

## Curriculum Vitae: Gregory George KING

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### Personal details

Citizenship: New Zealand (Australian permanent resident)  
Date of Birth: 9<sup>th</sup> December, 1961

### Qualifications

PhD	1997	The University of Sydney, Australia.
FRACP	1993	Respiratory Medicine
MB ChB	1986	Otago University, New Zealand.

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## 1. Current Appointments

<b>2017 - present</b>	Conjoint Professor of Respiratory Medicine, Northern & Central Clinical Schools, Sydney Medical School, Sydney University.
<b>2010 - 2015</b>	Practitioner Fellow, National Health & Medical Research Council
<b>October 2005 - present</b>	Medical Director, Respiratory Investigation Unit, Royal North Shore Hospital, St Leonards 2065.
<b>2002 - present</b>	Staff Specialist, Department of Respiratory Medicine, Royal North Shore Hospital, St Leonards 2065.
<b>1999 - present</b>	Research Leader, The Woolcock Institute of Medical Research, Glebe NSW 2037.
<b>1995 - 1999</b>	Associate Physician, Department of Respiratory Medicine, Royal Prince Alfred Hospital, Camperdown 2050.

## 2. General Description

**Education:** Gregory G. King, MB ChB, PhD, FRACP is a medical graduate of Otago University in New Zealand and practicing Consultant Respiratory Physician. He completed his PhD at Sydney University on airway closure in asthma and completed Postdoctoral Research Fellowships at Sydney University and at the Pulmonary Research Laboratory of the University of British Columbia in Vancouver.

**Current positions and memberships:** He is the Research Leader of the Airway Physiology & Imaging Group. He is staff specialist in the Department of Respiratory Medicine at Royal North Shore Hospital, where he directs the asthma service and is the Medical Director of the Respiratory Investigation Unit. He is Conjoint Professor of Respiratory Medicine of the Northern Clinical School of the University of Sydney (2017). Dr King is a member of the American Thoracic Society (ATS), European Respiratory Society (ERS), the American Physiological Society (APS) and Thoracic Society of Australia and New Zealand (TSANZ) for whom he currently serves on executive committees dealing with programming, education, research and society awards and grants.

**Activities:** Dr King is active in clinical research, undergraduate and postgraduate teaching at a local, national and international level, and practices respiratory medicine at the Royal North Hospital, Sydney where he sees patients with severe and difficult-to-manage airways disease and acute general respiratory medical patients. His aim is to integrate research with teaching and clinical practice in relation to the management of airways disease. His research interest is airway and lung mechanics in airways diseases, in which he has published over 100 peer-reviewed scientific journal papers, has supervised 15 PhD completions, and currently supervises 7 PhD students.

Publication citations (August 2016): H-index 31. i10 index 60. Citations 3922.

**Short description:** Dr King is a medical graduate of Otago University and a clinician-researcher at the Woolcock Institute of Medical Research, Sydney University, Centre of Research Excellence in Severe Asthma and Royal North Shore Hospital. He is Conjoint Professor of Respiratory Medicine the Sydney Medical School, Sydney University and Medical Director of the Respiratory Investigation Unit. He has a research interest in the mechanics of airways disease in relation to

clinical aspects of disease. His expertise includes complex measurements of airway and lung function, including the forced oscillation technique, multiple breath nitrogen washout and 3-dimensional ventilation imaging and CT imaging. He currently supervises 7 PhD students (6 as primary supervisor) and postdoctoral fellows from science and medical backgrounds. He has a clinical and research interest in asthma, COPD and bronchiolitis in haemopoietic stem cell transplant recipients. Dr King maintains active participation in the activities of the TSANZ and ATS in terms of teaching, professional development and executive committee function.

### 3. Past Appointments

<b>2007 - 2016</b>	Conjoint Associate Professor of Medicine, Northern Clinical School, Sydney University
<b>2002 - 2006</b>	Conjoint Senior Lecturer, Northern Clinical School, Sydney University
<b>2000 - 2002</b>	Sydney University U2000 Postdoctoral Fellow
<b>1997 - 1999</b>	Postdoctoral Research Fellow, UBC Pulmonary Research Laboratory, Vancouver, Canada .
<b>1994</b>	Respiratory Physician, Chest Clinic, Royal Prince Alfred Hospital, Camperdown NSW 2050. Allergy Consulting Rooms, Royal Prince Alfred Medical Centre.
<b>1995 - 1996</b>	Medical Officer, Liverpool Private Hospital Sleep Unit (part time)
<b>1993 - 1996</b>	Medical Officer ICU and CCU, Strathfield Private Hospital (part time)
<b>1993 - 1996</b>	Research Scholar / PhD student, Institute of Respiratory Medicine.
<b>1991 - 1992</b>	Advanced training respiratory medicine, Department of Respiratory Medicine, Royal Prince Alfred Hospital, Camperdown, Australia.
<b>1990</b>	First year advanced trainee, Department of Medicine, Dunedin Public Hospital, New Zealand.
<b>1989</b>	Medical Registrar, Department of Medicine, Dunedin Public Hospital, New Zealand. (General Medicine/nephrology, Intensive Care, Cardiology)
<b>1988</b>	Senior House Officer, Department of Medicine, Dunedin Public Hospital, New Zealand. (6 months General Medicine, 6 months Respiratory Medicine.
<b>1987</b>	Second Year House Officer, Dunedin Public Hospital, New Zealand.
<b>1986</b>	First Year House Officer, Waikato Public Hospital, Hamilton, New Zealand.

### 4. Society Memberships

2016	European Respiratory Society
2004	American Thoracic Society
2005	American Physiological Society
2005	Asia Pacific Society of Respirology
1994	Thoracic Society of Australia & NZ

## 5. Committee Memberships

<b>2017</b>	Chair Elect, Structure and Function Assembly, Asia Pacific Society of Respiriology
<b>2015</b>	Translational Committee member, CRE for Severe Asthma.
<b>2014</b>	Co-Chair, ATS/ERS Task Force: Statement on Technical Standards for The Forced Oscillation Technique. Chair, Awards Committee, Education and Research Sub-committee, Thoracic Society of Australia and NZ.
<b>2013</b>	Chair, Program Committee, Respiratory Structure and Function Assembly, American Thoracic Society.
<b>2012</b>	Chair Elect, Program Committee, Respiratory Structure and Function Assembly, American Thoracic Society. Member, Advisory Committee on Lung Imaging, Australian Synchrotron, Melbourne. Assigners Academy, National Health & Medical Research Council of Australia. Grant Review Panel member, NZ Health Research Council (2012-2013)
<b>2012 - present</b>	Chair, Research Committee, The Woolcock Institute of Medical Research.
<b>2011</b>	Chair, Local Organising Committee, Thoracic Society of Australia & NZ ASM Canberra.
<b>2008</b>	Member, Nominations Committee, Structure & Function Assembly, American Thoracic Society. Member, Program Committee, Structure & Function Assembly, American Thoracic Society (2008 - 2010).
<b>2007</b>	Deputy-chair & Chair, Sleep & Physiology Special Interest Group, Thoracic Society of Australia & NZ (2007 - 2009). Convenor, Short Course for Advanced Trainees, TSANZ ASM (2007 - 2008)
<b>2006</b>	President, NSW Branch, Thoracic Society of Australia & NZ (2006 - 2007). Member, Planning Committee, Respiratory Structure and Function Assembly, American Thoracic Society. Member, Education and Research Sub-Committee, Thoracic Society of Australia & NZ (2006-7). Convenor, RACP Selection Committee for Advanced Trainees in Respiratory Medicine (2006 - 2008).
<b>2005</b>	Member, Program Committee, Structure & Function Assembly, American Thoracic Society (2005 - 2009).
<b>2004</b>	Honorary Secretary, NSW Branch, Thoracic Society of Australia & NZ (2004 - 2005). Member, Scientific Organising Committee, Thoracic Society of Australia & NZ ASM, Sydney.
<b>2002</b>	Member, GP Asthma Initiative - Spirometry Subgroup, Department of Health and Ageing.

