

annual  
report 2006  
Menzies Research Institute



Menzies  
Research  
Institute



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At the Menzies Research Institute our aspiration is to contribute significantly to human health and wellbeing. Our success as a leading health and medical research organisation is built on Tasmania's community and its distinctive characteristics:

- its stable population and extensive genealogical records;
- the small island geography; and
- a community that participates so freely as study participants, volunteers or supporters.

## Our Past

From modest beginnings in 1988, the Menzies Research Institute quickly gained a reputation for its ground-breaking work into the link between babies' sleeping position and sudden infant death syndrome (SIDS).

Since then, Menzies has developed into an established centre for population health research, with a global reputation in epidemiology and expanding roles in genetics and clinical epidemiology and biomedical research. Our past successes include:

- highlighting the importance of vitamin D in the development of bones in children and adults;
- evidence of the link between early life sun exposure and susceptibility to multiple sclerosis;
- discovering genes that cause disease; and
- showing the link between infant bedding and childhood asthma.

## Today

Today our research efforts focus on preventing a range of diseases including cancer, multiple sclerosis, cardiovascular disease, diabetes, osteoporosis and epilepsy. Our aim is to explore the complex link between environmental and genetic causes of disease.

We are undertaking nationwide studies, and collaborating with interstate and international researchers.

The Institute's work continues to extend throughout Australia and the western Pacific and southeast Asian regions.

## Our Future

Our plan for the future is one of expanded research programs and increased collaborative links throughout Australia and the world to take advantage of new opportunities.

We are undergoing an exciting transformation with our research activities being expanded to focus on both clinical and basic science. The depth and quality of the research at the Institute will be enhanced and strengthened through an ongoing strategy for growth.

Thanks to the generosity of the Tasmanian community we will continue to find answers to local health problems that have global significance.

## A Tasmanian Icon

The Tasmanian Government proudly supports the work of Menzies through the Icons Program. The Icons Program showcases the very best that Tasmania has to offer, nationally and internationally.

## University of Tasmania

The Menzies Research Institute is an institute of the University of Tasmania.

## Menzies Foundation

The Menzies Foundation was largely responsible for the formation of the Menzies Research Institute and has generously supported the Institute since its inception.



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Local research with global significance.





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Professor James Vickers			
Professor Haydn Walters			
Associate Professor Adrian West			
Members:			
Dr Roger Chung			
Dr Tracey Dickson			
Dr Changhai Ding			
Dr Adele Holloway			
Associate Professor David Johns			
Dr Stephen Richards			
Associate Professor Greg Woods			
Dr Jane Zochling			

*"We will continue our strong research effort in the area of population health and further strengthen Menzies' focus on research excellence."*

Significant progress has been made in 2006 to implement our vision for the Menzies Research Institute, which focuses on our aspiration to contribute significantly to improved human health and wellbeing.

In June we officially launched the Growth Strategy, which aims to consolidate Menzies' position as Tasmania's premier medical research facility.

The strategy will build critical mass, resulting in one central and significant institute based at the University of Tasmania (UTAS) focusing on medical research.

There are two key elements to the exciting future for Menzies:

- Implementation of the growth strategy that will increase the number of research groups at Menzies and expand our focus on both clinical and basic science. This has been achieved with a number of excellent medical researchers from the Faculty of Health Science at UTAS and the Royal Hobart Hospital joining Menzies. In addition we will be appointing five senior research fellows, thanks to the generous support of the University; and
- A new building to be completed in 2009 to accommodate Menzies along with the School of Medicine.

Many people have asked me why we are changing what has been a successful research institute since it was established in 1988.

The simple answer is to ensure continued relevance and viability both of the Menzies Research Institute and medical research at UTAS. Growing and developing through building critical mass will provide greater opportunities – standing still is not an option in the changing world of medical research.

The Australian research sector has built a strong reputation for excellence in attracting and retaining outstanding researchers and securing investment from within Australia and overseas. For Menzies to prosper in an increasingly competitive environment – not just in the Australian medical research environment, but in

the international market place – there needs to be one strong core research institute in Tasmania.

Our aim is to build on what we have by expanding our research areas, creating greater depth and quality of research and strengthening collaborative effort across research areas. This will strengthen Menzies' capacity to attract both research funding and researchers in a changing and more competitive environment.

We will continue our strong research effort in the area of population health and further strengthen Menzies' focus on research excellence. Population health research will also be integrated into basic genetics, clinical, cellular and biochemistry research. The expanded Menzies Research Institute will also continue to exploit one of its important advantages – access to Tasmania's unique population resource, which has been a key factor in the Institute's success over the past 18 years.

As you may be aware, considerable thought and effort has gone into the growth strategy. I reported last year that the matter of how medical research is organised at the University has been a subject of consideration for several years. Since the appointment of our new Board in December 2004 and Director in May 2005, the Faculty of Health Science and Menzies have been working together intensively to progress the new strategy.

The point we have now reached has been the result of great co-operative effort involving a number of key stakeholders from Menzies, the University, the Royal Hobart Hospital, the Department of Health and Human Services and a number of organisations that support our research, including The Cancer Council Tasmania, the Royal Hobart Hospital Research Foundation, the Multiple Sclerosis (MS) Society and the National Heart Foundation.

In particular, I would like to acknowledge and thank the following four people for their efforts in driving this strategy forward:

- the University of Tasmania's Vice Chancellor, Professor Daryl Le Grew;
- the Director of the Menzies Research Institute; Professor Simon Foote;
- the Dean of the Faculty of Health Science, Professor Allan Carmichael; and
- the former Pro Vice Chancellor of Research, Professor Andrew Glenn.

I would also like to acknowledge the contribution of the broad range of members of the health science research community in Tasmania who have participated in the extensive consultations that have been undertaken to get us to this point.

I have no doubt that the new growth strategy will further enhance Menzies' reputation and heritage – building on its substantial reputation in population health research.

On behalf of the Board, I would like to welcome the new members of Menzies and their research teams. I am confident that the combination of skills, knowledge and resources now existing at Menzies will enable researchers to have more opportunities available to them and greater research success.

Congratulations to all the researchers and their staff for their efforts this year. There have been several significant grant successes. For example, the Australian Cancer Research Foundation has awarded Menzies \$1.1 million for a new cancer research centre.

Furthermore, Professor Simon Foote has been working closely with other foundations in Tasmania to create new opportunities for researchers, such as the Royal Hobart Hospital Research Foundation, The Cancer Council Tasmania and the MS Society.

The Menzies Foundation, Tasmanian Government and UTAS have continued to provide crucial support to Menzies and I would like to acknowledge their strong commitment in helping us to improve health outcomes.

Menzies also continues to receive generous support from hundreds of individuals, community groups, businesses and philanthropic and funding bodies, who provide valuable funds to enable us to carry out critical research. Our volunteer supporters also deserve special mention for the time and effort they give to Menzies.



*Dr Dan Norton*

I have pleasure in thanking my fellow Board Members for their guidance and expertise that has helped Menzies get through a significant year.

In 2006 we have made significant progress, however I think it is important to note much more still has to be achieved, including:

- the commencement of five senior research fellows;
- finalisation of plans and construction of the new building; and
- attracting increased research funding, in particular more significant grants from funding bodies such as the National Health and Medical Research Council and the National Institutes of Health in the United States.

I look forward to seeing what 2007 brings and making further progress in the development of Tasmania's premier health and medical research facility.

#### **Dr Dan Norton**

Chairman

## **The Board**

**The Board is the governing body of the Menzies Research Institute and is appointed by the Council of the University of Tasmania.**

Dr Dan Norton (Chairman)

Dr David Boadle

Professor Simon Foote

Sir Guy Green

Mr Damon Thomas

Professor Jonathan West

Professor Judith Whitworth

A portrait of Professor Simon Foote, a man with a beard and glasses, smiling. The image is partially obscured by a green banner on the left side.

## Director's Report: Professor Simon Foote

2006 has been an exciting and challenging year for the Menzies Research Institute, including significant growth and expansion in both clinical and basic science research.

Some of the major developments resulting from the growth strategy implemented in 2006 include:

- development of an organisational structure based on a membership model;
- an increase in the number of research groups at Menzies;
- an expansion of the breadth of science conducted; and
- a thematic approach to our research programs.

We completed the first phase of the strategy with researchers from the Faculty of Health Science joining the population health and genetic researchers from the "Old Menzies". This gives the Menzies the critical mass required to compete at a national and international level. It has significantly increased our numbers of researchers and programs and will foster a new level of collaboration between research groups. Further phases of this growth strategy will include more interactions with clinical researchers, hopefully culminating in a formal arrangement with hospitals across the state.

In order to accommodate researchers from different environments, we have instigated a membership model with senior researchers being appointed as Senior Members and early career scientists being appointed as Members. Each member is responsible for their own research team. The aggregation of members into themes in 2007 will be supra-

organisational and flexible. Themes will encourage collaboration between groups and hopefully provide the framework for interdisciplinary interactions.

The University of Tasmania has provided a \$5 million injection of funding, giving the Institute the opportunity to employ five new senior research fellows. This support from UTAS has allowed the appointment of three high quality researchers and will allow the appointment of a further two researchers early in 2007. The researchers appointed so far will work in the neuroscience theme and will add greatly to the strength of this area in the Institute. This welcome initiative from the University will greatly augment our biomedical research.

With these changes Menzies has doubled in size during the last six months and I anticipate we will increase to approximately 250 staff by 2008. This growth puts new demands on Menzies, particularly the Board, Senior Management Team and Administration Team, including finance, human resources and research grant administration. I would like to thank those in these groups, and particularly General Manager Mark Bennett for his support and guidance during this growth phase.

Complimenting the expansion of the Menzies Research Institute will be a new \$43.34 million building, with state of the art laboratories on a shared site with the Faculty of Health Science. Sharing with the Faculty will enhance links between our two organisations and help in delivering high quality undergraduate and postgraduate research education in Tasmania.

The new building will be located on the site of the current Menzies building, along with an adjacent parcel of land acquired by the University, until recently used as a hostel. Construction will begin in the near future and the new building is scheduled to be completed in 2009.

To accommodate the construction of the new Menzies building, staff from the Liverpool Street offices have moved to a temporary premises at 199 Macquarie Street. Thank you to all staff who made this move a smooth and successful one.

I think it is important to not let the progress of the growth strategy overshadow our research discoveries and successes in 2006:

- The cancer research capability of the Menzies Research Institute is continuing to expand thanks to a new injection of funds from The Cancer Council Tasmania. The Cancer Council provided a three-year, \$345,000 grant to establish the first dedicated cancer research position at Menzies;
- Additional success in obtaining cancer research funds includes a \$1.1 million grant from the Australian Cancer Research Foundation for a new cancer centre that was awarded to Menzies late in 2006;
- Menzies research has shown that changes in the microvasculature are an early indication of insulin resistance, a condition which precedes type two diabetes. This program was awarded an NHMRC project grant;
- Lung cancer is now the biggest cancer killer of women in Tasmania, overtaking bowel and breast cancer, according to statistics published by the Tasmanian Cancer Registry at the Menzies Research Institute;
- Researchers at Menzies have discovered that knee cartilage defects, a common precursor to osteoarthritis, are associated with a decrease in the amount of cartilage which cushions the bones in a person's knee;
- Ground-breaking research into osteoporosis at Menzies has provided encouraging news for those at risk of developing the debilitating bone condition. It was shown that improving education and feedback for target groups can lead directly to increased bone density and better preventative behaviour;

- The Menzies Research Institute has been awarded US \$2 million in funding from the Atlantic Philanthropies to establish a system to monitor the growing problem of non-communicable diseases (NCDs) in Vietnam. In developing nations such as Vietnam, the burden of NCDs has taken over from traditional problems of infectious diseases like malaria and tuberculosis, and disorders due to under-nutrition and deficiencies;
- A new program at Menzies is providing opportunities for undergraduate students at UTAS to participate in biomedical research. This year five students were selected from a high quality field of applicants to participate in the Undergraduate Research Opportunities Program (UROP), in which students undertake a project that is part of a research program at the Institute.

Ongoing assistance from the local community and beyond has enabled our researchers to carry out research into local health problems. Without this support Menzies would not be in the position to expand its research programs and to carry out such large scale research projects. On behalf of all the staff at Menzies, I would like to express our deepest appreciation to our many supporters, including study participants, volunteers and those who provide financial support.

In addition, thank you to UTAS, the Menzies Foundation, the Tasmanian Government and the Atlantic Philanthropies for their significant financial support. This support is essential to the ongoing research and administration of the Menzies Research Institute.

The Menzies Board has continued to provide excellent direction for strategic activities, working closely with the University of Tasmania. I would like to personally thank them for their continued support of my role and their guidance in a significant year for Menzies.

To finish, it's crucial that I recognise and make mention of all Menzies staff. I am fortunate to work with more than 150 passionate and dedicated individuals who are enthusiastic about improving health outcomes for people both locally and all around the world.

**Professor Simon Foote**

Director





## A Strategy for Growth

The Menzies Research Institute began an unprecedented transformation in 2006 into Tasmania's premier health and medical research facility, with the announcement of a revolutionary new growth strategy in May.

Menzies' Director, Professor Simon Foote, said the strategy aims to build critical mass and will result in a central and significant institute in Tasmania focusing on biomedical research.

"We are restructuring and expanding Menzies' areas of research to focus on both clinical and basic science. This is essential to ensure that the depth and the quality of the research at the Institute is enhanced and strengthened," Professor Foote said.

*"One of the advantages to operating a medical research institute in Tasmania is the close association we can foster with hospitals and clinicians."*

The expanded Menzies Research Institute will continue to exploit one of its important advantages, that of Tasmania's unique population resource, which has been a key factor in Menzies' success over the past 18 years.

Professor Foote said: "Tasmania's stable population, excellent genealogical records and the generosity of the community make this state a unique and ideal place to conduct ground-breaking research on common and chronic health problems.

"With its enhanced capacity and the continued support of the community, Menzies' will be able to break through on key health issues and influence clinical medicine and public health guidelines here in Tasmania, as well as nationally and globally," he said.

The matter of how health science research is organised at UTAS had been a subject of consideration for several years. Since the appointment of the Menzies Research Institute's new Board and Director in 2005, the Faculty of Health Science (FHS) and the Menzies Research Institute worked together to progress the new strategy.

Menzies implemented a membership model, as part of the growth strategy, to enhance collaborations across research areas and ensure that the depth

and high quality of research is enhanced and strengthened.

On 1 October Menzies increased in size by fifty per cent with the announcement of the first members who were appointed to the Institute as the next step in the exciting strategy for growth.

"By welcoming members from other parts of UTAS, the current areas of research at Menzies have been significantly expanded. Some of the new themes which complement Menzies' past work include neuroscience, diabetes and insulin research, respiratory medicine and clinical research.



“One of the advantages to operating a medical research institute in Tasmania is the close association we can foster with hospitals and clinicians. Through Menzies’ new structure we are forging closer links between researchers who study the basic biology of disease and clinical researchers.

“The new Menzies also offers an attractive environment for the recruitment of world-class biomedical researchers to Tasmania. Menzies’ expanded resources and new research themes have already enabled us to recruit several internationally renowned researchers, who will commence in 2007,” he said.

Nineteen of Tasmania’s most highly respected health and medical researchers were named as Menzies’ first members and senior members at a special gathering of Menzies staff in October.

“The members brought with them their own teams of researchers, students and support staff, swelling staff numbers at the Institute from around 100 to more than 150,” Professor Foote said.

“Through these initiatives for growth, the Menzies is growing to be on a par with some of Australia’s most eminent medical research institutes.

“This is an exciting time for the Menzies Research Institute, and we are grateful for the support we are receiving from the Tasmanian community,” Professor Foote said.



*Mark Bennett, Kathy Thomson and Professor Simon Foote examine plans for the new building*

The Menzies' Board is responsible for vision, strategy and general oversight of overall performance of the Menzies Research Institute, for which it is accountable. The Director is empowered to manage the operations of Menzies in conformity with agreed plans, policies and procedures, and is accountable to the Board for operational performance.

Until October 2006, an Executive Management Group existed to provide input to decision making and advice to the Director. The group comprised Professor Simon Foote, Associate Professor Alison Venn, Professor Graeme Jones and Mark Bennett.

In October 2006, as part of the growth strategy, the structure of Menzies was reorganised under a membership model. This included the replacement of the Executive Management Group with an expanded Senior Management Team. The role of the Senior Management Team is to advise the Director on issues arising during the course of the operation of Menzies.

