2006 annual report no 93
australian respiratory council

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Australian Respiratory Council (ARC) is a member of the Australian Council for International Development (ACFID) and is a signatory to the ACFID Code of Conduct. The Code requires members to meet the high standards of corporate governance, public accountability and financial management.

community

our mission & vision

Mission: to develop and support innovative and effective approaches to research and development in lung health and to improve lung health in communities, with emphasis on disadvantaged groups.

Vision: continue to build expertise in respiratory health. Foster innovation in respiratory health research. Deliver and measure positive impacts to communities and research. Enhance ARC's role in the country as a unique non-government organisation in the area of lung health. Advocate to improve respiratory health, particularly in relation to TB and smoking at state, national and international levels.

our patrons

Her Excellency Professor Marie Bashir AC, CVO
Governor of New South Wales.

Sir Nicholas Shehadie AC OBE.

growth

president's report

david macintosh

Infectious respiratory diseases continue to be a significant threat to humankind. World Health Organisation officials issued an unprecedented warning in September that deadly new strains of tuberculosis have been identified that are virtually untreatable using drugs now available. There is also the recent arrival of avian influenza and the threat of a major global pandemic. These developments highlight the relevance and importance of the Australian Respiratory Council's project and research work, both in Australia and overseas.

Over the next few years, the important decisions taken in the past year will see the Australian Respiratory Council (ARC) grow and further extend its reach in infectious respiratory diseases. This annual report highlights the significant progress ARC's research and public health programs have made in the past year. I recommend it to you and sincerely hope you enjoy reading about ARC's achievements in 2006.

Strategic direction As I said in last year's annual report, as part of our strategic plan we commissioned research with the aim of improving the organisation's community profile and developing strategies to engender community involvement and support. The quantitative research clearly showed that, as a first step, we needed to change our name. At a special general meeting in December last year, members agreed to adopt our new name Australian Respiratory Council (ARC). On the eve of World TB Day in March, we were privileged to have our patron, Her Excellency Professor Marie Bashir AC, CVO, Governor of New South Wales, officially launch the Council.

ARC's future directions are encapsulated in our byline *prevention and cure of respiratory illness*. Through our funding for research relevant to tuberculosis, other respiratory infections, and respiratory illnesses related to tobacco use, as well as its support for capacity building and health promotion projects in Australia and the region, ARC will continue to work towards reducing the high rates of tuberculosis and the burden of respiratory diseases in general.

The strategic decision mentioned in my last report concerning the allocation of significant funds to an indigenous health project work has progressed in the past year. The specialist working group has provided sound advice on an appropriate project, and at the time of going to press we are about to announce the successful project for commencement before the end of 2006.

During the year, ARC has also strengthened its international profile. We became a constituent member of the International Union against Tuberculosis and Lung Disease and, as such, ARC represents Australia in its newly-formed Asia Pacific Region. Our forthcoming collaboration with the Centers for Disease Control and Protection involving tuberculosis control in the northern Pacific is an excellent example of our increased international involvement.

Financial growth The Council significantly improved its capital base during the past year. ARC has also increased its total equity to $8.65 million as at 30 June 2006 from $8.20 million in 2005. After careful consideration, we decided to sell our investment property in Rose Bay. The sale occurred in August with the proceeds being added to our investment portfolio. The increased funds generated from a bigger portfolio will give ARC the opportunity to reinforce its commitment to increase its contribution to respiratory health.

The sale necessitated the relocation of ARC's offices to its property in Sydney's central business district which again is part of our strategic direction.

It has been, and will continue to be, very difficult to balance the increased important work of our organisation against our internal financial resources. Fundraising has not been one of our strengths and will need to substantially improve to enable continued growth and success.

The board Emeritus Professor Noel Martin AM who stepped down from the board last year after being a director since 1961 died peacefully on 21 July. Noel, who was 82, was our longest serving President holding that office for 27 years. The organisation owes him a huge debt of gratitude for his significant contribution over so many years. Dr Peter Tyler's obituary of Noel appears elsewhere in this report.

I would also like to acknowledge departing members of the board who have made significant contributions to ARC over many years. Dr Gavin Frost and Professor Robyn Richmond departed from the board during the past year.

I would like to thank Gavin and Robyn for their commitment to ARC and for their individual roles in helping to place the Council in the respected position it is today. I would especially like to acknowledge Robyn's role in chairing the projects committee over many years.

Derick Smith has advised me that he will not be seeking re-election at the next annual general meeting and I personally appreciate his contribution and wish him well and good health for many years.

Further thanks go to my fellow directors and office bearers who all contribute to ARC in different ways. I would like to particularly mention Robert Horsell our Finance Director who keeps a careful eye on our finances. Vice-Presidents Associate Professor Michael Levy and Professor Paul Seale continue to provide wise counsel to the board. It is a pleasure to work with such dedicated people.

I would also like to welcome Dr Peter Gianoutsos to the board. He brings to the board a wealth of knowledge and experience in respiratory medicine.

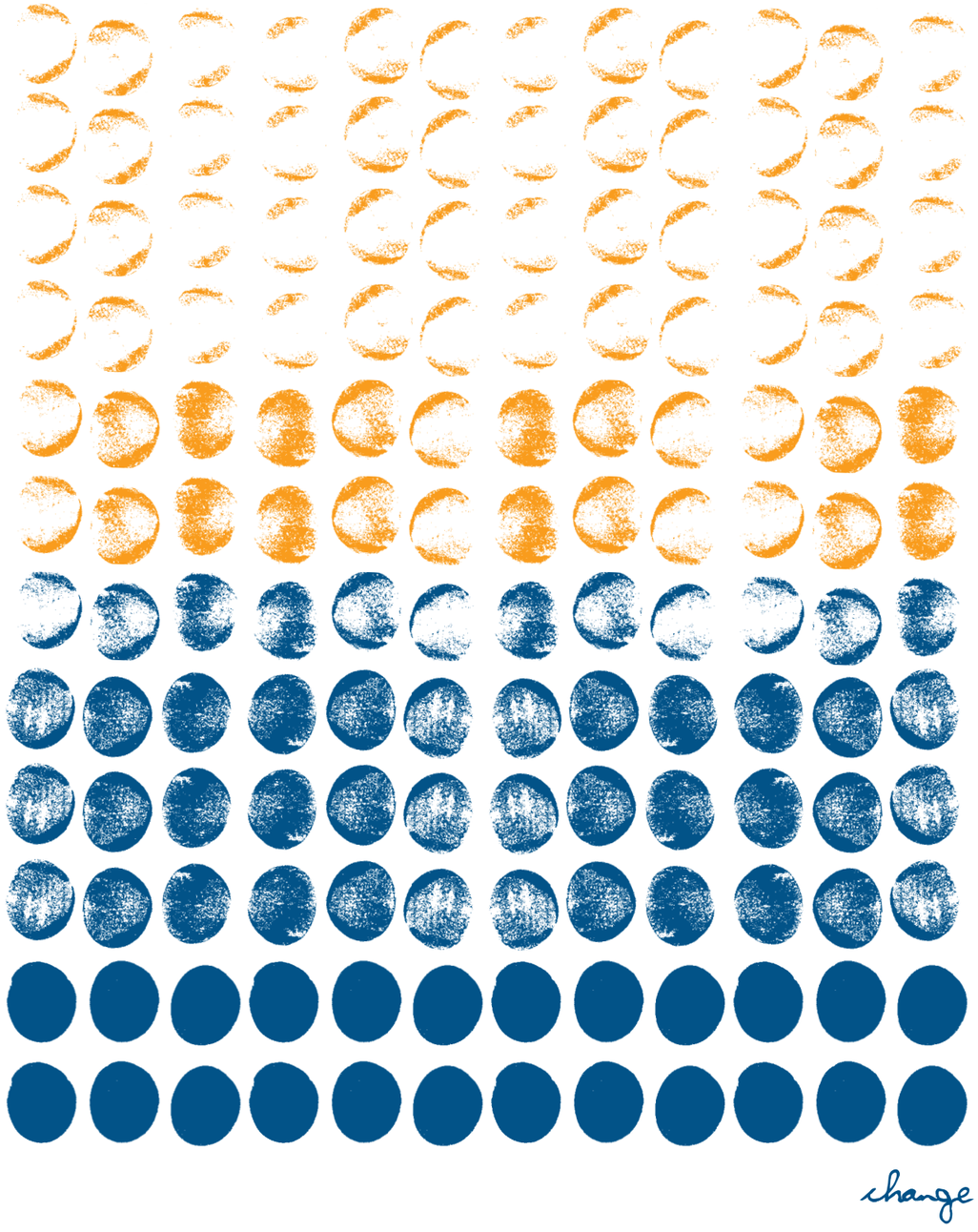
Thanks A number of new staff have joined ARC this year and I would like to take the opportunity to welcome them to the Council. To those who have left to pursue other opportunities, I wish them well and thank them for their support.

ARC's successes would not be possible without the support of our donors who contribute to our work. Their support has meant that we have been able to implement some new project work in the area of indigenous health.

I would also like to acknowledge those supporters who have provided ARC with a legacy in their Will. This is a most generous and thoughtful gift and one which helps ARC in planning for its future. In particular, I acknowledge the generosity of the late Mrs Marjorie Adams.

I look forward to a successful and productive year ahead.

David Macintosh



executive officer's report

bruce ramage

The past year has been one of growth for the Australian Respiratory Council. We have embarked on a significant indigenous respiratory health project, we have expanded our international program partners in the Pacific and our research fellow's research has begun to produce results. If that is not enough, we have changed our name and we are relocating our offices. Many of these changes mean that as we grow we face challenges that need to be optimised and managed.

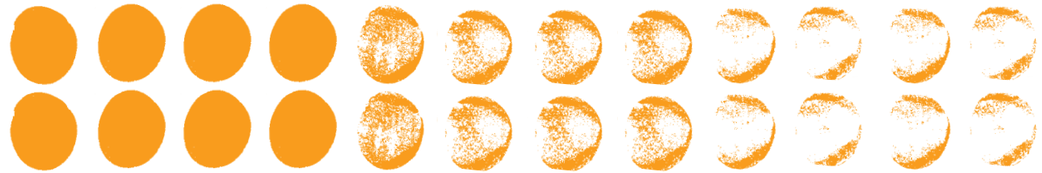
Introduction Last year I talked about the initiatives we were taking to increase our public profile and foreshadowed significant changes for the organisation. Since then, research among our donors and in the community generally clearly indicated that our former name was confusing and misleading and we needed to do something about it if our important respiratory health message was to be heard. A number of alternatives was canvassed in the community, resulting in members resolving to adopt Australian Respiratory Council at a general meeting in December last year. It is early days, but as far as I can judge, the change has been well received. Much thought went into the design of our new logo. Visually, the spiral represents the notion of breathing in and out with the receding arcs providing a sense of movement; metaphorically, the close-knit pattern is meant to reflect the spirit of a community working together to find solutions for the prevention and cure of respiratory illnesses, particularly in Australia and surrounding regions.

Research ARC's Harry Windsor Research Grants Scheme continues to provide Australia-wide research funding. This year we provided three grants. Progress on this research can be found elsewhere in this report.

Dr Ingrid Laing continued as ARC Ann Woolcock Fellow during the year. Her work on the role of genetics in infant lower respiratory tract infections is progressing well. Her progress report appears elsewhere in this report. During the past year Ingrid has been a most worthy and enthusiastic ambassador for ARC. She has attended and presented papers at a number of national and international conferences, as well as speaking about her work at ARC's launch in March. The research committee also extended the duration of our fellowship from three to four years. The new length will apply to present and future fellowships.

