

institute for
RESPIRATORY HEALTH

ANNUAL REPORT

2014-2015



THE INSTITUTE FOR RESPIRATORY HEALTH

We are a collaborative respiratory research organisation. We aim to improve the life of everyone living with a respiratory condition by bringing together world class researchers and dedicated clinicians to investigate, diagnose, treat and prevent respiratory diseases.

We conduct and foster innovative basic and clinical research and translate our work into improved treatments for people with respiratory conditions. We think outside the box and we get results.

We campaign for an increased awareness and investment in respiratory education and research. We focus on real people and our work gives hope for a better future to those with respiratory disease.

resphealth.org.au

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.

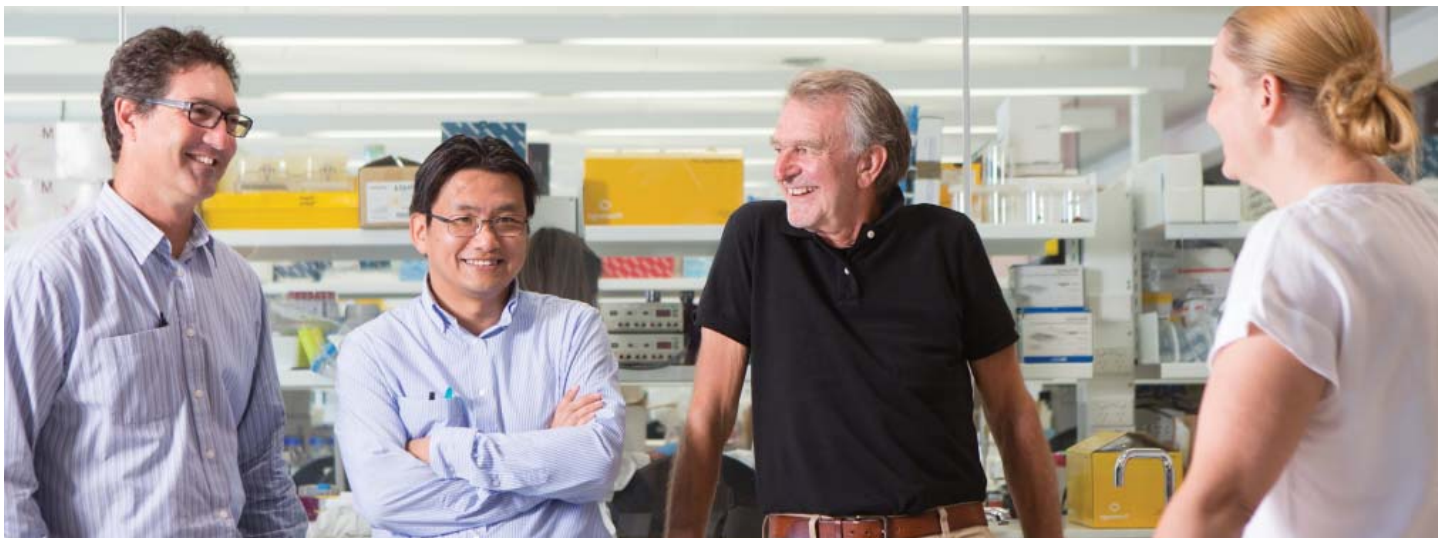
CAMPAIGNING AND EDUCATION

We campaign in Western Australian for an increased awareness of and investment in respiratory education and research.

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OUR RE-BRAND

INSTITUTE FOR RESPIRATORY HEALTH

Our rebrand comes at the end of a full year of strategic reviews, brand reviews and communications planning in 2014, thanks to the help of Lotterywest grant funding and our many supporters.

**WE WERE IN OUR 15TH YEAR AND OUR BOARD
RECOGNISED THE IMPORTANCE OF PLANNING
FOR THE NEXT 15.**

We have been successful in establishing ourselves in the field of respiratory research and the successful delivery of clinical trials.

Our new expanded vision, mission and objectives lay out our ambitions for the future. You can read them on the inside front cover of this report, and on our new website at resphealth.org.au.



WELCOME TO OUR NEW LOOK

WE LOVE OUR NEW COLOURS, OUR NEW LOOK AND OUR
EXCITING NEW NAME - THE INSTITUTE FOR RESPIRATORY HEALTH.

The new brand is in keeping with our reinvigorated core values that reflect our organisation, people who work here and the amazing research that they undertake every day. You can see our amazing staff in our fresh new images and on our website, resphealth.org.au.

WE'RE RESULTS DRIVEN.

We lead our field by constantly improving our processes and knowledge base. We translate our work from innovative laboratory based sciences to clinical practice. We manage multiple major drug trials projects, and our researchers are able to work in state-of-the-art research facilities.

WE COLLABORATE.

We bring together passionate experts from around the world and share knowledge to deliver life changing outcomes. Our researchers consistently publish ground breaking results. We work with leading pharmaceutical companies and deliver new treatments and we all work towards a common goal – to offer the best quality of life to everyone living with a respiratory condition.

WE FOCUS ON REAL PEOPLE.

People are at the heart of everything we do. We educate our patients, and the wider community about lung health so everyone can breathe easier. We nurture our students and offer grants and scholarships so everyone can live their passion and work towards our common goal.

WE THINK OUTSIDE THE BOX.

We look for new ways of doing things and keep up to date with the latest scientific advancements. We are constantly developing better ways to diagnose and treat respiratory diseases.



CHAIR'S REPORT

SUE MOREY

WE FOCUS ON REAL PEOPLE. It's one of the four core values adopted in our re-brand, and one that I can relate to personally.

Not all medical research deals with people face-to-face but at the Institute for Respiratory Health, people are at the heart of everything we do. We know that our work gives hope for a better future for those with respiratory diseases.

Respiratory physician and researcher Professor Philip Thompson brought patient focus to his 15 years of Directorship at the Institute. He also campaigned for better opportunities for students and early-career researchers so everyone could live their passion and work towards our common goal.

In 2014 Professor Thompson stepped down, but his passion for respiratory health continues in our new brand and strategic work, thanks to the support of Lotterywest.

The appointment of new Director Professor Geoff Laurent in April 2014 saw us focus on a strong, united future

of respiratory health and research professionals in Western Australia and internationally. Securing a world recognised research leader in Professor Laurent has given us the start to that increased visibility.

In 2014, our Clinical Trials Unit welcomed Dr Martin Phillips and staff from Western Australian Lung Research in a merger that took on four ongoing trials.

Our strong relationship with the University of Western Australia continued, and will continue as the Centre for Respiratory Health. Sir Charles Gairdner Hospital continues its support, as do partnerships with Notre Dame, Murdoch and Curtin Universities.

Thanks to my fellow Board members and Sub-Committee members for their commitment during 2014, in particular outgoing Director Professor Philip Thompson and new Director Professor Geoff Laurent for their services in the past and into the future.

A handwritten signature in black ink, appearing to read 'Sue Morey'.

Sue Morey
Chair



DIRECTOR'S REPORT

GEOFF LAURENT

WE COLLABORATE. It's a value that I believe is vital to the future of respiratory research in Western Australia, and globally.

At the Institute for Respiratory Health, we haven't just changed the way we look. The way we work is also changing. We've already started reaching out to the wider respiratory community in Western Australia, and I have recently appointed a Leadership Team to help get the best results for people with respiratory illness. We welcome Deputy Director, Professor Peter Eastwood and Clinical Director, Professor Gary Lee. Cameron Agnew our Executive Officer is also part of this new team as is Meagan Shorten, Head of our Clinical Trials Unit.

In Western Australia we have many leaders in respiratory research, and a great depth of talent across paediatric and adult respiratory disease. To increase our grant funding and improve translational research, it is vital that we widen our alliances.

Bringing researchers together and working with other experts worldwide will allow us to conduct better research and be pre-eminent in getting results for people living with respiratory illnesses.

I would like to acknowledge the hard work of all our staff at the Institute of Respiratory Health. This includes our world class researchers and dedicated clinicians, administrative staff, students and collaborators.

On behalf of the Institute I would like to thank our Patron, Chief Justice Wayne Martin, and Ambassadors Karen Tighe and Glenn Mitchell for their continued support. Thank you to our Board of Directors, members, staff and researchers for their focus and involvement in the Institute for Respiratory Health.

Finally, I would like to recognize the continuing support of you all and particularly the support of Westcare and the Melbourne Cup Luncheon Committee who fund essential research through our grant program.

Professor Geoff Laurent
Director



IN RECOGNITION OF OUR INAUGURAL DIRECTOR

PROFESSOR PHILIP THOMPSON
DIRECTOR 1998-2014

In 2014 we recognise the founder and inaugural Director of the Institute of Respiratory health (formally the Lung Institute of Western Australia), Professor Philip Thompson, who worked with passion and dedication in the position of Director for 15 years.

The Institute has been extremely fortunate to have the vision, commitment and drive of Professor Thompson to create the Institute that exists today. Professor Thompson's expertise and experience enabled the Institute to embrace a number of research disciplines with a broad approach to understanding lung disease. From its inception as the Asthma and Allergy Research Institute in 1999, to the change to the Lung Institute of Western Australia in 2006 it was different from most research institutes in that it was disease based, open to the public to participate, mixing clinic and laboratory research, and it was driven by both social and research purposes.

The diversity of Professor Thompson's skills have greatly benefited the Institute of Lung Health and has lead him also to be Clinical Professor at Curtin University; a lead partner in the Australian Asthma Genetics Consortium; Head of the Department of General Medicine (SCGH); President of the Thoracic Society of Australia and New Zealand; Editor-in-Chief of Respirology, Consultant Respiratory Physician (SCGH); and Director of the WA Node of the Cooperative Research Centre for Asthma and Airways.