Current members of the Senior Management Team are:

Professor Simon Foote  
Professor Michael Clark  
Associate Professor Alison Venn  
Professor Graeme Jones

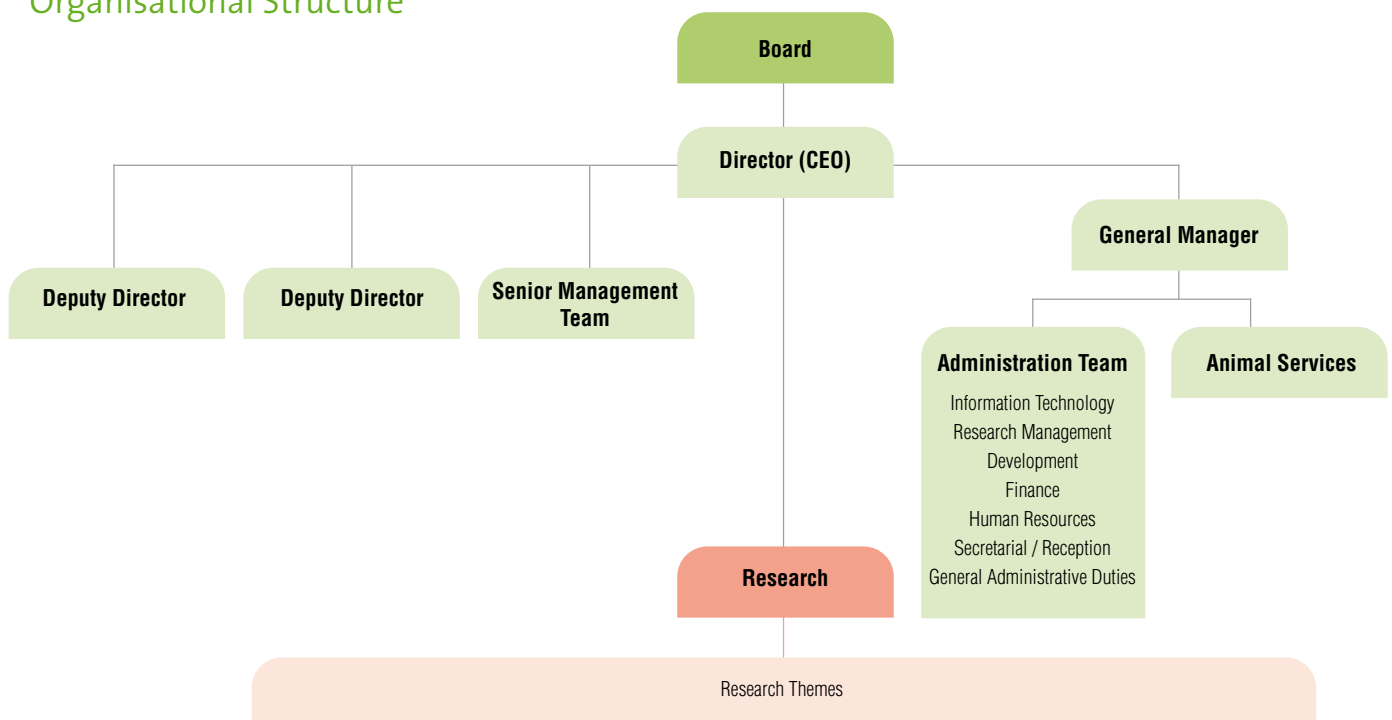
Professor Haydn Walters  
Associate Professor Inn Chuah  
Professor James Vickers  
Mark Bennett

The reorganisation also resulted in the appointment of a second deputy director during 2006. The two deputy directors are Associate Professor Alison Venn and Professor James Vickers.

As part of the growth strategy, the Board and management, in consultation with stakeholders, reviewed the research program of Menzies. New research areas have been included in our research program that are consistent with our objectives and that build on Menzies' foundation in population health research. The research program is now loosely organised around themes of research excellence.

Supporting the research programs is the Administration Team, including research management, information technology, human, financial and physical resource management. Development activities promote the Institute's research and facilitate the development of beneficial relationships with government, industry and the general public. Honorary researchers, scientific advisers and volunteers also provide invaluable support.

## Organisational Structure





## Research

### Senior Members

Associate Professor Leigh Blizzard	10
Associate Professor Meng Inn Chuah	13
Professor Mike Clark	14
Professor Simon Foote	15
Professor Graeme Jones	16
Professor Mark Nelson	18
Professor Anne-Louise Ponsonby	20
Associate Professor Steve Rattigan	14
Associate Professor Alison Venn	22
Professor James Vickers	24
Professor Haydn Walters	26
Associate Professor Adrian West	28

### Members

Dr Roger Chung	28
Dr Tracey Dickson	24
Dr Changhai Ding	16
Dr Adele Holloway	29
Associate Professor David Johns	30
Dr Stephen Richards	14
Associate Professor Greg Woods	32
Dr Jane Zochling	34





*Associate Professor Leigh Blizzard works in the area of biostatistics*

#### RESEARCH TEAM:

Michael Austin, Lung Scan Technician  
Dr Jahar Bhowmik, Biostatistician  
Georgie Boon, Administration Assistant  
Michelle Callisaya, Masters Student  
Stella Foley, Research Officer  
Peta Hitchens, PhD Student  
Charlotte McKercher, Research Officer  
Kara Martin, PhD Student  
Clare Munro, Project Officer/Study Coordinator  
Devindri Perera, Biostatistician/Genetic Statistician  
Dr Stephen Quinn, Biostatistician  
Damon Richardson, Laboratory Technician  
Shalee Richardson, Study Coordinator  
Dr Velandai Srikanth, TASCOC Chief Investigator  
Jan Stacey, Psychologist  
Dr Jim Stankovich, Biostatistician/Genetic Statistician  
Claire Storr, Psychologist  
Dr Russell Thomson, Biostatistician/Genetic Statistician

#### EXTERNAL COLLABORATORS:

Dr Melanie Bahlo, Walter and Eliza Hall Institute  
Prof David Hosmer, University of Massachusetts  
Dr Jennifer McGinley, Murdoch Childrens Research Institute  
Dr James McKay, International Agency for Research on Cancer  
Prof David Reutens, Monash University  
Jeremy Silver, Walter and Eliza Hall Institute  
Dr Tim Thornton, University of California, Berkeley

#### FUNDING BODIES:

National Health and Medical Research Council  
The Australian Medical Bioinformatics Resource

#### Statistical support

Members of the Biostatistics Unit provided statistical support across Menzies during 2006. This has contributed positively to the Institute's growing research productivity.

The biostatistics team provides support in the areas of:

- advice on study design, sample size, and statistical methods;
- training in the use of statistical methodology;
- advice and assistance with data management;
- advice and assistance with data analysis;
- developing new statistical methodology;
- analysis and interpretation of data;
- report writing; and
- contributing to preparation of manuscripts for publication.

#### Contributions to statistical methodology

A notable achievement by the team was a published contribution in statistical methodology for relative risk estimation. In the language of epidemiology, the relative risk is a measure of the effect of exposure to a disease-causing agent. We explored factors determining the ability of currently available software to successfully fit a relative risk model. We compared its estimates with those from alternative methods, trialled three tests for determining how well the model fitted the data, and illustrated the use of diagnostic statistics to assess outlying, poorly-fit and influential data values. Work also continued on a method for analysing dense sets of genotyping data from large families.

### Cigarette Type and Lung Function Study

Scientists debate whether smoking low-tar cigarettes reduces the harm done by smoking. The study seeks to determine whether there are differences in lung function between people who smoke low-tar cigarettes, and those who smoke cigarettes that have higher tar yields. The lungs of participants are scanned to determine whether the pattern of deposition of smoke-like particles differs between smokers of lower-yield and higher-yield cigarettes.

Progress has been slower than anticipated but by the end of 2006 we have tested 196 of the targeted number of 200 participants, and appointments have been made for testing the remaining subjects during January 2007. It has been difficult to obtain access to the scanning equipment, which is in full use for medical diagnostic purposes.

### The Tasmanian Cognition and Gait (TASCOG) Study

TASCOG is studying the effects and mechanisms of age-related brain changes on gait, balance and cognition in a population-based sample of Tasmanian people aged at least 60 years. The study is measuring brain structural changes identified by magnetic resonance imaging (MRI), and examining in detail the effect of the changes on key aspects of brain function. A further aim of the study is to discover factors that can be modified or treated in order to prevent dementia and falls.

This study has progressed rapidly and has exceeded its initial recruitment targets. Of the 400 participants required by December 2007, 360 have already been recruited and measurements have been completed for 285. MRI scans have been analysed for 239 subjects.

Initial analyses have commenced, looking at the effect of brain structure changes on gait and cognition, the effect of age on gait and balance, and the relationship between cognition and gait. These preliminary analyses indicate that brain structure changes are correlated with several gait and balance variables.





## Tasmanian Cancer Registry

### DIRECTOR:

Associate Professor Alison Venn

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### STAFF:

Leah Newman, Manager Cancer Registry  
Joan Clough, Data Entry  
Krystyna Jackman, Administrative Officer  
Jackie Luck, Medical Coder  
Pam Whelan, Data Entry

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### Funding bodies:

Department of Health and Human Services,  
Tasmania

The Tasmanian Cancer Registry (TCR) is responsible for collecting, collating and reporting incidence of all cancers in Tasmanian residents. By law, cancer registration is required in all Australian States and Territories to assist State and National efforts to understand the causes of cancer, to plan health services and assist prevention efforts and treatment decisions. The TCR is hosted by the Menzies Research Institute.





#### RESEARCH TEAM:

Dr Jamie Chapman, Lecturer  
David Hale, PhD Student  
Julie Harris, MSc Student/Technician  
Jacqueline Leung, Honours Student  
David O'Toole, PhD Student  
A/Prof Adrian West, Senior Member

#### FUNDING BODIES:

University of Tasmania Institutional Research Grant Scheme  
National Health and Medical Research Council

### In vitro study of cellular responses of olfactory ensheathing cells triggered by exposure to bacteria

Olfactory ensheathing cells (OECs) are unique cells in the nose that envelop the nerves involved with the sense of smell. In a recent analysis of the genetics of OECs, we discovered that OECs may have a significant role to play in immune response compared to other supporting cells of the nervous system. This project aims to determine the ways that OECs respond after exposure to certain microbial molecules and bacteria. The results will reveal whether OECs have the capacity to mount a biologically significant response and possibly act as a protective agent in preventing bacterial infection in the nose.

We demonstrated that OECs were attracted to bacteria. Many bacteria that were internalised by OECs were later digested by the cells. In addition, exposure to bacteria caused an increase in the rate of nitric oxide production. Some of these results will be published shortly in *Glia*.

### Modulation of astrogliosis by olfactory ensheathing cells

Transplantation of OECs has been used to promote repair in the injured central nervous system with varying degrees of success. This project utilises an in vitro model to examine whether or not OECs are able to prevent the negative effects of scarring that develops following injury.

The influence of OECs is compared to those of other types of cells, such as Schwann cells and microglia.

We demonstrated that in contrast to Schwann cells, OECs were able to reduce the rate of production of chemicals such as glial fibrillary acidic protein (GFAP) and chondroitin sulphate proteoglycan in reactive astrocytes, the major supporting cell within the brain.

At the same time, OECs and Schwann cells were also found to stimulate an increase in the reproduction of astrocytes. Under specific culture conditions, microglia were shown to increase the expression of a particular gene in astrocytes, suggesting that unlike OECs, they may be contributing to increased scarring.





*Dr Stephen Richards conducts research in the area of diabetes*

#### RESEARCH TEAM:

Geoff Appleby, Faculty Staff  
Eloise Bradley, MSc Student  
Carol Bussey, PhD Student  
Dr Andrew Clark, Honorary Research Associate  
Kathleen Downey, PhD Student  
Emma Eaton, Honours Student  
Amanda Genders, PhD Student  
Andrew Herbert, Honours Student  
Dr John Newman, Postdoctoral Fellow  
Dino Premilovac, Honours Student  
A/Prof Stephen Rattigan, Senior Member  
Dr Stephen Richards, Member  
Merren Roberts, Research Assistant  
Renee Ross, PhD Student  
Phil St Pierre, PhD Student

#### EXTERNAL COLLABORATORS:

Prof Eugene Barrett, University of Virginia  
Dr Etto Eringa, Free University, Amsterdam  
Prof Mark Febbraio, Baker Institute, Melbourne  
Prof Bente Kiens, August Krogh Institute, Copenhagen  
Dr Glenn McConell, University of Melbourne  
Prof Erik Richter, August Krogh Institute, Copenhagen

#### FUNDING BODIES:

Australian Research Council  
National Heart Foundation  
National Health and Medical Research Council  
National Institutes of Health, USA

### Control of muscle metabolism by microvascular perfusion

In type two diabetics, muscle is slower to remove glucose from the blood following a meal. Since glucose is a highly reactive molecule, it can cause chronic damage to tissues as it circulates, resulting in blindness, nerve and kidney damage, heart disease and stroke. We have made the major discovery that insulin, the hormone which promotes glucose removal by muscle, also increases blood flow to the

muscle cells. Significantly, this response to insulin is among the first to disappear in the development of diabetes, and the group's research has shown that it could account for half of the resistance of muscle to insulin's effects on glucose removal from the blood.

### Effect of the nitric oxide-dependent vasodilator on insulin action in muscle

Methacholine is chemically related to the neurotransmitter, acetylcholine. It relaxes arteries in muscle and so improves blood supply to the muscle cells. Unlike many agents that do this, however, methacholine also enhances muscle glucose absorption in the presence of insulin. This study aimed to determine whether methacholine acts directly on the muscle cells, or whether improved blood supply via arterial relaxation was responsible for the increased glucose uptake. We found that methacholine has both actions, but they are dependent on the dose given: at low dose it only increases blood flow, and does not affect muscle metabolism directly, while at high doses it does both. This work suggests a novel approach to the design of potential anti-diabetic drugs, acting by enhancing muscle blood supply.

### Insulin-mediated vasoreactivity in skeletal muscle resistance arteries

This project investigated, via an international collaboration, whether an inflammatory hormone called TNF $\beta$  impairs insulin's actions on blood flow. We have previously found that TNF $\beta$  inhibits insulin-mediated glucose uptake by muscle, and proposed that this results from impairment of arterial relaxation by insulin. By examining isolated muscle arteries TNF $\beta$  was found to impair relaxation, but not constriction of arteries, leading to a net constriction in the presence of insulin. We also identified some of the signaling molecules (kinases) responsible for the constriction, suggesting possible drug targets for improving muscle insulin sensitivity.



#### RESEARCH TEAM:

Dr Lucy Harlow, Postdoctoral Fellow  
Dr Brendan McMorran Senior Scientist,  
Meriam Shabbar, Honours Student  
Clare Smith, Honours Student  
Dr Jim Stankovich, Biostatistician

#### EXTERNAL COLLABORATORS:

Dr Melanie Bahlo, Walter and Eliza Hall Institute  
Dr Gordon Smyth, Walter and Eliza Hall Institute  
Prof Terry Speed, Walter and Eliza Hall Institute

#### FUNDING BODIES:

Howard Hughes Medical Institute, USA  
Murigen Therapeutics  
National Collaborative Research Infrastructure Strategy,  
Department of Education, Science and Training  
National Health and Medical Research Council

### The role of platelets in malaria infections

We have evidence from work with mice that animals with low platelet counts are susceptible to malaria infection. Aspirin, which is a platelet inhibitor, also renders a resistant animal more resistant. We are currently translating our findings in mice to human cases of malaria. We have found that purified human platelets have the ability to inhibit the growth of human malarial parasites (*Plasmodium falciparum*) in culture.

*Professor Simon Foote is a geneticist, working on malaria and epilepsy*

### Finding suppressor mutations for epilepsy

In this project we are looking for genetic mutations in mice which have the ability to reverse the activity of kainic acid, an organic compound which causes seizures. Proteins produced by the genes carrying these mutations will potentially be targets for new epilepsy therapies. We have identified four types of mice that are more resistant to the seizure activity of kainic acid. We are now taking the next step to identify the region of the genome which is carrying the mutation.