## **6. Collaborations**

### *National - Current*

1. Professor Alan James and Dr Peter Noble, Telethon Children's Institute and University of Western Australia, Perth.
2. Professor Bruce Thompson, Monash University and The Alfred Hospital, Melbourne.
3. Professor Peter Gibson, Hunter Medical Research Institute and University of Newcastle, Newcastle.
4. Professor E Haydn Walters, Dr Richard Woodbaker and Dr David Johns, University of Tasmania, Tasmania.

### *International - Current*

1. Professor Dirkje Postma, Dept. of Pulmonary Medicine and Tuberculosis, University Medical Center Groningen, Groningen, The Netherlands 2014-15.
2. Associate Professor Geoffrey Maksym, Department of Engineering, Dalhousie University, Nova Scotia, Canada. 2013 - current.
3. Professor Raffaele Dellaca, Politecnico di Milano, Italy. 2013 - current.
4. Professor Kim Prisk, Departments of Medicine and Radiology, University of California, San Diego, USA. 2013 - current.
5. Dr Sylvia Verbanck – Respiratory Division, Academic Hospital, Vrije Universiteit Brussel, Belgium.
6. Professor Ellie Oostveen - revision of the ATS/ERS FOT Technical Standards document. 2014-15.
7. Professor Gwen Skloot - ATS Working Group on "Evaluation and Management of Asthma in the Elderly" 2015.

### *International - Past*

1. Associate Professor Merryn Tawhai, The Bioengineering Institute, University of Auckland, NZ.
2. Professor Yasutaka Nakano, Shiga University of Medical Science, Japan.
3. Professor Robert Brown, Departments of Radiology and Anaesthesia, Johns Hopkins University, Baltimore, Maryland, USA.
4. Dr Terry Robinson, Department of Paediatrics – Pulmonary Medicine, Stanford University School of Medicine, California, USA.

### *Industry*

1. Thorasys, Montreal, Quebec, Canada.
2. Restech, Milan, Italy.

## **7. Journal Manuscript Editorial Board / Review**

2013-5	Editorial Board Respiratory Physiology and Neurobiology.
2015-2016	Associate Editor Respirology for COPD Review Series.
2017	Editorial Board Canadian Journal of Respiratory, Critical Care and Sleep Medicine
2016	Editorial Board Modern Medicine Respirology

### *Reviewer*

1. American Journal of Respiratory and Critical Care Medicine
2. European Respiratory Journal
3. Journal of Applied Physiology
4. Thorax
5. Chest
6. Respirology.
7. Internal Medicine Journal
8. Medical Journal of Australia
9. Respiratory Physiology and Neurobiology
10. AJP-Lung Cellular and Molecular Physiology
11. Paediatric Pulmonology
12. International Journal of Obesity

## **8. Awards**

2014 Asia Pacific Society of Respirology Ann Woolcock Research Medal.

## 9. Invited Lectures

<p><b>2017</b></p>	<p><b>TSANZSRS, Canberra.</b></p> <ul style="list-style-type: none"> <li>• AT Short course: “What the FOT is that?”</li> <li>• Postgraduate Course on FOT: “FOT in asthma diagnosis and management”</li> <li>• Postgraduate Course in Severe Asthma: Case discussions in severe asthma (with Vanessa MacDonald and Alan James).</li> <li>• Industry Stand (AstraZeneca): “Knowing about Hyperinflation can help in the management of COPD patients”</li> </ul> <p><b>ATS ASM, San Francisco, USA.</b></p> <ul style="list-style-type: none"> <li>• Symposium: Fat and Flow. “Ventilation distribution in Obesity”</li> <li>• Symposium: Smokers With Preserved Spirometry: Early COPD? “Small Airway Function in Smokers”</li> </ul> <p><b>ERS ASM, Milan, Italy.</b></p> <ul style="list-style-type: none"> <li>• The Sadoul Lecture (honouring Dirkje Postma): “Small Airways and Hyperresponsiveness in Asthma and COPD”</li> </ul> <p><b>APSR ASM, Sydney, Australia.</b></p> <ul style="list-style-type: none"> <li>• Postgraduate Course in Severe Asthma: “Optimising Inhaled Therapy”</li> <li>• Symposium: Predicting progression and therapeutic responses in COPD. “Airway &amp; Lung Imaging”</li> <li>• Industry sponsored breakfast Symposium (MundiPharma). High Fine Particle Fraction Combination Rx Improves Symptoms &amp; Small Airway Function in Uncontrolled Asthma</li> <li>• Industry Stand (MundiPharma): “Drug Delivery to the Small Airways in Asthma”</li> <li>• Industry Stand (AstraZeneca): “Hyperinflation in COPD”</li> </ul>
<p><b>2016</b></p>	<p>4th Annual Peter D. Paré Lecture, James Hogg Research Centre, University of British Columbia, Vancouver, Canada. Sept 2016.</p> <p>Thoracic training and education – in the 21st century: Pulmonary Physiology - Teaching Old Tricks To A New Generation. Symposium TSANZSRS Perth.</p> <p>TSANZ/ANZSRS Joint Master class: Bronchial Provocation testing. Bronchial Provocation results: What does it mean?</p> <p>TSANZ Concurrent Session (Physiology and Sleep SIG and Asthma and Allergy SIG): Targeting airway stiffness to treat obstructive disease. Airway wall stiffening in asthma and COPD.</p>