Partnerships and Programs During 2006 our program partnerships have expanded. ARC's pilot nurse training last year in Kiribati was the first in the Pacific. I mentioned last year that it might enhance TB programs throughout the entire region. This hope has been realised. At the Pacific Island TB Controllers Association (PITCA) meeting in Honolulu last year there was genuine interest in our nurse training. At this year's PITCA meeting the Centers for Disease Control and Prevention (CDC), the Secretariat of the Pacific Community (SPC) and ARC will deliver a training course to nurses who work in the countries of the Northern Pacific. Although we have worked with SPC on other Pacific projects, it is the first time we have collaborated with CDC.

Our work in Samoa has taken longer than expected to get under way but is now back on track. ARC will be working with SPC and the Samoan Department of Health to deliver on the ground training to laboratory technicians from Samoa and other Pacific Island countries. This training will be followed by nurse training which has been designed to build capacity at the front-line of TB care where it can be most useful.



change

Kiribati with its high burden of TB and the diagnosis of its first case of multi-drug resistant tuberculosis remains a high priority for ARC. The outcomes of the nurse training has highlighted a number of areas where ARC can contribute and we continue to explore those possibilities. One of these initiatives is the adaptation of the flipchart *What is TB?* for use by public health workers in Kiribati.

During the past year, the flipchart *What is TB?*, originally developed for the Maningrida community in the Northern Territory, has been a 'best seller', with copies being sent to many indigenous communities in Australia, State health departments and public health officials. It is also planned to adapt it for use in the northern Pacific.

Staff There have been some staff changes over the past year. Judith Begnell joined ARC as administration manager in March replacing Melissa George who had been with ARC since 2003. Judy brings a wealth of experience and many skills to this pivotal position. I welcome Judy to the ARC team.

Kylie Monro was appointed project manager in November and regrettably resigned in May. In her all-too-brief time with us, Kylie provided significant input into the indigenous respiratory health project and our nurses training in the northern Pacific. All at ARC wish her and her baby well for the future.

Acknowledgements and thanks I would especially like to acknowledge the late Professor Noel Martin who during my time here became a special friend. His profound knowledge of this organisation's past helped me, on more than one occasion, to understand and appreciate the present.

To achieve their objectives, small organisations often rely heavily on a variety of people outside the organisation. I must acknowledge Mark Lambert of the Secretariat of the Pacific Community in Noumea for all his advice and assistance in so many disparate matters during the year. Mark remains a good friend of ARC. In the same vein I would like to thank Subroto Banerji of the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, for imparting so much of his knowledge about tuberculosis control in the northern Pacific. Subroto has left the Pacific arena to take up a position with CDC Global AIDS Program (GAP) in Pretoria, South Africa. All who work in TB control in the Pacific region will miss him greatly.

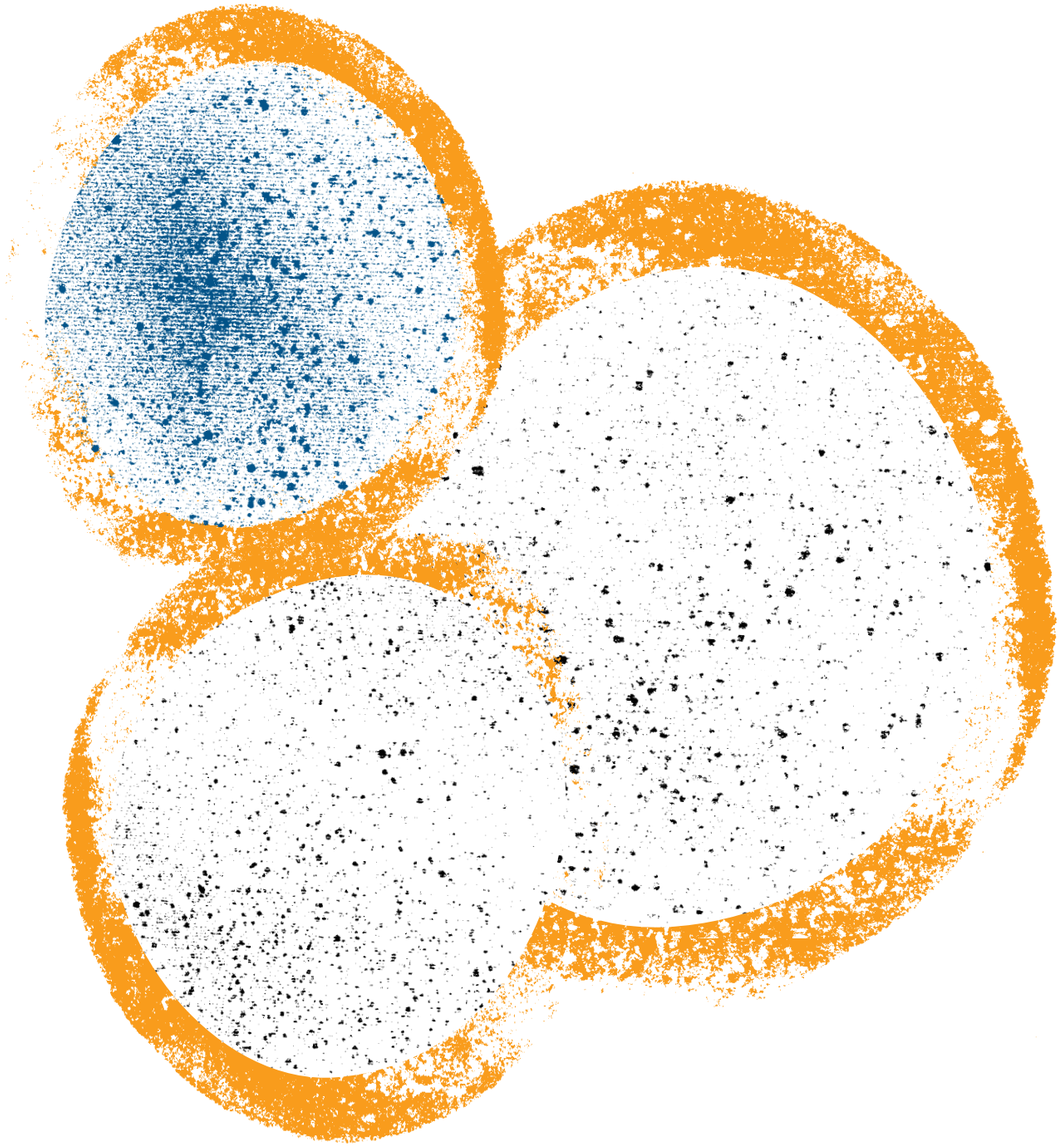
The recent property sale involved considerable teamwork. I would like in particular to thank Michael Roset of solicitors Manion McCosker and Michael Pallier of Raine & Horne, Double Bay for all their efforts on ARC's behalf.

I would also like to acknowledge our dedicated donors many of whom have contributed over many years. I truly applaud their commitment and generosity.

Finally I would like to acknowledge and thank ARC's board of directors for their work and contribution to ARC's success. It is the dedication of the board and the staff's hard work that make ARC the success that it is.

During the past twelve months I have had the privilege of meeting many people working in TB control in the Pacific, and have come to realise first hand some of the problems they encounter on a daily basis. I have also been able through the Council meetings of the Asia Pacific region of the International Union against Tuberculosis and Lung Disease to appreciate some of the difficulties faced by high burden countries in the region. It is clear that Australia and ARC can play a significant role in our region to improve respiratory health. I look forward to the successes that 2007 will bring.

Bruce Ramage



longest-serving president

obituary

noel desmond martin am (1923-2006)

When Noel Martin died on 21 July 2006, the Australian Respiratory Council lost a unique and valued supporter who led the organisation during a period when it broadened its objectives to meet new priorities in the health needs of Australians.

Noel was a dentist by profession, spending most of his distinguished career at the University of Sydney and the United Dental Hospital, becoming Professor of Preventive Dentistry in 1961, and later Dean of the Faculty of Dentistry for a remarkable eighteen years. Many of the patients at the Dental Hospital suffered from tuberculosis which sparked Noel's interest in respiratory disease, as special hygiene precautions had to be implemented to prevent the spread of tuberculosis. The community health aspects of preventive dentistry provided synergy for his parallel interests in dentistry and medicine. In collaboration with Dr Mick Flynn at the Sydney Water Board, Noel Martin campaigned vigorously for the introduction of fluoride into the water supply, becoming known as "The Father of Fluoridation". Fifteen years after its introduction in other parts of Australia, Sydney residents finally gained the benefits of fluoridation in 1968.

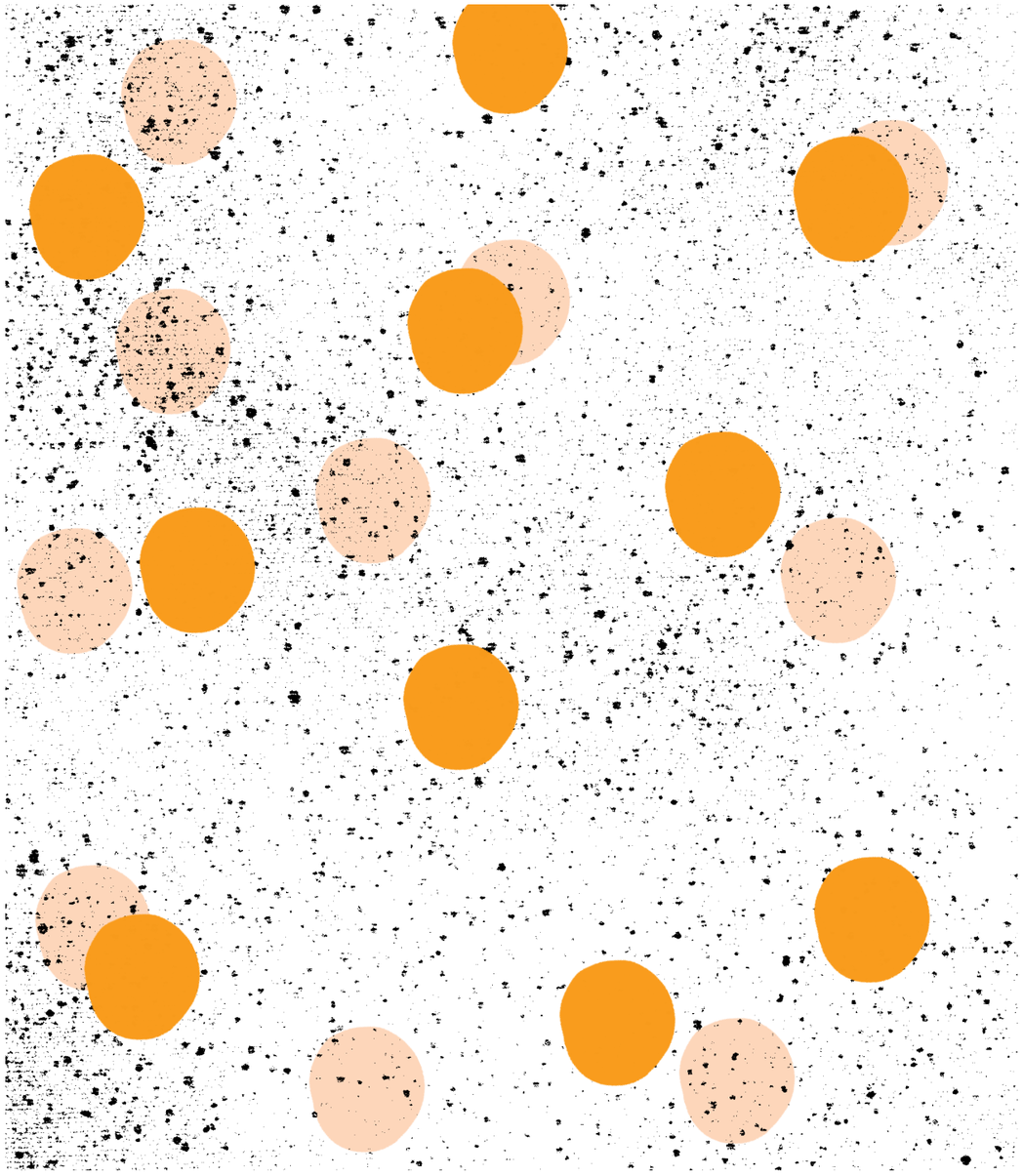
Professor Martin joined the board of the Anti-Tuberculosis Association of NSW in 1960, at the height of the national compulsory x-ray screening campaign. By 1967 he was President of the Association, an office he held for the next twenty-seven years – almost one-third of the organisation's existence. When mass screening wound-down in the 1970s, Noel was instrumental in channelling the Association in a different direction, beginning a program of multiphasic general health assessment under the new name Community Health and Anti-Tuberculosis Association. Martin described the aim as "the prevention and early detection of disease, coupled with health education and an understanding of social and environmental hazards". This attracted a vituperative response from sections of the medical profession who feared the effect on their incomes, but Noel Martin remained undeterred. His experience with the fluoridation controversy had immunised him against the pleas of vested interests.