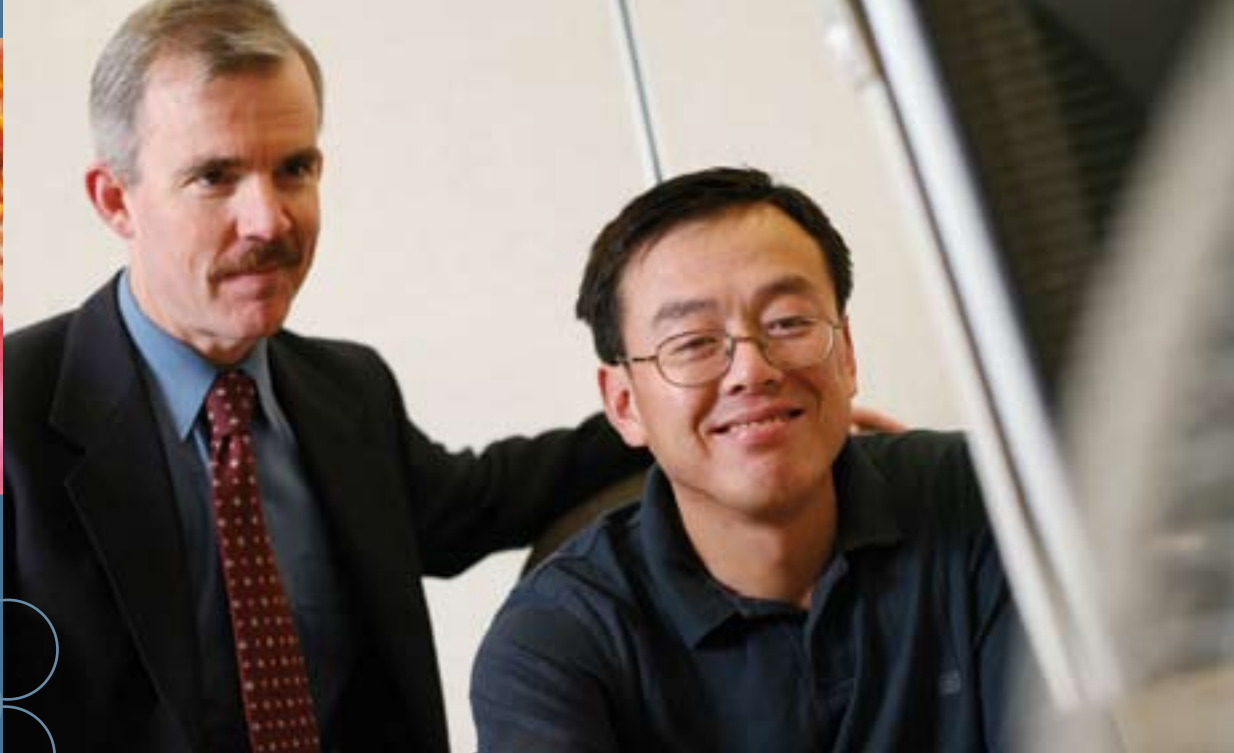
### Identifying host targets for novel antimalarial therapy using an ENU suppressor screen

We believe that a new anti-malarial drug strategy which targets host molecules has many advantages over the current anti-parasite drugs. These drugs will hinder the development of resistance by the parasite. We are identifying potential drug targets using a technique known as an ENU mutagenesis suppressor screen.

### Identifying host targets for novel antimalarial therapy using a bioinformatics approach

This project is also investigating the potential of a new drug strategy to target host molecules rather than the malaria parasite itself. We are identifying potential drug targets using the genome sequences of both humans and the parasite to find genes which are likely to present as host targets. This project has just begun and some early targets are being tested. Inhibitors for these proteins are being tested in cultured *P. falciparum*.





*Professor Graeme Jones and Dr Changhai Ding work closely together*

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Masonic Centenary Medical Research Foundation  
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Royal Hobart Hospital Research Foundation  
Tasmanian Community Fund  
Tasmanian Government  
University of Tasmania Institutional Research  
Grants Scheme

#### Continuing Projects: TASOAC and FRISBEE

2006 was a very busy and rewarding year in the Musculoskeletal group. The Tasmanian Older Adult Cohort Study (TASOAC) continued, as did the Fracture Risk Study of Bones of Early Existence (FRISBEE) study and a number of clinical trials. The bone densitometry clinic continued to provide a valuable service to researchers and the general public.

The TASOAC study is ongoing with study participants coming back for their year two visits. This stage will be finished in May 2007 when major data entry is planned. Measurement of bone density in the knee, MRI assessment of knee and hip joints, and assessment of spinal fractures is a major and time consuming exercise but the results will be worth the effort.

#### Vitamin D status over time: Association with knee structural change

This study was designed to measure serum vitamin D levels in subjects who participated in the TASOAC follow-up study then to determine the associations of serum vitamin D changes with knee structural change assessed by MRI, falls risk, change in bone density and vertebral fracture risk in older adults over two years. In 2006, serum vitamin D levels were measured in 600 subjects.

### **Are serum inflammatory markers predictive of knee structural changes and bone loss in the elderly?**

This project, also associated with the TASOAC project, was designed to measure serum levels of inflammatory markers including C-reactive protein (CRP), interleukin-1 $\beta$  (IL-1 $\beta$ ) and tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) in the elderly, and determine the association with progression of osteoarthritis and osteoporosis as well as other disease such as rheumatoid arthritis.

Serum levels of CRP, IL-1 $\beta$ , TNF- $\alpha$  and interleukin-6 were detected in 200 subjects from both baseline and follow-up samples. Data will be analysed and papers written up in 2007.

### **Are bone turnover biomarkers associated with knee structural change assessed by magnetic resonance imaging (MRI) in the elderly?**

Serum or urinary levels of the bone turnover markers including serum bone-specific alkaline phosphatase and urinary pyridinoline (modified by urine creatinine) in elderly participants in the TASOAC study were measured to determine the association with progression of osteoarthritis as well as other diseases such as rheumatoid arthritis.

Urine pyridinoline and creatinine levels were measured in 200 subjects from both baseline and follow-up samples. Due to technical problems, serum bone-specific alkaline phosphatase was not assayed; instead, we measured serum level of leptin, a hormone encoded by the obesity gene. Data will be analysed and papers will be written up in the first half of 2007.

### **Concluding: T-Bone**

The T-Bone study finished in late 2005. After data cleaning, analysis of data was performed in late 2006. A number of very important findings have resulted from this. A single measure of bone density at age eight is a major predictor of fractures through adolescence and heel ultrasound appears as good as the gold standard measure of bone strength in predicting fracture. These results will be presented and submitted for publication throughout 2007.

### **New research**

A study into scleroderma genetics also commenced in late 2006. There are also a number of clinical trials ongoing in rheumatoid arthritis, fibromyalgia, osteoarthritis and osteoporosis.

### **Publications**

We reported in two papers that cartilage splits in the knee are highly variable in adults and that up to one third can improve over two years. This was previously thought not to happen in adults. Factors associated with worsening included higher body mass index, increasing age, female sex and bone size in the knee. Furthermore, these splits were associated with cartilage loss in the knee suggesting their prevention will decrease the risk of osteoarthritis in the knee in later life.

We also compiled a comprehensive review of calcium supplementation for healthy bones in children. This was published in the prestigious *British Medical Journal*. While calcium is a key ingredient of bone, there was little evidence to suggest that increasing intake from 700mg/day to 1200 mg/day has any major effect in terms of strengthening bones or decreasing fractures. A number of important presentations were done in 2006.





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National Health and Medical Research Council  
National Heart Foundation  
Royal Australia College of General Practitioners  
Sanofi Aventis

#### FUNDING BODIES:

National Health and Medical Research Council  
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### Aspirin in reducing events in the elderly (ASPREE)

The ASPirin in Reducing Events in the Elderly (ASPREE) study is a randomised double-blind placebo controlled trial involving up to 20,500 participants around Australia. It is designed to detect a 15% difference in major adverse cardiovascular events between placebo and active treatment in participants aged 70 years and above.

A feasibility study has been completed and final data analysis is underway with a manuscript in preparation. The main ASPREE study began in Tasmania in September 2006 and recruitment in other Australian states depends on the availability of further funding.

### Spirometry and asthma management in children and adults in General Practice

This study, run in conjunction with the University of Adelaide, aims to critically examine the impact of the measurement of airflow obstruction, using spirometry, on the management of asthma in adults and children. The study will provide evidence for the costs and benefits of spirometry use in the monitoring of asthma.

We hypothesize that the consistent and informed use of standardised spirometry measurement will improve the health outcomes, quality



of life and care for both adults and children with asthma. Evidence to support our hypotheses will be important to all key respiratory policy making groups throughout Australia, regarding the appropriate funding and fostering of widespread spirometry use.

### **Secondary prevention in acute coronary syndromes: Identifying the smoking cessation strategies and smoking related beliefs of people who successfully stop smoking after an acute coronary event.**

Quitting smoking is one of the most effective actions a person can take after having a heart attack or angina in order to prevent having a second and more serious event. However, while most smokers are highly motivated to quit after an acute coronary event (ACE) the majority will resume smoking within twelve months. This project addresses the question 'Why do some smokers successfully quit after an ACE while others continue to smoke?'

People who have successfully stopped smoking after they were hospitalised with a heart attack or angina are interviewed and their results compared with people who have continued to smoke after being hospitalised with a heart attack or angina. This will allow comparison of the behaviours, beliefs and strategies of successful quitters with people who do not successfully stop smoking after an ACE. The role of the GP and other health professionals in smoking cessation is also being investigated.

The results from this study will contribute to the development of specialized quitting programs for smokers with coronary artery disease, add to the body of scientific knowledge in the area and generally inform smoking cessation guidelines and the management of patients after an ACE. Corollary to this study is an additional qualitative study of why individuals quit smoking after an acute coronary event.

### **International Day for the Evaluation of Abdominal obesity (IDEA)**

The IDEA study gathered worldwide prevalence data on abdominal obesity and assessed its correlation with other cardiovascular risk factors, collecting information on the current status, characteristics and management of subjects aged between 18 and 80 consulting their general practitioner.

IDEA has resulted in a number of publications including a paper on the rationale and design of a primary care study on the prevalence of abdominal obesity and associated factors in 63 countries. Other papers in preparation include an article on the association of overweight, obesity and other patient characteristics in Australian general practice, and a paper describing Australian results from IDEA survey.

### **REduction of Atherothrombosis for Continued Health (REACH)**

REACH is an international registry of individuals with established cardiovascular disease (CVD) or high risk of developing CVD. A paper is in preparation on behalf of the Australian REACH registry investigators on management of cardiovascular risk factors in the Australian REACH registry.

### **Yoga for depression in adults**

A protocol for a Cochrane systematic literature review on yoga for depression in adults has been developed and submitted to the Cochrane Collaboration Depression, Anxiety and Neurosis Review Group in London, UK. It is anticipated that the Cochrane Review will be completed and published in 2007.





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#### FUNDING BODIES:

Australian Research Council  
Financial Markets for Children Foundation  
Ian Potter Foundation  
MS Society of Tasmania  
MS Trish Foundation  
National Health and Medical Research Council  
United States National Multiple Sclerosis Society

#### **The Ausimmune Study (The Australian Multicentre Study of Environment and Immune Function).**

The Menzies Research Institute is continuing to conduct the Tasmanian component of this large Australian Study, with other study regions in Brisbane, Newcastle and Geelong. Menzies staff are contributing to the overall scientific conduct of the study and related studies, such as an investigation of whether people with early demyelinating disease have a higher viral load of viruses such as Epstein-Barr Virus and Human Herpes Virus 6 in their blood at first presentation compared to age matched controls.

The Tasmanian region has had good participation rates compared to some other regions. A paper on the methods of the study is in press.

#### **Longitudinal Cohort Study of Multiple Sclerosis in Southern Tasmania**

The cohort has had serial clinical reviews at six-monthly intervals. The final cycle of data collection was completed in February 2005. Study analysis has continued in 2006. Researchers are focussing on environmental determinants of disease progression, for the purpose of developing new interventions to slow MS progression. Further funding was obtained to allow genetic assessment of disease progression, with a special emphasis on immunogenetics. Magnetic resonance imaging scans have been assessed in collaboration with St Vincent's Hospital, Melbourne.

### **The Tasmanian Environmental Control Study of MS**

This case control study has been very informative to date and this was recognised by NHMRC in a report on the most productive NHMRC grants funded from 1999-2003. The study has particularly provided information on the possible role of early life factors such as low sun exposure, low contact with infants and infection in determining the risk of Multiple Sclerosis. The study team is working with the Genetics group to explore gene-environment interactions in MS.

### **Fetal and infant determinants of childhood asthma**

The Tasmanian Infant Health Survey is an important international resource with regard to obtaining better information on the fetal, infant and child determinants of allergic disease, including asthma.

In 2006, a paper on the possible programming effects of antenatal diet on child size, shape and body composition at birth was prepared and published. Further work on to evaluate the possible adverse effects of very early introduction of a range of foods and drinks was conducted and is now in press.

### **Early life factors and allergic disease in adolescence**

The T-Bone Study (see page 17) included measures on hayfever and allergic development in adolescents. This allows us to take a 'life course approach' to study allergic disease causation, looking at not only fetal and infant factors but also those likely to be acting when children are of primary school age.

In 2006, extensive data analysis was conducted on allergen-pollen interactions, risk factors for peanut and other food allergy and other issues.

### **Does binocular vision training enhance literacy among children with low literacy?**

Past work has shown that some children with normal intelligence have reading problems because of problems coordinating both eyes to read visual images. The Literacy Pathways project screened for vision coordination problems among children with low literacy. Children who were found to have problems with their binocular vision were invited to participate in an educational trial designed to improve their reading.

The vision screening of eligible children was completed in 2006. The study design for the randomised control trial was finalised and the Project Officers completed their training for the interventions. One hundred and twenty one children were eligible for the ten week trial and 89 children agreed to participate. Seventy-nine children completed the post-assessments. Data analysis and the six month follow-up will be conducted in 2007.







*Associate Professor Alison Venn tracks the progress of the CDAH study around Australia*

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Atlantic Philanthropies  
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National Health and Medical Research Council  
National Heart Foundation  
Rebecca L Cooper Foundation  
Royal Hobart Hospital Research Foundation  
Tasmanian Community Fund  
The Sanitarium Health Food Company  
The Cancer Council Tasmania  
Veolia Environmental Services

#### Tall Girls Breast Density Study

This study aims to find out whether estrogen treatment to reduce the adult height of tall girls has had any long-term effects on breast tissue. One of the features of breast tissue is the proportion of dense tissue that appears on a breast x-ray. This feature, referred to as mammographic density, is recognised as a risk factor for breast cancer. Mammographic density is known to be affected by hormones

such as estrogen. However, it is not known whether hormone levels in adolescence have any long-term effects on the breast.

Study protocols were developed in 2006 and approvals obtained to access mammograms from BreastScreen services around Australia. Women aged 40 years and over who had been assessed or treated for tall stature as adolescents, and who had participated in a previous follow-up study of the effects of treatment, have been invited to participate. So far 250 (58%) have agreed to take part and most have completed a telephone interview. Women who have had a mammogram in the past have given us permission to access and scan the x-ray film for breast density measurements. Others have made appointments to have their first mammogram.

### **Childhood Determinants of Adult Health (CDAH)**

The CDAH study is a follow-up of 8,498 children who participated in the Australian Schools Health and Fitness Survey (ASHFS) in 1985 when they were aged between seven and 15 years. Extensive measures of body composition, fitness and lifestyle were recorded in 1985 and have been collected again at follow-up 20 years later. The study aims to examine associations between childhood factors and risk factors for cardiovascular disease and type two diabetes in adulthood. Associations between childhood factors and adult mental health and bone health will also be explored.

The study achieved a major milestone in 2006 with the completion of data collection. In total, 2,409 participants attended clinics around Australia for physical measurements and a further 1,585 participants completed telephone interviews or postal questionnaires. Blood samples have been tested and additional samples frozen for future studies. Data analysis is underway with one paper published and another undergoing revision.

### **The Tasmanian Parkinson's Disease Research Project**

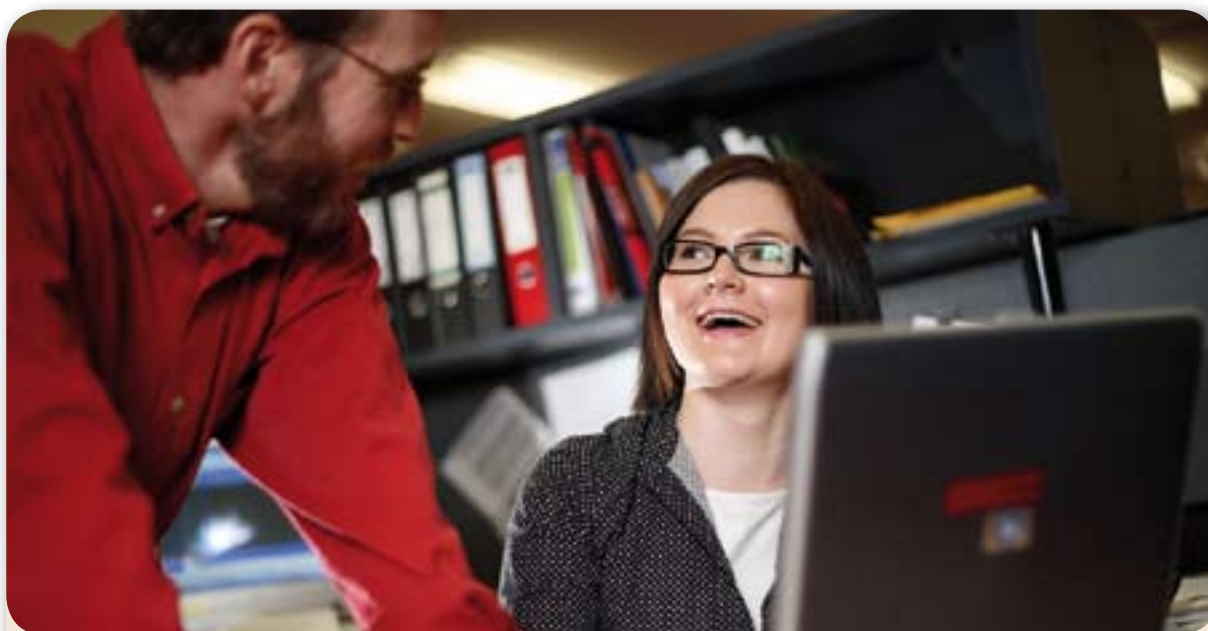
The Tasmanian Parkinson's Disease Research Project is examining the genes that cause Parkinson's disease and aims to discover other genes that have not been linked to the disease before. Identifying inherited risk factors will provide a better understanding of the way that Parkinson's disease develops and is an important step towards preventing and treating the disease.

