock University, Canada. 'Development and validation of risk models for lung cancer in asbestos exposed individuals'.

Prof Irmgard Irminger-Finger. University Hospitals Geneva (HUG). 'Bard1 in pulmonary fibrosis'.

Prof Sam Janes and Prof Robin McAnulty. UCL Respiratory, University College London. 'Investigating Gli as a novel therapeutic target in malignant mesothelioma'.

Dr Najib Rahman, Prof Fergus Gleeson & Prof Nick Maskell. Oxford Pleural Unit and Bristol Pleural Unit, UK. 'MIST-2', 'TIME 1, 2, 3' and 'SMART' Clinical Trials.

14 centres in Australia, NZL, HK, Singapore & Malaysia. AMPLE Clinical Trial Network.

NATIONAL

University of Western Australia, Royal Australasian College of General Practitioners and University of Queensland. 'Attitudes towards and understanding of lung cancer screening in General Practitioners in Australia'.

Prof Darryl Knight (University of Newcastle)**, Prof Matthias Ernst & Dr Rob O'Donoghue,** (Olivia Newton-John Cancer Research Institute)**, Erik Thompson,** (Queensland University of Technology). 'STAT3 regulation of cell responses in IPF'.

University of Queensland, University of New South Wales. 'Low dose CT scan for the early detection of lung cancer in high-risk smokers: an evaluation / demonstration'.

University of Western Australia, Royal Australasian College of General Practitioners and University of Queensland. 'Attitudes towards and understanding of lung cancer screening in General Practitioners in Australia'.

Dr Manuel Ferreira. QIMR Berghofer Medical Research Institute. 'Identifying genetic determinants for asthma'.

Prof Scott Bell. Adult CF Centre, The Prince Charles Hospital; QIMR Berghofer Medical Research Institute, Queensland.

Assoc/Prof David Whiley. University of Queensland Clinical Centre of Research. 'Systematic molecular surveillance of P. aeruginosa strains in patients with cystic fibrosis at Sir Charles Gairdner Hospital'.

Prof J Brown. UCL. 'Mechanism of bacterial invasion of pleural cavity'.

LOCAL

Prof Brendan McQuillan. University of Western Australia. 'Phamacogenetics of ADRbeta2 in cardiac disease'.

Prof Ryan Lister. Harry Perkins Institute. 'SETD7 in pathogenesis and severity of asthma'.

The Rural School of UWA, WA Department of Health and Edith Cowan University. 'A randomised controlled patient preference study examining the utility of advanced care planning in severe respiratory disease patients'.

Prof Bruce Robinson, Prof Jenette Creaney, Prof Roslyn Francis, Prof Anna Nowak. Clinical and bench mesothelioma research, novel imaging, development of biobank.

Dr Mark Fear and Professor Fiona Wood. Burns Injury Unit, University of Western Australia. 'Epithelial-mesenchymal cell communication in fibrosis'.

Prof G Waterer. University of Western Australia. 'Bacterial interaction with mesothelial cells and parapneumonic effusions'.

Prof Thomas Riley, Dr Claus Christophersen. Edith Cowen Univeristy. 'Prospective cross-sectional surveillance of incidence, prevalence and molecular epidemiology of C. difficile infection in patients with CF in Western Australia'.

National Centre for Asbestos Related Diseases, University of Western Australia and Sir Charles Gairdner Hospital. 'The genetic understanding of asbestos related disease'.

PathWest and Sir Charles Gairdner Hospital. 'The microbiology of pleural infection in Western Australia'.

National Centre for Asbestos Related Diseases, The University of Western Australia and Sir Charles Gairdner Hospital. 'The genetic understanding of asbestos related disease'.

Dr Joost Lesterhuis. National Centre for Asbestos Related Diseases, UWA. 'Identification of the molecular networks that drive mesothelioma invasion'.

Prof Jenette Creaney. National Centre for Asbestos Related Diseases, University of Western Australia . 'The effect of FGF9 on anti-tumour immunity in malignant mesothelioma'.

Adult CF Centre, Sir Charles Gairdner Hospital; The University of Western Australia. 'Systematic molecular surveillance of P. aeruginosa strains in patients with cystic fibrosis at Sir Charles Gairdner Hospital'.

Brown S, Keijzers G, Smith J. 'A randomised controlled trial of interventional versus conservative treatment of primary spontaneous pneumothorax'. Project Grant, National Health & Medical Research Council, Australia.

Prof Gerard Hoyne, University of Notre Dame. 'STAT3 regulation of cell responses in IPF'.