While at the Institute, Professor Thompson has also achieved success and recognition on many fronts both nationally and internationally. This can be reflected in him winning the Asia Pacific Society of Respiriology Medal and TSANZ's most prestigious award the Society Medal. This is in addition to the 250+ published manuscripts and book chapters and more than 17 higher degree awards, many being research fellowships.

Professor Thompson stepped down as Director in March, 2014.

BOARD OF DIRECTORS



MS SUE MOREY OAM FRCNA
CHAIR

Nurse Practitioner in Respiratory Medicine, Sir Charles Gairdner Hospital.
Board of Directors Westcare Inc.



MR JOHNSON KITTO LLB

Managing Partner of Kitto & Kitto, Barristers & Solicitors.



PROF LOU LANDAU AO MBBS MD FRACP
DEPUTY CHAIR

Emeritus Professor of Paediatrics, University of Western Australia.
Chair of the Postgraduate Medical Council of Western Australia.



PROF GEORGE YEOH BSC PHD

(UWA appointed representative)
Head of Liver Disease and Carcinogenes Unit,
Centre for Medical Research, University of Western Australia.



MR JESPER SENTOW B.SC. (ECON) CPA MBA
TREASURER

Chair of Finance Sub-Committee.
Management Consultant.



ASSOC/PROF SIMON LEUNIG MED MBA BPHD

Dean of International Student Admissions.



MR BILL COLEMAN AM BSOCS, BJURIS LLB
SECRETARY

Chair of Governance and Risk Sub-Committee.
Chair, Salaries and Allowances tribunal of WA.
Former Chief Commissioner of the WA Industrial Relations Commission.



PROF GEOFF LAURENT BSC PHD FRCP(HON)
FRCPATH FMEDSCI (DIRECTOR)

Director of the Institute for Respiratory Health.
Director of the Centre for Cell Therapy and Regenerative Medicine, University of Western Australia.
Honorary Fellow at University College London.



PROF GEOFFREY STEWART BSC PHD

Chair of Scientific Sub-Committee.
School of Pathology and Laboratory Medicine,
University of Western Australia.

SUB-COMMITTEES OF THE BOARD

Finance: Jesper Sentow (Chair), Cameron Agnew, Sue Morey
Governance and Risk: Bill Coleman (Chair), Cameron Agnew
Scientific: Prof Geoff Stewart (Chair), Prof Robyn O'Hehir*, Prof Stephen Holgate*, Prof Clive Robinson*

*External to the Institute for Respiratory Health.



COMMUNITY ACTIVITIES

THANKS TO ALL OF OUR DONORS, VOLUNTEERS, AND MEMBERS FOR YOUR SUPPORT IN 2014.

MAJOR GIFT GIVERS

Individuals

Joanne Barratt
Jim Clinton
William Darby
Beverley Fitzgerald
Wayne Flynn
Jean Laing
Andrew Martin
Melbourne Cup Luncheon Volunteers
Greg Walkington

Corporates

Cycling Eventsures
Mobile Dewatering
Skilled Group Limited
Westcare
Westernex

MAJOR FUNDRAISERS

Delirium 24 Hour Cycle Race

Cameron Agnew
Ben Castlehow
Alistair Cook
Cowaramup Lions Club
Nick Crane
Melissa Flynn
Sally Lansley
Catherine Rinaldi
HBF Run for a Reason
'Ban's Ballerinas'
Toni Priestman
Chevron City to Surf
Simon Choo

VOLUNTEERS

Thank you to all our volunteers who gave their time during various events throughout 2014. We couldn't do it without you!

MEMBERS

We continued to enjoy the strong support of our members in 2014, who comprise individuals from the scientific / medical sector, as well as the broader community, students and the corporate sector.



DELIRIUM 24 HOUR CYCLE RACE

The Delirium 24 Hour Cycle Race took place again in Cowaramup, WA, with the Institute for Respiratory Health (then the Lung Institute of WA) as charity partner. Riders cycled for 24 hours and completed nearly 1,000 kms between them. Melyssa Flynn starred in a video which helped us raise \$10,000 helping fund better diagnosis and treatments of rare lung disease.

COMMUNITY LUNG TESTING: FREMANTLE DOCKERS

Danyle Pearce is a Fremantle Dockers player who lives with asthma. His young cousin also lives with cystic fibrosis, which is why Danyle helped us in 2014 to raise awareness of the importance of supporting research into lung disease and being aware of your own lung health. We conducted free lung testing around the metro area during the month of May to find 'Perth's Best Set of Lungs' and raise awareness of early diagnosis.

MELBOURNE CUP LUNCHEON

Local comedian Famous Sharron helped get us in the mood at the Melbourne Cup Luncheon, where a group of dedicated volunteers outdid themselves in their annual fundraiser for the Glenn Brown Memorial Grant for Cystic Fibrosis and Bronchiectasis. \$56,126 was raised at the State Reception Centre in Frasers, King's Park. Volunteers including Institute for Respiratory Health staff members help on the day. The event wouldn't happen without Janeine Thomas and Suzanne Sheridan who work tirelessly with their committee for many months leading up to the Cup.

MEDICAL RESEARCH SEMINARS

In 2014 the Institute ran two seminars and a Lung Symposium for our Scientific Members. The following presentations were made:

Prof David Singe

Clinical Pharmacology and Respiratory Medicine, University of Manchester, UK
'Dual bronchodilation and the changing landscape for COPD'.

Prof Darryl Knight

Head, School of Biomedical Sciences and Pharmacology, University of Newcastle, UK
'What's the magic number behind epithelial cell differentiation, innate immunity and asthma: (p)300'.

Professor Peter J Sterk

Head of Research, Department of Respiratory Medicine, University of Amsterdam
'The utilization of transcriptomics and breathomics in airway diseases'.

Chuan Bian Lim

Research Officer, Institute for Respiratory Health
'Hedgehog pathway: a novel target for mesothelioma'.

Ass/Prof Yuben Moodley

Head of Stem Cell Unit, Institute for Respiratory Health
'Innovative strategies for airways disease'.

Dr Svetlana Baltic

Unit Manager, Molecular Genetics Unit
Institute for Respiratory Health
'Development of antisense oligonucleotides for asthma'.



LUNG INFORMATION AND FRIENDSHIPSHIP FOR EVERYONE – L I F E SUPPORT GROUP

As the Institute for Respiratory Health undergoes strategic change, adopting a stronger collaborative role with respiratory researchers, the time is perfect for L I F E Support Group to take on a stronger networking role with other support groups across the State. WA is a fair way from anywhere else and there is so much that WA groups can do to help each other.

We have been discussing these ideas with the Institute for Respiratory Health staff for some months and we'd like to see the formalisation of this expanded role for L I F E, including the capacity for other groups to be affiliated with the Institute here in Western Australia, in the same way that they are affiliated with the Brisbane-based Lung Foundation Australia. Some WA groups have already indicated an interest in this.

We started off by speaking at other group meetings and networking with local leaders. There are now ten groups

in WA, with an eleventh starting up in Geraldton. In 2013 we drew local respiratory self-help groups together for a combined respiratory support group display booth at the Self Help Group Expo hosted by Connect Groups at Garden City. After meeting people from other groups at the Lung Foundation's annual education day, L I F E members have shown interest in getting to know people better in other groups by visiting them. There are additional opportunities for more information sharing, learning and networking events or sharing a speaker bureau.

Over the past 12 months L I F E has continued to provide friendship and information through monthly meetings and speaker program, with quarterly social events and an informative magazine.

We finished the year by inviting leaders from the other WA groups to attend L I F E's Christmas party, which was a great success. We look forward to what 2015 has to bring.



Hero Award winner Lyndell Gore

HERO AWARD WINNERS

Our annual 'Heroes' are members of the Institute for Respiratory Health who demonstrate outstanding support and commitment to the Institute and others with respiratory conditions.

LYNDELL GORE

Despite living with severe asthma from a very young age, Lyndell is always willing to devote her time with a warm smile and eagerness to help. Lyndell is a photographer at functions; our resident musician for members' morning teas; and is an occasional media spokesperson, representing other people living with asthma and other respiratory conditions. Lyndell has been a long term patient with the Clinical Trials Unit and is a delight to work with. Lyndell is such a generous person and was hugely deserving of this award.

MEAGAN SHORTEN

The second award is presented to Meagan Shorten, the Head of the Clinical Trials Unit. Meagan was nominated by her team for the outstanding way she led the Clinical Trials Unit throughout 2013 and 2014. Amongst the team she is described as being passionate supportive and a skillful manager. Meagan cares greatly for the trial patients and lung patients who are given care that exceeds the boundaries of trials.

HERO HONOUR ROLL

2013

Mrs Janine Ban

2012

Mrs Janiene Thomas and
Ms Alison Guest

2011

Mr Paul Barratt (deceased)

2010

Mrs Edna Brown (deceased)
and
Dr Jenni Ibrahim



Meagan Shorten with City of Nedlands Mayor Max Hipkins



RESEARCH GRANT PROGRAM

At the Institute for Respiratory Health we are grateful that some individuals and organisations are able to help fund specific areas of respiratory research.

Our competitive research grant program enables such donors to establish a grant addressing a specific research area by providing \$50,000 for a 12 month period. We add value to the donation by administering the grant which includes an independent scientific board selecting the grant winners.

WESTCARE ALAN KING GRANT FOR INVESTIGATION INTO INFECTIOUS LUNG DISEASE

Awarded to: Professor Gary Lee, Institute for Respiratory Health.

'Translational Research Program in Pleural Infection'.

Funded by Westcare Inc.

GLENN BROWN MEMORIAL GRANT FOR INVESTIGATION INTO CYSTIC FIBROSIS AND BRONCHIECTASIS.

Awarded to: Professor Steven Stick, Telethon Kids Institute.

'Assessing non-ion channel effects of the CFTR potentiator Ivacaftor'.

Funded by Melbourne Cup Luncheon Committee volunteers.