Previously we have focussed on an investigation of the genetic causes of Parkinson's disease in people with a strong family history of the condition. In 2006, we expanded our search for the genetic causes of Parkinson's disease in a much larger sample of Tasmanians. With the help of Medicare Australia, 996 Tasmanians were identified as receiving medication commonly prescribed for Parkinson's disease; all were invited to participate in the study. Three hundred and thirty-five eligible people agreed to participate by completing a questionnaire and providing a saliva sample from which DNA was extracted. Genetic testing of the DNA samples will continue in 2007.

### **Integrated surveillance system for non-communicable diseases in Vietnam**

The aim of this project is to develop an infrastructure for a national non-communicable disease office in Vietnam. This is being done in order to be able to conduct regular surveillance of established and emerging non-communicable diseases that threaten the public health of the Vietnamese population.

In 2006 a project manager was recruited and relocated to Hanoi for the first year of the project. Sentinel sites for stroke surveillance in Hanoi and Ho Chi Minh City were selected and a strategic plan developed.



*Dr Mike Schmidt and Seana Paul are members of the CDAH team*



*Professor James Vickers works in the area of neuroscience*

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National Health and Medical Research Council  
Royal Hobart Hospital Research Foundation  
Tasmanian Masonic Centenary Medical Research Foundation  
Brian Marks Bequest Research Donation

### **Nerve Cell Plasticity and the Neuropathology of Parkinson's disease**

Parkinson's Disease (PD) is one of the most common neurodegenerative disorders. Its incidence increases steadily with age affecting approximately one per cent of the population at age 65 and up to five per cent by the age of 85. At the time of diagnosis, patients suffer from a range of motor impairments that worsen over time. Pathologically these patients are characterised by the accumulation of a protein known as alpha-synuclein in specific types of nerve cells in their brain. However, the function of this protein is unknown.

This research aims to clarify the role of alpha-synuclein in PD and normal function of the central nervous system and provide new potential therapeutic targets for the treatment of PD and other neurodegenerative disorders in which oxidative stress, excitotoxicity and central nervous system trauma have been implicated.

Our studies found that the protein alpha-synuclein is upregulated in neurones in response to chronic oxidative stress and is associated with neuroprotection. The manuscript describing this result was received by the scientific community with great enthusiasm and interest and as such was selected by the Editors of 'Experimental Neurology' as a feature article and was printed with an accompanying invited commentary. This preliminary data contributed to our successful National Health and Medical Research Council Project Grant application which will allow for significant expansion of this project over the next three years.



### Cellular Degeneration in Alzheimer's disease

Alzheimer's disease (AD) is a neurodegenerative disease that progresses over the course of many years and has several pathological hallmarks, namely, -amyloid plaques, neurofibrillary tangles and neuropil threads. Although much is now known about AD there is still considerable controversy over which of the pathological hallmarks causes the disease, why only certain populations of nerves cells die and how these nerve cells die in AD. The aim of this project is to study the pathological hallmarks of AD in human brains and to utilise in vivo and in vitro models to investigate the crucial cellular changes underlying neurodegeneration in this condition.

### The Cause of Neural Degeneration in Motor Neuron Disease

Motor neuron disease involves the selective degeneration of the nerve cells involved in movement in the spinal cord and the cortex of the brain. The reasons for this selective degeneration and the cellular alterations resulting in nerve degeneration are unknown. This aim of this project is to investigate the mechanisms involved in neurodegeneration in motor neuron disease and other neurodegenerative diseases with the ultimate goal of reducing or preventing nerve cell death. This project utilises novel cell culture methods to model important aspects of the pathology of this condition.

### Axon Regeneration in the mature Central Nervous System

Brain and spinal cord injury are major causes of death and disability. The aim of this project is to determine how nerve cells in the brain respond to injury. We have found that the way in which a mature nerve cell attempts regenerative sprouting appears to be very different to the pattern of axonal growth that characterises early brain development. Our research is aimed at determining the cellular features that characterise the adaptive response of nerve axons to damage in the adult brain and comparing and contrasting these with developmental events. It may then be possible to manipulate this axonal response to injury to help damaged brains to repair themselves.



*Dr Tracey Dickson is unravelling the mysteries of neurodegenerative disorders like Alzheimer's disease*



*Professor Haydn Walters leads a respiratory medicine research team*

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Commonwealth Department of Health and Ageing  
Department of Health and Human Services Tasmania  
GlaxoSmithKline Australia  
Medical Benefits Fund of Australia  
National Health and Medical Research Council  
Royal Hobart Hospital Research Foundation  
University of Melbourne

#### Physiology

The respiratory research group has developed novel measurement systems for airway stiffness and differentiation between large and small airway disease and lung parenchymal disease. These support our immunopathology studies by providing sophisticated physiological phenotype correlations. We are working with large data-sets of lung function data for "mining" patterns of disease and determining mechanisms of exercise-related oxygen desaturation, which seems more common in women than currently recognised.

#### Airway disease immunopathology

This research involves bronchoscopic assessment and tissue sampling of the airways in smokers with normal and abnormal airflow. We are assessing airway inflammation and airway structural remodelling and the mechanisms involved in linkage between the two processes in patients with chronic obstructive pulmonary disease (COPD).

Our group has a particular interest in vascular endothelial growth factor and angiogenesis in the airways in situations of chronic inflammation, and the response to inhaled corticosteroid and smoking cessation; and TGFβ1 as a central mediator linking epithelial and mesenchymal activation and inflammation with remodelling.

## Cystic Fibrosis

We are studying the ionic environment of the airway that favours growth of the bacteria *Pseudomonas aeruginosa*, especially the handling of ferrous/ferric iron. We are investigating iron-chelators as potential therapy. We are also looking at virulence factors in *Pseudomonas* and relationship to disease severity, plus the importance of biofilms and their modification to *Pseudomonas* infection.

In the area of health services research we are investigating the use of information technology and self-efficacy building in patient case management.

## Evidence-Based Medicine

Our group is the headquarters of the Cochrane Collaboration Australian Airway Network providing systematic reviews in asthma and COPD to support national and international guideline development.

## Health Services Research in COPD

Pathways Home for Chronic Respiratory Disease is a collaboration with the Department of Health and Human Services to develop clinical self-efficacy in patients with COPD, and to foster case-management through training of "mentors" based in community nursing.

We are conducting a study of usefulness and barriers to use of spirometry in case finding and management of COPD in general practice. We also have an interest in appropriate use of medicines in the community and use of information technology systems to assess and assist that.

## Epidemiology and Genetics

The Tasmanian Asthma Survey is a 36 year follow up of the 1961 Tasmanian birth cohort first studied in 1968 at age of seven years



*PhD student Romy Sohal works with laboratory manager Steve Weston*

(approx 8,600 individuals). We have spent five years finding the original probands and undertaking a comprehensive questionnaire survey and laboratory examination of lung function in 1,400 randomly selected probands.

We are currently in the process of enriching the laboratory study for individuals in specific clinical phenotypes determined by the answers to the questionnaire. We will be starting the next phase of the study in 2007 in which we will be undertaking a questionnaire and a physiological and genetic study of 21,000 phenotypically matched and unmatched siblings.

We are also a collaborating centre in the national Burden Of Lung Disease (BOLD) study, a multicentre Australian survey of COPD prevalence and risk factors.







*Dr Roger Chung and Associate Professor Adrian West are exploring new treatments for brain injury*

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Australian Research Council  
Ian Potter Foundation  
Motor Neurone Disease Research Foundation  
National Health and Medical Research Council

### **Developing metallothioneins as a therapeutic agent for promoting neuronal recovery from central nervous system injury or neurodegenerative disease**

Dysfunction of the central nervous system (CNS) as a consequence of injury or disease has a significant impact upon the entire community. Unfortunately there are no clinical therapies currently available to either protect neurons from dying or promote neuronal recovery following CNS injury or disease. However, our recent research has identified the exciting potential of metallothionein (MT) proteins as a neuroprotective and neuroregenerative agent. In this project, we will evaluate the

therapeutic potential of MT proteins in several animal models of neuronal injury and neurodegenerative disease, including traumatic brain injury, motor neurone disease and Alzheimer's disease.

We have commenced animal trials to test the efficacy of MT-based treatments for delaying the progression of neurodegeneration in animal models of motor neurone disease and Alzheimer's disease. While these trials are still ongoing, the results to date are very encouraging. We are also currently investigating different routes of administration for metallothionein, to determine an optimal method for treatment.

### **Using metallothioneins as a model for understanding cellular and biochemical interactions between neurons and astrocytes within the brain**

We have recently identified a novel and major neuroprotective mechanism within the injured brain, involving an interaction between injured neurons and the major supporting cell within the brain, astrocytes. This involves the up-regulation and secretion of the astrocytic protein metallothionein (MT), which is then able to directly interact with neurons to promote recovery.

We propose to use this system as a model to enhance our fundamental understanding of some of the cellular and biochemical mechanisms involved in brain function. This research may also provide insight into ways of improved healthy aging.

We have been able to measure the level of secretion of MT from astrocytes, and have identified that the astrocytes must be induced in a certain way to promote secretion of the protein. We have also identified a potential biochemical pathway that regulates the interaction of MT with neurons, and we are investigating this in further experiments.



*Geneticist Dr Adele Holloway is investigating one of the causes of leukaemia*

#### RESEARCH TEAM:

Kate Brettingham-Moore, PhD Student  
Phillippa Oakford, PhD Student  
Shannon Ray, Research Assistant  
Owen Sprod, PhD Student

#### EXTERNAL COLLABORATORS:

Prof Frances Shannon, Australian National University

#### FUNDING BODIES:

David Collins Leukaemia Foundation  
National Health and Medical Research Council

### Switching on gene expression in T cells : The role of NF-kB recruited SWI/SNF chromatin remodelling complexes in inducible gene expression in T cells

Cells within the immune system are activated to fight infection by producing a host of signalling molecules called cytokines. Immune diseases arise when these cytokines are not produced at the correct time and place. This project aims to determine how cytokine genes are produced in response to immune signals.

We have identified important components of the gene switch that is required to produce a cytokine called GM-CSF in immune cells. We have found that particular tags or marks are associated with this cytokine gene in immune cells which allow it to be switched on rapidly in these cells. These tags are not associated with the gene in cells where it does not need to be switched on. In addition we have found that some of these tags are also associated with other immune cytokines, suggesting a common mechanism by which cytokines can rapidly orchestrate a response to infection.

### Investigating the role of the RUNX1 protein in the regulation of gene expression in myeloid cells.

The RUNX1 (or Acute Myeloid Leukaemia 1) protein is altered in a significant proportion of leukaemias. This project aims to investigate how the RUNX1 protein functions within cells in order to understand how its altered activity contributes to the development of leukaemia.

RUNX1 regulates the expression of a factor called GM-CSF, which is important for normal blood cell growth. GM-CSF is expressed in normal myeloid cells, but not in a leukaemic cell line containing an altered form of RUNX1. We have found that this is because the GM-CSF gene is epigenetically 'tagged' or differently marked in these cells and that RUNX1 is responsible for setting up some of these tags. Importantly we have found that we are able to turn GM-CSF back on in the leukaemic cells by treating the cells with agents that are able to correct some of these tags





#### RESEARCH TEAM:

Afshin Agahi, Honours Student  
Jon Ho Chan, Honours Student  
Dr Byeong Kang, School of Computing  
Tristan Ling, Honours Student  
Dr David Reid, Senior Lecturer  
Patrick Stam, Honours Student  
Dr Justin Walls, Senior Lecturer  
Prof Haydn Walters, Senior Member  
Dr Julia Walters, PhD Student  
A/Prof Richard Wood-Baker, Honorary Member

#### EXTERNAL COLLABORATORS:

Dr Debbie Burton, Charles Sturt University  
Dr Kevin Gain, Royal Perth Hospital  
John Gregory, Tasmanian Institute of Sport

#### FUNDING BODIES:

Anaesthetic Society of Australia  
GlaxoSmithKline Australia  
nnd, Medizintechnik, Switzerland  
Royal Hobart Hospital Research Foundation

### Flow dependence of anatomical dead space measured with new ultrasonic technology

Under a confidentiality agreement with an instrument company (nnd, Medizintechnik, Switzerland) we have applied novel ultrasonic technology to show, for the first time, that the volume of the conducting airways of the lung (anatomical dead space) is inversely related to expiratory flow. We believe that this flow-dependence of anatomical dead space occurs due to non-uniform airway emptying which is greater at lower expired flows.

Our data offers the potential to derive new and sensitive information about disease driven geometric abnormalities of the peripheral airways, which may lead to new non-invasive and sensitive methods for detecting very early mechanical airway abnormalities, that is at a stage when it is potentially reversible.

This work will be advanced in 2007 by an investigation of flow dependency of dead space in patients with obstructive disorders.

### Exercise induced arterial desaturation measured with arterial blood samples and pulse oximetry

This complex study aimed to determine the accuracy of pulse oximetry in assessing blood oxygenation during exercise in females and to determine whether any desaturation is due to diminished peripheral chemosensitivity. Our results showed that pulse oximetry tends to underestimate arterial oxygenation and that arterial desaturation is not associated with reduced chemosensitivity to oxygen.

This project was completed by Honours student Patrick Stam who received the Thoracic Society of Australia and New Zealand Young Investigator Award at their annual scientific meeting in 2006.

### An incremental learning method for data mining from a large lung function database

In this study an expert computing program was developed to provide automatic interpretation of lung function data and to provide an interface to enable a large patient database to be interrogated to discover new knowledge. The interpretation program was successfully developed based on rules created by a human 'expert' and the analysis interface has been used successfully to test and generate hypotheses and to answer clinical and physiological questions.

The application of this program to a prospective dataset consisting of many thousands of patients results is now possible and will provide a powerful research and teaching resource.



## Spirometry in general practice

Spirometry is an important test of lung function and is included as part of practice guidelines for detecting and monitoring of patients with diseases such as asthma and chronic obstructive pulmonary disease. However, there is no data on the utility of this test in general practice in Australia.

In this study we obtained the first data on spirometer ownership and usage in Australia and have completed a parallel study showing that a newly developed ultrasonic spirometer is an ideal instrument for use by General Practitioners due to its accuracy and long-term stability of its calibration.

## Anatomical dead space and partitioning of the Fowler dead space

The volume of the lung airways can provide important information about lung mechanics and the functional consequences of disease driven structural airway remodelling. In this study we present data that supports our hypothesis that the measurement of airway volume is sensitive to expiratory flow. This may have important consequences when interpreting airway volume data (i.e. anatomical dead space) and suggests that two independent and novel indices can be derived: a true

measure of airway volume and an index of disorderly lung emptying. These indices may provide new and sensitive methods for detecting subtle peripheral airway disease.

## Relative vs absolute physiological measures as predictors of mountain bike cross-country race performance

The aims of this study were to document the effect terrain has on the physiological responses and work demands (power output) of riding a typical mountain bike cross-country course under race conditions and to compare this to performance during a an exercise test conducted in the laboratory. We found a strong relationship between the physiological variables determined from the laboratory test and performance during the cross-country time trial and also that the different terrain types encountered during the cross-country race elicited different physiological responses in the rider. The major finding of this study that physiological measures relative to mass obtained during the laboratory based testing were significantly more predictive of performance during the field trial than absolute measures has significant implications for training prescription.





*Associate Professor Greg Woods is an immunologist*

**RESEARCH TEAM:**

Dr Silvana Bettiol, Lecturer - Microbiology  
Vicki Carroll, Technical Officer  
Nicholas Casey, PhD Student  
Dr Andrew Castley, Masters Student  
Jill Chuckowree, Technical Officer  
Candice Clark, Honours Student  
Mark Cozens, Technical Officer  
Thanuja Dharmadasa, Honours Student  
Alexandre Kreiss, PhD Student  
Dr Roslyn Malley, PhD Student  
Heather McGee, PhD Student  
Prof H Konrad Muller, Research Associate  
Narelle Phillips, Technical Officer  
Deborah Scott, PhD Student

**EXTERNAL COLLABORATORS:**

Prof Mary Norval, University of Edinburgh

**FUNDING BODIES:**

David Collins Leukaemia Foundation of Tasmania  
Eric Guiler Foundation  
National Health and Medical Research Council  
Paul Mackay Bolton Scholarship for Cancer Research  
The Cancer Council Tasmania

### **Long Term Effects of UV-B Irradiation on the Developing Skin Immune System**

Exposure to sunlight, which includes ultraviolet radiation, during early childhood has been linked to the development of skin cancer later in life. We believe that this is due to differences in the immune system of adults compared to very young children, and that this influences the response to the ultraviolet radiation. This project aims to analyse the immediate and long term effects of ultraviolet radiation on the immune system of neonatal mice, with the aim of scientifically demonstrating a link between neonatal exposure to ultraviolet radiation and skin cancer development.