His term as President concluded in 1994, but he remained on the board and continued to visit the Association's office regularly. In 2003 he was elected a Life Governor in recognition of his contribution over so many years. His leadership during his presidency provided the organisation with the opportunity to make a significant contribution to public health in New South Wales. Although in declining health, he continued to attend board meetings until last year when he concluded he could not be as active as he would have wished. His interest in the organisation, however, never waned.

Noel Martin was a high achiever. At St Joseph's College in Sydney, he won a bursary to the University of Sydney at the age of fifteen, where he distinguished himself both academically and on the athletic field. His running spikes, appropriately framed, were on display at his funeral. The sports centre at the University of Sydney is named in his honour. Academically, he won two Fulbright Scholarships to undertake postgraduate study in the U.S.A.

Noel confided to me that he really wanted to study agriculture, not dentistry. He came from a family of small farmers on the NSW Central Coast, and following his retirement spent a lot of time on a farm he acquired in that area, aptly named Martinsville. Friends and relatives persuaded him to take up dentistry because of the poor economic state of agriculture when he left school after the Depression. His interest in fluoridation of public water supplies was prompted by his observation of dental disease in sheep due to a lack of fluorine in their diet. A combination of his agricultural and dental enthusiasms.

All his ten children share their father's desire to serve the community, and all have been notable achievers in their own spheres, often gifted in music and sports. His daughter Clare, Chief Minister of the Northern Territory, is a prominent public figure. Noel regarded the Anti-Tuberculosis Association (and later CHATA and ARC) as part of his extended family, devoting to both the same paternal care and affection that he gave his children. Noel Martin's contribution to the improvement of respiratory health was unusual because in many ways he seemed to be an unlikely protagonist for this cause, but also because of his commitment over such a long period. *Peter J Tyler*



genetics

dr ingrid laing

Australian Respiratory Council Ann Woolcock Research Fellow, Telethon Institute for Child Health Research, Perth

Genetic influences on causal pathways of ALRIs in highly susceptible infants

Early in life, infants from the highlands of Papua New Guinea (PNG) experience dense bacterial infection of their nasal passages, leading to one of the highest childhood mortality rates due to pneumonia in the world. In the Asaro Valley, PNG where this study is based, *Streptococcus pneumoniae (pneumococcus)* is found in the nasal passages of all children before the age of 3 months and commonly by the age of 17 days. This early colonisation is associated with an increased risk of pneumonia and is the most common reason for children to be admitted to hospital or die in PNG, accounting for 34.7% of all deaths in children under 5 years and 50% of all deaths in infants under 1 year of age.

The PNG Institute of Medical Research (PNGIMR), the Telethon Institute for Child Health Research and the School of Paediatrics and Child Health at the University of Western Australia are conducting a trial of the 7 valent pneumococcal conjugate vaccine (7vPCV) in infants from the highlands of PNG. This fellowship project comprises a systematic investigation of the contribution of genetic factors to the development of immune responses and susceptibility to pneumonia in this population.

Between May 2005 and September 2006, 191 infants have been recruited into the study, 15 have left and one infant has died. Preliminary microbiological studies of the weekly nasal swabs, collected from the infants in the first month of life, have shown that they are colonised with a wide variety of pneumococcal serotypes at a very young age (total of 34 different serotypes identified and most commonly by 20 days of age). Data collected on the incidence of acute respiratory infection has shown that there have been 165 episodes, and 36 of these were moderate or severe.

This year, informed consent has been obtained from 152 mothers, for their infants and themselves to participate in the genetic studies. In July/August this year, ARC funded a trip to Goroka, PNG for the purpose of collecting the first batch of study DNA samples. Due to the limited resources at the PNGIMR, 32kg of laboratory reagents were taken to Goroka and included DNA extraction kits that had been tested and selected based on generating a high yield of DNA and their ease of use. As the blood samples collected from the study infants at 3 months of age have been small, limited cells were available for DNA extraction, necessitating the use of extraction kits.

The time in Goroka was spent extracting DNA and training Jacinta Kono, a technician at the PNGIMR, in the use of the DNA kits, so that she may continue extracting DNA from the study samples. DNA samples from 66 infants and 24 mothers were brought back to Perth for genetic analysis. Half of the extracted DNA sample remained in PNG. Due to the small volumes of DNA available, a method of quantitating DNA, using UV analysis in a 96-well plate, was tested. This was successful and showed that the samples from PNG ranged in concentration from 28.5 to 108.5ng/ul. In the next month, preliminary genotyping of these samples to determine the frequency of several immune gene polymorphisms in this population will be completed.

As part of this fellowship, two new projects that will investigate the immunogenetics of acute infection in the ears and lungs of Australian children have been developed in collaboration with Perth researchers. These projects will enable comparisons between those factors associated with susceptibility to pneumonia in PNG (a developing country) and Australia (a developed country).

Ingrid Laing and Jacinta Kono - extracting DNA samples in the PNGIMR Molecular Biology laboratory, Goroka, PNG.

Albert, a PNGIMR nurse, with one of the vehicles used to visit babies in the study.

Attendance at Meetings Training on the clinical, social and environmental aetiology of lower respiratory infections in both developed and developing countries was gained by attendance at the 2005 Papua New Guinea Medical Research Symposium in Goroka, and two postgraduate workshops at the 2005 European Respiratory Society Annual Congress in Copenhagen. The visit to Goroka, PNG also helped to establish the collaborative ties necessary for the success of this fellowship.

The launch of the Australian Respiratory Council provided an opportunity to promote the work of ARC and give a short presentation on the value of prevention of respiratory diseases. Following this, attendance at the Thoracic Society of Australia and New Zealand Annual Scientific Meeting (Canberra) and the 5th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD5 - Alice Springs) allowed further promotion of ARC, research training and development and maintenance of collaborative links with colleagues undertaking respiratory research. As *Streptococcus pneumoniae* is the cause of over 60% of bacterial pneumonia in PNG, attending ISPPD5 provided a unique opportunity to gain further knowledge for this fellowship project. New perspectives on the particular issues facing indigenous communities was also gathered from two workshops on Consultation with Indigenous Communities.

ARC and the Ann Woolcock Research Fellowship have been promoted and acknowledged in an additional five presentations, and in the Telethon Institute for Child Health Research Annual Report.

Grants awarded In November 2005, a University of Western Australia Small Grant for Early Career Researchers was awarded to fund a proportion of the consumables required for this project and has facilitated the beginning of laboratory work.

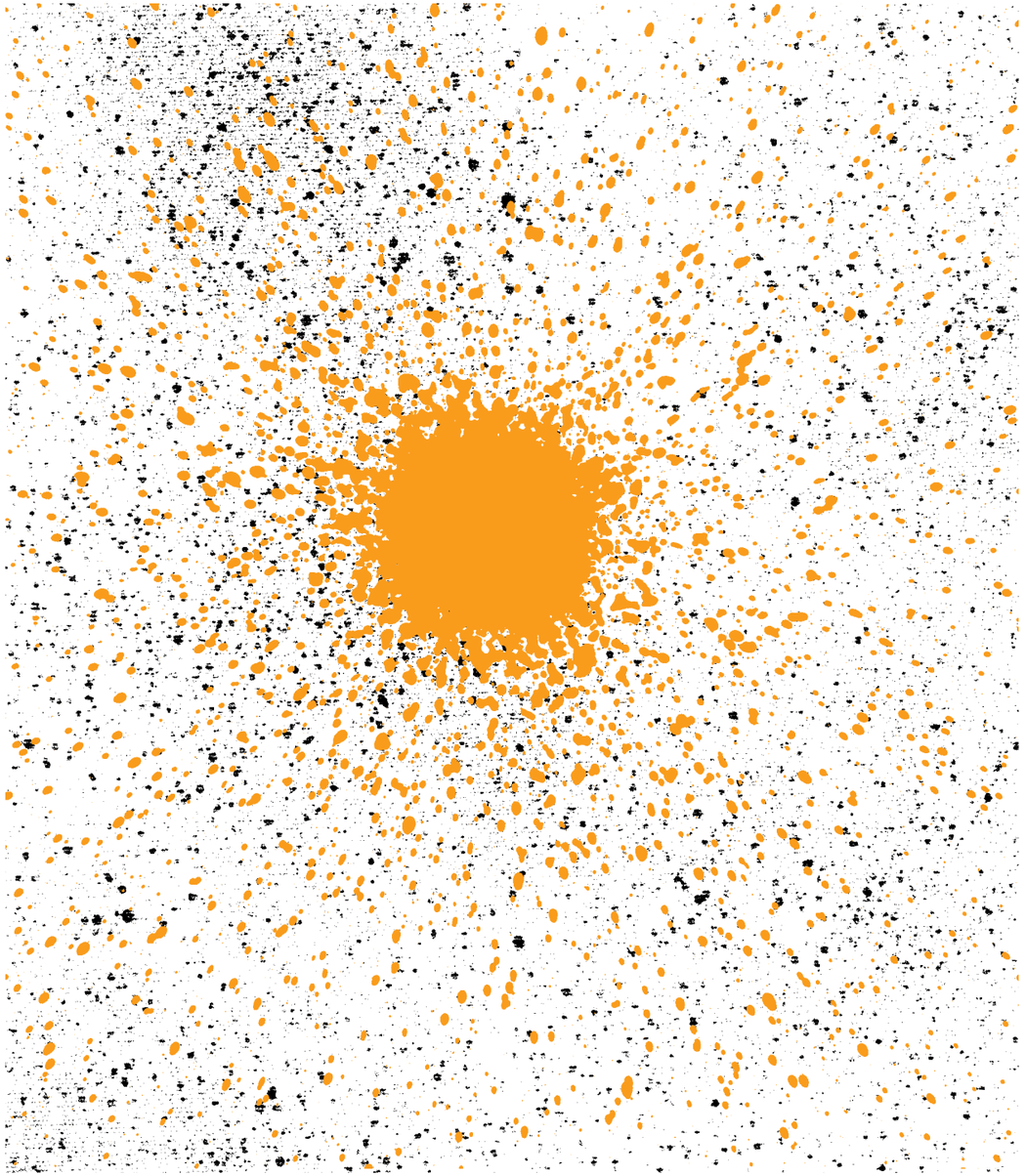
Publications Manuscripts acknowledging ARC as a source of support have included a book chapter (accepted for publication) and a journal article (submitted for publication).