<p><b>2015</b></p>	<p>TSANZ Guidelines for Acute Oxygen Therapy. Grand Rounds at The Royal Prince Alfred Hospital, Royal North Shore Hospital, Concord Hospital (2016).</p> <p>COPD: Moving Towards Personalised Treatment. Satellite Symposium, Taiwan Society of Pulmonology and Critical Care Medicine, Kaohsiung, Taiwan.</p> <p>Translating Asthma Control from Research to Real World (the small airways). MundiPharma / Korean Thoracic Society Asian Pacific Conference. Seoul, Korea.</p> <p>MundiPharma Speaker Tour Hong Kong. Aerosol treatment in Asthma.</p> <p>MBNW - What The Heck Are We Measuring? Flow Volume Underworld Meeting, The Woolcock Institute of Medical Research, March.</p> <p>Exploring Physiologic Mechanisms to Understand COPD. ANZSRS/TSANZ Joint Symposium, TSANZ Gold Coast, QLD.</p> <p>Targeting The Central and Peripheral Airways In Asthma. Philippines College of Chest Physicians Conference, Manila, Philippines, March.</p> <p>Navigating the Pulmonologist Through the Sea of Asthma Phenotypes and Endotypes. Philippines College of Chest Physicians Conference, Manila, Philippines, March.</p>
<p><b>2014</b></p>	<p>Clinical Applications of FOT – Thorasys presentation, TSANZ Adelaide, SA. 2014 (unpaid).</p> <p>TSANZ Workshop: Reviewing NHMRC Grants. TSANZ Adelaide, SA. 2014 (unpaid).</p> <p>Understanding the grant writing process. ATS RSF Workshop, San Diego, USA. 2014 (registration waived).</p> <p>A Reappraisal of Small Airway Dysfunction in Asthma and COPD. Bronchitis IX meeting, Groningen, The Netherlands. Travel, accommodation and registration.</p> <p>Ann Woolcock Memorial Lecture, Asia Pacific Society of Respiriology Annual Scientific Meeting, Indonesia.</p> <p>Small airways in asthma and severe asthma. Assembly of Asthma Congress Symposia, Asia Pacific Society of Respiriology Annual Scientific Meeting, Indonesia.</p>
<p><b>2013</b></p>	<p>Physiologic markers of small airways disease and their physiologic relevance. Major Symposium ERS Barcelona. Hot Topic: Small airways in asthma: from physiologic measures to clinical relevance. (Expenses paid)</p> <p>Obesity and Asthma. TSANZ/ANZSRS Darwin. Joint Plenary Session: Obesity and Respiratory Disease Interactions. (Not paid)</p> <p>Severe Asthma: What is the role of chest CT? Severe Asthma Network Symposium, TSANZ Darwin.</p>

<b>2012</b>	<p>APSR Conference, Hong Kong. Structure and Function Assembly Symposium: Discoveries from SPECT and PET in asthma.</p> <p>TSANZ Annual Scientific Meeting, Canberra. March. Convenor, TSANZ Short Course on Research. Talk: Choosing a Postdoctoral Project or Location.</p> <p>ATS Annual Scientific Meeting, San Francisco. Speaker Major Symposium. Airway Remodeling And Hyperresponsiveness In Asthma: What Are They And What Can We Do About Them? "Airway mechanics: determinants of airway narrowing."</p> <p>Annual Novartis Respiratory Symposium, Amora Hotel, Sydney. February. 1) Debate: Should we treat symptoms and not numbers in COPD? 2) COPD research in Australia.</p>
<b>2011</b>	<p>"What is important in the management of longterm asthma control". 21st Congress of Interasma Japan/North Asia. Gifu Prefecture. 1st July, 2011.</p> <p>"CT Imaging in Asthma" and The Effect of Methacholine Challenge on Ventilation Heterogeneity in Asthma Measured by Technegas SPECT/CT". The 3rd Meeting of the Japanese Society of Pulmonary Functional Imaging and 5th International Workshop of Pulmonary Functional Imaging (3rd JSPFI &amp; 5th IWPMFI), Awaji, Japan. January 2011.</p> <p>TSANZ ASM, Perth, WA. ANZSRS debate: "To glow or to blow". April, 2011.</p> <p>Obesity and the Lung: Effects on Structure and Function. ATS Structure and Function Symposium: Obesity – Implications for the Clinical Practice of the Pulmonary, Critical Care and Sleep Physician. May, 2011.</p>
<b>2010</b>	<p>AstraZeneca Respiratory Symposium, January 2010. Sydney. The Future of Imaging.</p> <p>GSK Asthma Masterclass (Australia, New Zealand, Singapore, India, Vietnam, Malaysia, China, Taiwan, Thailand). "Asthma is a variable disease". July 2010. Tokyo, Japan.</p> <p>Keynote speaker: WA Branch TSANZ / ANZSRS meeting, October 2010. 1) Lung function monitoring and 2) What can imaging tell us about lung disease.</p> <p>Keynote speaker: Queensland Branch TSANZ meeting, Brisbane. November, 2010. "How will imaging technology be of use in respiratory practice and research in the next 10 years?".</p> <p>APSR ASM, Manila. November 2010. Top 20 Tips for Interpreting Lung Function Testing in the Adults</p> <p>APSR ASM, Manila. Lung Imaging Developments</p> <p>APSR ASM, Manila. Current and Future Imaging for COPD</p>
<b>2009</b>	<p>GSK Symposium: Risking the Future or Managing Future Risk? TSANZ Annual Scientific Meeting, Darwin.</p>

<b>2008</b>	<p>Thoracic Society of Australia and NZ, Annual Scientific Meeting, Melbourne. 1) Short Course for Advanced Trainees. "Pulmonary Physiology in Everyday Practice". 2) Sleep and Physiology SIG Symposium. "Imaging the small airways: HRCT."</p> <p>Japanese Respiratory Society Annual Scientific Meeting, Kobe, Japan. The Mechanisms By Which Airway Inflammation and Remodeling Cause Airway Hyperresponsiveness in Asthma.</p> <p>Airways 2008 Meeting, Gold Coast, Australia. Assessment of COPD in clinical practice with a focus on imaging.</p> <p>Asia Pacific Society of Respiriology. APSR and ANZSRS Post Graduate Course. Imaging Techniques for Measuring Small Airways. Bangkok, Thailand.</p>
<b>2007</b>	<p>Thoracic Society of Australia and NZ, Annual Scientific Meeting. 1) Short Course for Advanced Trainees. Measurement of small airway function. 2) Pfizer Boehringer Symposium: "The Great Debate: Mortality is the Ultimate Endpoint in COPD."</p> <p>American College of Chest Physicians, Chicago, USA. Assessment of remodelling, HRCT techniques.</p> <p>Asia Pacific Society of Respiriology Annual Scientific Meeting, Gold Coast, Australia. 1) ANZSRS/APSR Combined symposium: new developments in physiology. Linking the Structure and Function of the respiratory system - the upper airway to lung parenchyma.</p> <p>AstraZeneca Leadership Forum, Melbourne 2007. Imaging of Progressive Lung Disease in Asthma.</p>
<b>2006</b>	<p>Asia Pacific Society of Respiriology Annual Scientific Meeting, Kyoto, Japan. "Application of CT Scans for Airways Diseases."</p> <p>American College of Asthma, Allergy and Clinical Immunology Annual Scientific Meeting, Philadelphia, USA. Evening Symposium: "Measurements of Small Airway Function: Beyond FEF25075".</p> <p>Australia, New Zealand Society of Respiratory Scientists, Annual Scientific Meeting, Canberra. "Forced Oscillation Measurements in COPD".</p> <p>Thoracic Society of Australia and NZ, Annual Scientific Meeting, Breakfast session: "COPD &amp; hyperinflation: is that all there is? (is there more to COPD than FEV1)".</p> <p>Thoracic Society of Australia and NZ, Annual Scientific Meeting, Sleep and Physiology SIG Symposium: "Peripheral Airway function in Asthma – Mechanics".</p>
<b>2005</b>	<p>Asia Pacific Society of Respiriology Annual Scientific Meeting, Guangzhou. "Airway heterogeneity in asthma measured by HRCT".</p> <p>GSK Asthma meeting, South East Asia, Ho Chi Minh City. "The long and short of asthma management".</p> <p>The Structure and Function of the Periphery of the Lung, Brussels. "Small airway measurements by FOT and MBNW in Asthma".</p> <p>Airway smooth muscle mechanics in asthma workshop, San Diego.</p>