This study demonstrated that exposure to a single “sunburn” in early life does disrupt the development of the skin immune system. When the mice in this study reached adulthood, cells within lymph nodes were significantly altered as there was an increase in the population that controls the immune response, namely T regulatory and B cells. These results clearly show that inappropriate exposure to sunlight at a very young age can alter the immune response in adulthood.

### **The Skin Immune System in Cutaneous Carcinogenesis**

Vitamin D is produced in the skin in response to exposure to sunlight. As excess sunlight can contribute to the development of skin cancer we assessed how the skin immune system and skin cancer development was influenced by vitamin D. To do this we analysed the effects of vitamin D deficiency throughout life to determine if vitamin D deficiency in mice impairs the development and function of the skin immune system as well as increasing the susceptibility to sunlight induced skin cancer.

The outcomes to date indicate that males and females respond to different extents to vitamin D. When analysing the function of the skin immune system it was found that vitamin D controls its function of skin immune system more effectively in males than in females. However, when analysing the role of vitamin D in protecting against sunlight induced skin cancer we produced evidence to indicate vitamin D is more effective in females than in males. The role of vitamin D may explain why females are more prone to autoimmune disease but less prone to skin cancer than their male counterparts.

### Skin Immune System: From Birth to Maturity

In early life we have an immature immune system and we are susceptible to various infections. The local environment in which the cells reside will influence the development of the immune system, therefore this project used the skin immune system as a model to understand how the immune system develops and the influence of the environment. This was undertaken by analysing the proteins and cells during development.

A detailed “map” of all the proteins which are present in adult and neonatal skin has been produced and when comparing these “maps” a number of proteins have been identified that may guide the development of the skin immune system. One of these proteins, Stefin A, has been evaluated in more detail, as it appears to be critical to development of the skin immune response. Using human skin we have been able to produce a model of how immune cells interact in the early stages of development and how this may direct outcomes of immunity in later life.

### Analysis of a Lentivirus-delivered shRNA to Prevent Leukaemic Cell Growth

Carefully designed short-hairpin RNAs (shRNAs) have the potential to inactivate specific cancer causing genes. This project is aimed at producing shRNAs to target a range of leukaemic genes, which will cause the leukemic cells to either differentiate, or to die. Either way the cells will no longer be cancer cells.

The lentiviral vectors to deliver the shRNAs have been constructed and are under the process of evaluation. Preliminary results suggest that at least one of the shRNAs being tested does induce a significant knockdown of the target gene and therefore warrants further investigation.

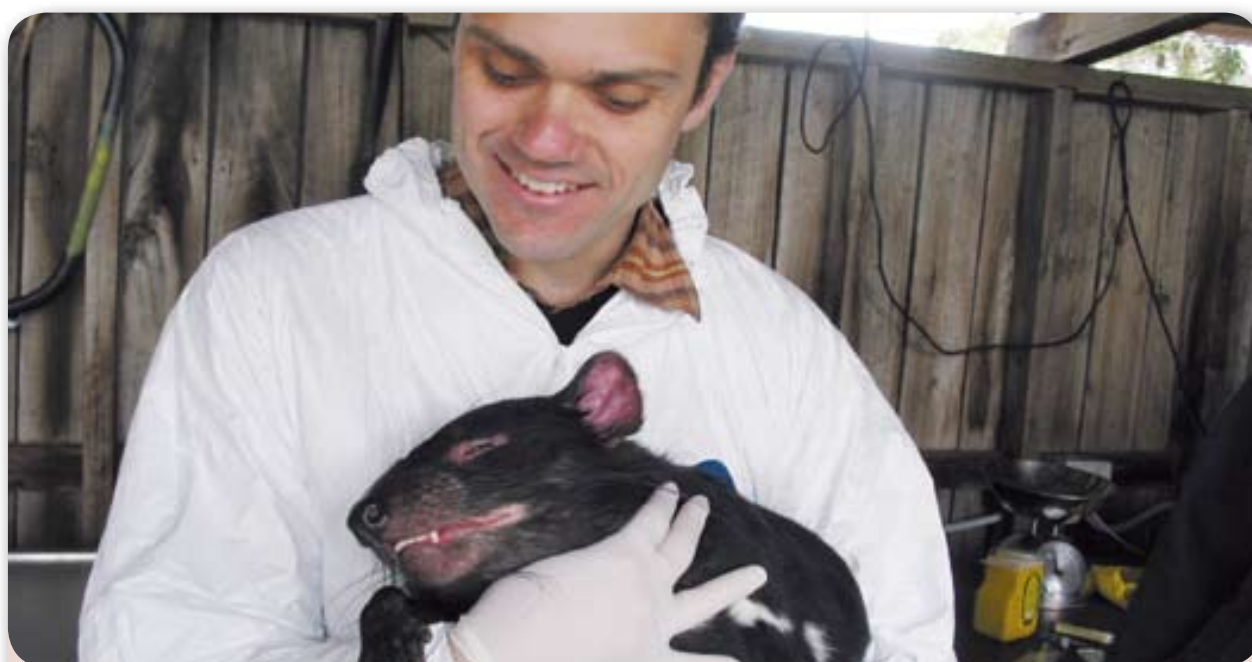
### Immune Response of the Tasmanian Devil

The Tasmanian Devil is currently under threat from a devastating disease known as Devil Facial Tumour Disease (DFTD). A remarkable feature of this disease is that it is directly transferred between devils. As there is no evidence for lymphocyte infiltration into the tumour it would indicate a lack of immune involvement and poses the possibility that the immune system of the devil is suppressed. In order to evaluate this we analysed aspects of the immune response of the Tasmanian devil as well as analysing the tumour for factors that may suppress the immune response.

This study has clearly shown that the Tasmanian devil has a healthy immune response and that the tumour does not produce a factor to suppress the immune response. By performing studies on lymphocytes from devils from around the state we have good evidence to indicate that there is a limited genetic diversity among the devil population hence the tumour is not recognised and eliminated by the immune system.

### Evaluation of Natural Products on the Immune Response and Other Related Health Parameters

Nature has provided many natural products that have the potential to promote our health. In this project we are evaluating products from the marine environment with an emphasis on boosting our immune system. A number of volunteers have enrolled in this study, which is now reaching its mid-way point. The study has involved these volunteers supplementing their diet with a supplied capsule. A complete analysis of the data will be conducted in 2007 when all the volunteers have completed their course of the capsules.



*PhD student Alexander Kreiss with an anaesthetised Tasmanian Devil*





RESEARCH TEAM:  
Prof Graeme Jones, Senior Member

EXTERNAL COLLABORATORS:  
Prof Juergen Braun, Germany

FUNDING BODIES:  
Department of Health and Human Services

*Dr Jane Zochling is a rheumatologist with a particular interest in ankylosing spondylitis*

### Ankylosing spondylitis

Ankylosing spondylitis (AS) is a rheumatic disease that causes arthritis of the spine and joints of the lower back and can cause inflammation of the eyes, lungs and heart valves.

It can vary from intermittent episodes of back pain that occur throughout life to a severe chronic disease that attacks the spine, peripheral joints and other body organs, resulting in severe joint and back stiffness, loss of motion and deformity as life progresses.

AS affects 1 in 200 Australians and occurs in twice as many men as women. AS usually has its onset between the ages of 16 to 35. The cause of AS is unknown but there appears to be a strong genetic link.

Dr Zochling joined Menzies in December as the Dick Buttfeld Research Fellow, funded by the Department of Health and Human Services. She is initiating an inception cohort of AS patients in order to investigate prognostic markers, disease activity and functional impairment in this disease. Dr Zochling will also become involved in existing projects with the Musculoskeletal Research Group.





Alzheimer's Australia Research. \*West, AK; \*Vickers, JC; \*Chung, RS. Metallothionein-based therapeutic for Alzheimer's Disease. \$249,311

Australian Cancer Research Foundation. \*Foote, SJ; \*Venn, A; Lowenthal, RM; \*Vickers, JC; \*Dickinson, JL; \*Blizzard, CL; \*Stankovich, J; Bahlo, M. The ACRF Tasmanian Inherited Cancer Centre (ACRF TICC). \$1,100,000

Arthritis Foundation of Australia: Grant-In-Aid. \*Ding, C; \*Jones, G. Vitamin D Status, Knee Structural Change, Fall Risk and Change in Bone Density in TASOAC. \$10,000

The Atlantic Philanthropies (USA) Inc. \*Granger, R; \*Srikanth, V. Measurement of Change (To develop the surveillance and monitoring function of the national NCD programme of Vietnam). \$2,666,665

Clifford Craig Medical Research Trust. \*Roddam, LF; \*Sanderson, K; \*Wood-Baker, R; Tristram, SG; Haug, G. The Acquisition of New Strains of Non-Typeable Haemophilus Influenzae Is The Leading Cause of Acute Exacerbations in Tasmanian COPD Patients. \$43,467

Cancer Council of Tasmania. \*Dickinson, JL; \*Stankovich, J; Lowenthal, RM; Marsden, KA; \*Patterson, B; \*Quinn, SJ. Investigating the genetics of familial haematological cancers in Tasmania. \$60,000

Cancer Council Tasmania. \*Dickinson, JL. Cancer Council Tasmania, Research Fellow. \$345,000

Cancer Council Tasmania. \*Venn, A; Kavanagh, A; Gertig, D; \*Jordan, H. Exposure to High Dose Estrogens in Adolescence: Long Term Effects on Mammographic Breast Density. \$3,000

Cancer Council Tasmania. \*Woods, GM; \*Muller, HK. Effects of UV radiation and vitamin D deficiency on the development of the skin immune system. \$35,000

Clive & Vera Ramaciotti Foundation. \*Chung, RS. Can Metallothionein Protect Against Axonal Degeneration Following Traumatic Brain Injury? \$30,000

David Collins Leukaemia Foundation. \*Holloway, AF. Dereglulation of Gene Expression by RUNX1 Fusion Proteins in Leukaemia. \$25,000

Department of Economic Development: Institutional funding. \*Foote, SJ. Tasmanian Icon Funding Program. \$1,500,000

Department of Foreign Affairs and Trade: Australia-Thailand Institute. \*Stankovich, J; \*Thomson, RJ. A course in computational and statistical skills for medical genetics researchers. \$6,000

Department of Health and Human Services Tasmania. \*Zochling, JM. Buttfield Postdoctoral Research Fellowship Program. \$380,000

GlaxoSmithKline Australia: Fellowship. \*Walters, EH; Johns, DP; \*Wood-Baker, R. Risk Factors for Chronic Respiratory Diseases in Middle Age: 36 Year Follow-up of the Tasmanian Asthma Study. \$160,000

GlaxoSmithKline Australia. \*Wood-Baker, R; \*Walters, EH; \*Reid, DW. Investigation of airway inflammation in COPD. \$80,000

High Blood Pressure Research Council of Australia. \*Nelson, MR; \*Winzenberg, TM. A Cluster Randomised controlled trial of an automated versus manual device for blood pressure management (CRAB). \$59,086

Howard Hughes Medical Institute. \*Foote, SJ. Infectious Diseases and Parasitology - International Research Scholars Program. \$US 500,000

Ian Potter Foundation. \*Van der Mei, IAF; \*Foote, SJ; \*Dickinson, JL; \*Ponsonby, AL; Taylor, BVM; \*Dwyer, T; \*Blizzard, CL. Identification of Genes that Influence MS Progression by Pathways that Involve UV Exposure: a Prospective Cohort Study. \$100,000

The Max Bruce Trust – A Charitable Discretionary Trust administered by Peter Worrall Lawyers. \*Dickinson, JL. The Tasmanian prostate cancer genetics study. \$81,000

Masonic Centenary Medical Research Foundation. \*Srikanth, V; Reutens, D; Phan, T. The Tasmanian Cognition and Gait Study (TASCOG). \$19,350

Masonic Centenary Medical Research Foundation. \*Vickers, JC. PhD Scholarship: Cathy Blizzard. \$60,000

Motor Neurone Disease Research Institute of Australia Inc: Zo-ee MND Research Grant. \*Vickers, JC; \*King, AK; \*Dickson, TC; \*Chung, RS;

\*West, AK; \*Chuah, MI. Unravelling the cellular pathology underlying neuronal degeneration in motor neuron disease. \$24,744

National Health & Medical Research Council. \*Nelson, MR. Aspirin in Reducing Events in the Elderly (ASPREE). \$85,000

National Health & Medical Research Council: Project Grant. \*Clark, MG; \*Rattigan, S; \*Richards, SM; Choi-Lundberg, DL. Central and Peripheral Actions of Insulin for the Control of Muscle Capillary Recruitment. \$417,750

National Health & Medical Research Council: Project Grant. \*Dickson, TC; \*Vickers, JC. The Neuroprotective Properties of Alpha-Synuclein. \$260,250

National Health & Medical Research Council: Program Grant. \*Foote, SJ. Genetic analysis of complex disease processes. \$1,620,000 (transferred from WEHI, ongoing from 2002)

National Health & Medical Research Council: Peter Doherty Fellowship. \*Jones, G; Elso, C. Characterisation of the 12Gso Mouse: a Model for the Study of Skeletal Development. \$269,000

National Health & Medical Research Council: Practitioner Fellowship. \*Jones, G. \$340,000

National Health & Medical Research Council: Public Health Fellowship. \*Paul, SL. Cardiovascular disease risk behaviours: understanding childhood origins. \$274,000

National Health & Medical Research Council: Project Grant. \*Srikanth, V. A Population-Based Study of Cerebrovascular Mechanisms Underlying Gait, Balance and Cognition in Older People. \$518,400

National Health & Medical Research Council: Project Grant. \*Venn, A; Kavanagh, A; Gertig, D; \*Jordan, H. Exposure to High Dose Estrogens in Adolescence: Long Term Effects on Mammographic Breast Density. \$89,050

National Health & Medical Research Council: Training Fellowship. \*Van der Mei, IAF. Gene-environment interaction in MS risk and progression: focus on ultraviolet radiation and Epstein-Barr virus pathways. \$137,000

National Health & Medical Research Council: General Practitioner Fellowship. \*Winzenberg, TM. Chronic Disease Prevention - A Series of Observational & Interventional Studies: Bone Mass & Fracture Risk in Older Adults: Bone Mass & Obesity in Children. \$299,000

National Heart Foundation: Grant-In-Aid. \*Clark, MG; \*Rattigan, S; \*Richards, SM; Kolka, CM. Endothelin-1, type2 diabetes and hypertension. \$112,680

National Heart Foundation: Postdoctoral Fellowship. \*Schmidt, MD. Fatness and fitness: effects on heart disease, diabetes and metabolic syndrome risk from childhood to adulthood. \$122,686

National Heart Foundation: Travel Grant. \*Magnussen, C. Cardiovascular risk factors in childhood and carotid artery intima-media thickness in adulthood: The Childhood Determinants of Adult Health Study. \$1,000

National Heart Foundation: Travel Grant. \*Cleland, V. Maintaining or increasing relative physical activity levels is associated with maintaining a healthy weight from childhood into adulthood: The Childhood Determinants of Adult Health (CDAH) study. \$1,000

MS Society of Tasmania. \*Van der Mei, IAF. Ausimmune Study. \$25,000

Perpetual Trustees. \*Dickinson, JL; \*Foote, SJ. The Tasmanian Leukaemia and Other Haematopoietic Malignancies Research Study. \$40,000

Royal Australian College of General Practitioners: Cardiovascular Research Grant. \*Nelson, MR; Hansen, EC; Boland, RJ. Secondary Prevention in Acute Coronary Syndromes: Identifying the Smoking Cessation Strategies and Smoking Related Beliefs of People who Successfully Stop Smoking after an Acute Coronary Event. \$23,299

Royal Australian College of General Practitioners: Cardiovascular Research Grant. \*Winzenberg, TM. The assessment of physical activity in general practice. \$24,848

Royal Hobart Hospital Research Foundation. \*Bettli, SS; \*Sanderson, K; \*Reid, DW. Neutrophil function in patients with cystic fibrosis. \$12,150



Royal Hobart Hospital Research Foundation. \*Chuah, MI; \*West, AK; \*Muller, HK. Protection of the brain from infection: Immune properties of olfactory ensheathing cells. \$10,000

Royal Hobart Hospital Research Foundation. \*Holloway, AF; Shannon, MF; \*Walters, EH. Switching genes on in immune cells: how does basal chromatin structure predict cytokine gene responses? \$20,000

Royal Hobart Hospital Research Foundation. \*Jones, G; Hynes, K; \*Blizzard, CL. A longitudinal study of bone development and fracture risk in the early pubertal years. \$13,636

Royal Hobart Hospital Research Foundation. \*Stewart, NJ. The role of Vitamin D and its receptor in the action of T regulatory cells, a set of cells important in the prevention of autoimmune diseases. \$4,979

Royal Hobart Hospital Research Foundation. \*Walters, EH; \*Reid, DW; \*Wood-Baker, R. The role of mast cells in smoking related airway disease. \$13,636

Royal Hobart Hospital Research Foundation. \*Walters, EH; Dharmage, S. Risk factors for BHR in middle age: a prospective study from childhood to middle age among northern Tasmanians. \$20,000

Royal Hobart Hospital Research Foundation. \*Vickers, JC; \*Dickson, TC. Axon regeneration in the mature CNS. \$20,000

Tasmanian Community Fund. \*Ding, C; \*Jones, G. Are Serum Inflammatory Markers Predictive of Knee Structural Changes and Bone Loss in the Elderly? The TASOAC Study. \$50,000

National Institute of Health: Agreement. \*Clark, MG; \*Rattigan, S; \*Richards, SM. The Effects of Insulin on the Microvasculature. \$347,500

Department of Education, Science and Training: National Collaborative Research Infrastructure Strategy (NCRIS). Foote, SJ; Goodnow, C; Hilton, D; Whitelaw, E. Animal Models of Disease 5.2.1 – the Australian Phenomics Network: Infrastructure Grant. \$15,000,000 (approximately \$1,250,000 to Menzies Research Institute)

## Publications

### Refereed Articles

Andrews G, \*Sanderson K, Hudson R. Interventionspotenziale – Die Krankheitslast der Depression verringern (Reducing the burden of depression). Volkskrankheit Depression? Bestandsaufnahme und Perspektiven 2006;359-370 (Edited book chapter)

Andrews G, Simonella L, Lapsley H, \*Sanderson K, March L. Evidence based medicine is affordable: the cost-effectiveness of current compared with optimal treatment in RA and OA. Journal of Rheumatology 2006;33:671-680

Bahlo M, \*Stankovich JM, Speed T, Rubio J, Burfoot R, \*Foote SJ. Detecting genome wide haplotype sharing using SNP or microsatellite haplotype data. Human Genetics 2006;119(1-2):38-50

Baker S, Richardson A, Barnuta L, \*Thomson RJ. Why conservation reserves should not always be concentrated in riparian areas: a study of ground-dwelling beetles in wet eucalypt forest. Biological Conservation 2006;133(2)

\*Blizzard L, Hosmer D. Parameter estimation and goodness-of-fit in log binomial regression. Biometrical Journal 2006;48(01):5-22

Bruinsma F, \*Venn A, Patton G, Rayner J, Pyett P, Werther G, Jones P, Lumley J. Concern about physical appearance during adolescence and depression in later life. Journal of Affective Disorders 2006;91:145-152

\*Burdon KP, \*McKay JD, Wirth MG, Russell-Eggitt IM, Bhatti S, Ruddle JB, Dimasi D, Mackey DA, Craig JE. The PITX3 gene in posterior polar congenital cataract in Australia. Mol Vis. 2006 Apr 18;12:367-71.