1. IA Laing and PN Le Souef, Association Studies in Asthma, in Genetics of Asthma and COPD Ed. Dirkje Postma and Scott T Weiss, 2006, Marcel Dekker/Taylor & Francis Group. Accepted 7 Feb 2006.
2. Tulic MK, Hurrelbrink RJ, Prêle CM, Laing IA, Upham JW, Le Souëf PN, Sly PD & Holt PG, Genetic variations in toll-like receptor (TLR)-4 are responsible for impaired epithelial and leukocyte responses to bacterial and viral stimuli, submitted to the Journal of Immunology, September 2006.

genetics

Publications that preceded support from ARC include:

1. Martin AC, Laing IA, Khoo SK, Zhang G, Rueter K, Teoh L, Taheri S, Hayden CM, Geelhoed GC, Goldblatt J and Le Souef PN. Acute asthma in children: relationship between CD14 and CC16 genotype, plasma levels and severity. American Journal of Respiratory and Critical Care Medicine 2006; 173:617-22.
2. Hales BJ, Martin AC, Pearce LJ, Laing IA, Hayden CM, Goldblatt J, Le Souëf PN and WR Thomas. IgE and IgG anti-house dust mite specificities in allergic disease. Journal of Allergy and Clinical Immunology 2006; 118:361-7.
3. Wiertsema SP, Khoo SK, Baynam G, Veenhoven RH, Laing IA, Zielhuis GA, Rijkers GT, Goldblatt J, LeSouëf PN and EAM Sanders. Association of the CD14 promoter polymorphism with otitis media and pneumococcal vaccine responses. Clinical and Vaccine Immunology 2006; 13:892-7.
4. Wiertsema SP, Baynam G, Khoo SK, Veenhoven RH, van Heerbeek N, Zhang B, Laing IA, Rijkers GT, Goldblatt J, Sanders EAM, LeSouef PN, Association of genetic variants in IL-4, IL-4R and IL-13 with the anti-pneumococcal antibody response. Vaccine – accepted 20th July 2006.
5. Zhang G, Hayden CM, Khoo SK, Laing IA, Turner S, Landau L, Goldblatt J and Le Souëf PN. Association of haplotypes of ß2-adrenoceptor polymorphisms with lung function and airway responsiveness in a paediatric cohort. Paediatric Pulmonology – accepted 20th July 2006.



antibiotics

professor robert capon

Institute for Molecular Bioscience, University of Queensland, Brisbane

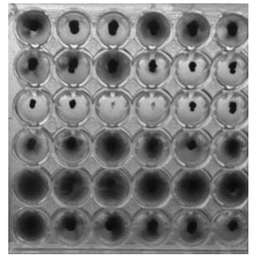


figure 1. TM assay on HPLC fractions from sample A.

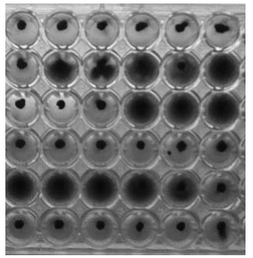


figure 2. TM assay of LH-20 fractions from sample B.

A new non-toxic approach to controlling bacterial infection

Traditional antibiotic discovery strategies focus on bacteriostatic and bactericidal agents – leading to antibiotics that are, in effect, selective toxins. The search for antibiotics that control, rather than kill bacteria, represents a valuable new discovery paradigm able to yield drugs not compromised by emerging resistance. A wide variety of pathogenic bacteria utilise polar surface filaments called type IV pili (TFP) to attach to and colonise host epithelial surfaces. TFP extend and retract from the poles of the cell for surface translocation termed twitching motility (TM), which is critical for host infection. Type IV pili are a well-validated but totally under-utilised target for antibiotic discovery.

This project will search for new non-cytotoxic antibiotics that control infections by inhibiting the TM of a wide range of important bacterial pathogens, in particular, *Pseudomonas aeruginosa*. These new antibiotics will be well-suited to treat immunologically compromised and seriously ill patients, such as those suffering cystic fibrosis, burns, AIDS or undergoing cancer chemotherapy, who are less able to tolerate cytotoxic side-effects. A TM assay capable of simultaneously assessing whether a test extract, fraction or pure compound is (a) non-bactericidal against P. *aeruginosa*, and (b) selectively inhibits the twitching phenomena has been developed successfully.
The screen of a library from southern Australian and Antarctic marine extracts (~3000 invertebrates and algae) with this new assay resulted in fourteen extracts with promising TM inhibitory properties.

Using an optimised partitioning process, the fourteen target extracts were converted into seventy-three fractions, with each subjected to the TM assay. Characteristic TM assay results are shown for sample A, which revealed non-cytotoxic TM inhibitors in wells B4-C2 and C5-C7 (Figure 1). This conclusion is evident from the presence of a healthy bacterial colony on the agar surface (brown spot), but the absence of a bacterial halo indicative of twitching motility (a transparent zone). By contrast, wells C3 and C4 were cytotoxic (no bacterial growth or halo). Likewise, fractionation of sample B revealed two TM inhibitors in wells C2 and C3 (Figure 2). To date, fifteen TM inhibitors have been isolated from the fourteen target marine extracts.

The discovery that marine metabolites can influence gram negative TM reveals a hitherto unrecognised ecological role. Marine sponges are well-known for their ability to host symbiotic bacteria, and their ability to produce non-cytotoxic TM inhibitors represents a plausible ecological control strategy - to manage the density and localisation of bacterial colonisation with the sponge tissue.

Results to date confirm that marine extracts are a valid source of TM inhibitors, and that these are small “drug-like” molecules. Ongoing studies will define the structures of these metabolites, and will seek to determine whether such inhibitors have therapeutic potential.

professor david jans

Department of Biochemistry and Molecular Biology, Monash University, Melbourne

vaccine development

Role of phosphorylation in regulating nuclear trafficking of the viral matrix protein during respiratory syncytial virus infection

Respiratory syncytial virus (RSV) is the major cause of viral pneumonia in infants and young children throughout the world, with over 100,000 infants infected by RSV in Australia every year, (estimated annual cost of between 1 and 4 million dollars in the State of Victoria alone), as well as being an important cause of pneumonia in the elderly, resulting in more deaths each winter than influenza. Currently there is no efficacious treatment for infection or vaccine to prevent RSV infection.

This study examined one of the RSV proteins, the matrix protein (M), which is central to virus propagation and resultant cell injury. It has been observed that M enters the cell nucleus (the site of cellular RNA synthesis) where it appears to inhibit RNA synthesis early in infection. Later, it exits the nucleus in a step required for virus production (see Figure 1). Understanding how M trafficks between nucleus and cytoplasm at precise times during infectious cycle could be the key to establishing its role in pathogenesis, and enable the development of new approaches to anti-viral therapy.

By examining the M protein both in isolation in living cells, and in infected cell systems, it has been possible firstly, to identify the key targeting signals in M that determine its ability to traffic, and the cellular transport molecules that mediate this. We have identified the signal conferring M nuclear entry through the action of the cellular transporter importin beta 1, as well as the signal mediating nuclear export through the exporter exportin 1. It had previously been observed that M was likely to contain a phosphate group at a specific site or sites on the protein in infected cells. Since M's phosphorylated state appeared to correlate with its cytoplasmic location later in infection, when it is actively exported from the nucleus, it was hypothesised that phosphorylation could be the switch between M nuclear import and export. A number of experiments were carried out to examine this in detail, in particular focussing on a protein kinase CK2 site close to the nuclear export signal, that seemed likely to regulate M's export activity.

Live cell imaging experiments were first performed using quantitative microscopy to look at localisation of M in the presence and absence of a specific inhibitor of exportin 1, results showing that M nuclear localisation was increased. Importantly, the inhibitor of exportin 1 inhibits RSV virus production 25-fold, indicating that M nuclear export is important in the infectious cycle. Significantly, experiments using an inhibitor of CK2 revealed the same effect, implying that phosphorylation of M may be through CK2, and that this may be important for M nuclear export. Experiments looking at M's location in virus-infected cells in the presence of the CK2 inhibitor should confirm these observations. Parallel biochemical analysis indicates that the form of M in the nucleus and cytoplasm is different, and that the CK2 inhibitor changes the relative amounts of the respective forms of M. All of this is consistent with phosphorylation of M by CK2 playing a role in modulating M subcellular localisation.

Interestingly, the analysis of the CK2 site near the nuclear export signal, proved that this particular site is not critical in affecting M nuclear export. Currently other sites in M are being examined in an attempt to localise the key site(s) to then perform similar analysis.

In summary, although the work is ongoing, progress has been made in understanding the signals and cellular proteins including kinases responsible for M subcellular trafficking. When the work is complete, it will be possible to make viruses defective in M trafficking, both to test formally the importance of M trafficking in RSV infection, and as a possible first step to developing attenuated viruses for use in vaccine development.

Ghildyal R, Ho A and Jans DA (2006) Central role of the respiratory syncytial virus matrix protein in infection FEMS Microbiol. Rev 30, 692-705.

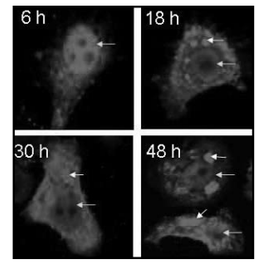
Ho A, Jans DA, Soegiyono L, Dias M, Coghill S, Wong W, Bardin, PG and Ghildyal R (2006) The respiratory syncytial virus matrix protein possesses a Crm1-mediated nuclear export mechanism Traffic (TRA-05-0091R2)[under revision.

Figure. M is nuclear early in infection and cytoplasmic later (A); inhibition of nuclear export using the inhibitor LMB increases nuclear accumulation (B) and reduces virus production (C).

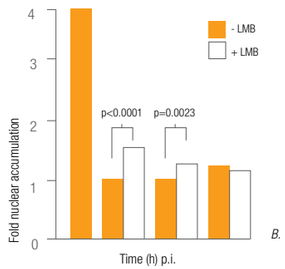
A. Confocal microscopic images of human respiratory cells at different times after infection with RSV; green arrowheads denote the rim of the nucleus, white arrows cytoplasmic inclusions. RSV M is seen in the nucleus at 6h, but mostly cytoplasmic at later timepoints.

B. Quantitative analysis for extent of accumulation in the nucleus over time after infection in the absence and presence of LMB; LMB increases nuclear accumulation.

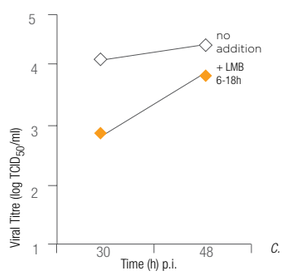
C. Virus production in the absence and presence of LMB; LMB reduces virus production.



A.



B.