EDUCATION INITIATIVES

Supporting the education of clinical and scientific researchers is part of our vision to improve the life of everyone living with a respiratory condition.

In 2014 we invested over \$80,000 funding PhD and Honours student scholarships and the Summer Vacation Cadet Program, all of which supported young scientists to embark on a career in respiratory research.

RECIPIENTS OF PHD TOP-UP SCHOLARSHIPS AWARDED IN 2014

Vinicius Cavaleri de Oliveira, Curtin University
Research Unit: Physiotherapy
Project Title: 'Surgical resection for lung cancer: Optimising patient evaluation and recovery'. Supervised by K Hill, S Jenkins.

RECIPIENTS OF ONGOING PHD TOP-UP SCHOLARSHIPS

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

Chuan Bian Lim, University of Western Australia
Research Unit: Tissue Repair
Project Title: 'Role of Hedgehog signalling in malignant mesothelioma.' Supervised by SE Mutsaers, CM Prêle, S Baltic, PJ Thompson.

RECIPIENTS OF THE HONOURS / BACHELOR OF MEDICAL SCIENCE SCHOLARSHIPS

Zachariah Dawes, University of Western Australia
Research Unit: Tissue Repair Group
Project Title: 'Epithelial cells in the regulation of STAT3-mediated lung fibrosis'. Supervised by CM Prele, SE Mutsaers, CB Lim, F Pixley.

Courtney Kidd, University of Western Australia
Research Unit: Molecular Genetics and Inflammation
Project title: 'Alternative splicing of histone modification enzymes: impact on asthma and asthma severity'. Supervised by S Baltic, P Thompson.

Abhishek Menon, University of Western Australia
Research Unit: Tissue Repair Group
Project Title: 'Mesothelial cell differentiation in an in vivo animal chamber model'. Supervised by R Dilley, SE Mutsaers, CM Prele.

RECIPIENTS OF THE HONOURS / BACHELOR OF MEDICAL SCIENCE SCHOLARSHIPS CONT.

Joe Yasa, Murdoch University
Research Unit: Tissue Repair Group
Project Title: 'B-cells in regulating STAT3-mediated lung fibrosis'. Supervised by SE Mutsaers, CM Prele, CB Lim, G Hoyne.

SENIOR TRAVEL AWARD WINNER 2014

Dr Sally Lansley
Conference: 12th international Mesothelioma Interest Group Conference
Abstract: 'The role of fibroblast growth factor-9 in the regulation of the tumour-specific immune response in malignant mesothelioma'.

JUNIOR TRAVEL AWARD WINNERS 2014

Kimberly Birnie, University of Western Australia
Conference: 12th international Mesothelioma Interest Group Conference
Abstract: 'Loss of miR-223 and over expression of target protein stathmin regulates cell motility in MM'.

Tim Rosenow
Conference: TSANZ 2014 and European Respiratory Society (ERS) Annual Congress 2014
Abstract: 'Pragma: a new method of quantifying structural lung disease in young children with cystic fibrosis'.

PHD SCHOLARS WITHIN THE INSTITUTE

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

Vinicius Cavalheri de Oliveira, Curtin University
Research Unit: Physiotherapy
Project Title: 'Surgical resection for lung cancer: Optimising patient evaluation and recovery'. Supervised by K Hill, S Jenkins.

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

Louise Ganderton, Curtin University
Research Unit: Physiotherapy
Project title: 'Short-term effects of exercise training on exercise capacity and quality of life in individuals with pulmonary arterial hypertension'. Supervised by E Gabbay, S Jenkins, K Gains.

Chuan Bian Lim, University of Western Australia
Research Unit: Tissue Repair
Project title: 'Role of Hedgehog signalling in malignant mesothelioma.' Supervised by SE Mutsaers, CM Prêle, S Baltic, PJ Thompson.

Li Whye Cindy Ng, Curtin University
Research Unit: Physiotherapy
Project title: 'Optimising physical activity in people with COPD'. Supervised by S Jenkins, K Hill.

Dr Rajesh Thomas, University of Western Australia
Research Unit: Pleural Diseases
Project Title: 'Management of Malignant Pleural Effusion'. Supervised by YCG Lee.



MASTERS SCHOLARS WITHIN THE INSTITUTE

Ben Noteboom, Curtin University
Research Unit: Physiotherapy
Project title: 'Vascular health in chronic obstructive pulmonary disease: magnitude of impairment, association with disease severity and effect of exercise training'.
Supervised by K Hill, A Maiorana, S Jenkins.

Carol Watson, Curtin University
Research Unit: Physiotherapy
Project title: 'Quadriceps dysfunction following heart and heart-lung transplant: Magnitude, nature, contributing factors and clinical implications.' Supervised by K Hill, S Jenkins.

Jamie Wood, Curtin University
Research Unit: Physiotherapy
Project title: 'A proof of concept study investigating the impact of telehealth clinics on the lung function and quality of life of adults with cystic fibrosis.'
Supervised by K Hill, S Jenkins, S Mulrennan.

HONOURS SCHOLARS WITHIN THE INSTITUTE

Teck Hui Teo, University of Western Australia
Research Unit: Stem Cell
Project Title: 'Improving protective anti-bacterial immune responses in COPD patients by blocking co-inhibitory T-cell receptors'. Supervised by Y Moodley, D Tan, L Kirkham, P Price.

SUMMER VACATION CADETSHIPS

Courtney Kidd, University of Western Australia
Research Unit: Molecular Genetics and Inflammation.
'Epigenetic mechanisms in asthma'.
Supervised by Svetlana Baltic.

Julia Richardson, Murdoch University
Research Unit: Molecular Genetics and Inflammation
'Regulation of Prostaglandin E2 and Prostaglandin D2 receptor expression by micro RNAs in airway epithelium'.
Supervised by Svetlana Baltic.

Joe Yasa, Murdoch University
Research Unit: Tissue Repair
'Characterising Bard1 isoform expression in malignant mesothelioma'.
Supervised by CM Prêle.





RESEARCH OVERVIEW 2014

A SUMMARY OF KEY CLINICAL AND SCIENTIFIC PROJECTS UNDERTAKEN BY THE INSTITUTE DURING 2014.

PATIENT CARE

A randomised controlled patient preference study examining the utility of advanced care planning in severe respiratory disease patients': In collaboration with the WA Department of Health and the Rural School at UWA, this project by the Occupational and Respiratory Health Unit started recruitment in July 2014 and we aim to recruit ~100 subjects with severe respiratory disease and examine their health care utilization (with particular emphasis on expenditure) with or without bespoke Advanced Care Plans in place. Recruitment is expected to

continue until mid 2015, with a further 6 months follow up afterwards.

LUNG REGENERATION

A new study, 'Assessing the capacity for adult 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. Professor Geoff Laurent, together with A/ Prof Cecilia Prele 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.

AIRWAY DISEASE

ASTHMA

The Clinical Trials Unit has been involved in a number of studies for new medications that address different subsets of asthma. Many physicians are not conscious of these asthma subtypes and struggle to achieve control using conventional treatments.

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. The Unit contributes genetic data samples to its various studies and early findings have already achieved publication in the prestigious Lancet and Nature Genetics journals.

The Molecular Genetics and Inflammation Unit has started collecting a large sample bank of DNA, serum, and RNA samples of patients with airway diseases such as asthma, COPD and bronchiectasis.

The Molecular Genetics 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 and environmental exposures and ageing. It regulates the expression of a large number of well-established asthma associated genes. 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. This may be a good therapeutic target.

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 appeared to be very promising.

ALPHA 1- ANTITRYPSIN DEFICIENCY

The Clinical Trials Unit started a new study 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 alpha1 antitrypsin in the body to prevent or slow down lung damage in patients with AATD.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

A randomised controlled trial of supplemental oxygen versus medical air in people with chronic obstructive pulmonary disease: Supplemental Oxygen in Pulmonary Rehabilitation Trial (SuppORT): This is an ongoing, multicentre, double blind, randomised controlled trial by the Physiotherapy Unit in people with COPD who demonstrate a fall in oxygen levels during exercise. The study is comparing breathing supplemental oxygen versus medical air (sham intervention) during an eight-week exercise training program. The outcomes assessed are exercise capacity, daily physical activity and health-related quality of life both at the completion of the training period and at six months later.

Vascular health in people with COPD: magnitude of impairment and effects of exercise training: This ongoing study by the Physiotherapy Unit compares ultrasound-derived measures of vascular structure and endothelial function in people with COPD and healthy individuals.

Measures are also being taken before and after exercise training in people with COPD.

A trial continued within the Clinical Trials Unit for a new inhaler to see whether the way it has been developed works better than those currently available for managing COPD. The Unit also trialled another new inhaler which is approved in other countries but not yet in Australia.

The Clinical Trials Unit undertook a study testing Bronchoscopic Thermal Ablation, an alternative treatment for severe COPD patients.

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

An inhaled therapy, combining three approved medications into one inhaler was trialled by the Clinical Trials Unit. This is ongoing and is looking promising for patients.

Myeloid-derived suppressor cells (MDSC): The goal of this study by the Stem Cell Unit is to explore the role of MDSC in regulating chronic inflammation Progress.

Regulatory T-cells (Treg): The goal of this study by the Stem Cell Unit is to analyse the function of Tregs.

T-cell co-inhibitory receptors (PD-1, CTLA-4): The goal of this ongoing study by the Stem Cell Unit is to compare the expression of inhibitory receptors between AECOPD, stable COPD and healthy controls. Protective anti-

bacterial responses: The goal of this ongoing study of non-typeable *Haemophilus influenza* infection in COPD by the Stem Cell Unit is to characterize anti-bacterial responses of T-cells and monocytes of COPD patients.

Mesenchymal stem cell (MSC): The goal of this ongoing study by the Stem Cell Unit is to investigate the effects of MSC treatment on inflammation and immune cells.

