



## CEO's Update

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As the CRCAA approaches the end of its fifth year of operation it is opportune to reflect on the achievements made during this period. Good progress has been made on the environmental programs. Two major traffic related air pollution projects have been completed, the results of which are being prepared for publication. A number of interesting drug targets have been identified, validated and patented. Consideration is now being given to taking these targets closer to commercial utilisation. The diagnostics program has developed unique physiological and proteomic testing platforms. The proteomic tests have been patented and are undergoing clinical validation. Studies of asthma in the elderly

are also progressing apace. The CRCAA has also attracted a large number of highly talented PhD scholars and at present there are nineteen ongoing scholarships.

Active consideration is now being given to the possibility of applying for a final third term grant from the Commonwealth Government. Planning is well under way and the senior research leaders will be meeting in late June to finalise the proposed research strategy.

**Philip Bert**  
Chief Executive Officer

## Visit by Vietnamese Delegation

Recently the CRCAA hosted a visit by a delegation of officials from the Ministry of Science and Technology from the Socialist Republic of Vietnam. The purpose of the visit was to study Australian policies and experience on the development of science and technology enterprises. The officials were very interested in the structuring of collaborative research and were impressed with CRC model used in Australia. The highlight of the visit was a tour of the new cell biology and the physiology laboratories.

*Picture to the right - Nathan Brown explaining the finer points of the FOT technology to the Vietnamese officials.*



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## Cell Biology group move to the Woolcock Institute

Prof Judy Black's cell biology group has recently moved from the Camperdown campus of the University of Sydney to specially built laboratories in the Woolcock Institute building in Glebe Point Road.

The group comprises of 20 senior researchers, PhD and Honours students and research assistants. The group has an international flavor comprising of members coming from France, Germany, the Netherlands, China, Japan, Sri Lanka and the UK.

This move, which consolidates two major CRC research nodes on one site, will greatly enhance communication between the clinical and molecular biology research groups.



*Dr Brian Oliver in the new laboratory*

## GPR43 research published in Nature



*Prof Charles Mackay and Kendle Maslowski*

PhD student Kendle Maslowski and Prof Charles Mackay of the Garvan Institute have received worldwide recognition for their work on GPR43 that was published recently in *Nature*. Kendle and Charles have demonstrated that GPR43, a molecule expressed by immune cells and previously shown to bind short chain fatty acids, functions as an anti-inflammatory receptor. "The notion that diet might have profound effects on immune responses or inflammatory diseases has never been taken that seriously" said Charles. "We believe that changes in diet,

associated with Western lifestyles, contribute to the increasing incidences of asthma, Type 1 diabetes and other autoimmune diseases. Now we have a new molecular mechanism that might explain how diet is affecting our immune systems."

"We're also now beginning to understand that from the moment you're born, it's incredibly important to be colonised by the right kinds of gut bacteria," added Kendle. "The kinds of foods you eat directly determine the levels of certain bacteria in your gut."

"Changing diets are changing the kinds of gut bacteria we have, as well as their by-products, particularly short chain fatty acids. If we have low amounts of dietary fibre, then we're going to have low levels of short chain fatty acids, which we have demonstrated are very important in the immune systems of mice."

This research highlights the importance of eating considerably more unprocessed whole foods such as fruits, vegetables, grains, nuts and seeds.

# Scholarship News

## PhD Scholarships

We would like to welcome seven new scholars to the CRCAA who were successful for the 2010 round.



**Claude Farah (Woolcock)**  
Title of Project: Predicting the response to changes in combination therapy in asthmatics



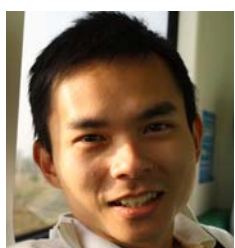
**Patrick Ng (USYD)**  
Title of Project: Molecular pathogenesis of chronic respiratory diseases



**Rohimah Mohamud (Monash)**  
Title of Project: The effect of particles on regulatory T cells in lungs: implication for asthma development and immunotherapy



**Sophie Timmins (Woolcock)**  
Title of Project: Assessment of the clinical utility of the Forced Oscillation Technique in COPD



**Hock Luck Tay (University of Newcastle)**  
Title of Project: Characterising the role of miRNAs during bacteria infection in the lung



**Jingjing Li (University of WA)**  
Title of Project: Respiratory innate immune factors regulate steroid-resistant airway hyperreactivity and asthma



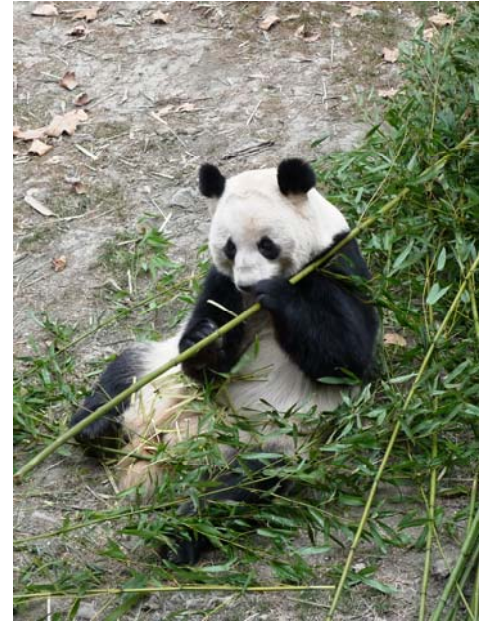
**Luke Hatchwell (University of Newcastle)**  
Title of Project: Role of microRNAs in response to rhinovirus infection in allergic airways disease