GRANTS

Brims FJH. Support for a research registrar for 1 year to work on the International Lung Screen Trial local recruitment. WA Cancer and Palliative Care Network cancer fellowship.

Brims FJH. Longitudinal cohort of asbestos removalists to study health effects. WA Cancer Council Collaborative Grant.

Knight D, Burgess J, Westall G, **Laurent GJ, Mutsaers SE**, **Prêle CM.** Fibroblast Scenecence as a diver of pulmonary fibrosis. NHMRC Project Grant.

Manuel Ferreira, Simon Phipps, **Philip Thompson**, Antiopi Varelias. Validation of PAG1 as a new risk gene with therapeutic potential for asthma. NHMRC Grant.

Lee YCG. Pleural Effusion And Symptom Evaluation (PLEASE) Study: A comprehensive study of breathlessness in patients with a pleural effusion . Project Grant, Sir Charles Gairdner Research Advisory Committee.

Lee YCG, Creaney J, Nowak A, Millward M and Musk AW. Phase II Trial of a Novel FGF-Receptor Antagonist in Mesothelioma. Project Grant, NSW Workers' Compensation Dust Disease Board.

Lee YCG. Maskell N, Murray K, Creaney J, Newton R and Thomas R. Australasian Malignant Pleural Effusion (AMPLE) Trial-2. Project Grant, Cancer Council of Western Australia.

Lesterhuis W, Bosco A, **Lee YCG**, Lake R and **Lansley S**. Identification of the molecular networks that drive mesothelioma invasion. Project Grant, Cancer Australia.

Robinson BW, Creaney J, Lake R, Nowak A, Musk AW, Lesterhuis W, **Lee YCG**, Francis R, Holt R and Waddell N. National Centre for Asbestos Related Diseases, Centre of Research Excellence Grant, National Health and MRC, Australia.

Lucas A, Giangreco A, **Prêle CM.** Can the rejuvenation of IGF-1 levels restore the capacity for lung regeneration? University of Western Austalia, Helmholtz Zentrum Munich, University College London. Seed funding.

Lucas M, Laurent GL, Prêle CM, Mutsaers SE, Eule U, Delriviere L. Role of IGF1 and IGF1R signalling in compensatory lung growth post-pneumonectomy. Sir Charles Gairdner Hospital Research Advisory Committee Grant.

Mutsaers SE. Cancer Council WA, Cancer Research Career Achievement Award.

Mutsaers SE. miRNAs in mesothelioma. Cancer Council WA Fellowship.

McAnulty R, **Mutsaers SE**, **Prêle CM**. Evaluating B-cell and JAK/STAT targeted therapies for lung fibrosis. British Lung Foundation, Pump Priming Grant.

Janes S, McAnulty R, **Mutsaers SE** and **Prêle CM**. Investigating Gli as a novel therapeutic target in malignant mesothelioma. British Lung Foundation. PhD Scholarship Grant.

Popowicz N. Optimising antibiotic (piperacillin/tazobactam) therapy in pleural infection and cystic fibrosis using a newly developed antibiotic assay. Project Grant, Sir Charles Gairdner Research Advisory Committee, Australia.

Prêle CM, Knight D, Fear M, McAnulty R, Wood F, **Laurent GJ**. Epithelial-mesenchymal cell communication; towards new therapeutic targets for fibrosis. NHMRC Project Grant.

Mutsaers SE, **Prêle CM**, Knight DA, O'Donoghue R, Hoyne G, **Laurent GJ**. STAT3 regulation of cell responses in IPF. NHMRC Project Grant. 2014-2017

Janes S, **Prêle CM** and Hynds R. Investigating HGF-induced STAT6 signaling in stromal-epithelial cell crosstalk. University of Western Austalia-Helmholtz Zentrum Munich-University College London Seed Funding Grant.

Tai A. Clostridium difficile infection in adult patients with cystic fibrosis in Western Australia (WA): disease burden and clinical impact. Conquer Cystic Fibrosis Research Program.

Tan D. Postdoctoral Medical Research Fellowship. Royal Perth Hospital, Medical Research Foundation.

Wood J, Mulrennan S, Jenkins S. Investigating the use of a smartphone application to reduce intravenous antibiotic use in cystic fibrosis. Sir Charles Gairdner Hospital Research Advisory Council Grant.

FELLOWSHIP

Thomas R. Clinical Post-doctoral Fellowship. Cancer Council of Western Australia.

PUBLICATIONS

BOOK CHAPTERS

Brims FJH, Musk AW. Asbestos Related Pleural Diseases. In: Textbook of Pleural Diseases, 3rd edition. YCG Lee and RW Light.