C.

paul kelly 1,2
graeme maguire 1
peter morris 1
ivan bastian 3 &
nicholas anstey 1

Laboratory confirmation of sputum specimens is a key component of tuberculosis diagnosis in Timika. Pak Ferryanto, microscopist, with Paul Kelly.

The Timika Community Hospital, field headquarters for the NUTTS study.

nutrition & tuberculosis

Nutritional intervention to improve tuberculosis treatment outcome in Timika, Indonesia: the NUTTS Study.

1 *Menzies School of Health Research, Charles Darwin University, Darwin.*
2. *National Centre for Epidemiology & Population Health, Australian National University, Canberra.*
3 *Institute for Medical & Veterinary Studies, Adelaide.*

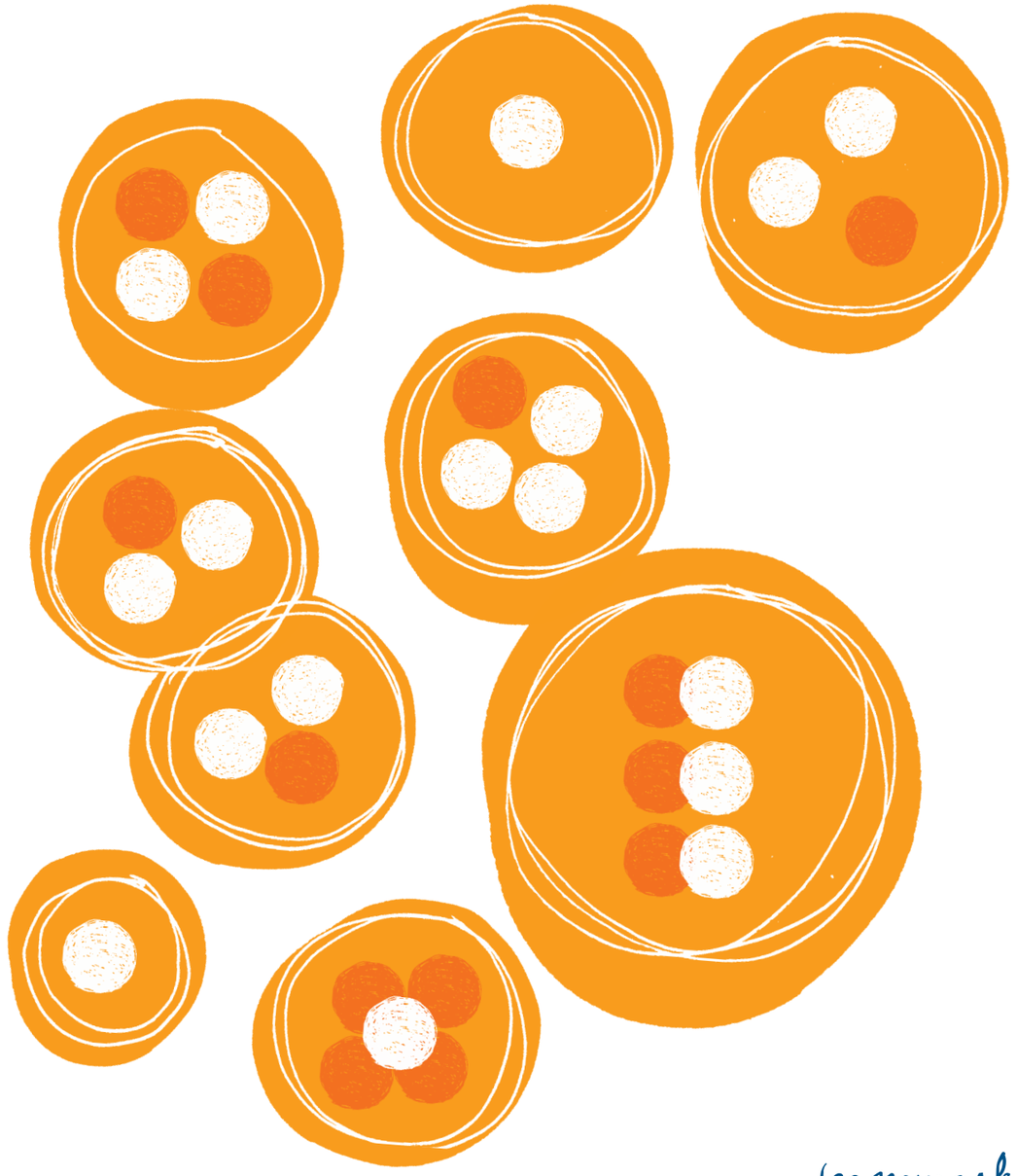
Background The Australian Respiratory Council (ARC) care has provided funds to a team of Australian researchers working in collaboration with Indonesian counterparts to examine the effect of food on the outcomes of tuberculosis treatment in Timika, Papua Province, Indonesia. The Nutritional Upgrade for Tuberculosis Treatment Success (NUTTS) study is an extension of the previously ARC-funded tuberculosis research program at the same site. Preliminary data show that patients have severe tuberculosis disease at diagnosis, low rates of HIV co-infection (4%) and MDR-TB (2%) and a high percentage (41%) are malnourished by WHO criteria (BMI<18.5kg/m^2). Further, it has been demonstrated that these patients respond slowly to treatment: while there is clinical, radiological and anthropometric improvement after two months of treatment, average lung volumes measured by spirometry remain significantly lower than control values at both two and six months, and 31% of patients remain in the malnourished range at two months.

Despite the existence of effective medications and national tuberculosis control programs in most countries, tuberculosis remains a major cause of death due in part to poor compliance with treatment. A key issue in reducing tuberculosis morbidity and mortality is therefore: what are the most effective ways to improve tuberculosis treatment compliance? There is a well-recognised link between adult malnutrition and tuberculosis, with malnourished adults more likely to develop active tuberculosis disease and active tuberculosis, causing weight loss. Pulmonary nitric oxide (NO) production appears to be an important nutritionally-dependent mediator of myco-bacterial killing and amelioration of the immunopathology of tuberculosis in humans. No previous intervention studies have measured pulmonary immunological correlates of outcome to determine mechanisms of the effects seen.

The NUTTS Study Within the context of a well-functioning DOTS program, we will randomise patients with pulmonary tuberculosis to intervention (daily food supplement for two months followed by weekly for four months) or a control group (nutritional advice alone). The food will consist of a relatively low-cost, locally available, culturally acceptable standardised food supplement which would be sustainable if this intervention is found to be effective. The following hypotheses arising from the work to date are being tested: food supplementation will improve compliance with tuberculosis treatment and given that malnutrition is associated with tuberculosis disease severity and delayed treatment response, correction of malnutrition with a food supplement will result in more rapid improvement in tuberculosis associated malnutrition and in measures of treatment outcome and lung inflammation.

Study progress Preliminary results from a trial of arginine supplementation in uncomplicated malaria patients in Timika has resulted in substantial increases in exhaled NO (3g supplementation led to a mean increase of 40%). The immunohistopathological changes associated with tuberculosis suggest that NOS2 expression in tuberculosis which leads to the increase in endogenous NO production is at least as high as in malaria. Therefore, if the malaria result is replicated in our tuberculosis study, 1.2g supplemental arginine would be expected to increase exhaled NO by at least 16%. The proposed sample size is sufficient to demonstrate an effect of this size. Preliminary data from a related study in East Timor has shown that the study design is feasible and acceptable to the community, tuberculosis patients and clinic staff. We have been able to incorporate the lessons learnt in this study and apply them to a different setting in Timika where our well-established research collaboration will allow wider study of the food-tuberculosis interaction.

The principle investigator has made visits to Jakarta and Timika to finalise the study protocol in consultation with local stakeholders. Preliminary ethical approval has been obtained and the full ethics proposal is being prepared. A preliminary nutritional survey of Timika tuberculosis patients will be undertaken later this year to provide important baseline data and to test the acceptability of the proposed food intervention. The full proposal has been re-submitted to the National Health and Medical Research Council and the decision is awaited. An infectious diseases consultant will join the team in 2007. Two Indonesian research students with laboratory and nutritional expertise have been identified as field-based collaborators.



teamwork

board of directors

Amanda Christensen Dip Nursing

NSW TB Program Manager 1997-; various positions in public health for seventeen years including tuberculosis control for eleven years. Appointed to the Board in 2001.

Clinical Associate Professor Peter Gianoutsos MB, ChB, FRACP, FACCP

Senior Respiratory Physician (VMO) Dept of Respiratory Medicine RPAH 1971-; Member TSANZ, ATS, ACCP; Chairman RPA Medical Board 1989-1991; Member of Medical Board of NSW 1978-1982; Chairman UMP Medical Experts Panel 2002-. Member of Board of Directors UMP 2000-2002. Appointed to the Board in 2006.

Robert Horsell CPA

Partner, R E Horsell & Co Public Accountants 1978-; Director, Cricket Australia 1997-2004, 2005-; Chairman, Cricket NSW 1997-; Director, Bradman Foundation 1999-2005. Appointed to the Board in 1999; Finance Director.

Clinical Associate Professor Michael Levy MBBS, MPH, FAFPHM

Director, Centre for Health Research in Criminal Justice, Justice Health 2004-; Clinical Director, Population Health, NSW Corrections Health Service 1998-2004; conjoint appointments with the School of Public Health, University of Sydney and Monash University; World Health Organization 1995-1997; Convenor of the First National Tuberculosis Conference (Public Health Association of Australia), 1994; Short-term Consultant for Tuberculosis Control in Kiribati, Burma, Papua New Guinea, China and the Philippines; Expert, SPC's TB Modelling Meeting 2006. Appointed to the Board in 1998; Vice-President.

David Macintosh BBS, FCA

Chairman, Payce Consolidated Limited 1992-; Director, Payce Consolidated 1990-; Managing Director, Paynter Dixon Construction Group 2001-; Director of numerous private companies; twenty-six years of senior management and director level in the transport and construction industries in Australia and Europe; Member of Board of Governors, Woolcock Institute of Medical Research; Member of the President's Council, The Children's Hospital at Westmead; Director, The Australian Lung Foundation; Chairman, The Macintosh Foundation, Macintosh Chair of Paediatric Respiratory Medicine – Endowed Chair 29 November 2005 in perpetuity; actively involved in the Surf Life Saving movement for over forty years; Life Member and Vice-President, Long Reef Surf Life Saving Club Inc.; Member and Chairman of the Expenditure Review Committee, Collaroy Surf Life Saving Club Inc. Appointed to the Board in 1997; President.

Professor J Paul Seale MBBS, PhD, FRACP, FRCP

Professor of Clinical Pharmacology, University of Sydney 1992-; Pro-Dean, Faculty of Medicine, University of Sydney 1997-2003; Consultant Physician, Royal Prince Alfred Hospital 1980-; Deputy Director, Woolcock Institute of Medical Research; Member, Australasian Society for Clinical and Experimental Pharmacologists and Toxicologists; Past President, Thoracic Society of Australia and New Zealand; former Congress President, Asia Pacific Society of Respirology; Chairman, NSW Therapeutics Advisory Group; Chair, TB Advisory Committee, Sydney South West Area Health Service; Chair, Drug & Therapeutics Committee, Sydney South West Area Health Service. Appointed to the Board in 1997; Vice-President.

Frederick Smith FCA

Chartered accountant since 1955; previously Partner in large international accounting firm. Extensive experience as Director of public and private companies. Appointed to the Board in 1998.