LUNG CANCER

Effects of exercise training in patients following surgical resection for non-small cell lung cancer (NSCLC): This randomised controlled trial by the Physiotherapy Unit investigated the role of exercise training on the recovery of people following lung resection (with/without adjuvant chemotherapy) for non-small cell lung cancer. The outcomes assessed were exercise capacity, quality of life, muscle strength, physical activity and feelings of anxiety and depression.

Patterns of sedentary behaviour and physical activity in people following lobectomy for non-small cell lung cancer (NSCLC) compared to healthy controls: This study by the Physiotherapy Unit investigated and compared the way in which time spent in sedentary behaviour and physical activity were accumulated in people following curative intent treatment for NSCLC and age and gender-matched healthy controls.

CYSTIC FIBROSIS

Telehealth for people with cystic fibrosis (CF) living in rural and remote areas of WA: This research by the Physiotherapy Unit is being undertaken in collaboration with staff from the Cystic Fibrosis and Bronchiectasis Unit. The aim of the research is to determine whether a multidisciplinary telehealth clinic reduces the decline in lung function and improves the quality of life of people with CF who live in rural and remote WA.

The Clinical Trials Unit in collaboration with The Cystic Fibrosis and Bronchiectasis Unit continued clinical trials of drugs that target the protein which is defective in CF as a result of genetic mutations. All patients are now receiving the treatment as part of an ongoing clinical trial. Continuing these trials will help determine whether this targeted therapy will provide much needed benefits to people living with CF.

The Clinical Trials Unit previously participated in the clinical trials of the drug Ivacaftor. This drug is now available via the PBS to individuals with the G551D mutation.

The Cystic Fibrosis and Bronchiectasis Unit (CF&B Unit) are committed to improving clinical care for CF patients. A study focusing on telehealth for rural and country CF patients continues - the project will assess whether a CF Multidisciplinary telehealth clinic reduces the decline in lung function, and improves quality of life, in adults with CF who live in rural and remote Western Australia (WA).

The CF&B Unit continued to participate in the Australian CF Clonal Pseudomonas study – this study has now been completed and results are being analysed.

The CF&B Unit has analysed data from the Ivacaftor Named Patient Program. This data was part of an Australian multicentre study to and results were presented at the 2014 Thoracic Society of Australia and New Zealand (TSANZ) conference.

In collaboration two Units, Molecular Genetics and Inflammation Unit and The Cystic Fibrosis and Bronchiectasis Unit explored mechanisms underlying the pathology and lung deterioration in CF and CF-related diabetes. A paper detailing the results of this study has been submitted for publication.

The Clinical Trials Unit took on a Cystic Fibrosis trial involving an intravenously administered drug, attempting to minimise pseudomonas in CF patients.

INTERSTITIAL DISEASE PULMONARY FIBROSIS

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

A group of clinicians united by their interest in IPF and supported by the Australian Lung Foundation have developed the Australian IPF Registry. This Registry aims to enroll all Australians with IPF so that the data collected can help researchers learn more about this serious disorder. LIWA was pleased to be involved in this exciting project in 2014, working with the Australian Lung Foundation. Ass/Prof Yuben Moodley is a member of the Registry Steering Committee and Emily Stevens was the Coordinator in Western Australia. The Molecular Genetics Unit is also exploring the bio markers for IPF in collaboration with Ass/Prof Moodley.

The Molecular Genetics Unit has been collecting, processing and storing samples from IPF patients for an Australia-wide collection.

The Molecular Genetics Unit and the Tissue Repair Group are working in collaboration to screen and conducting genetic testing to explore the mechanisms of IPF.

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. Our Tissue Repair Unit has pioneered studies identifying the gp130-induced signal transducer and activator of transcription (STAT)3 signalling pathway as pivotal in the development of lung fibrosis. What regulates STAT3-mediated fibrosis is not clear but their current studies are focussing 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.

PLEURAL DISEASE

PLEURAL EFFUSIONS AND EMPYEMA (PLEURAL INFECTION)

The Pleural Medicine Unit aimed to look at the effect of bacterial infection on the resident mesothelial cells and pleural fluid in an effort to better understand the infective process which may lead to therapeutic optimization.

The Pleural Medicine Unit has a focus on translational medicine. The Unit is studying the effect of fibrinolytics on pleural fluid formation. This may lead to an improved understanding of the observed clinical effect on fluid drainage.

AUSTRALASIAN MALIGNANT PLEURAL EFFUSION (AMPLE) TRIAL

The Pleural Medicine Unit leads the AMPLE randomised clinical study comparing indwelling pleural catheter (IPC) with pleurodesis in the management of malignant pleural effusion. To date 90 (of the target total of 146) participants have been enrolled and included 9 recruitment centres in

Australia, New Zealand and Singapore. An AMPLE 2 study is currently in development within the Unit.

CLINICAL AND LABORATORY STUDIES ON MALIGNANT PLEURAL DISEASES

The Pleural Unit has a strong track record on studying various aspects of the diagnosis, pathogenesis and best management of malignant pleural disease and care of malignant effusions. These include investigating the benefits and complications (and their best care) of use of indwelling pleural catheters, evaluating biomarkers for malignant pleural diseases, and the use of imaging in improving diagnostic yield.

The Pleural Disease Unit also employs various in vitro techniques and preclinical models to investigate novel therapies for malignant pleural disease and mesothelioma.

MESOTHELIOMA

miRNA in mesothelioma Limited treatment options in Mesothelioma lead to a short median survival and clinical management is hampered by the lack of molecular biomarkers for diagnosis/prognosis. There is growing evidence that short non-coding RNAs such as microRNA (miRNA), are useful biomarkers 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 also worked 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 are also looking at the biological significance of certain miRNAs in mesothelioma.

The hedgehog signalling pathway 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 have 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 project 'Development of a clinically relevant prognostic model for malignant pleural mesothelioma' by the Occupational and Respiratory Health Unit aims to develop a novel statistical method for predicting prognosis in malignant mesothelioma using classification and regression tree modeling. This will identify risk groups, with similar characteristics that interact and confer a certain prognosis, as opposed to traditional multivariate logistic regression that provides independent predictors of an outcome, but no account of the interaction of the variables. Data collection is complete and refining the models is continuing.

PLEURAL INFECTION

Current studies examine the effect of common bacteria in pleural infection and their biological effects on pleural mesothelium in vitro and in vivo. It will identify key mediators governing the development of pleural infection and provide proof-of-concept data that antagonising these mediators can reduce bacterial invasion of the pleural cavity, potentially leading to new therapeutic approaches.

THE ROLE OF FIBROBLAST GROWTH FACTOR 9 (FGF9)

FGF-9 is an exciting and novel target uncovered from our global gene profiling of human MPM samples. We have verified over-expression of FGF-9 in MPM over other cancers and benign pleuritis in five separate cohorts of

human pleural tissues and effusions. Our 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. Our data are the first to suggest a central role of FGF-9 in the biology of MPM and current studies are aimed at assessing anti-FGF-9 strategies for clinical translation.

BIOLOGICAL ROLES OF MALIGNANT PLEURAL FLUID IN THE CARCINOGENESIS OF MESOTHELIOMA

Malignant pleural effusion 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% of) MPM patients suffer from a pleural effusion. It is commonly thought that the pleural effusion is simply a by-product of cancer involvement of the pleura. Our studies are aimed at determining why MPM stimulates the production of such large volumes of fluid, often throughout the disease course 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 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 significant impact on clinical care strategies.

TRANSPLANTATION

Quadriceps dysfunction following lung and heart-lung transplantation: magnitude, nature, contributing factors and clinical implications. This ongoing research by the Physiotherapy Unit explores changes in quadriceps muscle strength and/or fatigue from six months after lung and heart-lung transplantation.



RESEARCH ACTIVITIES

AWARDS IN 2014

Kimberly Birnie. 5th Margaret River Region Forum Regenerative Medicine, Student Bursary Award. International Mesothelioma Interest Group, Young Investigator Travel Award.

Fraser Brims. Thoracic Society of Australia and New Zealand (TSANZ), Best Lung cancer SIG presentation.

Vinicius Cavalheri. Thoracic Society of Australia and New Zealand (TSANZ) Best scientific poster on Interventional Pulmonology and Lung Cancer.

Curtin University Best Paper Award, Mark Liveris Health Sciences Research Student Seminar.

Louise Ganderton. PhD, Curtin University

Courtney Kidd. 2013/14 Vi Watson Scholarship Asthma Foundation of Western Australia.

The Fiona Staniforth Research Award, 2014, Asthma Foundation of Western Australia.

2014 LIWA Honours Award, Lung Institute of WA.

TSANZ's Asthma and Allergy SIG Award.

Chuan Bian Lim. 5th Margaret River Region Forum Regenerative Medicine, Student Bursary Award.

Geoff Laurent. European Respiratory Society Certificate, in recognition of excellence in scientific and or educational contributions to respiratory medicine over many years.

Elected as one of 125 Foundation Fellows, European Respiratory Society.

Steven Mutsaers. International Mesothelioma Interest Group, International Mesothelioma Interest Group Outstanding Service Award.

Dino Tan. TSANZ travel award.

Rajesh Thomas. NH&MRC, Post-Graduate Scholarship WA Cancer and Palliative Care Network fellowship, WACPCN research fellowship.

Phil Thompson. Inducted as a Fellow of TSANZ.

Joe Yasa. 5th Margaret River Region Forum Regenerative Medicine, Student Bursary Award.
Murdoch, International PhD Student Scholarship.

INVITED PRESENTATIONS AND CHAIRMANSHIP INTERNATIONAL

Svetlana Baltic. Seminar (2014): Alternative splicing in disease and therapy, Institute of Biological Sciences "Sinisa Stankovic", Belgrade, Serbia.