<b>2004</b>	<p>TSANZ Course on Respiratory Research. Clinical use of FOT in adults. TSANZ ASM.</p> <p>“New investigations and management of pulmonary embolism” Course on Respiratory Medicine for GP’s, July 2004.</p> <p>Airways 2004 meeting (Glenelg, SA). Physiological predictors of treatment outcomes”.</p>
<b>2002</b>	<p>Airways 2002 meeting (Noosa). “HRCT in obstructive Lung Disease.”</p>
<b>1997</b>	<p>Major Symposium: Annual Scientific Meeting of the European Respiratory Society, Berlin, Germany. “New ways of visualising the airways.”</p>

## **10. Service To The Profession**

1. Convener, Implementation of the Acute Oxygen Therapy guidelines at RNSH.
2. Chair, Awards Committee, TSANZ. 2014 - current.
3. Organising Committee, Flow Volume Underworld Meeting 2015, Sydney.  
This conference started in 1965 by a small group of pulmonary physiologists who are now recognised as having made historic contributions to lung physiology (Peter Macklem, Sol Permutt, Jere Mead, Bob Hyatt). It has run every 3-5 years around North America and its focus has been intensive discussion on important research questions in the physiology of the lung, usually around obstructive airways disease.  
The Sydney conference is the 50th anniversary of the conference and the second time it will have been held outside North America.
4. Chair, ATS/ERS Taskforce for Standards for the Forced Oscillation Technique.  
This task force comprises a large proportion of the world's experts in airway physiology and forced oscillation techniques. The task is to revise the 2003 Guideline document.
5. Chair, Working Group, TSANZ Guidelines For Acute Oxygen Therapy.  
The group revised the Guideline Statement for the TSANZ, with a view to publication in Respirology and work to disseminate the recommendations locally.
6. Mentor, Mentorship Program, Thoracic Society of Australia and NZ  
This is a program that matches mentors and mentees in the Thoracic Society. My role as a mentor has been to provide advice and insight to young respiratory physicians to help them develop their careers as physicians and physician - scientists.
7. Convenor, Lung School Program and Respiratory Basic Training Program, RACP.  
Coordination of the respiratory lecture program given to the Basic Trainees in Australia. This was given via video link from the RACP offices in 2006 & 2007. The Lung School was a lecture and seminar course given to Respiratory Advanced Trainees, also run out of the RACP education facility to trainees across Australia.

## 11. Grants

TITLE	Investigators	Source	Years	Funds
FOT home monitoring in asthma	C Thamrin Gregory G King	Severe Asthma CRE	2016	\$22,000
Effects of bronchial thermoplasty on small airways in severe asthma	Claude Farah Gregory G King	Severe Asthma CRE	2016	\$22,000
Severe asthma: identifying patterns of medication taking behaviour in primary care	Sinthia Bosnic-Anticevich Greg King	Severe Asthma CRE	2016	\$22,000
APP1078579 - Severe Asthma CRE	Peter Gibson Guy Marks Vanessa McDonald Peter Wark Gregory King Bruce Thompson Helen Reddel John Upham Lorraine Smith Alan James	NH&MRC - CRE	2015-19	\$2,498,171
IMPACT Philanthropy	Gregory King	Perpetual	2015	\$74,671
USyd Bridging Grant - Role of neutrophils in chronic airflow obstruction in asthma.	Gregory King	USyd Bridging Scheme	2014	\$30,000
APP1076217 - CSI-Sydney: New technologies to treat chronic sinus infection	Young, Paul Traini, Daniella King, Gregory Bailey, Dale Whitchurch, C Rohanizadeh, R	NH&MRC - Development	2014-16	\$401,708
APP1065938: Prediction of clinical outcomes in COPD from lung function variability	Cindy Thamrin Greg King	NH&MRC	2014-16	\$496,226
APP1063068 – Airway extracellular matrix and smooth muscle in chronic obstructive pulmonary disease (COPD)	Alan James Greg King Peter Noble Peter McFawn Brent McParland John Elliott	NH&MRC	2014-16	\$501,118
APP1031701: Localised airway reactivity as a determinant of asthma control and AHR	Greg King Cheryl Salome Norbert Berend	NH&MRC	2012-15	\$296,175

APP1008548: Physiological aetiology of refractory asthma	Bruce Thompson Greg King Frank Thien Jo Douglas Robin O'Heir	NH&MRC	2011-13	\$344,208
APP632793: Is asthma in the elderly a disease of the peripheral airways?	Greg King Cheryl Salome Norbert Berend Nathan Brown Sue Downie	NH&MRC	2010-12	\$484,500
APP632916 - Practitioner Fellowship	Greg King	NH&MRC	2010-14	\$420,875
Ref: 2008-33 – Research Development.	Dale Bailey Greg King	Northern Sydney Area Health Service Research Grants Program	2008	\$40,000
APP512387: How do thick airway walls affect airway hyperresponsiveness in asthma?	GG King CM Salome N Berend N Brown S Downie	NH&MRC	2008-10	\$367,125
APP457346: Does the pattern of ventilation distribution predict airway hyperresponsiveness?	GG King CM Salome N Berend	NH&MRC	2007-09	\$246,750
Functional assessment in the management of radiotherapy in lung cancer	Jennifer Cox Dale Bailey Greg King Geoff Schembri Graeme Morgan	Cancer Institute of NSW	2007-09	\$27,090
Markers of airway disease in older people with persistent airway obstruction	N Berend GG King CM Salome	Asthma Foundation of NSW	2006	\$50,000
The effects of lung inflation on ventilation heterogeneity and airway closure in asthma.	G King B Thompson S Verbanck M Tawhai CW Thorpe	Asthma Foundation of NSW	2006	\$50,000
Advanced diagnostics and monitoring: FOT and eNO (Project 2.1)	N Berend G King C Salome	Co-operative Research Centre for Asthma & Airways	2005-11	~\$500,000/yr for 7 years
0562715 - X-ray Micro-tomography Validation of HRCT-Based Airway Measurements	A Jones GG King	ARC Linkage	2005-8	\$646,098

Centre for Clinical Research Excellence in Respiratory and Sleep Medicine	R Gurnstein G Marks P Gibson P Bye S Anderson GG King N Berend C Jenkins M Hensley	Centre fo Clinical Researchexcellence in Respiratory & Sleep	2005-10	\$2M over 5 years
The effects of heterogeneity and airway closure on airway distensibility measurements in asthma.	GG King	Asthma Foundation of NSW	2005	\$2,500
The effects of heterogeneity and airway closure on airway distensibility measurements in asthma.	GG King B Thompson S Verbanck CW Thorpe CM Salome	University of Sydney Bridging Grant	2005	\$70,000
Forced Oscillation Technique To Measure Upper Airway Function In Sleep Apnea.	R Grunstein R Gallagher GG King	St Vincents Clinic Research Grant	2005	\$20,000
The effect of obesity on airway hyperresponsiveness	CM Salome GG King N Berend	Asthma Foundation of NSW	2004	\$50,000
153839: Airway wall thickness and heterogeneity are key determinants of asthmatic airway function.	GG King J Magnussen	NH&MRC	2001-3	\$217,000
153809: Abnormal airway smooth muscle behaviour in asthma – toward an in vivo test.	AJ Woolcock CM Salome GG King	NH&MRC	2001-3	\$195,000
Measurement of small airways disease using multiple breath nitrogen washout.	N Berend GG King CM Salome	Rammaciotti	2001	\$15,000
Sydney University U2000 Postdoctoral Fellowship.	GG King	University of Sydney	2000-02	\$150,000
Deep inspiration inhibition during progressive airway smooth muscle activation.	GG King	Asthma Foundation of NSW	2000	\$25,000
The effects of deep inspiration on airway closure, airway narrowing and ventilation in normal and asthmatic subjects.	GG King	ALF Young Investigator Grant-in-Aid	2000	\$24,000
Monitoring devices and Small Airways Project.	GG King	Cooperative Centre for Asthma	2000-05	\$1,460,000