Clinical Associate Professor Iven Young BSc (Med), MBBS, PhD, FRACP

Head, Department of Respiratory and Sleep Medicine, Royal Prince Alfred Hospital (RPAH) 1991-; Visiting Medical Officer, RPAH 1979-1985; Senior Staff Specialist in Respiratory Medicine, RPAH 1985-; Post-Doctoral Fellow, University of California, San Diego 1976-1978; Research Fellow, University of Sydney 1974-1976; Respiratory Physician 1975-; Member, Thoracic Society of Australia and New Zealand; Member, American Thoracic Society; Senior Examiner, Australian Medical Council 1997-; elected to the Adult Medicine Division, Royal Australasian College of Physicians 2000-2001; Chairman, Division of Medicine, RPAH 2001-. Appointed to the Board in 1998. Elected Life Governor of ARC in 2003.

Bruce Ramage BSc, BA (Hons)

Company Secretary and Executive Officer. Joined ARC in 2001.

research committee

Professor Carol Armour

Professor of Pharmacy, University of Sydney

Associate Professor Peter Gibson

Staff Specialist, Respiratory Medicine Unit John Hunter Hospital

Associate Professor Michael Levy

Director, Centre for Health Research in Criminal Justice Health;
Chair ARC projects committee

David Macintosh

Chairman, Payce Consolidated. ARC President (ex officio)

Associate Professor Iven Young (chair)

Head, Department of Respiratory Medicine, Royal Prince Alfred Hospital

projects committee

Dr Colin Butler

Senior Research Fellow in Global Health, School of Health and Social Development, Deakin University

Dr Vicki Krause

Director, Centre for Disease Control Northern Territory Health Services

Associate Professor Michael Levy (chair)

Director, Centre for Health Research in Criminal Justice Health

David Macintosh

Chairman, Payce Consolidated. ARC President (ex officio)

Dr Graeme Maguire

General and outreach physician, Department of Medicine, Cairns Base Hospital; Research Fellow, Menzies School of Health Research, Darwin

Sheila Simpson

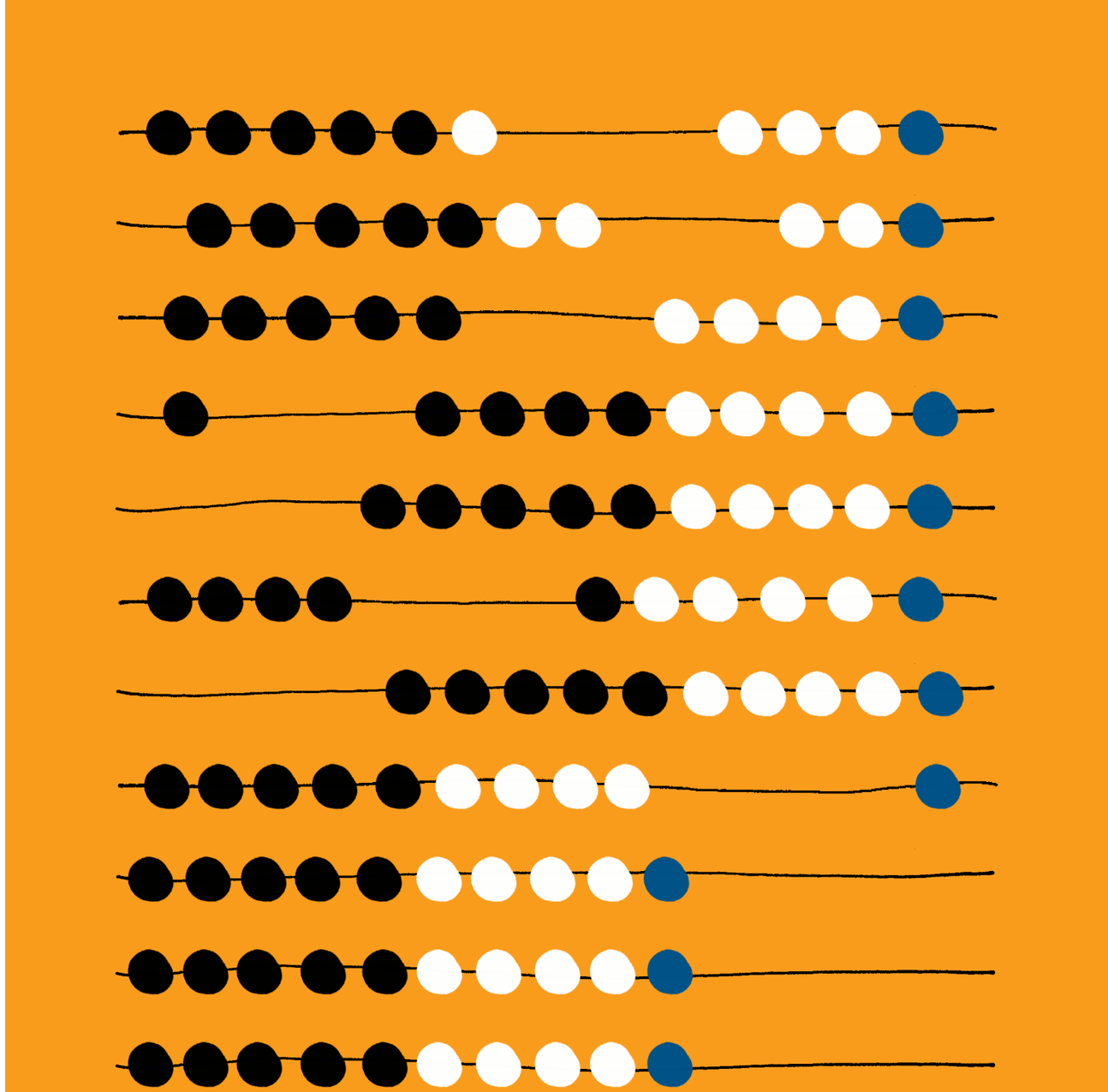
TB Nurse, Liverpool Health Service

Professor Richard Taylor

School of Public Health, University of Queensland

Dr Justin Waring

Consultant Physician, Respiratory and Tuberculosis Medicine, Royal Perth Hospital



2006 arc financials

directors' report

The directors present their report together with the financial report of the Australian Respiratory Council for the year ended 30 June 2006 and the auditor's report thereon.

Directors The directors at any time during or since the end of the financial year are:

Amanda Julie Christensen
Gavin Walter Frost
Peter Gianoutsos
Robert Eric Horsell
Michael Herbert Levy
David Hugh Macintosh
Noel Desmond Martin AM (deceased)
Robyn Lesley Richmond
John Paul Seale
Frederick Charles Samuel Smith
Iven Hunter Young

Company Particulars The Australian Respiratory Council, incorporated and domiciled in Australia, is a public company limited by guarantee. The address of the registered office is: Suite 2, 2 Norwich Road ROSE BAY NSW 2029

Company Secretary Bruce Ramage was appointed to the position of company secretary in 2001.

Principal Activity The principal activity of the company during the financial year was the provision of funds for the prevention and cure of respiratory illness. There was no significant change in the nature of this activity during the financial year.

Review and Results of Operations The company continued to engage in its principal activity during the financial year. The profit of the company for the year ended 30 June 2006 was $525,512 (2005 profit: $1,151,911).

Dividends No dividends have been paid or declared since the end of the previous year, and no dividends were previously recommended as the Constitution of the company prohibits their payment.

State of Affairs Apart from its change of name and sale of its building in Rose Bay, no other significant changes in the state of affairs of the company occurred during the financial year.

Events Subsequent to Balance Date There has not arisen in the interval between the end of the financial year and the date of this report any item, transaction or event of a material and unusual nature likely, in the opinion of the directors of the company to significantly affect the operations of the company, the results of those operations, or the state of affairs of the company in future financial years.

Likely Developments The company will continue to pursue its principal activities at a surplus. It is not expected that the results in future years will be adversely affected by the continuation of these operations.

Further disclosure of information regarding likely developments in the operations of the company in future financial years and the expected results of those operations is likely to result in unreasonable prejudice to the company. Accordingly, this information has not been disclosed in this report.

Environmental Regulations The company's operations are not subject to any significant environmental regulations under Australian Law.

Insurance of Officers During the financial year, the company has paid premiums in respect of directors' and officers' liability insurance contracts for the year ended 30 June 2006, and since the financial year, the company has paid or agreed to pay on behalf of the company, premiums in respect of such insurance contracts for the year ending 30 June 2007. Such insurance contracts insure against certain liability (subject to specific exclusions) persons who are or have been directors or executive officers of the company.

The directors have not included details of the nature of the liabilities covered or the amount of the premium paid in respect of the directors' and officers' liability insurance contracts, as such disclosure is prohibited under the terms of the contracts.

Particulars of Directors

Amanda Christensen Dip Nursing.
Appointed to the Board on 22 February 2001.
Interest in contracts: Nil

Dr Gavin Frost MBBS FRACMA FAFPHM.
Appointed to the Board in 1980 (Retired 28 November 2005)
Interest in contracts: Nil

Clinical Associate Professor Peter Gianoutsos MB CHB FRACP FACCP.
Appointed to the Board on 15 May 2006.
Interest in contracts: Nil

Robert Horsell CPA.
Appointed to the Board on 24 June 1999. Finance Director.
Interest in contracts: Nil

Clinical Associate Professor Michael Levy MBBS MPH FAFPHM.
Appointed to the Board on 21 May 1998. Vice-President.
Interest in contracts: Nil

David Macintosh BBS, FCA.
Appointed to the Board on 19 June 1997. President.
Interest in contracts: Nil

Emeritus Professor Noel Martin AM MDS FACD FRACD FAPHA FICD AJAOP FRAH (Ire) FRSM (Eng).
Appointed to the Board in 1961. Life Governor (Resigned 19 September 2005, now deceased)
Interest in contracts: Nil

Professor Robyn Richmond BA MA MHEd PhD.
Appointed to the Board in 1994 (Resigned 14 January 2006)
Interest in contracts: Nil

Professor J Paul Seale MBBS PhD FRACP.
Appointed to the Board on 19 June 1997. Vice-President.
Interest in contracts: Nil

Frederick Smith FCA.
Appointed to the Board on 3 September 1998.
Interest in contracts: Nil

Clinical Associate Professor Iven Young BSc(Med), MBBS, PhD, FRACP.
Appointed to the Board on 6 August 1998.
Interest in contracts: Nil

Directors' Meetings

The number of directors' meetings held during the financial year and the number of meetings attended by each director were:

	Number Attended	Number Held while in Office
Amanda Christensen	6	7
Gavin Frost	0	4
Peter Gianoutsos	0	1
Robert Horsell	6	7
Michael Levy	5	7
David Macintosh	7	7
Noel Martin	0	2
Robyn Richmond	1	4
J Paul Seale	6	7
Frederick Smith	5	7
Iven Young	6	7

independent auditor's report

Lead Auditor's Independence Declaration Under Section 307C of the Corporations Act 2001 To the directors of the Australian Respiratory Council: I declare that, to the best of my knowledge and belief, in relation to the audit of the financial year ended 30 June 2006 there have been: no contraventions of the auditor independence requirements as set out in the Corporations Act 2001 in relation to the audit; and no contraventions of any applicable code of professional conduct in relation to the audit.

Stuart H Cameron
Partner, Nexia Court & Co, Chartered Accountants
Sydney, 25 September 2006

Signed in accordance with a resolution of the directors:

David Macintosh
Director
Sydney, 25 September 2006

The financial report and directors' responsibility The financial report comprises the income statement, balance sheet, statement of changes in equity, cash flow statement, accompanying notes to the financial statements (notes 1 to 19), and the directors' declaration, (set out on pages 27 to 38), for The Australian Respiratory Council (the "company"), for the year ended 30 June 2006.