Kimberley Birnie. Young Investigator Presentation – IMIG Meeting, Capetown South Africa (Oct 2014), Loss Of Mir-223 And Over-Expression Of Target Protein Stathmin Regulate Cell Motility In Malignant Mesothelioma.

Fraser Brims. Presentation: Bear N, Cooper M, de Klerk N, Brims FJH. The epidemiology of pneumothorax in Western Australia. Thoracic Society of Australian and New Zealand Annual Scientific Meeting, 2014.

Presentation: Brims FJH, Murray CP, de Klerk N, Alfonso H, Reid A, Wong PM, The J, Olsen N, Mina R, Musk AW. 12 months of Low dose CT scan screening an asbestos exposed population: results from the Western Australia Asbestos Review Program. American Thoracic Society, 2014.

Presentation: Brims FJH, Meniaway, T, Lake, R, Nowak, A. Routinely collected clinical and laboratory data can reliably predict longer survival in malignant pleural mesothelioma. American Thoracic Society, 2014.

Presentation: Brims FJH, Rosenstangal, A, Yogendran, A, Lee F, Franke A, Reid C, Hart J, Kay I, Waterer G, Lee YCG. The bacteriology of pleural infection in Western Australia. American Thoracic Society, 2014.

Sue Jenkins. Pulmonary rehabilitation: current topics and future directions. Nagasaki University 26th Pulmonary Rehabilitation Workshop Extension Lecture. Nagasaki, Japan, July 2014.

Geoff Laurent. Investing in rare lung diseases is a waste of time and does not benefit common lung diseases. TSANZ Conference, March 2014.

BARD1 an Oncogenic Driver and Biomarker of Lung

Cancer in Session SiG Orals – Lung Cancer. TSANZ. April 2014.

Gary Lee (chair), Rajesh Thomas (faculty) at Pleural Disease Masterclass, Session at American College of Chest Physicians annual CHEST meeting, Austin USA, October 2014

Gary Lee. Malignant pleural effusions: Best practice. Clinical Oncology Society of Australia Annual Scientific Meeting, Melbourne, Australia. Dec 2014.

Workshop (Pleural Disease & Thoracoscopy): Thoracic ultrasound: guidance to thoracic procedures; Indwelling Pleural Catheter in MPE; New therapy for pleural infection. Symposium (Updates on Pleural Disease): New therapy for pleural infection. Symposium (Mediastinal Tumor and Mesothelioma): Mesothelioma and malignant pleural effusions. Asian Pacific Society of Respiriology Annual Congress, Bali, Indonesia. Nov 2014.

Steve Mutsaers. Presentation: UWA-HMGU-UCL Collaborative Research Meeting, London (July 2014) Targeting Hedgehog Signalling Pathways in Malignant Mesothelioma.

President of IMIG Committee, Opening address, IMIG Meeting, Capetown South Africa (Oct 2014)

Session Chair, IMIG Meeting, South Africa (Oct 2014)

Cecilia Prêlé. Session Chair – 2nd UWA-HMGU-UCL Collaborative Research Meeting, London (July 2014).

NATIONAL

Kimberley Birnie. Presentation: Fifth Margaret River Region Forum; Cell Therapy and Regenerative Medicine. Developing New Cell Therapies for Cancer and Ageing, Bussleton, Perth Nov 2014, Loss Of Microrna-223 and C-Jun-Terminal Kinase (Jnk) Signalling Contribute to the Over-Expression of Stathmin in Malignant Pleural Mesothelioma (MPM).

Fraser Brims. Presentation: Brims FJH, Murray CP, de Klerk N, Alfonso H, Reid A, Wong PM, The J, Olsen N, Mina R, Musk AW. 12 months of Low dose CT scan screening an asbestos exposed population: results from the Western Australia Asbestos Review Program. Thoracic Society of

Australian and New Zealand Annual Scientific Meeting, 2014.

Presentation: Brims FJH, Meniaway, T, Lake, R, Nowak, A. Routinely collected clinical and laboratory data can reliably predict longer survival in malignant pleural mesothelioma. Thoracic Society of Australian and New Zealand Annual Scientific Meeting, 2014.

Presentation: Brims FJH, Rosenstangal, A, Yogendran, A, Lee F, Franke A, Reid C, Hart J, Kay I, Waterer G, Lee YCG. The bacteriology of pleural infection in Western Australia. Thoracic Society of Australian and New Zealand Annual Scientific Meeting, 2014.

Chair: Scientific session 'Science, neuroendocrine tumours and mesothelioma'. Facilitator: satellite symposium on lung cancer screening. Australia Lung Cancer Conference, October 2014.

Sue Jenkins. Physical activity and exercise training in COPD and heart failure. Perspectives in co-morbid COPD and heart failure. Menarini Continuing Professional Development Course. Sydney, September 2014.

Physical activity and exercise training in COPD. Menarini Perspectives in COPD meeting. Sydney, May 2014.

Geoff Laurent. It's time to crack fibrosis. A journey through airway smooth muscle to the centre of the lung. An educational event celebrating the career and achievements of Professor Judy Black. Woolcock Institute of Medical Research, January 2014.

Getting funded, having fun and transforming patient care. Respiratory Medicine CME Session. February, 2014.

Cecilia Prêle. Presentation: Prêle CM, Green AM, Handoko AT, Lau HL, O'Donoghue RJJ, McAnulty R, Laurent GJ, Anderson GP, Knight DA, Ernst MR*, Mutsaers SE*. Mechanisms underlying STAT3-induced lung fibrosis. TSANZ meeting Adelaide, April 2014.

Session Chair: Fifth Margaret River Region Forum; Cell Therapy and Regenerative Medicine. Developing New Cell Therapies for Cancer and Ageing, Bussleton, Perth Nov 2014

LOCAL

Svetlana Baltic. (2014): Development of antisense oligonucleotides for asthma, LIWA Lung Symposium, Perth.

Session judge - ASMR Symposium, Perth

Vinicius Cavalheri de Oliveria. Lung cancer: The role of exercise training in the early clinical stage. APA WA Symposium. Perth, April 2014.

Geoff Laurent. Invited speaker, Lung Club Dinner Meeting. TSANZ WA, 2014.

From muscle to lung: can stem cells deliver regeneration. Combined Biological Sciences Meeting WA. 2014.

Stem Cells for Lung Therapy. PATH 3308 Biotherapeutics and Regenerative Medicine Lecture at The University of Western Australia. September 2014.

Lungs in translation: new opportunities for better treatment of lung cancer and chronic respiratory diseases. Cancer Centre Seminar. September 2014.

Cecelia Prêle. Session Chair – Combined Biological Sciences Meeting, Perth

COMMITTEES AND BOARDS

INTERNATIONAL

Geoff Laurent. External Assessor for the Periodic Review of Research Degree Provision in the National Heart and Lung Institute, Imperial College London.

Member of Advisory Board, BARD1AG.

American Thoracic Society World Lung Health Committee.

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

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

Member, American Fibrosis Association

Member, WASOG Conference Scientific Committee

President, British Association of Lung Research

Director of the European Respiratory Society (ERS) Lung Science Conference
Editor-in-Chief, International Journal of Biochemistry and Cell Biology
Associate Editor, American Journal of Respiratory Cell and Molecular Biology
Section Editor, Fibrogenesis and Tissue Repair
British Thoracic Society, Advisory Board (Thorax).
Steve Mutsaers. President, IMIG Committee, International Mesothelioma Interest Group (IMIG)
Member, Scientific Board, Mesothelioma Applied Research Foundation (MARF)

NATIONAL

Fraser Brims. Member, Australian Mesothelioma Registry Management Committee, Safe Work and Cancer Institute NSW.
Kylie Hill. Editor, Critical Appraised Papers, Journal of Physiotherapy.
Sue Jenkins. Member, COPD Evaluation Committee, Lung Foundation Australia

LOCAL

Svetlana Baltic. Executive committee, WA branch of TSANZ
Fraser Brims. Chair, WA Mesothelioma Registry, University of Western Australia.
Nola Cecins. Member, Respiratory Health Network Advisory Group (including COPD Model of Care Working Party, Department of Health, Health Networks Branch. Member, NMHS Respiratory Service Delivery Model Working Group, Department of Health North Metropolitan Area Health Service.
WA State Representative, Pulmonary Rehabilitation Network, Lung Foundation Australia.
Natalia Forrest. Member, Respiratory Health Network, WA Department of Health
Sue Jenkins. Member, Research Advisory Committee, Sir Charles Gairdner Hospital.

WA State Representative, Pulmonary Rehabilitation Network, Lung Foundation Australia.
Member, Clinical Commissioning Pulmonary Rehabilitation Reference Group, Fiona Stanley Hospital.
Cecilia Prêle. Member, Organizing and scientific committee for Third UWA-HMGU-UCL Collaborative Research Meeting, Perth, UWA 2015.
Member, Organizing and scientific committee for Fifth Margaret River Region Symposium, University of Western Australia.
Member, Organizing and scientific committee for the Regenerative Medicine Session of CBSM Perth, CBSM
Member, Organizing and scientific committee for Second UWA-HMGU-UCL Collaborative Research Meeting, London 2014.
Deputy Section Editor, Regenerative Medicine, Fibrogenesis and Tissue Repair
Dino Tan. Chair, Associate Committee, WA branch of TSANZ
Member, Outreach and Symposium, WA branch of ASMR
Member, General Committee, WA branch of ASI

INTERNATIONAL COLLABORATIONS

Professor Paul Baas. 'Investigating miRNA in serum and pleural effusion fluid from mesothelioma patients', The Netherlands Cancer Institute, Amsterdam, Department of Thoracic Oncology, The Netherlands.
Dr Asger Bjerregård. University of Copenhagen, Denmark – The role of RAGE in asthma
Professor Courtney Broadus. 'Use of tumour spheroids in testing drug actions', University of California, San Francisco, California, USA.
Associate Professor Dina Brooks. University of Toronto, West Park Healthcare Centre, Toronto, Canada: Measurement of physical activity.
Prof Anoop Chauhan. University of Portsmouth, UK. The presence and provenance of coagulation factors in post-mortem specimens of lungs from fatal asthma, non-fatal asthma and controls.