Burgess JA, \*Walters EH, Byrnes GB, Wharton C, Jenkins MA, Abramson MJ, Hopper JL, Dharmage SC. Who remembers whether they had asthma as children? J Asthma. 2006 Dec;43(10):727-30.

\*Charlesworth JC, \*Stankovich JM, Mackey D, Craig J, Haybittel M, Westmore RN, Sale M. Confirmation of the adult-onset primary open angle glaucoma locus GLC1B at 2cen-2q13 in an Australian family. Ophthalmologica 2006;220:23-30

Fourlanos S, Perry C, Stein MS, Stankovich JM, Harrison LC, Colman PG. A clinical screening tool identifies autoimmune diabetes in adults. Diabetes Care 2006;29:970-975

Collins N, Litt J, Moore M, \*Winzenberg T, \*Shaw K. General practice: professional preparation for a pandemic. Med J Aust. 2006 Nov 20;185(10):S66-9.

\*Dickinson J, Sale M, Passmore A, \*Fitzgerald L, Wheatley C, Burdon K, Craag J, Tengrisorn S, Carden S, Maclean H, Mackey D. Novel mutations in the NDP gene: contribution to Norrie Disease, Familial Exudative Vitro retinopathy and retinopathy of prematurity. Clinical and Experimental Ophthalmology 2006 Sep-Oct;34(7):682-8.

\*Ding C, Cicuttini F, \*Blizzard L, \*Jones G. Genetic mechanisms of knee osteoarthritis: a population-based longitudinal study. Arthritis Res Ther. 2006;8(1):R8. (E-published)

\*Ding C, Cicuttini F, \*Blizzard L, \*Scott F, \*Jones G. A longitudinal study of the effect of sex and age on rate of change in knee cartilage volume in adults. Rheumatology 2006 (E-published)

\*Ding C, Cicuttini F, \*Scott F, \*Cooley H, \*Boon C, \*Jones G. Natural history of knee cartilage defects and factors affecting change. Archives of Internal Medicine 2006;166(6):651-658

Dwyer T, Hosmer D, Hosmer T, \*Venn A, \*Blizzard L, Blair S, \*Granger R, Shaw J, Zimmet P, \*Cochrane J, Dunstan D. The inverse relationship between number of steps per day and obesity in a population-based sample – the AusDiab study. International Journal of Obesity 2006 (E-published)

Feltis BN, Wignarajah D, \*Reid DW, Ward C, Harding R, Walters H. Effects of inhaled fluticasone on angiogenesis and vascular endothelial growth factor in asthma. Thorax 2006 Nov 14 (E-published)

\*Foley S, Lord SR, \*Srikanth V, \*Cooley H, \*Jones G. Falls Risk is associated with Pain and Dysfunction but not Radiographic Osteoarthritis in Older Adults: Tasmania Older Adult Cohort Study. Osteoarthritis and Cartilage 2006;14:533-539.

\*Granger R, \*Blizzard L, Fryer J, \*Dwyer T. Association between dietary fat and skin cancer in Australian population using case-control and cohort study designs. BMC Cancer 2006;6 (E-published)

\*Haas MA, \*Vickers JC, \*Dickson TC. Rho kinase activates Ezrin-Radixin-Moesin (ERM) proteins and mediates their function in cortical neuron growth, morphology and motility in vitro. Journal of Neuroscience Research 85, 34-46.

\*Jones G. Is ultrasound a useful method for the diagnosis of osteoporosis? (invited viewpoint). Medicographia 2006;86(28):45

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\*King AE, \*Chung RS, \*Vickers JC, \*Dickson TC (2006) Localization of glutamate receptors in developing cortical neurons in culture and relationship to susceptibility to excitotoxicity Journal of Comparative Neurology 498, 277-94

Lin E, Pappenfuss T, Tan R, Senyschen D, Bahlo M, Speed T, \*Foote SJ. Mapping of the plasmodium chabaudi resistance locus char2. Infection and Immunity 2006;74(10):5814-5819

\*Magnussen C, Fryer J, \*Venn A, Laakkonen M, Raitakan O. Evaluating the Use of a Portable Ultrasound Machine to Quantify Intima-Media Thickness and Flow-Mediated Dilatation: Agreement Between Measurements from Two Ultrasound Machines. Ultrasound in Medicine & Biology 2006;32:1323-1329

McGlone S, \*Venn A, \*Walters EH, Wood-Baker R. Physical Activity, Spirometry and Quality -of-Life in Chronic Obstructive Pulmonary Disease. Journal of Chronic Obstructive Pulmonary Disease 2006;3(June):83-88

Naunton M, Peterson G, \*Jones G. Pharmacist-provided quantitative heel ultrasound screening for rural women at risk of osteoporosis. The Annals of Pharmacotherapy 2006;40:38-44

Naunton M, \*Jones G, Peterson G. Under-use of bisphosphonates in rural elderly women who have sustained fractures. Australian Journal of Rural Health 2006;14:286

\*Nelson MR, Reid CM, Ryan P, Willson K, Yelland L. Self-reported adherence with medication and cardiovascular disease outcomes in the Second Australian National Blood Pressure Study (ANBP2). *Med J Aust.* 2006 Nov 6;185(9):487-9.

\*Ponsonby AL, Dwyer T, \*Van der Mei IAF, Kemp A, \*Blizzard L, \*Taylor B, Simmons R, Kilpatrick T. Asthma onset prior to multiple sclerosis and the contribution of sibling exposure in early life. *Clin Exp Immunol* 2006;146(3):463-470

Poustie SJ, Taylor DM, Forbes AB, Skiba MA, \*Nelson MR, McNeil JJ. Implementing a research governance framework for clinical and public health research. *Med J Aust.* 2006;185(11-12):623-6.

Quilty MC, King AE, Gai WP, Pountney DL, \*West AK, \*Vickers JC, \*Dickson TC. (2006) Alpha-synuclein is upregulated in neurones in response to chronic oxidative stress and is associated with neuroprotection. *Experimental Neurology.* 199, 249-56.

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\*Ding C, \*Jones G. Belimumab Human Genome Sciences/ Cambridge Antibody Technology/GlaxoSmithKline. *Current Opinion in Investigational Drugs* 2006;7(5):464-472

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\*Rattigan S, Bradley EA, \*Richards SM, \*Clark MG. Muscle metabolism and control of capillary blood flow: insulin and exercise. *Essays Biochem.* 2006;42:133-44.

\*Blizzard L, Hosmer DW. *The log multinomial regression model for nominal outcomes with more than two attributes*. Oral presentation to the Joint Statistical Meetings of the American Statistical Society, the International Biometric Society, the Institute of Mathematical Statistics and the Statistical Society of Canada, Seattle, USA, 5-10 August.

\*Blizzard L, Hosmer DW. *The log multinomial regression model for nominal outcomes with more than two attributes*. Oral presentation to the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

\*Callisaya M, \*Blizzard L, \*Schmidt M, McGinley J, \*Srikanth V. *The effect of age and sex on gait in a population-based older sample – The Tasmanian Study of Cognition and Gait (TASCOG)*. Poster presentation at the Australia/New Zealand Society for Geriatric Medicine, Christchurch, New Zealand, September.

\*Cleland V, \*Venn A, \*Dwyer T. *Is Change in Physical Activity Associated with Maintaining a Healthy Weight from Childhood into Adulthood? The Childhood Determinants of Adult Health (CDAH) Study*. Oral presentation to the 5th Annual Meeting of the International Society for Behavioral Nutrition & Physical Activity, Boston, Massachusetts, USA, 13-16 July.

\*Cleland V, \*Venn A, \*Schmidt M, \*Dwyer T. *Are physical activity and fitness patterns associated with healthy weight maintenance from childhood to adulthood?* Poster presentation at the Physical Activity and Obesity Satellite Conference, International Congress on Obesity, Brisbane, September.

\*Curry B, \*Dalton M, \*Venn A. *The projected and actual costs of tracing and recruiting participants for a follow-up of the 1985 Australian Schools Health and Fitness Survey*. Poster presentation to the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

\*Dalton M, \*Dwyer T, \*Venn A. *Practicalities and Pitfalls of Remote Blood Collection in a National Cohort Study: the Childhood Determinants of Adult Health study*. Poster presentation to the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

Dharmadasa, TC, \*Malley, RC, Muller, HK, \*Woods, GM. *Dietary Vitamin D3 deficiency alters skin UVB-induced DNA damage in neonatal mice*. Poster presentation at the Australian Health and Medical Research Congress, Melbourne, Victoria, November.

\*Dickinson J, \*Thomson R, \*Patterson B, \*Polanowski A, \*Stankovich J, Fryer J, \*Blizzard L, \*Dwyer T. *Prostate Cancer Sun Exposure and Genes Modifying Risk*. Poster presentation to the 11th International Congress of Human Genetics, Brisbane, 6-10 August.

\*Ding, C. *Smoking interacts with family history with regard to knee cartilage loss and cartilage defect development*. Oral presentation to the ARA Annual Scientific Meeting, Perth, May 2006.

\*Ding, C. *Serum vitamin D and its change in older adults: associations with bone mineral density, the TASOAC study*. Oral presentation to the ANZBMS Annual Scientific Meeting, Port Douglas, October 2006.

\*D'Souza WJ. *Research Priorities in the Asia Pacific Region. Stepping back into the light in epidemiology and public health*. Invited presentation to the 6th Asia Oceania Epilepsy Congress, Kuala Lumpur, Malaysia, 16-19 November.

\*Kreiss, A, \*Clarke, CJ, \*Woods, GM. *Impaired allogeneic recognition may account for establishment of Devil Facial Tumour disease cells in Tasmanian devils*. Poster presentation at the Australian Health and Medical Research Congress, Melbourne, Victoria, November.

\*Kreiss, A, \*Woods, GM. *Mitogen induced lymphocyte proliferation and mixed lymphocyte reaction in Tasmanian devils (Sarcophilus harrisii)*. Oral presentation at the Australasian Society for Immunology, Auckland, New Zealand, December.

Dwyer T, \*Magnussen CG, \*Venn A, \*Thomson R. *The Childhood Determinants of Adult Health Study: Change in Fitness after 20 years follow-up is Associated with Change in Fatness and CHD Risk Factors*. Poster presentation at the National Heart Foundation of Australia Conference, Sydney, March.

\*FitzGerald L, \*Stankovich J, Price G, McKay J, Veneter D, \*Dickinson J. *Analysis of large familial prostate cancer pedigree using comparative genomic hybridization*. Poster presentation to the 11th International Congress of Human Genetics, Brisbane, 6-10 August.

\*Foley S, \*Ding C, Cicuttini F, \*Jones G. *Physical Activity and Knee Structural Change: A Longitudinal Study using MRI*. Oral presentation to the 48th Annual Meeting of the Australian Rheumatology Association, Perth, Western Australia, 20-24 May.

\*Foley S, \*Quinn S, Dwyer T, \*Venn A, \*Jones G. *Measures of childhood Fitness and Body Composition are associated with Calcaneal Quantitative Ultrasound in Adulthood: A 20 Year Prospective Study*. Oral presentation to the 16th Annual Meeting of the Australian and New Zealand Bone and Mineral Society, Port Douglas, Queensland, 22-26 October.

\*Granger R. *Measurement for change: A collaboration to develop a NCD surveillance system in Viet Nam*. Oral presentation to the Public Health Association of Australia Annual Conference, Sydney, Sept.

\*Hitchens P. *Epidemiology of Jockey Falls in Australian Thoroughbred Racing: Literature Review, Methods & Preliminary Results*. Oral presentation to the 3rd Annual Primary Health Care Research, Evaluation and Development Symposium, Hobart, 23 November.

\*Jones, G. *The role of bone in osteoarthritis: size does matter*. Oral presentation to the ARA Annual Scientific Meeting, Perth, 20th May 2006.

\*Jones, G. *Prevalent fracture in adolescents: association with different types of bone mass*. Oral presentation to the ANZBMS Annual Scientific Meeting, Port Douglas, October, 2006.

\*Jones, G. *Strontium ranelate: overview of the fracture*. Oral presentation to the ANZBMS Annual Scientific Meeting, Port Douglas, October, 2006.

\*Jordan H, \*Venn A, Bruinsma F, Werther G. *Adolescent exposure to high dose estrogens and subsequent effects on breastfeeding*. Poster presentation to the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

\*Koutoulis L. *A model for the Decentralisation of Research Management within Universities*. Poster Presentation at INORMS 2006: Internationalisation of Research, Brisbane, Australia, 22-25 August.

\*Magnussen CG, \*Venn A, Dwyer T. *Negative Effects of Muscular Strength on Systolic Blood Pressure in a Cross-sectional Study of Young Adults*. Poster presentation at the National Heart Foundation of Australia Conference, Sydney, March.

\*Magnussen CG, \*Venn A, \*Dwyer T, Celermajer DS, Raitakari OT. *Childhood and current cardiovascular risk factors and presence of carotid atherosclerotic lesions in adulthood: The Childhood Determinants of Adult Health (CDAH) Study*. Oral presentation to a satellite symposium of the International Atherosclerosis Symposium, Naples, Italy, 15-17 June.

\*Magnussen CG, \*Venn A, \*Dwyer T, Raitakari OT. *Cardiovascular risk factors in childhood and carotid artery intima-media thickness in adulthood: The Childhood Determinants of Adult Health (CDAH) Study*. Oral presentation to the International Atherosclerosis Symposium, Rome, Italy, 18-23 June.

\*Malley, RC, Muller, HK, \*Woods, GM. *Modification of skin immune system function by dietary vitamin D3 is influenced by age and gender*. Oral presentation at the Australian Health and Medical Research Congress, Melbourne, Victoria, November.

\*McGee, HM, \*Woods, GM. *Neonatal exposure to solar simulated radiation alters development of skin immune system, resulting in long-term changes in lymph node cell populations*. Oral presentation at the Australian Health and Medical Research Congress, Melbourne, Victoria, November.

\*McGee, HM, \*Woods, GM. *Neonatal exposure to solar simulated UVR delays skin immune system development and alters immune function in adulthood*. Poster presentation at the International Conference on Dendritic Cells, Edinburgh, Scotland, September.

\*Newman L, \*Bhowmik J, \*Blizzard L, \*Venn A. *Trends in smoking-related cancers in Tasmania 1978-2003*. Epidemiology session, Clinical Oncological Society of Australia Annual Scientific Meeting, Melbourne.



\*Patterson B, McKay J, \*Stankovich J, \*Quinn S, \*Thomson R, \*FitzGerald L, Godgar D, \*Dickinson J. *Fine Mapping of Regions Containing Potential Prostate Cancer Susceptibility Genes in a Large Tasmanian Family*. 11th International Congress of Human Genetics, Brisbane, 6-10 August.