MRC/PMAC Health Program - Astra Pharma RFP Respiratory Medicine Fellowship.	GG King	Astra/MRC/PMAC Fellowship, Canada	1997-8	\$57,300
Sydney University Post Graduate Research Award.	GG King	Sydney University	1995-6	\$30,000
Asthma Foundation of NSW research scholarship (declined).	GG King	Asthma Foundation of NSW	1995	
Asthma Foundation of NSW research scholarship.	GG King	Asthma Foundation of NSW	1994	\$20,000

## 12. Industry Funding

Title	Investigators	Source	Years	Amount
Technegas SPECT/CT Imaging Characterisation of Obstructive Airways Disease	Gregory King Dale Bailey Paul Roach Cindy Thamrin Stephen Milne	CycloPharm	2018-20	\$385,000
Continuous maximal bronchodilatation with UMEC/VI as first line treatment for smokers at risk of developing COPD	Christine Jenkins, Gregory King Norbert Berend	GSK	2016-19	\$1,000,000
Circadian Rhythm, Co-morbidities and Medications in COPD	GG King Paul Young Ron Grunstein	Menarini	2	\$250,000
COPD Research Fellowship	GG King Cindy Thamrin Claude Farah	Boehringer Ingelheim	2013 - 2015	\$150,000
A comparison of IOS and MBNW as measures of small airways disease	GG King CM Salome D Chapman	GSK	2011-12	\$240,000
Changes in ventilation distribution with tiotropium measured by SPECT in COPD	CM Salome GG King N Berend	Boehringer Ingelheim	2007	\$20,000
Evaluation of respiratory system conductance and inspiratory capacity as a measure of response to bronchial challenge with mannitol.	N Berend CM Salome GG King	Pharmaxis	2006-7	\$182,000
Development of SPECT CT in pulmonary vascular and airways disease	GG King	Vita Medical	2006	\$40,000

## 13. Teaching

### *Sydney Medical School - course development and review*

1. PBL question development and review meetings
2. Provision of PBL questions to the GMP exam bank
3. Review of the GMP Respiratory Block Handbook

### *Sydney Medical School - direct teaching*

1. Physiology tutorials, Royal North Shore Hospital.  
These weekly tutorials involve junior staff, Respiratory Scientists, medical students and research staff and students, of the Department of Respiratory Medicine. The aim is to increase general knowledge of physiology relevant to clinical respiratory medicine, including routine lung function reporting.
2. Opportunistic bedside teaching during routine ward rounds of junior staff and students.
3. Normal pulmonary structure and function, Lectures 1 & 2.  
Respiratory lecture to GMP 1 on normal lung anatomy and function.
4. Severe asthma lecture, to the Northern Clinical School students during the respiratory block.
5. Respiratory Q&A session for the Northern Clinical School students during the respiratory block.
6. Past GMP teaching for Sydney Medical School (Northern Clinical School): PBL tutor and clinical skills tutor GMP1 (Central and Northern Clinical Schools), Professional and Personal Development tutor (Northern).
7. Sydney Medical School MD tutor for the new MD degree.  
I supervise a group of 2 medical students who are undertaking their research components of their research component. We have allocated research projects and provide them with group tutorials on basic research methodology.
8. Grant review workshop (2012 and 2014) for early career researchers run by the faculty of medicine (coordinated by Carol Armour and Judy Black).  
The aim of this workshop is to inform early career researchers of the grant writing and review process, and the standard of grant applications that would be considered competitive.
9. Chronic disease and Ageing lecture to MD year 1: 2014.  
This was the first lecture introducing research basics and process to the 1st year class. This was combined lecture with 2 other clinical researchers.

### *Teaching in Respiratory Medicine outside of the Sydney Medical School.*

1. Tutoring and lecturing for the Royal North Shore Hospital, Department of Respiratory Medicine Basic Physicians Training course.
  - Part 1 FRACP practice examiner as required.
  - Pulmonary physiology lecture.
  - Opportunistic teaching during ward rounds as above.
2. Pulmonary clinical and physiology series, The Woolcock Institute of Medical Research. The attendees include basic physician trainees, respiratory advanced trainees, nurses, physiotherapists, general practitioners.
  - Clinical seminars on the management of adult asthma, paediatric asthma, COPD and clinical use of lung function testing. (Sponsored by GSK in 2017)
  - Physiology seminars to teach basic pulmonary physiology. The attendees include basic physician trainees, respiratory advanced trainees, respiratory scientists, research scientists, physiotherapists. (Sponsored by GSK in 2017)

3. Respiratory Advanced Trainees Meeting 2014 - ongoing.

Created, organised and secured sponsorship (Boehringer Ingelheim) for 4 meetings during the year for NSW Advanced Trainees. The program consists of 1 clinical case discussion and 1 research presentation from a current full time researcher in respiratory medicine.

*Teaching in Respiratory Medicine nationally and internationally*

1. I was on the Education and Research Sub-committee for the TSANZ from 2004 - 2007 and I am again on this Sub-committee from 2014 (4 year term).
2. I was the course convenor for the Short Course for Advanced Trainees from 2005 - 2007, which saw it grow from a small, selective meeting to an annual meeting attended by nearly all of the Australia's respiratory advanced trainees, as well as some from NZ.
3. Course Convenor for the Lung School (Respiratory Advanced Trainees) and RACP Basic Training lectures in respiratory medicine (2006-7).
4. I was on the Chair and Chair-Elect of the Program Committee of the Respiratory Structure and Function Assembly, of the American Thoracic Society, which oversaw the postgraduate courses run by the society at the Annual Scientific Conference.  
In that role, I reviewed and coordinated submissions and the Programme Committee's rankings of those educational courses. I also submitted proposals for those courses.
5. Course Convenor, United American Pharmaceuticals, Philippines. 2014.
6. Postgraduate workshop faculty on the postgraduate workshop on the grant assessment process at the 2014 American Thoracic Society meeting.
7. Course convenor and lecturer on the NH&MRC grant review process at the Thoracic Society of Australia and NZ, 2014 meeting.

## 14. Research Student Supervision

Total PhD supervisions to date	24
Total current as primary supervisor	6
Total PhD completions	16
Total completions as primary supervisor	9
Total current PhD supervisions	7

### Former PhD student destinations

1. Farah, Harris, Timmins, Baraket, Mahadev, Robinson are Staff Specialists at Sydney University Teaching Hospitals.
2. Farah, Robinson and Harris current undertake clinical research.
3. Harris is Head of Respiratory Medicine at Royal North Shore Hospital.
4. Mahadev is Head of TB services for the Northern Sydney Local Health District.
5. Chapman is Research Fellow undertaking Research in Health Sciences, University of Technology, Sydney.
6. Brown is Research Coordinator, Emergency Medicine, Royal Brisbane Hospital.
7. Diba is Research Coordinator at the School of Nursing and Midwifery, Camperdown Campus, Sydney University.