Lee YCG. Pleural Tumors. In: Oxford Textbook of Medicine, 6th ed. Oxford, UK: Oxford University Press.

de Fonseka D, **Lee YCG** and Maskell NA. Pleural Diseases. In: Oxford Textbook of Medicine, 6th ed. Oxford, UK: Oxford University Press, in press.

Lee YCG and Light RW. Future Directions. In: Light RW and Lee YCG, eds. Textbook of Pleural Diseases, 3rd ed, pp. 847-649. Taylor & Francis, 2016.

Davies HE and **Lee YCG**. Pleurodesis. In: Light RW and Lee YCG, eds. Textbook of Pleural Diseases, 3rd ed, pp. 569-580. Taylor & Francis, 2016.

Davies HE and **Lee YCG**. Mediastinal Tumours and Cysts. In: Oxford Textbook of Medicine, 6th ed. Oxford, U.K.: Oxford University Press, in press.

Rashid Ali MR, Porcel JM, Koegelenberg C, Halifax R, Maskell NA and **Lee YCG**. Pleural Diseases. In: Shah P, Hearth F, Lee YCG and Crier G, eds. Essential Clinical Pulmonology. Taylor & Francis, in press.

Leong SL, Davies HE and **Lee YCG**. Malignant Pleural Mesothelioma. In: Shah P, Hearth F, Lee YCG and Crier G, eds. Essential Clinical Pulmonology. Taylor & Francis, in press.

Azzopardi M and **Lee YCG**. Pleural Effusion Management in Malignant Pleural Mesothelioma. In: Malignant Pleural Mesothelioma: Present Status and Future Directions. Sharjah, UAE: Betham, in press.

Light RW and **Lee YCG**. Pneumothorax, Chylothorax, Hemothorax and Fibrothorax. In: Broaddus VC, Mason RJ, Murray JF, Nadel JA, King TE, Ernst JD, Lazarus SC, Slutsky AS eds. Murray & Nadel's Textbook of Respiratory Diseases, 6th ed, in press. Philadelphia, PA, USA: Elservier, in press.

Stathopoulos GT, **Lee YCG**and Robinson BWS. Experimental Models: Pleural Diseases. In: Light RW and Lee YCG, eds. Textbook of Pleural Diseases, 3rd ed, pp. 125-144. Taylor & Francis, 2016.

Moodley YP, **Armitage JD**, **Tan DB**. The biology and potential clinical applications of mesenchymal stromal cells in diseases of the lung. Chapter: The Biology and Therapeutic Application of Mesenchymal Cells.

Mutsaers SE, Jaurand MC, **Lee YC**, **Prêle CM**. Chapter 3. Mesothelial Cells and Pleural Immunology. Textbook of pleural diseases Ed 3. Ed R Light and YC G Lee. 2016: p27-44.

Thomas R, Kalomenidis I, Jett J and **Lee YCG**. Malignant Pleural Effusions. In: Light RW and Lee YCG, eds. Textbook of Pleural Diseases, 3rd ed, pp. 283-300. Taylor & Francis, 2016.

INVITED REVIEWS AND EDITORIALS

Brims FJH, McWilliams A, Fong K. Lung cancer screening in Australia: progress or procrastination? The Medical journal of Australia 2016;204:4-5.

Zosky GR, Hoy R, Silverstone E, **Brims FJH**, Miles S, Johnson AR, Gibson P, Yates DH. Coal workers' pneumoconiosis: an Australian perspective. Medical Journal of Australia 2016:204(11); 414-418

Irminger-Finger I, Kargul J, **Laurent GJ**. Oxidative stress signaling: Too much of a good thing. Int J Biochem Cell Biol. 2016 Dec;81(Pt B):233.

Irminger-Finger I, Kargul J, **Laurent GJ**. Extra cellular matrix a modular soil for stem cells. Int J Biochem Cell Biol. 2016 Dec;81(Pt A):164.

Kargul J, Irminger-Finger I, **Laurent GJ**. Proteolytic degradation pathways in health and disease. Int J Biochem Cell Biol. 2016 Oct;79:401.

Iminger-Finger I, Kargul J, **Laurent GJ**. G protein-coupled receptors (GPCRs): The more the merrier. Int J Biochem Cell Biol. 2016 Aug;77(Pt B):181-2.

Kargul J, Irminger-Finger I, **Laurent GJ**. Nanomedicine: Application of nanoparticles in clinical therapies and diagnostics. Int J Biochem Cell Biol. 2016 Jun;75:140.