Pham Hung Luc, Truong Ba Nhan, \*Au Bich Thuy, Nguyen Thi Thu Cuc, Kha Huu Nhan, Duong Quoc Thang, \*Leigh Blizzard, \*Granger R, \*Dwyer T. *Body fatness as an independent predictor of hypertension in the Vietnamese population: results of a survey of risk factors of cardiovascular diseases and diabetes mellitus using STEPS methodology*. Poster presentation to the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

\*Quinn S, \*Stankovich J, \*Thomson R, \*FitzGerald L, \*Patterson B, \*Polanowski A, McKay J, \*Dickinson J. *Analysis of Familial Data in Large Pedigrees*. 11th International Congress of Human Genetics, Brisbane, 6-10 August.

Rattigan S, Ross RM, Zhang L, Richards SM, Clark MG. *Cytokines and Capillary Recruitment in Skeletal Muscle*. Oral presentation at the Third Australian Health & Medical Research Congress, Melbourne, Australia, 26 Nov.

\*Schmidt M, \*Dwyer T, \*Thomson R, Zimmet P, \*Venn A. *How different measures of childhood body composition predict risk of metabolic syndrome in adulthood*. Poster presentation at the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

\*Schmidt M, \*Shaw K, \*Cleland V, \*Dwyer T, \*Venn A. *Prevalence of obesity in younger and older adults across recently proposed pedometer activity indices*. Oral presentation at the Physical Activity and Obesity Satellite Conference, International Congress on Obesity, Brisbane, Sept

Seneviratne U, \*D'Souza WJ, Cook MJ. *Long-term Assessment of Oxcarbazepine in a Naturalistic Setting: a Retrospective Study*. Poster Presentation to Australia and New Zealand Neurology Association Annual Scientific Meeting, Canberra, 1-5 May.

\*Stankovich J, Bahlo M, Rubio J, Huxtable S, Kilpatrick T, Speed T, \*Foote S. *Linkage analysis using 19th century genealogical links inferred from genotypes*. Oral presentation to the 11th International Congress of Human Genetics, Brisbane, 6-10 August.

Sun C, Tan J, Fuller K, Hitchcock A, Graham J, \*D'Souza W, Cook M. *Safety of newer antiepileptics in infants exposed through breast milk as measured by infant growth parameters and breast milk levels*. Poster Presentation to Epilepsy Society of Australia 21st Annual Scientific Conference, Melbourne, 4-7 October.

\*Thomson R, \*Quinn S, \*Stankovich J, \*McKay J, Silver J, Bahlo M, \*FitzGerald L, \*Dickinson J. *Linkage analysis of large families, in the new era of dense marker sets*. 11th International Congress of Human Genetics, Brisbane, 6-10 August.

\*van der Mei IAF. *Winter vitamin D insufficiency a concern for healthy Australians, especially Tasmanians*. Invited presentation to the Primary Health Care Research, Evaluation & Development Strategy: Third Annual Tasmanian Symposium, November.

\*van der Mei IAF. *Epidemiological studies in Tasmania and beyond*. Invited presentation to the MS Australia conference, March.

\*Venn A. *Oestrogen treatment for tall stature: counting the costs*. Invited presentation at the International Congress on Human Reproductive Health through the Ages, Adelaide, 8-10 March.

\*Venn A, \*Schmidt M, Norman R, \*Dwyer T. *Serum testosterone and sex hormone binding globulin levels in young women: associations with body composition in childhood and adulthood*. Poster presentation to the International Congress on Obesity, Sydney, Sept.

\*Venn A, \*Thomson R, \*Schmidt M, \*Cleland V, \*Curry B, \*Dwyer T. *Obesity from childhood to adulthood: a follow-up of participants in the 1985 Australian Schools Health and Fitness Survey*. Oral presentation to the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

\*Venn A. *Epidemiological research in Australia: competition, credibility and collaboration*. Invited plenary presentation to the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

\*Winzenberg T, \*Shaw K, Fryer J, \*Jones G. *Calcium supplementation in children increases lean mass but has no effect on weight or body fat: a meta-analysis*. Oral presentation to the ANZBMS/IOF Combined Annual Scientific Meeting, Port Douglas, 23-26 October.

\*Winzenberg T, Willson K, Ryan P, \*Jones G. *Thiazide diuretics and fracture risk: a posthoc analysis from the ANBP2 trial*. Oral presentation to the ANZBMS/IOF Combined Annual Scientific Meeting, Port Douglas, 23-26 October.

\*Winzenberg T, Hansen E, \*Jones G. *How do women change osteoporosis preventive behaviours in their children?* Oral presentation to the RACGP ASC, Brisbane, 5-8 October.

Wright, N, Wotherspoon, SJ, \*Woods, GM, Lowenthal, RM, Ragg, S. *Reducing the toxicity of autologous stem cell transplant*. Oral presentation at the Haematology Society of Australasia Annual Scientific Meeting, Hobart Tasmania, October.

\*Woods, GM, \*\*Kreiss, A. *Immune response of the Tasmanian devil*. Oral presentation at the Australian Health and Medical Research Congress, Melbourne, Victoria, November.

\*Zochling J, van der Heijde D, Burgos-Vargas R, Collantes E, Davis J, Dijkmans B, Dougados M, Géher P, Inman R, Khan MA, Kvien TK, Leirisalo-Repo M, Olivieri I, Pavelka K, Sieper J, Stucki G, Sturrock R, van der Linden S, Wendling D, Böhm H, van Royen BJ, Braun J. *ASAS/EULAR recommendations for the management of ankylosing spondylitis*. Invited plenary presentation to the Australian 3E Initiative in ankylosing spondylitis, Melbourne, December.

\*Koutoulis L. *A model for the decentralisation of Research Management within Universities*. Poster Presentation at INORMS 2006: Internationalisation of Research, Brisbane, Australia, 22-25 August.

\*Ponsonby AL. *Infection and Sun Exposure in Childhood & Adolescence and Risk of MS*. Invited keynote speech to the Multiple Sclerosis Australia National Conference, Sydney, March.

\*Ponsonby AL. *Multiple Sclerosis in Australia and the Ausimmune Study*. Oral presentation to the Betty Cuthbert Boardroom Lunch, Macquarie Bank, Sydney, 18 September.

\*Ponsonby AL. *Observational Analytic Studies in Multiple Sclerosis: Controlling Bias Through Study Design and Conduct*. Oral presentation to the Annual Scientific Meeting of the Australasian Epidemiological Association, Melbourne, 18-19 September.

\*Ponsonby AL. *Investigating the multifactorial aetiology of MS: Ausimmune and other studies*. Oral presentation to the 2006 Centre for Neuroscience Research Symposium, Melbourne, 20 September.

\*Walters J, \*Johns DP, \*Hansen E, \*Gartlan J, \*Walters EH, \*Wood-Baker R. *Motivational effects of spirometry on smoking cessation*. British Thoracic Society Winter Meeting, London, December.

\*Walters EH, Matheson MC, Burgess J, Wharton C, Jenkins M, \*Johns D, Abramson MJ, Hopper JL, Dharmage SC. *Lessons learnt so far from the current follow up of the Tasmanian Asthma Survey: A longitudinal study of respiratory health from age 7 to 44 years*. British Thoracic Society Winter Meeting, London, December.



## Education and Training

One of the key goals of the Menzies Research Institute is to attract quality research students and postdoctoral fellows and train them to become future research leaders.

In line with this objective, the number of research higher degree students enrolled at the Institute increased dramatically during 2006, principally through the implementation of Menzies' growth strategy. There are now more than 50 PhD and Masters candidates enrolled at the Institute. Additionally, there are five honours candidates studying at Menzies.

This rapid expansion in postgraduate student enrolments has prompted a reappraisal of the way that training activities are provided at the Institute. To support the needs of students and postdoctoral fellows, a program of coursework in statistics will be implemented in 2007. It is anticipated that other academic areas will follow suit by offering coursework or other specialised training activities.

This builds on the strong focus we have had in the past on training activities for students in epidemiology. These include the Advanced Epidemiology course, which began in 2004 and concluded in 2006. The aims of this course were to provide researchers with

the skills required to formally interpret the reported results of epidemiological studies and design, implement and analyse epidemiological studies.

Menzies' weekly series of Academic Meetings continued with high attendance from both academic and general staff. These meetings continue to provide staff with an invaluable opportunity to discuss research progress and priorities.

Internationally renowned epidemiologist Professor Kenneth Rothman visited Menzies in September to present a course "An Introduction to the Principles and Methods of Epidemiologic Research".

Professor Rothman is Professor of Epidemiology at Boston University and has written two widely used textbooks on the subject. Seventy-six participants attended from all over Australia, New Zealand and from as far afield as Fiji to learn from this expert in the field.

A large group of Menzies staff and students also attended, taking advantage of the opportunity to network with other health and research professionals and learn from a world-class teacher and scientist.



*76 participants attended a week long course presented by epidemiologist Prof Ken Rothman*



## Administration Team

### Staff:

Tim Albion, IT Systems Manager  
Bill Avery, Community Relations Officer (to 5 May)  
Mark Bennett, General Manager  
Jill Butterworth, Communications and Events Coordinator  
Alistair Chilcott, IT Systems Administrator  
Jenny Cochrane, Data Manager  
Julia Garry, Development Officer/  
Research Officer (from 3 April)  
Melita Griffin, Development Manager  
Furley Johnston, Receptionist  
Dr Lisa Koutoulis, Research Manager  
Dixie Prenter, Secretary to the Director  
Emma Stubbs, Administrative Assistant  
Susan Sussems, Development Officer (from 4 December)  
Kathy Thomson, Administration Manager  
Stewart Wells, Administration Officer – Finance

The Administration Team aims to provide efficient and effective support to the Director, Board and staff at Menzies. The Team supports Menzies' research activities across a number of areas, including administration and reception, human resource management, finance, grants management, information technology, development and communications.

With the implementation of a significant new strategic direction, growth in income and staffing levels, and considerable effort to support the design and development of the new building for Menzies, 2006 was a challenging year for the Administration Team.

### Administration, reception and human resources

Administration, reception and human resources staff played a significant role supporting the achievement of Menzies' objectives and its strategic direction. Human resource staff were active recruiting a number of new appointees to Menzies and replacements for staff who had moved on. In 2006, staffing numbers increased by fifty per cent, accompanied by low staff turnover.

Half of the growth in staffing numbers was researchers joining Menzies from the University of Tasmania (UTAS) as part of the growth strategy, while the other half arose from the increased performance and grant successes of research staff who were at Menzies prior to the growth strategy.

The Administration Team played a significant role in the development and implementation of the growth strategy that has seen Menzies consolidate itself as the core research institute for biomedical research in Tasmania. Staff from the Administration Team contributed to the strategy across a number of key areas, including facilitating the review by external consultants, preparing and implementing a plan to communicate the strategy and administrative arrangements surrounding the strategy's implementation.

A priority of the Administration Team in 2006 was managing the consultation process for the new building for the entire Institute to ensure that the building is fit for purpose and has the capacity to accommodate our projected growth. The new building will be a co-location of Menzies and elements from the UTAS' Faculty of Health Science, including the School of Medicine. It is anticipated that the building will be completed in 2009.



As the new building will be constructed on the former Menzies site in Liverpool Street, staff from Liverpool Street have temporarily relocated to 199 Macquarie Street for the construction period. Menzies is now spread across six sites.

## Research management

In 2006, Menzies assumed responsibility for the administration of its research grants. This role was previously performed on Menzies behalf by UTAS. To manage the added administrative responsibilities, Menzies incorporated an additional section to the Administration Team; the Research Management team.

This team works with researchers to identify appropriate funding sources locally, nationally and internationally. They may assist in writing the proposals, and formulating budgets. In addition they ensure that all research grants are submitted in a timely manner and according to the guidelines of a particular funding body. Once a grant is successful, the Research Management team must ensure compliance with research agreements including progress and financial reporting, and liaising between the funding body and the researchers to ensure that the needs of each party are met.

The National Health and Medical Research Council (NHMRC) is the major nationally competitive funding round for Menzies each year. In 2006 we were successful in obtaining three fellowships to support researchers across various fields of research. We were also awarded two project grants to support research in the fields of neuroscience and endocrinology, respectively. Menzies was also part of a strong national collaborative bid which was successful in obtaining \$15 million through the 'Backing Australia's Ability Initiative – National Collaborative Research Infrastructure Strategy'. Menzies will receive \$1 million of these funds over the next five years to build its capacity in mouse genomics.

In 2006, Menzies was successful in obtaining a major national grant from the Australian Cancer Research Foundation (ACRF). \$1.1 million was awarded to establish the ACRF Tasmanian Inherited Cancer Centre, which is a collaborative initiative between Menzies, UTAS' Faculty of Law and clinical researchers within Tasmania. This is a strategic alliance that will build Tasmania's capacity in cancer research and explore the increasingly important ethical and privacy issues surrounding genetic studies.

Menzies successfully obtained more than 30 smaller grants from various philanthropic organisations in 2006

(see page 36). These grants supported an enormous range of essential research, from pilot studies to the purchase of equipment and support of research personnel.

Menzies relies heavily on the Federal, State and philanthropic agencies which provide support to our research projects, and we appreciate their continued support of our research activities.

## Finance

In 2006, Menzies received a record level of income of \$13.4 million from a variety of funding sources, including \$2.8 million from nationally competitive grants via the NHMRC and the Australian Research Council. This included \$500,000 via a Capacity Building Grant and \$843,549 for a program grant looking at the genetic analysis of complex disease processes.

The Institute also received \$807,780 from UTAS. The majority of these funds were in recognition of Menzies' research income, publications, research higher degree student load and research higher degree completions via the Australian Government's Research Training Scheme, Institutional Grants Scheme and Research Infrastructure Block Grant.

The Tasmanian Government continued to provide support in a number of areas including recognition of Menzies status, achievements and place in the Tasmanian community through funding awarded under the Tasmanian Icons Program via the Department of Economic Development. This funding was renewed for a further three years during 2006. The Department of Health and Human Services also provided funds for the Tasmanian Cancer Registry which is managed by Menzies on behalf of the Tasmanian Government, to support our epidemiological research, and a postdoctoral fellowship – the Dick Buttfeld Research Fellowship.

The Menzies Foundation was largely responsible for the formation of Menzies and has supported the Institute since its inception. The Foundation continued this support in 2005 providing \$125,000 towards the activities of the Institute.

Menzies continued its strong relationship with international philanthropic organisation the Atlantic Philanthropies. Six and a half million dollars was received to support the construction and basic fit-out of the new building, in addition to the \$1 million received in 2005. The Atlantic Philanthropies also provided almost \$900,000 during 2006 to fund a \$US2,000,000 project over the period 2006 to

2009 that will see Menzies' researchers oversee the development of a national non-communicable disease surveillance system for Vietnam.

The Institute had a pleasing result in 2006, with an operating surplus of \$708,939. A majority of this surplus resulted from funds received for research projects that will be expended in 2007. The Income Statement and Balance Sheet for the year ended 31 December 2006 are included in this report at page 49 - 52.

## Information Technology

Staff from Information Technology (IT) aim to provide reliable, effective, secure and innovative IT solutions to assist the Menzies Research Institute pursue its aspiration.

Menzies' IT systems are continually being maintained and improved to ensure the secure and confidential storage of data and the reliable and effective use of computers and software in the day to day running of the Institute.

The IT Team is also responsible for the in-house development of software applications which improve work efficiencies for Institute staff. Of particular interest in 2006 was the development of a Computer Aided Telephone Interview (CATI) system which may be used to collect study data over the phone.

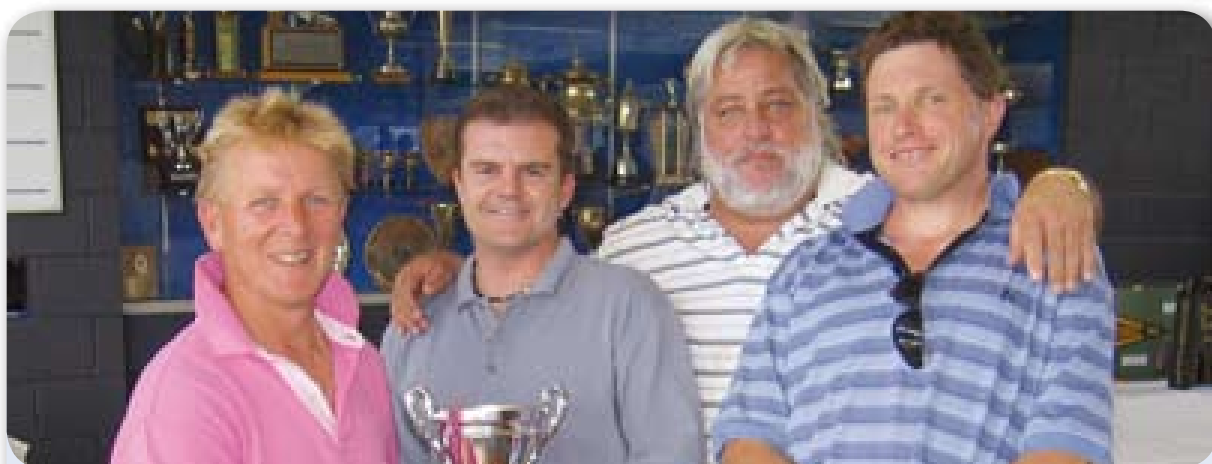
## Development

With the recent growth of Menzies through the growth strategy, reliance on the Development Team has also increased. Menzies' Development Team is responsible for all fundraising and marketing activities, working with the community including businesses, community groups, philanthropic organisations and individuals, and communicating about Menzies' research and ongoing need for funds.