### PhD Supervision

Year	Student	Project
2016	Alice Cottee (1 <sup>o</sup> )	Physiologic changes in acute COPD exacerbations.
2014	Stephen Milne (1 <sup>o</sup> )	Bronchodilator responses in COPD measured by SPECT/CT and O2 enhanced MRI
	Katrina Tonga (1 <sup>o</sup> )	The Effect Of Neutrophilic Inflammation On Small Airway Function In Asthma
2013	Sabine Zimmermann (1 <sup>o</sup> )	The role of lung function variability in COPD monitoring
2012	Kanika Jetmelani (1 <sup>o</sup> )	Detection of small airway alterations in non-obstructed smokers and improvement after bronchodilator using Forced oscillation technique.
	Geshani Jayasuryia (1 <sup>o</sup> )	Assessing Small Airways In Paediatric Lung Disease
	Christopher Htun (2 <sup>o</sup> )	The Time Course Of Changes In Small Airway Function Following Allogeneic Haemopoietic Stem Cell Transplantation (Upgraded From Mphil)
2011	Hashim Periyalil (1 <sup>o</sup> )	Airways Disease In The Elderly Measured By Functional Imaging (Transferred To Newcastle University)
2010	Kate Hardaker (1 <sup>o</sup> )	Asthma In The Elderly

2009	Sophie Timmins (1 <sup>o</sup> )	The Clinical Utility Of The Fot In Copd
	Sriram Mahadev (1 <sup>o</sup> )	Airway Physiology In Obesity
	Claude Farah (2 <sup>o</sup> )	The Effects Of Treatment On Small Airway Function In Asthma
	Catherine Farrow (nee Walsh) (1 <sup>o</sup> )	Ventilation Heterogeneity And Airway Closure In Asthma Measured By Spect/Ct (Upgraded From M Appl Sci)
2008	David Chapman (2 <sup>o</sup> )	Airway Closure, Ventilation Heterogeneity And Airway Hyperresponsiveness In Asthma (Upgraded From M Med)
	Jessica Kermode (2 <sup>o</sup> )	How Do Thick Airway Walls Affect Airway Hyper Responsiveness?
2007	Vanessa Kelly (2 <sup>o</sup> )	The Effects Of Heterogeneity And Airway Closure On Forced Oscillation Technique Measurements In Asthma
	Paul Robinson (1 <sup>o</sup> )	Use Of The Multiple Breath Nitrogen Washout Test As A Measure Of Peripheral Airway Function In Paediatric Airways Disease
2005	Benjamin Harris (1 <sup>o</sup> )	Object Analysis of Single Photon Emission Computed Tomography (SPECT) Ventilation/Perfusion Scintigraphy in Pulmonary Embolism and Other Pulmonary Disorders.
2003	Aneal Chandra (2 <sup>o</sup> )	Image Analysis Algorithm For Measuring Airway Wall And Lung Parenchymal Dimensions From 3-D HRCT Data.
2002	Chantale Diba (2 <sup>o</sup> )	Measuring Bronchodilator Response In Chronic Obstructive Pulmonary Disease
	Sue Downie (1 <sup>o</sup> )	Small Airways Disease And Ventilation Heterogeneity In Asthma
	Nathan Brown (1 <sup>o</sup> )	Airway Distensibility In Asthma
	Melissa Baraket (2 <sup>o</sup> )	The Dose Dependent Molecular Mechanisms Of Glucocorticoids In Asthma
2001	Jessica Dame-Carroll (1 <sup>o</sup> )	Greater Heterogeneity Of Airway Narrowing And Closure In Asthma

## Other Research Student Supervision

Year	Student/Fellow	Project
2015 to 2017	Stella Watson Tim Durak	MD Projects: "Forced oscillation measures of bronchodilator responses in COPD". "Frequency dependence of compliance measurements in elderly asthma".
2007	Samir Lahzami (Swiss Clinical Fellow)	Clinical utility of multiple breath nitrogen washout measurements of small airways disease in haemopoietic stem cell recipients
	Marina Wainstein (GMP Honours)	The effect of lung volume on ventilation heterogeneity
	Christina Thenu (B Eng. undergraduate thesis)	Viscosity flow correction for the nitrogen washout device
2006	David Chapman (Grad Dip)	Evaluation of respiratory system conductance and inspiratory capacity as a measure of response to bronchial challenge with mannitol
2004	Alex Wang	Advanced image analyses of SPECT V/Q for the diagnosis of pulmonary embolism
2002	Rod Sloane (GMP Honours)	Differences in spectral analysis of cough sounds in children
2001	Andrew Teo (GMP Honours)	FVC and airway resistance are better predictors of effort tolerance in severe asthma
	Stephen Ma (Fellow)	Research experience
	Fanny Ko (Chinese Clinical Fellow)	The effects of airway inflammation and remodelling on airway mechanics and asthma severity
2000	Chantale Diba (BSc Honours)	Serum levels of TIMP1 and MMP and airway smooth muscle MMP expression in asthma
	Julianne Kelly (GMP Honours)	A comparison of the rates of re-narrowing after deep inspiration in normal and asthmatics
	Natalie Groat (GMP Honours)	Markers of airway inflammation in breath condensate
1995	David Massasso (B Med Sci)	Perception of airway narrowing in COPD and asthma
1994	David Evans (B Med Sci)	The effect of beta agonists on airway hyperresponsiveness

## 15. Publications

### *Book Chapters*

1. **King G.** Pulmonary manifestations of other diseases. In: Kaminsky D, editor. Netter collection of medical illustrations: Respiratory system, Second ed. Amsterdam: Elsevier; 2010.
2. Structure and function in asthma. **G.G. King** and A.J. Woolcock. In: Barnes PJ, Grunstein MM, Leff AR and Woolcock AJ, eds. Asthma. Philadelphia: Lippencott and Raven Publishers, 1997:1367-1374 (vol 2).
3. **Gregory G. King.** Asthma Management for Community Pharmacists. Queensland University of Continuing Education. 1995.