Tom Dolmage. West Park Healthcare Centre, Toronto, Canada: Measurement of physical activity.

Professor Roger Goldstein. University of Toronto, West Park Healthcare Centre, Toronto, Canada: Measurement of physical activity

Associate Prof Pyng Lee. Division of Respiratory and Critical Care Medicine, National University Hospital, Singapore

Dr David Lam. Department of Medicine, Queen Mary Hospital, Hong Kong

Dr Robin McAnulty. 'Investigating the regulation of gp130-signalling pathways in idiopathic pulmonary fibrosis', University College London, UK.

Professor Fabio Pitta. Londrina, Brazil. Physical activity in COPD.

Dr Dragica Radojkovic. Centre for Molecular Genetics and Genetic Engineering, Serbia – Pharmacogenetics of asthma.

Professor Darlene Reid. University of British Columbia, Vancouver, Canada, co-editing a new version of a physiotherapy text book.

Professor Hideaki Senjyu and Dr Ryo Kozu. Department of Physical Therapy, School of Health Sciences, Nagasaki University, Nagasaki, Japan. Pulmonary rehabilitation in chronic lung disease.

Dr Nicola Smith. Respiratory Medicine, Wellington Hospital, New Zealand

Dr Martijn Spruit. CIRO. The Netherlands, Physical activity in COPD.

Dr Elaine Yap & Dr Fiona Horwood. Respiratory Medicine, Middlemore Hospital, New Zealand

The Australasian Malignant Pleural Effusion Trial (AMPLE) - A Multicentre Randomized Study Comparing

Indwelling Pleural Catheter vs Talc Pleurodesis in Patients with Malignant Pleural Effusions.

NATIONAL COLLABORATIONS

Prof Jennifer Alison (University of Sydney), Dr Zoe McKeough (University of Sydney), Dr Christine McDonald (Austin Hospital), Anne Holland (La Trobe University/ Alfred Hospital), Dr Norm Morris (Griffiths University).

Investigating the benefits of supplemental oxygen during exercise training in people with COPD.

Prof Gary Anderson, Jessica Jones and Dr Hong-Jian Zhu. 'Investigating gp130-signalling pathways in bleomycin-induced lung fibrosis in gp130-mutant mice', University of Melbourne, Melbourne, Australia.

Dr Michael Bint. Dept of Respiratory Medicine, Nambour General Hospital, Sunshine Coast

A/Prof Janette Burgess. Woolcock Institute of Medical Research – Regulation of Prostaglandin E2 and Prostaglandin D2 receptor gene expression; 'Investigating Fibrillin-1 in idiopathic pulmonary fibrosis', Cell Biology Group Woolcock Institute of Medical Research, Sydney, Australia.

Dr Tamera Corte. University of Sydney and IPF Registry – Biobanking for IPF

Prof Mattias Ernst, Dr Robert O'Donoghue, Walter and Eliza Hall Institute. Melbourne, Australia.

Dr Paul Gardiner. (University of Queensland). Changing physical activity and sedentary behaviour in chronic respiratory disease.

Dr Luke Garske. Respiratory Medicine, Princess Alexandra Hospital, Brisbane

Dr Genevieve Healy. (University of Queensland). Changing physical activity and sedentary behaviour in chronic respiratory disease.

Assoc/Prof Anne Holland, Dr Annemarie Lee. Physiotherapy Department, Alfred Hospital. Benefits of pulmonary rehabilitation in non-cystic fibrosis bronchiectasis.

Dr Kylie Johnston. (University of South Australia).

Changing physical activity and sedentary behaviour in chronic respiratory disease

Prof Darryl Knight. University of Newcastle, Callaghan, NSW, Australia.

Dr Ben Kwan. Respiratory Medicine, St George & the Sutherland Hospitals, Sydney

Dr Glen Reid and Professor Nico van Zandwijk. Birnie Banton Centre, 'Investigating miRNA in malignant mesothelioma', Asbestos Disease Research Institute, Sydney, Australia.

Dr Andrew Rosenstegel. Holy Spirit Northside Hospital, Brisbane

Prof Neil Watkins. 'Investigating hedgehog signalling pathways in malignant mesothelioma', Monash University, Melbourne, Australia.

LOCAL

Dr Chris De Chaneet. St John of God Hospital, Bunbury, WA.

Professor Peter Eastwood and Dr David Hillman. Pulmonary Physiology, Sir Charles Gairdner Hospital, Investigating mechanisms of exercise limitation in chronic obstructive pulmonary disease (COPD); benefits of walking training in COPD; Optimising physical activity in COPD.

Professor Danny Green. School of Human Movement, University of Western Australia, Vascular health in chronic obstructive pulmonary disease. Magnitude of impairment, association with disease severity and response to exercise training.

Professor Keith Hill and Dr Elissa Burton. School of Physiotherapy and Exercise Science, Curtin University. Effectiveness of exercise programs to reduce falls in older people with dementia living in the community.

Dr Anthony Kicic. Telethon Kids Institute.

Dr Ingrid Laing. School of Paediatrics and Child Health Research at the University of Western Australia.

Professor YC Gary Lee and Professor Peter Eastwood. Pleural Disease Unit, LIWA, University of Western

Australia School of Medicine & Pharmacology, Respiratory Department and Pulmonary Physiology, Sir Charles Gairdner Hospital. Malignant pleural effusions: A clinical and translational research program.

Prof YC Gary Lee & Dr Carolyn McIntyre. Edith Cowan University Health and Wellness Institute

Feasibility and efficacy of exercise in the management of malignant pleural mesothelioma.

Prof YC Gary Lee & Dr Francesco Piccolo. Department of Medicine, Swan District Hospital, Perth

Prof Anna Nowak. National Centre for Asbestos Related Diseases, WA. Development of a clinically relevant prognostic model for malignant pleural mesothelioma.

Professor Bruce Robinson, Professor Jenette Creaney, Associate Professor Richard Lake and Dr Cleo Robinson. 'Investigating miRNA and cell plasticity of malignant mesothelioma cells', School of Medicine & Pharmacology, University of Western Australia, Perth, Australia.

Dr Ranjan Shrestha. Respiratory Medicine, Fremantle Hospital, Perth.

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IT IS ONLY THROUGH RESEARCH THAT SOLUTIONS FOR PEOPLE WITH RESPIRATORY CONDITIONS ARE FOUND.

KIMBERLY BIRNIE, TISSUE REPAIR RESEARCHER



GRANTS

Baltic S. 'Dysregulation of prostaglandin E2 receptor expression leads to severe asthma', Raine Foundation Grant.

Sinclair C, Brims FJH, Auret K, Evans S. 'Examining the utility of advanced care planning in terminal respiratory disease patients'. WA Department of Health 'SHRAK' grant.

Musk AWM, de Klerk N, Reid A, Brims FJH. 'From asbestos miners to DIY home renovators: Understanding the consequences of changing patterns of asbestos exposure'. Cancer Council WA.

Brims FJH. 'Support for a research registrar for 1 year to commence a pilot early detection program for high risk smokers'. WA Cancer and Palliative Care Network Cancer fellowship.

Brims FJH, McWilliams A. 'Regular Early Specialist Palliative Care Treatment in Mesothelioma: 'RESPECT-Meso''. Slater & Gordon Health Projects Research Fund.

Alison J, McKeough Z, McDonald C, Jenkins S, Hill K, Holland AE, Morris NM. 'A randomized controlled trial of supplemental oxygen versus medical air in people with chronic obstructive pulmonary disease: Supplemental Oxygen in Pulmonary Rehabilitation Trial (Support)'. National Health and Medical Research Council Project Grant.

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

Lee YCG, Eastwood PR, Jenkins S, Singh B and Thomas R. 'A comprehensive study of breathlessness in patients with a malignant pleural effusion. Project Grant, Cancer Council of Western Australia.

Lee YCG. 'Australasian Malignant Pleural Effusion (AMPLE) Trial – a multi-national multi-centre randomised clinical trial'. Project Grant, Sir Charles Gairdner Hospital Research Advisory Committee, Australia.

Lee YCG. 'Translational research program in pleural infection'. Alan King Westcare Project Grant, Lung Institute of Western Australia, Australia.

Lucas M, Laurent GJ, 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.

Nowak A, Francis R, Lee YCG, Bydder S, Creaney J. 'Outcomes and predictors of efficacy of palliative radiotherapy in patients with malignant pleural mesothelioma'. Project Grant, Cancer Council of Western Australia, Australia.

Mutsaers SE. 'Small non-coding RNAs in malignant mesothelioma'. Cancer Council of WA Research Fellowship.

Mutsaers SE, Knight DA, Prêle CM, O'Donoghue RR, Hoyne GA & Laurent GJ. 'STAT3 regulation of cell responses in Idiopathic Pulmonary Fibrosis'. National Health and Medical Research Council Project Grant.

Thompson PJ & Baltic S. 'Managing asthma severity by managing PGD2 receptors'. Sir Charles Gairdner Hospital Research Advisory Committee Grant.

Thompson PJ & Baltic S. 'Aberrant alternative splicing defines the severity of Asthma'. Asthma Foundation WA project grant.



PUBLICATIONS

BOOK CHAPTERS

Musk AW, de Klerk N, Brims FJH. (2014). Asbestos-Related Non-Malignant Pleural Disease and Mesothelioma. In Parkes' Occupational Lung Disorders, 4th edition. Evans CC and Hasleton PS. London, UK: Hodder Arnold.