The directors of the company are responsible for the preparation and true and fair presentation of the financial report in accordance with the Corporations Act 2001. This includes responsibility for the maintenance of adequate accounting records, internal records and internal controls that are designed to prevent and detect fraud and error, and for the accounting policies and accounting estimates inherent in the financial report.

Audit approach We have conducted an independent audit in order to express an opinion to the members of the company. Our audit was conducted in accordance with Australian Auditing Standards in order to provide reasonable assurance as to whether the financial report is free of material misstatement. The nature of an audit is influenced by factors such as the use of professional judgement, selective testing, the inherent limitations of internal control, and the availability of persuasive rather than conclusive evidence. Therefore, an audit cannot guarantee that all material misstatements have been detected.

We performed procedures to assess whether in all material respects the financial report presents fairly, in accordance with the Corporations Act 2001, Accounting Standards, and other mandatory financial reporting requirements in Australia, a view which is consistent with our understanding of the company's financial position, and of its performance as represented by the results of its operations and cash flows.

We formed our audit opinion on the basis of these procedures, which included:

a. examining, on a test basis, information to provide evidence supporting the amounts and disclosures in the financial report, and

b. assessing the appropriateness of the accounting policies and disclosures used and the reasonableness of significant accounting estimates made by the directors.

While we considered the effectiveness of management's internal controls over financial reporting when determining the nature and extent of our procedures, our audit was not designed to provide assurance on internal controls.

Independence In conducting our audit, we followed applicable independence requirements of Australian professional ethical pronouncements and the Corporations Act 2001.

Audit Opinion In our opinion, the financial report of the Australian Respiratory Council is in accordance with:

a. the Corporations Act 2001, including:

i. giving a true and fair view of the company's financial position as at 30 June 2006, and of its performance for the year ended on that date; and

ii. complying with Accounting Standards and the Corporations Regulations 2001; and

b. other mandatory professional reporting requirements in Australia and the Charitable Fundraising Act 1991 and the Regulations under that Act.

Stuart H Cameron
Partner, Nexia Court & Co, Chartered Accountants
Sydney, 25 September 2006

directors' declaration

In the opinion of the directors of the Australian Respiratory Council:

a. the financial statements and notes, set out on pages 28 to 38 are in accordance with the Corporations Act 2001, including:

i. giving a true and fair view of the financial position of the company as at 30 June 2006 and of its performance, as represented by the results of its operations and its cash flows for the financial year ended on that date; and

ii. complying with Accounting Standards and the Corporations Regulations 2001;

b. there are reasonable grounds to believe that the company will able to pay its debts as and when they become due and payable;

c. the financial report gives a true and fair view of all income and expenditure with respect to fundraising appeals;

d. the Balance Sheet gives a true and fair view of the state of affairs with respect to fundraising appeals;

e. the provisions of the Charitable Fundraising Act 1991, the Regulations under that Act, and the conditions attaching to the fundraising authority have been complied with; and

f. the internal controls exercised by the company are appropriate and effective in accounting for all income received and applied from fundraising appeals.

Signed in accordance with a resolution of the directors:

Director
Sydney, 25 September 2006

income statement for the year ended 30/06/2006

	Note	2006 $	2005 $
Revenue from continuing operations	2	1,410,280	666,379
Increment relating to investment properties		-	1,127,972
		1,410,280	1,794,351
Depreciation	3	(8,339)	(9,300)
Research grants, fellowships and scholarships		(209,619)	(155,987)
Salaries and employee benefits expenses	3	(216,027)	(161,383)
Investment expenses		(23,239)	(21,543)
Consultancy fees		(99,706)	(85,972)
Other expenses		(327,838)	(208,255)
		(884,768)	(642,440)
Profit before income tax expense		525,512	1,151,911
Income tax expense		-	-
Profit	14	525,512	1,151,911

The above income statement should be read in conjunction with the accompanying notes.

statement of changes in equity for the year ended 30/06/2006

	Note	2006 $	2005 $
Total equity at the beginning of the financial year		8,204,900	6,856,566
Profit for the year		525,512	1,151,911
(Decrement)/increment in asset revaluation reserve		(75,735)	196,423
Total equity at the end of the financial year		8,654,677	8,204,900

The above income statement should be read in conjunction with the accompanying notes.

balance sheet as at 30/06/2006

	Notes	2006 $	2005 $
Current assets			
Cash and cash equivalents	5	743,922	942,689
Receivables	6	2,412,967	18,222
Other assets	7	20,236	6,295
Total current assets		3,177,125	967,206
Non-current assets			
Other assets	7	-	20,115
Other financial assets	8	4,207,697	3,884,092
Investment properties	9	1,400,000	3,400,000
Property, plant and equipment	10	11,442	16,505
Total non-current assets		5,619,139	7,320,712
Total assets		8,796,264	8,287,918
Current liabilities			
Payables	11	128,101	76,050
Provisions	12	13,486	6,968
Total current liabilities		141,587	83,018
Total liabilities		141,587	83,018
Net assets		8,654,677	8,204,900
Equity			
Reserves	13	3,589,600	3,665,335
Retained profits	14	5,065,077	4,539,565
Total equity		8,654,677	8,204,900

The above balance sheet should be read in conjunction with the accompanying notes.

cash flow statement for the year ended 30/06/2006

	Note	2006 $	2005 $
Cash flows from operating activities			
Distributions received		195,676	246,153
Cash receipts from customers		537,325	351,987
Cash paid to suppliers and employees		(980,062)	(622,349)
Dividends received		32,483	15,325
Refund of imputation credits		16,581	23,160
Interest received		43,640	41,576
Net cash (used in)/provided by operating activities	17b	(154,357)	55,852
Cash flows from investing activities			
Payment for property, plant and equipment		(3,276)	(10,332)
Payment for investments		(1,249,285)	(2,499,647)
Proceeds from sale of investments		1,208,151	2,631,015
Net cash (used in)/provided by investing activities		(44,410)	121,036
Net (decrease)/increase in cash held		(198,767)	176,888
Cash and cash equivalents at the beginning of the financial year		942,689	765,801
Cash and cash equivalents at the end of the financial year	17a	743,922	942,689

The above cash flow statement should be read in conjunction with the accompanying notes.

notes to the financial statements for the year ended 30/06/2006

1. Summary of significant accounting policies

The significant policies which have been adopted in the preparation of this financial report are:

a. Basis of Preparation The financial report is a general purpose financial report which has been prepared in accordance with Australian equivalents to International Financial Reporting Standards ("AIFRSs"), Urgent Issues Group Consensus Interpretations, other authoritative pronouncements of the Australian Accounting Standards Board and the Corporations Act 2001.

It has been prepared on the basis of historical costs and except where stated, does not take into account changing money values or fair values of non-current assets. Reconciliations and descriptions of the effect of transition from previous AGAAP to AIFRSs on the company's equity and net income are given in Note 19.

Critical accounting estimates The preparation of financial statements in conformity with AIFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the company's accounting policies.

b. Revenue Recognition Revenues are recognised at fair value of the consideration received net of the amount of goods and services tax (GST) payable to the taxation authority. Exchanges of goods or services of the same nature and value without any cash consideration are not recognised as revenues.

Interest Revenue Interest revenue is recognised as it accrues
Dividends Dividend revenue is recognised net of any franking credits. Revenue from dividends is recognised when received.
Other Income Income from other sources is recognised when the fee in respect of other products or services provided is receivable.

c. Goods and Services Tax Revenues, expenses and assets are recognised net of the amount of goods and services tax (GST), except where the amount of GST incurred is not recoverable from the Australian Taxation Office (ATO). In these circumstances, the GST is recognised as part of the cost of acquisition of the asset or as part of an item of the expense. Receivables and payables are stated with the amount of GST included.The net amount of GST recoverable from, or payable to, the ATO is included as a current asset or liability in the Balance Sheet. Cash flows are included in the Cash Flow Statement on a gross basis. The GST components of cash flows arising from investing and financing activities which are recoverable from, or payable to, the ATO are classified as operating cash flows.

d. Income Tax The company is registered as a charity and is not subject to income tax. Continued exemption for income tax is subject to the requirements for non-profit organisations.

e. Acquisitions of Assets All assets acquired including property, plant and equipment are initially recorded at their cost of acquisition at the date of acquisition, being the fair value of the consideration provided plus incidental costs directly attributable to the acquisition.

f. Receivables Receivables to be settled within 30 days are carried at amounts due. The collectibility of debts is assessed at balance date and specific provision is made for any doubtful accounts.

g. Investments Investments are carried in the company's financial statements at the lower of cost or recoverable amount.

h. Recoverable Amount of Assets Valued on Cost Basis The carrying amounts of assets valued on the cost basis are reviewed to determine whether they are in excess of their recoverable amount at balance date. If the carrying amount of assets exceeds its recoverable amount, the asset is written down to the lower amount. The write-down is recognised as an expense in the net profit or loss in the reporting period in which it occurs.

i. Depreciation *Useful lives* All property, plant and equipment have limited useful lives and are depreciated using the diminishing value method over their estimated useful lives. Assets are depreciated from the date of acquisition. Depreciation rates and methods are reviewed annually for appropriateness. When changes are made, adjustments are reflected prospectively in current and future periods only. Depreciation is expensed.
Property, Plant and Equipment The depreciation rates and method used for each class of asset are as follows:

	2006	2005	method
Plant & equipment	7.5%-50%	7.5%-50%	Diminishing

j. Payables Liabilities are recognised for amounts to be paid in the future for goods or services received. Trade accounts payable are normally settled within 30 days.

k. Employee benefits *(i) Wages, salaries, annual leave and non-monetary benefits* Liabilities for employee benefits for wages and salaries (including non-monetary benefits) and annual leave expected to be settled within 12 months of the reporting date representing present obligations resulting from employees' services provided up to reporting date, calculated at undiscounted amounts based on remuneration wage and salary rates that the company expects to pay as at reporting date including related on-costs.
(ii) Long service leave The liability for long service leave is recognised in the provision for employee benefits and measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date.
(iii) Superannuation Plan The company contributes to defined contribution employee superannuation plans. Contributions are charged against income as they are made.