### *Editorials and Invited Reviews*

1. **King GG**, James A, Wark P. The Pathophysiology of Severe Asthma: We've Only Just Started. *Respirology*. 2017;Accepted December.
2. Sin DD, and **King G.** COPD: Lessons Learned, Forging a Fantastic Future. *Respirology*. 2017;22:632-633.
3. McDonald VM, Maltby S, Reddel HK, **King GG**, Wark PA, Smith L, Upham JW, James AL, Marks GG, and Gibson PG. Severe Asthma: Current Management, Targeted Therapies and Future Directions – A Roundtable Report. *Respirology* 2017;22:53-60.
4. **King GG**, Thamrin C. Complex Lung Function In Severe Asthma: Seeing Is Believing. *European Respiratory Journal* 2016;48:294-6.
5. Beasley R, Chien J, Douglas J, Eastlake L, Farah C, **King G**, Moore R, Pilcher J, Richards M, Smith S, Walters EH. Target Oxygen Saturation Range 92-96% Versus 94-98%. *Respirology* 2016; 22(1):200-2.
6. **King, G. G.** and P. B. Noble 2015. "Airway remodelling in asthma: it's not going away." *Respirology* 2016;21(2):203-4.
7. Walters EH, **King GG**. Swimming Between the Flags. *Medical Journal of Australia* 2015; 203(3): 125.
8. **King GG**, Sin DD. Unravelling the many faces of chronic obstructive pulmonary disease: A hitchhikers guide to COPD. *Respirology* 2015; 21(1): 12-13.
9. Milne S, **King GG**. The Role of Imaging in COPD Phenotyping. *Respirology* 2015; 20(4): 522-523.
10. Milne S, **King GG**. Advanced imaging in COPD: insights into pulmonary pathophysiology. *Journal of Thoracic Disease* 2014; 6(11): 1570-1585.
11. Bossé Y, Lee-Gosselin A, Boulet L-P, Salome CM, **King GG**. Airway hyperresponsiveness in asthma: A better understanding yet to yield clinical benefit. *Journal of Allergy and Therapy* 2014;4(5):1-10.
12. Zimmermann S, Farah C, **King G.** Early COPD: how to identify, is it worth treating and how? *Modern Medicine*. 2013;14:(9 Suppl):17-22.
13. **King GG**. Tomographic imaging of small airways. *Respiration* 2012;84:265-274.
14. **King G**, Farah C. Targeting airway remodelling in asthma: the how, what and where? *Respirology*. 2012;17(4):585-7.
15. **King GG**. Current and Emerging Imaging in Relation to Drug Discovery in Airways Disease. *Pulmonary Pharmacology and Therapeutics*. 2011;24(5):497-504.
16. **King GG**. Cutting Edge Technologies in Respiratory Research: lung function testing. *Respirology*. 2011;16(6):883-90.



17. Chapman DG, Berend N, **King GG**, Salome CM. Can we cure airway hyperresponsiveness with a gym membership? *Journal of Applied Physiology* 2010; 109(2):267-8.
18. **King G**, Mahadev S, Harris B. Ventilation/Perfusion SPECT: Utility for Investigation of Pulmonary Physiology. *Seminars in Nuclear Medicine*. 2010;40(6):467-73.
19. Salome CM, **King GG**, Berend N. Physiology of obesity and effects on lung function. *J Appl Physiol*. 2010 January 1, 2010;108(1):206-11.
20. Berend N, Salome CM, **King GG**. Presidents' Review Series: Mechanisms of airway hyperresponsiveness. *Respirology*. 2008.13:624-631.
21. Lahzami, S and **King. G**. Targeting Small Airways in Asthma: The New Challenge of Inhaled Corticosteroid Treatment. *European Respiratory Journal*. 2008. 31(6):1145-7.
22. Thompson, B., **King, G.** and Richard Harding. The role of the large airways on smooth muscle contraction in asthma. 2007. Invited letter, *Journal of Applied Physiology*. 103(4):1465.
23. **King, GG** and Dame Carroll, J. The Application of Micro-Computed Tomography to Respiratory Imaging. *International Hospital Equipment and Solutions* (<http://www.ihe-online.com/>) November, 2006.
24. Harris, B. and **G. King**. Pulmonary hypertension. *Medical Observer* May 2006. [http://www.medicalobserver.com.au/update/pdfs/UPDATE\\_6238.pdf](http://www.medicalobserver.com.au/update/pdfs/UPDATE_6238.pdf)
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### *Refereed Papers, Published or in press*

1. Jetmalani K, Thamrin C, Farah CS, Bertolin A, Berend N, Salome CM, **King GG**. Peripheral airway dysfunction and relationship with symptoms in smokers with preserved spirometry. *Respirology* 2017; Accepted October.
2. Verbanck S, **King GG**, Zhou K, Miller A, Thamrin C, Schuermans D, et al. The Quantitative Link Of Lung Clearance Index To Bronchial Segments Affected By Bronchiectasis. *Thorax*. 2017;Accepted August.
3. Farrow CE, Salome CM, Harris BE, Bailey DL, Berend N, **King GG**. Peripheral Ventilation Heterogeneity Determines the Extent of Bronchoconstriction in Asthma. *Journal of Applied Physiology*. 2017;Accepted August.
4. Tonga KO, Robinson PD, Farah CS, **King GG**, Thamrin C. In vitro and in vivo functional residual capacity comparisons between multiple breath nitrogen washout devices. *ERJ Open Research*. 2017;3.
5. Zimmermann SC, Watts JC, Bertolin A, Jetmalani K, **King GG**, Thamrin C. Discrepancy between in vivo and in vitro comparisons of forced oscillation devices. *Journal of Clinical Monitoring and Computing*. Accepted June, 2017.
6. Gazzola M, Lortie K, Henry C, Mailhot-Larouche S, Chapman DG, Couture C, Seow CY, Pare PD, **King GG**, Boulet LP, Bosse Y. Airway smooth muscle tone increases airway responsiveness

in healthy young adults. *American journal of physiology Lung cellular and molecular physiology* 2017; 312: L348-L357.

7. Pham T, Leong P, Robinson P, Gutzler T, Jee A, **King G**, and Thamrin, C. Automated Quality Control of Forced Oscillation Measurements: Respiratory Artifact Detection with Advanced Feature Extraction. *Journal of Applied Physiology* 2017; 123: 781-789.
8. Robinson PD, **King GG**, Sears MR, Hong CY, and Hancox RJ. Determinants of peripheral airway function in adults with and without asthma. *Respirology* 2017; 22(6):1102-9.
9. Gobbi A, Dellacà R, **King GG**, and Thamrin C. Towards predicting individual risk in asthma using daily home monitoring of resistance. *Am J Respir Crit Care Med* 2017; 195(2):265-267.
10. Mailot-Larouche S, Lachance M, Bullone M, Henry C, Dandurand RJ, Boutlet L-P, Laviolette M, **King GG**, Farah CS, Bossé, Y. Assessment of airway distensibility by the forced oscillation technique: Reproducible and potentially simplifiable. *Frontiers in Physiology*. 2017;8:223.
11. Gazzola M, Henry C, Couture C, Marsolais D, **King GG**, Fredberg JJ, et al. Is airway smooth muscle disposed to narrow the airway or to limit its distension during lung inflation? *Respiratory Physiology and Neurobiology*. 2016; 229:51-58.
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13. Watts JC, Farah CS, Secombe LM, Schoeffel RE, Bertolin A, Dame Carroll J, **King GG**, Thamrin C. Measurement duration impacts variability but not impedance measured by the forced oscillation technique in health, asthma and COPD. *ERJ Open Research*. 2016; 2(2):1-7.
14. Dame Carroll J, Magnussen J, Berend N, Salome C, **King G**. Greater Parallel Heterogeneity Of Airway Narrowing And Airway Closure In Asthma Measured By High Resolution Computed Tomography. *Thorax* 2015; 70(12): 1163-70.
15. Beasley R, Chien J, Douglas J, Eastlake L, Farah C, **King G**, Moore R, Pilcher J, Richards M, Smith S, Walters H. Thoracic Society of Australia and New Zealand Oxygen Guidelines for Acute Oxygen Use in Adults. *Respirology* 2015; 20(8): 1182-1191.
16. Farah CS, Keulers LAB, Hardaker KM, Peters MJ, Berend N, Postma DS, Salome CM, **King GG**. The association between peripheral airway function and neutrophilic inflammation in asthma. *Respirology* 2015; 20: 975-981.
17. Jetmalani K, Timmins SC, Brown NJ, Diba C, Berend N, Salome CM, Wen F-Q, Chen P, **King GG**. Expiratory flow limitation relates to symptoms during COPD exacerbations requiring hospital admission. *International Journal of Chronic Obstructive Pulmonary Disease* 2015; 10(1):939-45.
18. Haghi M, Saadat A, Zhu B, Colombo G, **King G**, Young PM, Traini, D. Immunomodulatory Effects of a Low-Dose Clarithromycin-Based Macrolide Solution Pressurised Metered Dose Inhaler. *Pharmacological Research*. 2015; 32(6):2144-53.
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21. Robinson PD, Brown NJ, Turner M, Van Asperen P, Selvadurai H, **King GG**. Increased Day-To-Day Variability of Forced Oscillatory Resistance in Poorly Controlled or Persistent Paediatric Asthma. *Chest* 2014; 146(4):974-81.
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24. Downie S, Salome C, Verbanck S, Thompson B, Berend N, **King G**. Effect of methacholine on peripheral lung mechanics and ventilation heterogeneity in asthma. *Journal of Applied Physiology* 2013; 114: 770-777.
25. Hardaker KM, Downie S, Kermode J, Berend N, **King G**, Salome C. Ventilation heterogeneity is associated with airway responsiveness in asthma but not COPD. *Respiratory Physiology & Neurobiology* 2013; 189: 106-111.
26. Hulme KM, Salome CM, Brown NJ, Berend N, Agus HM, Horlyck KR, **King GG**, Chapman DG. Deep inspiration volume and the impaired reversal of bronchoconstriction in asthma. *Respiratory Physiology & Neurobiology* 2013; 189: 506-512.
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*Ten most significant publications*