Brims FJH, Musk AW. (In press 2015). Asbestos Related Pleural Diseases. In YCG Lee and RW Light, (eds.). Textbook of Pleural Diseases, CRC Press.

Mutsaers SE, Jaurand M-C, Lee YCG, Prêle CM. Mesothelial cells and pleural immunology. In: Textbook of Pleural Diseases 3rd ed, Chapter 3. Light RW and Lee YCG, (eds.). London, UK: Arnold Press (in press).

Mutsaers SE, Prele CM, Herrick SE. (In press 2015). Structure and function of the mesothelial cell. In: Intraperitoneal Cancer Therapy: Principles and Practice. Chapter 5. Ceelen W and Levine E, (eds.). Abingdon, UK. Taylor and Francis (in press).

INVITED REVIEWS AND EDITORIALS

Aung AK, Thompson PJ. Pulmonary Sporotrichosis: an evolving clinical paradigm. In Pulmonary and Systemic Fungal Infections Ed: Kaufmann; Seminars in Respiratory and Critical Care Medicine 2014 (In Press)

Irminger-Finger I, Kargul, Laurent GJ. (2014). Rare cancers: What we can learn from them. The International Journal of Biochemistry & Cell Biology 53: 459-60.

Irminger-Finger I, Kargul J, Laurent GJ. (2014). Non-coding RNAs: A novel level of genome complexity. The International Journal of Biochemistry & Cell Biology 54: 286.

Kargul, J, Laurent GL, Irminger-Finger I. (2014). Regenerative medicine: Future impact on clinical therapies and society. The International Journal of Biochemistry & Cell Biology 56: 1

McQualter JL, Anthony **D**, **Prêle CM**, **Laurent GJ**. (2014). Harnessing the potential of adult lung stem cells for regenerative medicine. *The International Journal of Biochemistry & Cell Biology*. Nov.56:82-91.

Thomas R, Francis R, Davies H, **Lee YCG**. (2014). Interventional therapies for malignant pleural effusions: The present and the future. *Respirology* 19: 809-822.

JOURNAL ARTICLES

Baltic S, **Mulrennan S**, **Aggarwal S**, **Wood J**, **Miranda A**, **Frost F**, **Kaye J**, **Thompson PJ**. The Role of Receptor for Advanced Glycation End Products in CF and CF related diabetes. *Scientific Reports (Nature)* 2015 (In Press) .

S Baltic. Co-author. The Interleukin-1 Consortium. Cardiometabolic effects of genetic upregulation of the interleukin 1 receptor antagonist: a Mendelian randomisation analysis. *The Lancet Diabetes & Endocrinology*. 2015 (In Press).

Barker AF, **O'Donnell AE**, **Flume P**, **Thompson PJ**, **Ruzi JD**, **de Gracia J**, **Boersma WG**, **De Soyza A**, **Shao L**, **Zhang J**, **Haas L**, **Lewis BA**, **Leitzinger LS**, **Mongomery AB**, **McKevitt M**, **Gossage D**, **Quittner AL**, **O'Riordan TG**. Aztreonam for Inhalation Solution (AZLI) in Patients with Non CF Bronchiectasis: the results from Two Double-Blind Phase 3 Trials. *Lancet Respiratory* Published online August 19, 2014 [http://dx.doi.org/10.1016/S2213-2600\(14\)70165-1](http://dx.doi.org/10.1016/S2213-2600(14)70165-1).

Bel EH, **Wenzel SE**, **Thompson PJ**, **Prazma C**, **Keene O**, **Yancey SW**, **Ortega H**, **Pavord ID**. Oral corticosteroid-sparing effect of mepolizumab in severe eosinophilic asthma: the SIRIUS study. *New England Journal of Medicine* 2014, 371: 1189-97.

Boonsawat W, **Thompson PJ**, **Faruqi R**, **Poonnoi P**. Survey of asthma management in Thailand - the Asthma Insight and Management study. *Asia Pacific Journal of Allergy and Immunology* 2014 (On Line In Press).

Boyle MP, **Bell SC**, **Konstan MW**, **McColley SA**, **Rowe SM**, **Rietschel E**, **Huang X**, **Waltz D**, **Patel NR**, **Rodman D**; **Anstead**

M, **Borowitz DS**, **Donaldson SH**, **Dorkin HL**, **Dunitz JM**, **Flume PA**, **Livingston FR**, **Kraynack N**, **Moss RB**, **Ren C**, **Schechter MS**, **Clements B**, **Thompson PJ**, **Kolbe J**, **Wynne C**, **Dupont L**. A CFTR corrector (lumacaftor) and a CFTR potentiator (ivacaftor) for treatment of patients with cystic fibrosis who have a phe508del CFTR mutation: a phase 2 randomised controlled trial. *Lancet Respir Med*. 2014 2:527-38

Brims FJH, **Murray CP**, **De Klerk NH**, **Alfonso H**, **Reid A**, **Manners D**, **Wong PM**, **Teh J**, **Olsen N**, **Mina R**, **Musk AW** (2014). Ultra low dose chest CT screening of an asbestos-exposed population in Western Australia. *American Journal of Respiratory and Critical Care Medicine*. (In press).

Burton E, **Cavalheri V**, **Adams R**, **Brown CO**, **Boverly-Spencer P**, **Fenton A**, **Campbell B**, **Hill K**. (2015). Effectiveness of exercise programs to reduce falls in older people with dementia living in the community: A systematic review and meta-analysis. *Clinical Interventions in Aging*. 2015(10): 421-434.

Cavalheri V, **Tahirah F**, **Nonoyama M**, **Jenkins S**, **Hill K**. (2014). Exercise training for people following lung resection for non-small cell lung cancer – A Cochrane systematic review. *Cancer Treatment Reviews*. 40(4):585-594.

Cheah FY, **Baltic S**, **Temple SE**, **Bhoola K**, **Thompson PJ**. (2014). Novel kinin b(1) receptor splice variant and 5'utr regulatory elements are responsible for cell specific b(1) receptor expression. *PLoS One*. 9(1):e87175.

Chung LP, **Baltic S**, **Ferreira M**, **Temple S**, **Waterer G**, **Thompson PJ**. (2014). Beta2 adrenergic receptor (adrbeta2) haplotype pair (2/4) is associated with severe asthma. *PLoS One*. 9(4):e93695.

Chuan BL, **Prêle CM**, **Arthur PG**, **Baltic S**, **Creaney J**, **Watkins DN**, **Thompson PJ** and **Mutsaers SE**. (2015). Mitochondria-derived reactive oxygen species drives GANT61-induced malignant mesothelioma cell apoptosis. *Oncotarget*. 6(3): 1519-30.

Cleaver AL, **Kania K**, **Wylie B**, **Connor T**, **Robinson C**, **Robinson BW**, **Mutsaers SE**, **Lake RA**. (2014). Long-term exposure of mesothelial cells to SV40 and asbestos leads to malignant transformation and chemotherapy resistance. *Carcinogenesis*. 35: 407-414.

- Ferreira MAR, Matheson MC, Tang CS, Granell R, Ang W, Hui J, Kiefer AK, Duffy DL, **Baltic S**, Danoy P, Bui M, Price L, Sly PD, Eriksson N, Madden PA, Abramson MJ, Holt PG, Heath AC, Hunter M, Musk B, Robertson CF, Le Souef P, Montgomery GW, Henderson AJ, Tung JY, Dharmage SC, Brown MA, James A, **Thompson PJ**, Pennell C, Martin NG, Evans DM, Hinds DA, Hopper JL. (2014). The Australian Asthma Genetics Consortium C: Genome-wide association analysis identifies 11 risk variants associated with the asthma with hay fever phenotype. *Journal of Allergy and Clinical Immunology*. 133 (6): 1564-1571.
- Gold LS, **Thompson PJ**, Salvi S, Faruqi AR, Sullivan SD. Level of Asthma Control and Health Care Utilization in Asia-Pacific Countries. *Respiratory Medicine* 2014; 108: 271-7
- Gunatilake S, **Brims FJH**, Fogg C, Lawrie I, Maskell N, Forbes K, Rahman N, Morris S, Ogollah R, Gerry S, Peake M, Darlison L, Chauhan AJ. (2014). A multicentre non-blinded randomised controlled trial to assess the impact of regular early specialist symptom control treatment on quality of life in malignant mesothelioma. (RESPECT-MESO): study protocol for a randomised controlled trial. *Trials*. 15:367.
- Hill K**, Gardiner G, **Cavalheri V**, **Jenkins S**, Healy G. (2015). Physical activity and sedentary behaviour: new targets for chronic obstructive pulmonary disease. *Internal Medicine Journal* IMJ-0364-2014R1. (in press)
- Jaffar J, Unger S, Corte TJ, Keller M, Wolters PJ, Richeldi L, Cerri S, **Prêle CM**, Hansbro PM, Argraves WS, Oliver RA, Oliver BG, Black JL, Burgess JK. (2014). Fibulin-1 predicts disease progression in patients with pulmonary fibrosis. *Chest*. 10:1378 13-2688.
- Kaessmeyer S, Bhoola K, **Baltic S**, **Thompson P**, Plendl J. Lung cancer neovascularisation: Cellular and molecular interaction between endothelial and lung cancer cells. (2014). *Immunobiology* 219(4):308-314.
- Kozu R, **Jenkins S**, Senju H. (2014). Evaluation of disability in patients with idiopathic pulmonary fibrosis grouped according to the Medical Research Council dyspnea scale: A cross-sectional study. *Archives of Physical Medicine and Rehabilitation*. 95: 950-955.
- Lee AL, Hill CJ, Cecins N, **Jenkins S**, McDonald CF, Burge AT, Rautela L, Stirling RG, **Thompson PJ**, Holland AE. (2014). Exercise training in non-cystic fibrosis bronchiectasis – a randomised controlled trial. *Respiratory Research*. 15:44.
- Lee AL, Hill CJ, Cecins N, **Jenkins S**, McDonald CF, Burge AT, Rautela L, Stirling RG, **Thompson PJ**, Holland AE. (2014). Minimal important difference in field walking tests in non-cystic fibrosis bronchiectasis following exercise training. *Respiratory Medicine*. 108(9): 1303-1309.
- Lim CB**, **Prêle CM**, Arthur PG, **Baltic S**, Creaney J, Watkins DN, **Thompson PJ** and **Mutsaers SE**. (2015). Mitochondria-derived reactive oxygen species drives GANT61-induced malignant mesothelioma cell apoptosis. *2014 Oncotarget*. 6: 1519-30
- McQualte JL, Anthony D, Bozinovski S, **Prêle CM**, **Laurent GJ**. (2014). Harnessing the potential of lung stem cells for regenerative medicine. *International Journal of Biochemical and Cell Biology*. 56: 82-91.
- Moodley Y**, **Thompson PJ**. Stem cells and the lung – the way forward. *Respirology* 2014; 19:5-8
- Nathan R, **Thompson PJ**, Price D, Fabbri LM, Salvi S, Gonzalez Diaz S, Maspero JF, Moreno-Cantu J, Fish J, Murphy K. Taking Aim at Asthma Around the World: Global Results of the Asthma Insight and Management (AIM) Survey in the Asia-Pacific Region, Latin America, Europe, Canada, and the United States. *Journal of Allergy and Clinical Immunology In Practice* 2014 (In Press)
- Ngai SP, Jones AY, **Jenkins S**. (2014). Regression equations to predict 6-minute walk distance in Chinese adults aged 55-85 years. *Hong Kong Physiotherapy Journal*. 32(2): 58-64.
- Noteboom B, **Jenkins S**, Maiorana A, Cecins N, Ng C, **Hill K**. (2014). Comorbidities and medication burden in people with chronic obstructive pulmonary disease attending pulmonary rehabilitation. *Journal of Cardiopulmonary Rehabilitation and Prevention*. 34:1:75-79.
- Ortega HG1, Liu MC, Pavord ID, Brusselle GG, FitzGerald JM, Chetta A, Humbert M, Katz LE, Keene ON, Yancey SW, Chanez P, for the MENZA Investigators including **Thompson PJ**. Mepolizumab treatment in patients with