## Collaboration with China

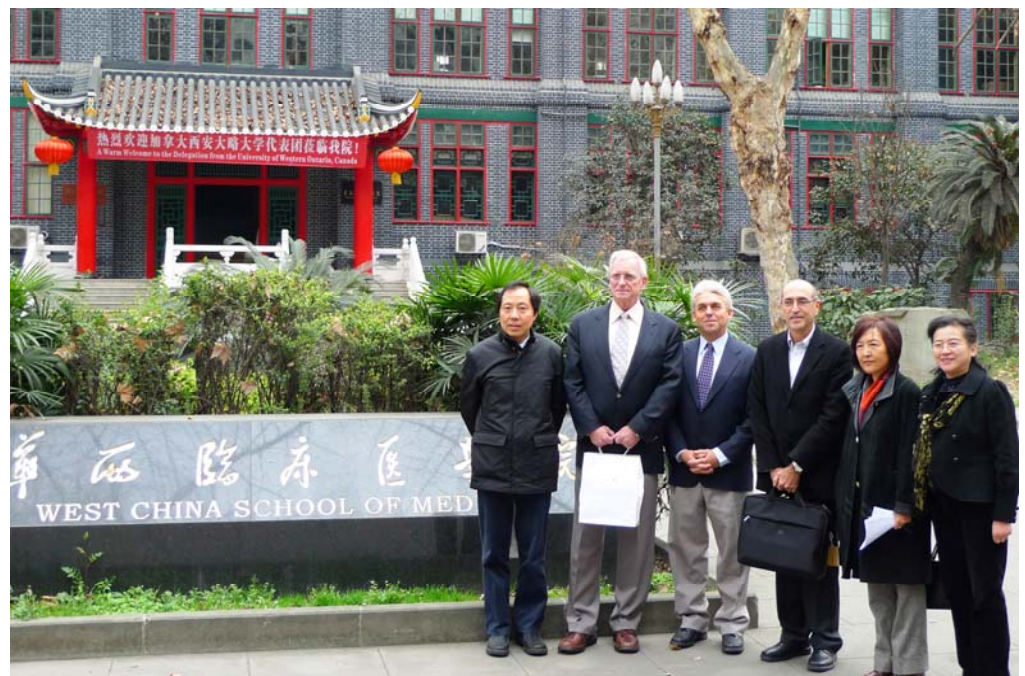
In late February Philip Bert, Peter Gibson, Norbert Berend and Clara He undertook a trip to China to meet with clinicians and scientists working in the respiratory field. Visits were made to hospitals and research laboratories in Changchun in the Jilin Province and Chengdu in the Shezuan Province.

The group was very well received at both sites and productive discussions were held with senior university, hospital and health department officials.

The Chinese researchers have great interest in collaborating with international partners and expressed a strong desire to establish formal links with the CRC. It is hoped that these groups will be able to play a role in future CRC research projects.



*A highlight of the trip was a visit to the world famous giant panda breeding station outside Chengdu.*



*From left to right - Prof Wen, Prof Berend, Prof Gibson, Mr Bert, Dr He and Ms Wu outside the West China School of Medicine*

# Congratulations



**Professor Guy Marks** has been awarded the prestigious Research Medal from the Thoracic Society of Australia and New Zealand (TSANZ).



**Professor Norbert Berend** has been elected President of FIRS (Forum of International Respiratory Societies) for 2011.

## Publication Update

**Maslowski KM, Vieira AT, Ng A, Kranich J, Sierro F, Yu D, Schilter HC, Rolph MS, Mackay F, Artis D, Xavier RJ, Teixeira MM, Mackay CR.** Regulation of inflammatory responses by gut microbiota and chemoattractant receptor GPR43. *Nature* 2009 doi:10.1038.

**Mattes J, Collison A, Plank M, Phipps S, Foster PS.** Antagonism of microRNA-126 suppresses the effector function of TH2 cells and the development of allergic airways disease. *PNAS* 2009 doi:10.1073/0905063106.

**Wood LG, Powell H, Gibson PG.** Mannitol challenge for assessment of airway responsiveness, airway inflammation and inflammatory phenotype in asthma. *Clinical & Experimental Allergy* 2010 (40) 232–241.

**Rose N, Cowie C, Gillett R, Marks GB.** Weighted road density: A simple way of assigning traffic-related air pollution exposure. *Atmospheric Environment* 2009 doi:10.1016.

**Wood LG, Powell H, Gibson PG.** Mannitol challenge for assessment of airway responsiveness, airway inflammation and inflammatory phenotype in asthma. *Clinical & Experimental Allergy* 2010 (40) 232–241.

**Pereira G, De Vos AJBM, Cook A, Holman CDJ.** Vector fields of risk: A new approach to the geographical representation of childhood asthma. *Health and Place* 2009 doi:10.1016.

**Goeman DP, Sancu LA, Scharf SL, Bailey M, O'Hehir RE, Jenkins CR, Douglas JA.** Improving general practice consultations for older people with asthma: a cluster randomised control trial. *MJA* 2009; 191:113-117.

**Salome CS, King GG, Berend N.** Physiology of obesity and effects on lung function. *J Appl Physiol* 2010 108: 206-211.

**Brown NJ, Xuan W, Salome CM, Berend N, Hunter ML, Musk AW, James AL, King GG.** (2010) Reference equations for respiratory system resistance and reactance in adults. *Respiratory Physiology and Neurobiology* (In press)