1. Thompson, B., Douglass, J., Ellis, M., Kelly V, O'Hehir E, King G, Verbanck S. 2013. Peripheral Lung Function In Patients With Asthma. *J Aller Clin Immunol*, 2013; 131: 1322-1328.
  - Further findings of the critical role of small airways in asthma, this time in acute severe asthma requiring hospitalisation.
2. Robinson PD, Latzin P, Verbanck S, Hall GL, Horsley A, Gappa M, Thamrin C, Arets HGM, Aurora P, Fuchs SI, King GG, Lum S, Macleod K, Paiva M, Pillow JJ, Ranganathan S, Ratjen F, Singer F, Sonnappa S, Stocks J, Subbarao P, Thompson BR, Gustafsson PM. Consensus statement for inert gas washout measurement using multiple- and single-breath tests. *Eur Respir J* 2013; 41: 507-522.
  - Demonstration of CIs international role and collaborations, in the use of small airway tests.
3. Farah CS, King GG, Brown NJ, Peters MJ, Berend N, Salome CM. Ventilation heterogeneity predicts asthma control in adults following inhaled corticosteroid dose titration. *Journal of Allergy and Clinical Immunology*. 2012;130(1):61-8.
  - Discovery of the role of small airways in determining the clinical expression of severe asthma.
4. Farrow CE, Salome CM, Harris BE, Bailey DL, Bailey E, Berend N, et al. Airway closure on imaging relates to airway hyperresponsiveness and peripheral airway disease in asthma. *Journal of Applied Physiology*. 2012;113(6):958-66.
  - Discovery of the topographical nature of small airway responsiveness in determining airway hyperresponsiveness in asthma.
5. Timmins SC, Diba C, Farrow CE, Schoeffel RE, Berend N, Salome CM, et al. The Relationship Between Airflow Obstruction, Emphysema Extent, and Small Airways Function in COPD The Predictors of Airflow Obstruction in COPD. *CHEST Journal*. 2012;142(2):312-9.
  - Demonstrating of the role of markers of small airways disease as a potentially useful parameter for phenotyping COPD.
6. Lahzami S, Schoeffel R, Pechey V, Reid C, Greenwood M, Salome C, Berend N, King G. Small airways function declines after allogeneic hematopoietic stem cell transplantation. *European Respiratory Journal* 2011;38:1180-1188.
  - An application of the research technique of measuring small airway function (Multiple Breath Nitrogen Washout) demonstrated that there may be a chronic deterioration in small airway function due to chronic graft versus host disease in bone marrow transplant patients (bronchiolitis) and as such, monitoring may be clinically useful.
7. Harris B, Bailey D, Miles S, Bailey E, Rogers K, Roach P, Thomas P, Hensley M, King G. The objective analysis of single photon emission computed tomography (spect) ventilation-perfusion scintigraphy in pulmonary embolism diagnosis. *American Journal of Respiratory and Critical Care Medicine* 2007;175:1173-1180.
  - Demonstration that SPECT V/Q scanning is highly sensitive for the diagnosis of pulmonary embolism and likely has an ongoing place in the clinical management of COPD
8. Downie S, Salome C, Verbanck S, Thompson B, Berend N, King G. Ventilation heterogeneity is a major determinant of airway hyperresponsiveness in asthma, independent of airway inflammation. *Thorax* 2007;62:684-689.



- The discovery a major mechanism of airway hyperresponsiveness in asthma whereby small airway dysfunction that persists after anti-inflammatory treatment leads to persisting responsiveness.
- 9. Johnson PRA, Roth M, Tamm M, Hughes M, Ge Q, King G, Burgess JK, Black JL. Airway smooth muscle cell proliferation is increased in asthma. *Am J Respir Crit Care Med* 2001;164:474-477.
- Discovery of the increased proliferative capacity of asthmatic airway smooth muscle cells, when asthmatic smooth muscle cells were cultured from bronchoscopic biopsies for the first time.
- 10. King GG, Eberl S, Salome CM, Young IH, Woolcock AJ. Differences in airway closure between normals and asthmatics measured by spect and technegas. *American Journal of Respiratory and Critical Care Medicine* 1998;158:1900-1908.
- The first objective measurement that in asthmatic lungs, airway closure (measured by non-ventilation), was found to be distributed in a disorganized manner across the lung. This formed the basis of the 'heterogeneity model' of airway function on which the subsequent 15 years of work was based.

*Top 5 most cited papers (August 2016)*

1. Salome CM, King GG, and Berend N. Physiology of obesity and effects on lung function. *J Appl Physiol* 108: 206-211, 2010. [citations 334]
2. Roth M, Johnson PRA, Rudiger JJ, King GG, Ge Q, Burgess JK, Anderson G, Tamm M, and Black JL. Interaction between glucocorticoids and [beta]2 agonists on bronchial airway smooth muscle cells through synchronised cellular signalling. *The Lancet* 360: 1293-1299, 2002. [citations 285]
3. Baile EM, King GG, Müller NL, D'Yachkova Y, Coche EE, Paré PD, and Mayo JR. Spiral Computed Tomography Is Comparable to Angiography for the Diagnosis of Pulmonary Embolism. *Am J Respir Crit Care Med* 161: 1010-1015, 2000. [citations 260]
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5. Nakano Y, Muller NL, King GG, Niimi A, Kalloger SE, Mishima M, and Pare PD. Quantitative assessment of airway remodeling using high-resolution CT. *Chest* 122: 271S-275S, 2002. [citations 199]
6. Downie S, Salome C, Verbanck S, Thompson B, Berend N, and King G. Ventilation heterogeneity is a major determinant of airway hyperresponsiveness in asthma, independent of airway inflammation. *Thorax* 62: 684-689, 2007. [citations 157]