severe eosinophilic asthma. *New England Journal of Medicine* 2014, 371:1198-207

Platé M, Lawson PJ, Hill MR, Quint JK, Kumari M, **Laurent GJ**, Wedzicha JA, Chambers RC, Hurst JR. (2014). Impact of a functional polymorphism in the PAR-1 gene promoter in COPD and COPD exacerbations. *Am J Physiol Lung Cell Mol Physiol*. Aug 15;307(4):L311-6

Popowicz N, Nash M, **Lee YCG**. (2014). Unintentional intramuscular administration of tPA/DNase for pleural infection. *Respirology Case Reports*. 2(4): 144-146.

Popowicz N, Piccolo F, Shresha R, **Lee YCG**. (2014). Two sequential tPA/DNase courses for noncommunicating loculated collections in pleural infection. *Respirology Case Reports*. 2(2): p. 87-89.

Tan D, Fernandez S, Price P, French M, **Thompson PJ**, and **Moodley Y**. (2014).

Impaired CTLA-4 responses in COPD are associated with systemic inflammation.

Cellular & Molecular Immunology. Mar 24. doi: 10.1038/cmi.2014.20. [Epub ahead of print]

Tan D, Fernandez S, Price P, French M, **Thompson PJ**, **Moodley Y**. Impaired function of regulatory T-cells in patients with chronic obstructive pulmonary disease (COPD). *Immunobiology* 2014 219: 975-979.

Thomas R, Budgeon C, Kuok YJ, Read C, Fysh E, Bydder S, **Lee YCG**. (2014). Catheter tract metastasis associated with indwelling pleural catheters. *Chest*. 146: 557-62.

van Dongen J, Jansen R, Smit D, Hottenga JJ, Mbarek H, Willemsen G, Kluft C, Duffy DL, Matheson MC, Marks GB, Hui J, Souëf PL, Danoy P, **Baltic S**, Nyholt DR, Jenkins M, Hayden C, Beilby J, Cheah F, Madden PA, Heath AC, Hopper JL, Musk B, Leeder SR, Walters EH, Martin NG, James A, Jones G, Abramson MJ, Robertson CF, Dharmage SC, Brown MA, Montgomery GW, **Thompson PJ**, Penninx BW, Ferreira MA, Boomsma DI, de Geus EJ. The contribution of the functional IL6R polymorphism rs2228145, eQTLs and

other genome-wide SNPs to the heritability of plasma sIL-6R levels. *Behavior Genetics* 2014 44:368-82.

Wootton SL, Ng LWC, McKeough ZJ, **Jenkins S**, **Hill K**, **Eastwood PR**, Hillman DR, Cecins N, Alison J. (2014).

Ground-based walking training improves quality of life and exercise capacity in COPD. *European Respiratory Journal*. 44: 885-894.

Wootton SL, Ng C, McKeough ZJ, **Jenkins S**, **Hill K**, Alison JA. (2014). Estimating endurance shuttle walk test speed using the six-minute walk test in people with COPD. *Chronic Respiratory Disease*. 11: 89-94.



FINANCIAL REPORT*

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

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 with the Charitable Collections Act 1946 (WA).
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 26th day of March 2015




Sue Morey, Board Chair

INCOME STATEMENT

FOR THE YEAR ENDED 31 DECEMBER 2014

	Note	2014 \$	2013 \$
Revenue	2	2,587,884	2,351,755
Operating expenses		(518,896)	(425,539)
Employee benefits expense		(1,861,127)	(1,596,782)
Depreciation expenses		(42,003)	(43,372)
Finance costs		(1,575)	(1,163)
Other expenses		(310,760)	(408,693)
(Deficit) for the year		<u>(146,477)</u>	<u>(123,794)</u>
Surplus/(deficit) allocated to			
Restricted funds	9	121,204	(69,259)
Designated funds	9	277,856	162,483
Unrestricted funds	9	(545,537)	(217,018)
		<u>(146,477)</u>	<u>(123,794)</u>

The accompanying notes form part of these financial statements.



BALANCE SHEET

FOR THE YEAR ENDED 31 DECEMBER 2014

	Note	2014 \$	2013 \$
CURRENT ASSETS			
Cash and cash equivalents	3	1,408,134	1,782,945
Trade and other receivables	4	379,231	267,697
Financial assets	5	250,000	-
TOTAL CURRENT ASSETS		<u>2,037,365</u>	<u>2,050,642</u>
NON-CURRENT ASSETS			
Financial assets	5	-	250,000
Property, plant and equipment	6	173,956	207,965
TOTAL NON-CURRENT ASSETS		<u>173,956</u>	<u>457,965</u>
TOTAL ASSETS		<u>2,211,321</u>	<u>2,508,607</u>
CURRENT LIABILITIES			
Trade and other payables	7	214,436	391,246
Employee provisions		153,690	134,302
TOTAL CURRENT LIABILITIES		<u>368,126</u>	<u>525,548</u>
NON-CURRENT LIABILITIES			
Employee provisions		64,188	57,575
TOTAL NON-CURRENT LIABILITIES		<u>64,188</u>	<u>57,575</u>
TOTAL LIABILITIES		<u>432,314</u>	<u>583,123</u>
NET ASSETS		<u>1,779,007</u>	<u>1,925,484</u>
MEMBERS' FUNDS			
Accumulated funds			
Restricted	8	251,945	130,741
Designated	8	683,625	405,769
Unrestricted	8	843,437	1,388,974
TOTAL MEMBERS' FUNDS		<u>1,779,007</u>	<u>1,925,484</u>

The accompanying notes form part of these financial statements.



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**INDEPENDENT AUDITOR'S REPORT
TO THE MEMBERS OF
THE INSTITUTE FOR RESPIRATORY HEALTH (INC.)**

We have audited the accompanying financial report, being a special purpose financial report, of the Institute for Respiratory Health Inc ("the Association"), which comprises the balance sheet as at 31 December 2014 the income statement and cash flow statement for the year then ended, notes comprising a summary of significant accounting policies and other explanatory information, and the directors statement.

Board of Management Responsibility for the Financial Report

The board of management is responsible for the preparation and presentation of the financial report in accordance with the basis of preparation described in Note 1 for the purpose of fulfilling the board of management's accountability requirements under the Association's Rules and the Charitable Collections Act 1946. The board of management's responsibility also includes such internal control as the board of management determine is necessary to enable the preparation of the statement that is free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on the financial report based on our audit. We conducted our audit in accordance with Australian Auditing Standards. These Auditing Standards require that we comply with relevant ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial report. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the statement, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the statement in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the board of management, as well as evaluating the overall presentation of the financial report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

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member of the RSM network is an independent accounting and
advisory firm which practises in its own right. The RSM
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Independence

In conducting our audit, we have complied with the independence requirements of the Australian professional accounting bodies.

Opinion

In our opinion, the financial report presents fairly, in all material respects, the financial position of the Institute for Respiratory Health (Inc.) as of 31 December 2014 and its financial performance for the year then ended in accordance with its constitution and the accounting policies described in Note 1 to the financial statements.

Basis of Accounting

Without modifying our opinion, we draw attention to Note 1 in the financial report, which describes the basis of accounting. The financial report has been prepared to assist The Institute for Respiratory Health (Inc.) to meet the requirements of its Rules and the Charitable Collections Act 1946. As a result, the statement may not be suitable for another purpose.

RSM BIRD CAMERON
RSM BIRD CAMERON

AWHYTE
ALASDAIR WHYTE
Director

Perth, WA
Dated: 13 March 2015



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 Institute for Respiratory Health

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We are a registered charity. All donations over \$2 are tax deductible.
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