	2006 $	2005 $
2. Revenue from continuing operations		
Rent received	192,096	215,562
Fund distributions from investments	195,676	246,153
Net profit on sale of investments	21,412	20,578
Net profit on sale of investment property	788,022	-
Dividends received	32,483	15,325
Interest revenue	43,640	41,576
Legacies and donations	18,087	2,000
Appeals	94,296	95,745
Refund of imputation credits	16,581	23,160
Membership fees	2,318	3,364
Sundry income received	5,669	2,916
	1,410,280	666,379
3. Expenses		
Profit includes the following specific expenses:		
Transfer to provision for:		
Employee benefits	6,518	(3,024)
Depreciation	8,339	9,300
4. Auditor's remuneration		
Audit Services:		
Auditors of the company – Nexia Court & Co Audit of the financial report	12,180	11,600
Other Services:		
Auditors of the company – Nexia Court & Co Accounting services	4,477	4,000
5. Cash and cash equivalents		
Current		
Cash on hand	903	550
Cash at bank	743,019	942,139
	743,922	942,689

	2006 $	2005 $
6. Receivables		
Current		
Sundry debtors	2,412,967	18,222
7. Other assets		
Current		
Pre-payments	20,236	6,295
Non-Current		
Deferred expenditure	-	20,115
8. Other financial assets		
Non-Current		
Listed shares – at fair value	2,130,256	1,651,705
Managed funds – at fair value	2,077,441	2,232,387
	4,207,697	3,884,092
9. Investment properties		
Investment properties - at fair value	1,400,000	3,400,000
10. Property, plant and equipment		
Plant and Equipment - at cost	79,756	76,480
Less: Accumulated depreciation	(68,314)	(59,975)
	11,442	16,505
Reconciliations		
Reconciliations of the carrying amounts for each class of property, plant and equipment are set out below:		
Plant and Equipment		
Carrying amount at beginning of year	16,505	15,473
Additions	3,276	10,332
Disposals	-	-
Depreciation	(8,339)	(9,300)
Carrying amount at end of year	11,442	16,505

	2006 $	2005 $

11. Payables

Current

Sundry creditors and accruals	128,101	76,050

12. Provisions

Current

Employee benefits provision	13,486	6,968

Number of employees

Number of employees at year end	3	3

13. Reserves

Capital profits	2,411,980	2,411,980
Asset revaluation	1,177,620	1,253,355
	3,589,600	3,665,335

Nature and purpose of reserves

a. Capital Profits *Nature and purpose of reserve*

The capital profits reserve is used to accumulate realised capital profits

Movements in reserve

Balance at end of year	2,411,980	2,411,980

b. Asset revaluation *Nature and purpose of reserve*

The asset revaluation reserve is used to record increments and decrements in the value of non-current assets.

Movements in reserve

Balance at beginning of year	1,253,355	1,056,932
(Decrements)/increments on revaluation	(75,735)	196,423
	1,177,620	1,253,355

14. Retained profits

Retained profits at the beginning of the year	4,539,565	3,387,654
Profit	525,512	1,151,911
Retained profits at the end of the year	5,065,077	4,539,565

15. Additional financial instruments disclosure

a. Interest Rate Risk *Interest Rate Risk Exposures* The company's exposure to interest rate risk, and the effective weighted average interest rate for classes of financial assets, and financial liabilities is set out below:

	Note	Weighted Average Interest Rate $	Floating Interest Rate $	Fixed Interest Maturing in 1 Year or Less $	Fixed Interest Maturing in Over 1 to 5 Years $	Non-Interest Bearing $	Total $
2006							
Financial assets							
Cash and cash equivalents	5	5.8%	743,019	-	-	903	743,922
Receivables	6	-	-	-	-	2,412,467	2,412,467
Other financial assets	8	4.6%	-	-	-	4,207,697	4,207,697
Financial liabilities							
Payables	11	-	-	-	-	128,101	128,101
2005							
Financial assets							
Cash and cash equivalents	5	4.9%	924,139	-	-	550	942,689
Receivables	6	-	-	-	-	18,222	18,222
Other financial assets	8	-	-	-	-	3,884,092	3,884,092
Financial liabilities							
Payables	11	-	-	-	-	76,050	76,050

b. Net Fair Values of Financial Assets and Liabilities

The carrying amounts approximate the fair values of financial assets and liabilities.

c. Credit Risk

The credit risk on financial assets of the company which has been recognised on the Balance Sheet is the carrying amount.

16. Key management personnel

a. Key management personnel comprise the directors and the company secretary.

b. The names of each person holding the position of director of the Australian Respiratory Council during the financial year was:

Amanda Christensen, Dr Gavin Frost, Clinical Associate Professor Peter Gianoutsos, Robert Horsell, Clinical Associate Professor Michael Levy, David Macintosh, Emeritus Professor Noel Martin AM (deceased), Professor Robyn Richmond, Professor Paul Seale, Frederick Smith and Clinical Associate Professor Iven Young

c. The compensation paid, payable, or otherwise provided to the directors of the company during the financial year was $Nil (2005: $Nil).

Compensation paid, payable or provided to other key management personnel totalled $100,000 (2005: $81,702). This comprised short-term benefits.

17. Notes to the cash flow statement

a. For the purposes of the Cash Flow Statement, cash and cash equivalents includes cash on hand and cash at bank.

Cash and cash equivalents as at the end of the financial year as shown in the Cash Flow Statement is reconciled to the related items in the Balance Sheet as follows:

	2006 $	2005 $
Cash on hand	903	550
Cash at bank	743,019	942,139
	743,922	942,689
b. Reconciliation of profit to net cash provided by/(used in) operating activities:		
Profit	525,512	1,151,911
Increment relating to investment properties	-	(1,127,972)
Depreciation	8,339	9,300
Net (gain)/loss on disposal of financial assets	(21,412)	(20,578)
Net (gain) on disposal of investment property	(788,022)	-
Changes in assets and liabilities		
Decrease/(increase) in receivables	76,598	32,400
Decrease/(increase) in pre-payments	(13,941)	1,372
(Decrease)/increase in provision for employee benefits	6,518	(3,024)
Increase/(decrease) in sundry creditors and accruals	52,051	12,443
Net cash (used in)/provided by operating activities	(154,357)	55,852

18. Information and declarations to be furnished under the Charitable Fundraising Act 1991, Section 23.

a. Details of aggregate gross income and total expenses of fundraising appeals

	2006 $	2005 $
Gross proceeds from fundraising appeals	100,095	95,745
Total income	100,095	95,745
Less: Total direct costs of fundraising	20,170	47,088
Total expenses	20,170	47,088
Net surplus from fundraising activities	79,925	48,657

b. Statement showing how funds received were applied to charitable purposes

This surplus is used for research grants, fellowships and scholarships.

c. Fundraising appeals conducted during the financial year

Appeals only.

d. Comparisons

	2006 $	2005 $
Total cost of fundraising/gross income from fundraising	20%	49%
Net surplus from fundraising/gross income from fundraising	80%	51%
Total cost of services/total expenditure	5%	5%
Total cost of services/total income received	5%	5%

19. Explanation of Transition from Australian Equivalents to International Financial Reporting Standards

Reconciliation of Equity

	Note	The Company 1.7.2004 AGAAP $	The Company 1.7.2004 Transition impact $	The Company 1.7.2004 AIFRS $	The Company 30.6.2005 AGAAP $	The Company 30.6.2005 Transition impact $	The Company 30.6.2005 AIFRS $
Assets							
Current assets							
Cash assets		765,801	-	765,801	942,689	-	942,689
Receivables		50,622	-	50,622	18,222	-	18,222
Other assets		7,667	-	7,667	6,295	-	6,295
Other financial assets		50,845	-	50,845	-	-	-
Total current assets		874,935	-	874,935	967,206	-	967,206
Non-current assets							
Other assets		20,115	-	20,115	20,115	-	20,115
Other financial assets		3,747,614	-	3,747,614	3,884,092	-	3,884,092
Investment property	a	2,272,028	1,127,972	3,400,000	2,272,028	1,127,972	3,400,000
Property, plant and equipment		15,473	-	15,473	16,505	-	16,505
Total non-current assets		6,055,230	1,127,972	7,183,202	6,192,740	1,127,972	7,320,712
Total assets		6,930,165	1,127,972	8,058,137	7,159,946	1,127,972	8,287,918

				2006 $		2005 $
Liabilities						
Current liabilities						
Payables	63,607	-	63,607	76,050	-	76,050
Provisions	9,992	-	9,992	6,968	-	6,968
Total current liabilities	73,599	-	73,599	83,018	-	83,018
Total liabilities	73,599	-	73,599	83,018	-	83,018
Net assets	6,856,566	1,127,972	7,984,538	7,076,928	1,127,972	8,204,900
Equity						
Reserves	3,468,912	-	3,468,912	3,665,335	-	3,665,335
Retained profits	3,387,654	1,127,972	4,515,626	3,411,593	1,127,972	4,539,565
Total equity	6,856,566	1,127,972	7,984,538	7,076,928	1,127,972	8,204,900

(a) Investment property

The expected effect of the above is to increase investment property by $1,127,972 at 1 July 2004, by $1,127,972 at 30 June 2005 and to increase other income by $1,127,972 for the financial year ended 30 June 2004.

Reconciliation of profit for the financial year ended 30 June 2005

		Company for the year ended 30 June 2005		
	Note	AGAAP $	Transition impact $	AIFRS $
Profit before income tax expense		23,939	-	23,939
Income tax expense		-	-	-
Profit for the period		23,939	-	23,939

Summary of impact of transition to AIFRS on retained earnings

The impact of the transition to AIFRS on retained earnings as at 1 July 2004 is summarised below:

	Note	$
Retained earnings as at 1 July 2004 under AGAAP		3,387,654
AIFRS reconciliation:		
Measurement of investment property at fair value	a	1,127,972
Retained earnings as at 1 July 2004 under AIFRS		4,515,626

summary financial report

arc's income statement for the year ended 30/06/2006

	2006 $	2005 $
Revenue		
Donations and gifts - monetary and non-monetary	100,383	97,745
Legacies and bequests	12,000	-
Investment income	1,081,233	1,451,604
Other income	216,664	245,002
Total revenue	1,410,280	1,794,351
Expenses		
Overseas projects	73,476	69,799
Domestic projects	249,006	155,987
Fundraising costs	20,170	47,088
Administration	542,116	369,566
Total expenses	884,768	642,440
Excess of revenue over disbursements (shortfall)	525,512	1,151,911

arc's balance sheet as at 30/06/2006

	2006 $	2005 $
Assets		
Current assets		
Cash and cash equivalents	3,156,889	960,911
Other assets	20,236	6,295
Non-current assets		
Property, plant and equipment	11,442	16,505
Other	5,607,697	7,304,207
Total assets	8,796,264	8,287,918
Liabilities		
Current liabilities		
Trade and other payables	128,101	76,050
Provisions	13,486	6,968
Non-current liabilities	-	-
Total liabilities	141,587	83,018
Net assets	8,654,677	8,204,900
Equity		
Reserves	3,589,600	3,665,335
Retained profits	5,065,077	4,539,565
Total equity	8,654,677	8,204,900

independent auditor's report to the members of arc

To the members of Australian Respiratory Council

Scope We have audited the summarised financial report consisting of the Statement of Financial Performance, Statement of Financial Position and Table of Cash Movements for Designated Purposes for the year ended 30 June 2006 in accordance with Australian Auditing Standards.

Audit Opinion In our opinion, the information reported in the summarised financial report is consistent with the annual statutory financial report from which it is derived and upon which we expressed an unqualified audit opinion in our report to the members dated 25 September 2006. For a better understanding of the scope of our audit, this report should be read in conjunction with our audit report on the annual statutory financial report.

Stuart H. Cameron

Stuart H Cameron
Partner, Nexia Court & Co, Chartered Accountants
Sydney, 25 September 2006

arc's table of cash movements for designated purposes for the year ended 30/06/2006

The purpose of this table is to show funds raised, disbursed and remaining unspent for designated or specific purposes.

Total for	Cash available at the beginning of the year $	Cash raised during the year $	Cash disbursed during the year $	Cash available at the end of the year $
Australian research grants and fellowships	-	112,383	(209,619)	(97,236)
Australian projects	-	-	(39,387)	(39,387)
International projects	-	-	(73,476)	(73,476)
Other purposes	942,689	1,921,473	(1,910,141)	954,021
Total	942,689	2,033,856	(2,232,623)	743,922

Note

In the financial year 2005-2006, the Board allocated an amount for Australian research grants and fellowships. The shortfall in the cash reserves is compensated by cash raised from investment activities.