Creaney J and **Lee YCG**. Diagnoses (not Diagnosis) of a pleural effusion – time to think concurrent etiologies. Ann Am Thorac Soc 2016; 13:1003-4.

Williamson JP, Twaddell S, **Lee YCG**, Salamonsen M, Hew M, Fielding D, Breen M, Nguyen P, Steinfort D, Hopkins P and Grainge C. Pleural ultrasound recognition of competence – an Australian and New Zealand approach. Respirology; in press.

Porcel JM, Lui MMS, Lerner A, Davies HE, Feller-Kopman D and **Lee YCG**. Comparing management approaches to malignant pleural effusions. Invited review for Expert Rev Respir Med.

Lee YCG, Idell S and Stathopoulos GT. Translational research in pleural infection and beyond. CHEST 2016; 150:1361-1370.

Bintcliffe O, **Lee YCG**, Maskell NA and Rahman NM. Benign non-infective pleural effusions and their management. Eur Respir Rev 2016; in press.

Lui MMS, Fitzgerald D and **Lee YCG**. Phenotyping malignant pleural effusions. Curr Opin Pulm Med 2016; 22:350-355.

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FINANCIAL REPORT

STATEMENT BY THE BOARD

The Board has determined that the association is not a reporting entity and that this special purpose financial report should be prepared in accordance with the accounting policies outlined in Note 1 to the financial statements.

In the opinion of the Board the financial report:

1. The association is not a reporting entity because there are no users dependent on general purpose financial statements. Accordingly, as described in note 1 to the financial statements, the attached special purpose financial statements have been prepared for the purposes of complying the Associations Incorporation Act 2015 (WA) and Australian Charities and Not-for-profits Commission Act 2012.
2. The attached financial report and notes thereto comply with the Accounting Standards as described in note 1 to the financial statements.
3. There are reasonable grounds to believe that the association will be able to pay its debts as and when they become due and payable.

This statement is made in accordance with a resolution of the Board and is signed for and on behalf of the Board by:

Dated this 20th day of March 2017

Peter Gunzburg, Board Chair

For a comprehensive review of our financial position, please email admin@resphealth.uwa.edu.au.

INCOME STATEMENT

FOR THE YEAR ENDED 31 DECEMBER 2016

REVENUE	2016 $	2015 $
Grant income	1,472,758	1,494,900
Clinical trials	714,242	818,822
Infrastructure funding	147,637	189,611
Fundraising income and donations	135,572	202,091
Corporate grants	250,000	250,000
Memberships income	5,945	7,040
Interest income	28,939	34,812
Other income	373,520	200,695
Total revenue	**3,128,613**	**3,197,971**
Expenses		
Operating expenses	(319,905)	(467,121)
Employee benefits expense	(2,148,608)	(2,235,505)
Depreciation expenses	(40,861)	(35,826)
Finance costs	(793)	(1,418)
Other expenses	(294,092)	(442,308)
Total expenses	**(2,804,259)**	**(3,182,178)**
Surplus for the year	**324,354**	**15,793**
Surplus/(deficit) allocated to		
Restricted funds	(31,105)	185,321
Designated funds	215,301	695,650
Unrestricted funds	140,158	(865,178)
	324,354	**15,793**

BALANCE SHEET

FOR THE YEAR ENDED 31 DECEMBER 2016

	2016 $	2015 $
CURRENT ASSETS		
Cash and cash equivalents	1,684,827	1,255,318
Trade and other receivables	820,170	929,914
Inventory	5,760	5,760
TOTAL CURRENT ASSETS	2,510,757	2,190,992
NON-CURRENT ASSETS		
Property, plant and equipment	116,629	157,490
TOTAL NON-CURRENT ASSETS	116,629	157,490
TOTAL ASSETS	2,627,386	2,348,482
CURRENT LIABILITIES		
Trade and other payables	278,009	266,429
Employee provisions	193,625	221,014
TOTAL CURRENT LIABILITIES	471,634	487,443
NON-CURRENT LIABILITIES		
Employee provisions	36,598	66,239
TOTAL NON-CURRENT LIABILITIES	36,598	66,239
TOTAL LIABILITIES	508,232	553,682
NET ASSETS	2,119,154	1,794,800
MEMBERS' FUNDS		
Accumulated funds		
Restricted	406,161	437,266
Designated	1,594,576	1,379,275
Unrestricted	118,417	(21,741)
TOTAL MEMBERS' FUNDS	2,119,154	1,794,800

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