A significant amount of funds are donated each year by individuals, groups and businesses in response to one of our direct mail fundraising appeals. These funds are raised to support and expand our medical research to tackle local health problems with global significance.

In 2006 hundreds of individuals, community groups and organisations generously donated to assist in the following priority areas:

- Improving childhood literacy through a new study to investigate low literacy levels among Tasmanian school children as a result of vision coordination problems;
- Support to drive the growth strategy further, including enhanced resources and capacity to help Menzies break through on key health issues;
- Research to assist GPs to confidently assess the physical activity levels of their patients and to develop a patient education program using accelerometers, so that if a GP recommends a certain amount of activity to a patient, both the GP and patient can easily see if the recommended levels are met; and



*David Osborne from Corporate Express (second from left) presents the 2006 Golf Classic cup to the winning team*

- Translation and communication of the findings of a study on the impact of physical activity and other lifestyle factors on cardiovascular disease risk factors in young Australians.

In the past year Menzies has once again received tremendous support from a number of individuals and businesses in implementing events and activities to raise funds and awareness in the community.

Menzies' annual Golf Classic was a sell out and was the most successful golf event to date. One hundred and thirty six golfers competed in the 2006 event, presented by Corporate Express Office Equipment, and raised more than \$23,000 for musculoskeletal research. Competitors extended their support of the event through the popular caddy auction, which included WIN TV's Penny Tame and Channel Nine AFL reporter Tony Jones.

On the same day, Veolia Environmental Services supported the Institute once again through the sponsorship of the launch of the AFL season in Tasmania at the Veolia Menzies Premier's Luncheon. This event provided the Institute an opportunity to raise funds for medical research via a raffle and auction.

Menzies joined forces with another Tasmanian Icon – the Tasmanian Symphony Orchestra (TSO) – in July to raise funds for cardiovascular disease research. We thoroughly enjoyed our interactions with the TSO and hope it is a start of an ongoing relationship.

In August, long time supporter of Menzies Mrs Bev Twibell once again donated the proceeds from the Bride of the Year competition to Menzies' work into childhood diseases. We were saddened to hear that Mrs Twibell is retiring from coordination of the Bride of the Year. We extend our grateful thanks to Mrs Twibell and look forward working with the new event organiser.

The Art of Christmas cocktail function made it on to the Menzies calendar for a second time, with a cocktail event and launch held in September. In 2006 the exhibition included artwork from five proclaimed Tasmanian artists.

The Institute, with the support of local businesses, reproduced the artwork into high quality Christmas

cards for corporate clients and the community. The function together with the sales of the Christmas Cards raised more than \$15,000 for medical research.

This event would not have been possible without the ongoing support and passion of Colin Anderson at Direction by Design. Colin created the event and card concept through design sponsorship of the event. Other ongoing supporters for the event included Wrest Point, Artery and Display Works. The printing of the cards was donated by the Printing Authority of Tasmania, with paper generously donated by Spicers Paper.

Later in the year, Menzies jointly hosted Research Australia's Thank You Day with UTAS' Faculty of Health Science. Thank You Day provides Menzies with the opportunity to thank volunteers, study participants and donors for their contribution to Australian health and medical research.

In 2006 several research projects have received in-kind support from other businesses including Betta Milk, Blockbuster Video, Putters Adventure Golf, ASICS and Target.

We would like to extend our thanks and acknowledge the generosity of all individuals, businesses, community groups, philanthropic organisations and government departments who have supported the work of the Menzies Research Institute in the past year.





## Volunteers

The Volunteer Program once again maintained a steady number of active volunteers in 2006. We farewelled some volunteers and welcomed several others who registered with the program. At the end of 2006 there were 63 volunteers providing research and administrative support to a variety of projects.

Volunteers are recruited from a variety of sources, however the majority become aware of the program after participating in a study or visiting the Institute for a bone density scan. Other new volunteers have joined us after learning about the Institute through a community talk.

New volunteers attend an induction session and receive a copy of the updated Volunteer Handbook. Efforts are then made to match their skills and availability with the needs of different units. Some volunteers are happy to assist whenever required, though the majority of new volunteers are seeking a regular commitment with Menzies.

Volunteers undertake many tasks, including reception duties, library maintenance, development and fundraising, special events, photocopying, filing, clerical duties, mail-outs, testing and assisting study participants, and data entry. These volunteers allow the Institute to carry out work which may not otherwise be achievable, and their involvement is deeply appreciated by researchers and administration staff alike.

The Institute would like to thank the following volunteers for their commitment and dedication in 2006:

Davys Baldwin  
Irma Baumeler  
Denis Black  
Richard Brodribb

Beverly Brown  
Jasmine Butler  
Audrey Button  
David Bryce  
Von Calvert  
Robyn Chapman  
Anita Clarkson  
Selina Claxton  
Fay Cox  
Ian Crouch  
Wendy Davidson  
Susan Davies  
Dawn Dore  
Pam Ewell  
Leslie Fletcher  
Pauline Foley  
Polly Foster  
Jeff Fung  
Adam Godleman  
Colleen Hay  
Barbara Hayes  
Cheryl Hewitt  
Susan Hibberd  
Keryl Houlgrave  
Jean Keil  
Kathy Koukias  
Jennifer Langridge  
Mary Leon  
Sue Lewis  
Sylvia Macleod

Marie Magill  
Sally Mason  
John Mathewson  
Betty McMeekin  
Susan Morrell  
Prue O'Halloran  
Pauline Payne  
Judy Pennicott  
Dale Pitt  
Rhona Puclin  
Jennifer Ransley  
Christopher Simmonds  
Maree Steele  
Roslyn Stoddart  
Elizabeth Stopforth  
Mary Stuart  
David Tulip  
Launa Turner  
Marylyn U'Ren  
Robert U'Ren  
Mary Veldhuis  
Gerald Veldhuis  
Margaret Vince  
Vicki Wagstaff  
Fay Wheeler  
Jenny Wiggins  
Janice Williams  
Sara Wilson  
Helen Wood

## Community

ABC Enterprises  
Apex Club of Glenorchy  
Australian Broadcasting Corporation  
Australian Legion of Ex-Servicemen & Women  
Bride of the Year Parade  
Burnie Bridge Club  
Burnie Friendship Group  
Burnie Senior Citizens Club Inc  
Cadbury Schweppes Pty Ltd  
Clarence RSL War Memorial Trust  
Department of Infrastructure, Energy & Resources  
Devonport Bridge Club  
Eastern Audiology Services  
Eye Spy Signs Pty Ltd  
Housewives Association  
Launceston City Council  
Lions Club of Forth Valley Inc  
Lions Club of Clarence Inc Tas  
Lions Club of Kentish Inc Tas  
Lions Club of Orford Spring Bay Inc Tas  
Lions Club of Queenstown  
Lions Club of Sandy Bay Inc Tas  
Lions Club of Sorell Inc Tas  
Navy Club Ladies Auxiliary  
New Norfolk Rebekah Lodge Inc  
Nugara Lodge  
Rotary Club of Claremont  
Rotary Club of Sorell  
Sheffield RSL Women's Auxiliary  
Southern Cross Television Staff Fundraising Committee  
Tamar Bridge Club  
Tasman Council Chambers  
Tasmanian Alkaloids Pty Ltd  
Tasmanian Bridge Association Inc.  
The Eclectic Quilters' Group  
The Gold Coast Congress Committee Of The Queensland Bridge Association  
UTAS Sport and Recreation  
Veolia Environmental Services  
War Widows Guild of Tasmania  
Wellbeing Club 13  
Westpac Banking Corporation

## Everyday Angels

Mrs Anita Clarkson  
Mr Brendon Davidson  
Mr & Mrs Garth & Brenda Haas  
Mrs Margaret Keogh  
Mrs Margaret Knight  
Mrs Wendy Noye  
Mr Kim Paterson  
Ms Carmel Taylor  
Mrs Cynthia Tennant  
Mrs Pat Vallance  
Mr Sam Mollard

## Individual

Mrs Barbara Adams  
Mrs Clarice Aird  
The Hon Michael Aird  
Mr & Mrs Pat & Dorothea Albion  
Mr & Mrs W & Kathleen Alexander  
Mrs Dulcie Allanby  
Mrs Ila Andrews  
Mr Harry Baldwin  
Mrs Justine Bamford  
Mr & Mrs A & S Bardenhagen  
Miss A Bassett  
Mrs J Barker  
Mrs Margaret Barnden  
Mrs V Barnes  
Mrs Beryl Bates  
Mr John Beakley  
Dr Trevor Beard  
Mr & Mrs Alan & Carol Beardwood  
Mr Douglas Beath  
Mr John Bellamy  
Mr Mark Bennett  
Mr Bruce Berwick  
Mr/s G Bevan  
Ms Wendy Beveridge  
Mrs M J Birkett  
Mr & Mrs John Birtwistle  
Mr & Mrs K & C Bristow  
Mrs Judith Bowden  
Mrs Barbara Brain  
Mr Edmund Breen  
Mrs Gwen Briscoe  
Mr & Mrs C & G Brown  
Mr Gordon Brown  
Mrs Elizabeth Bryant

Mrs E Burgess  
Ms Dot Burleigh  
Mr Ivan Burnac  
Mr & Mrs Trevor & Mavis Burridge  
Mrs Merle Bush  
Mrs Von Calvert  
Mr Geoff J Cavanagh  
Mr John Chalmers  
Mrs Jan Chew  
Mrs Gladys Chilcott  
Mrs Anita Clarkson  
Mr/s E. A. Cohen  
Mr & Mrs T & H Coles  
Mr Bruce Cooley  
Mrs Cynthia Coombe  
Mrs Judith Cooper  
Dr & Mrs Herbert & Noela Copeman  
Mr & Mrs D Copping  
Mr/s C. D. Counsel  
Mrs Nancy Crew  
Mrs Margaret Crisp  
Mr & Mrs Ian Crowden  
Mrs Norah Crowther  
Mrs E Curtis  
Mr Brendon Davidson  
Mr & Mrs R Davies  
Ms Adrienne Denholm  
Mrs Jeannette Dennison  
Mrs Barbara Ditcham  
Mrs Gladys Dodson  
Miss Matty June Doering  
Mr G Donnelly  
Mrs Ruth Doughty  
Mr Tim Dowling  
Mr & Mrs K Drake  
Dr DK Dubetz  
Mrs Marie Ducat  
Ms P Duggan  
Mr Ray Duncombe  
Mr Laurence Dunn  
Mrs Margaret Eldridge  
Mrs Joy Ellis  
Mrs Ruth Eschmann  
Mr & Mrs John Evans  
Ms Julia Farrell  
Dr & Mrs A Fenton  
Mr & Mrs K & E Fenton  
Mr Morris Fisher  
Mrs Faye Fitzgerald  
Mr H Foster

Mr Malcolm French  
Mr Kevin Fuge  
Ms Patricia Furst  
Ms Alison Gaden  
Mrs Beverley Geard  
Mr Gary Gibson  
Ms Belinda Gibson  
Mrs Aileen Gillard  
Mrs Muriel Girling  
Prof & Mrs J & J Goldsmid  
Mr & Mrs Richard & Christine Goodwin  
Mr & Mrs LS & GA Gordon  
Mrs N Gordon  
Mrs WG Gough  
Mr Trevor Grant  
Mrs Judy Grant  
Mr & Mrs Keith & Shirley Graver  
Mrs Joan Grimmond  
Mrs Maree Grimsdale  
Mr & Mrs Garth & Brenda Haas  
Mr Brian Haas  
Mr H.C. Haines  
Mr & Mrs M Hamilton  
Mr & Mrs John & Lindsay Hand  
Mr Philip Hand  
Mrs Nancy Harding  
Mrs I Hardman  
Mr & Mrs P & S Henri  
Mrs Margaret Heynes  
Mrs Celia Hill  
Mrs Jean Himmelhoch  
Mr & Mrs Peter & Jill Hindrum  
Mr Kevin B Hingston  
Mrs Mrenda Hodgson  
Mr Keith Hoey  
Ms Jane Hofto  
Mr Denis Holmes  
Mr & Mrs V & Z Houdek  
Mrs Ingrid Howe  
Mr & Mrs G. R. Hughes  
Dr John Hunter  
Mrs Lola A Hutchinson  
Mrs Ruth Huxley  
Mrs Margaret Jabour  
Mr & Mrs Brian & Amy Jackman  
Mrs Flora James

Mrs Carol Hurst	Mr M McEwan	Ms Cindy Shay	Mr & Mrs J & E Yates
Mrs Norma Jamieson	Mrs P McGuire	Mrs Evelyn Shield	Mr & Mrs Murray & Edna Yaxley
Dr Miranda Jelbart	Mr Terence McShane	Miss Joy Smith	
Mr Michael Jones	Ms Dorothy Medcraft	Mr & Mrs Hilton & Necia Smith	<b>Trusts and Bequests</b>
Mrs PM Jones	Mrs Violet Mee	Ms Maureen Smith	Christopher Hallam Bequest
Ms Dianne Joyce	Mr MG Middleton	Mr & Mrs Ross & Necia Smith	Arthur and Mary Paton Bequest
Mr Robert W. Kay	Mr Scott Minervini	Mr Colin A Sproule	Gerald Harvey Bequest
Mrs Marie Kays OAM	Mr Michael Mitchell	Mr & Mrs Peter & Sheila Stacey	Brian Marks Bequest
Mrs Doone Kennedy AO	Mrs Jane Mitchell	Mr & Mrs KV & DM Stanfield	Margaret Mack Bequest
Mrs Frances Kenyon	Mr & Mrs Peter G. Morgan	Ms Margareta Stanojevic	Ruby Menzie Bequest
Mrs Margaret Keogh	Mr & Mrs Leon & Sue Morrell	Mrs Roxanne Steenbergen	Ronald Buss Bequest
Hon Duncan Kerr MHR	Mrs M Morris	Mrs Pat Stokes	Rita Hughes Bequest
Mr Nigel King	Ms Margaret Morris	Mr James Swain	Bessie Kable Trust
Mrs Jean King	Mrs Rhona Moule	Mr Paul Sykes	Patricia Crabtree Bequest
Mrs Margaret Knight	Ms Judith Murdoch	Mr Terry Sykes	M & WHC Boys Donation
Mr & Mrs B & M Knoop	Ms Peg Newman	Ms Carmel Taylor	Ethel Young Bequest
Mr & Mrs L & J Kocsis	Miss Wendy Nichols	Mrs Clara Tegg	
Mr & Mrs A H Lade	Mrs Wendy Noye	Mrs Cynthia Tennant	<b>Lasting legacies</b>
Mr F N Lakin	Mrs E O'Brien	Ms Cassandra Tichanow	<b>Gifts of remembrance were made in honour of:</b>
Mr Donald Lange	Dr Audrey Officer	Ms Joanne Traynor	Mr Ernest Bartlett
Mr & Mrs Peter & Pamela Lechte	Mrs Valerie Palk	Mr L Trenham	Mrs Ellen Berwick
Miss Eileen Lees	Mr Alan Palmer	Mr & Mrs D H Trotman	Miss Roisin Marie Breen
Mrs Wendy Lees	Miss Elizabeth Parkes	Ms Fiona Tustian	Mrs Betty Bristow
Mrs Beverley Leitch	Mr Kim Paterson	Mrs Pat Vallance	Mr Ronald E. Bush
Mr & Mrs D G Lennox	Dr Janet Penny	Mrs Robin Verth	Mrs Nancy Chalmers
Mrs Laurie Leonard	Mr Edward Phillips	Mr & Mrs D & W Viney	Mrs Cathy Gibbons
Mr & Mrs Kevin Levis	Mr & Mrs A E & G Plaister	Mrs Sheila Vollprecht	Mr James Graney
Mrs S Lewin	Mrs Maisie Pollard	Mr & Mrs Robert & Katharine Von Bibra	Mr Karl Hodel
Mr & Mrs Lionel & Joyce Lewis	Mr & Mrs JF Ponsonby	Mrs Margaret Wade	Mrs Marjorie Dawn Innes
Ms Bronwyn Limbrick	Mr David Powell	Ms Janette Wagner	Mr William Kenyon
Mrs Judith Linton	Mr K Preece	Ms Helen Walch	Mr Mervyn Limbrick
Mr Peter Littlehales	Mrs Fran Pritchard	Mrs J Wallace	Mrs Olive Morrell
Mrs Olive Lonergan	Mrs Anne Rand	Mr & Mrs J & F Watson	Mrs Yvonne Estelle Penney
Mrs Judith Longhurst	Dr David Ratkowsky	Mr John Wedd	Mr Roger Stephen Penny
Mrs Zandra Lowe	Mrs Anna Rau	Mrs Jennifer Weldon	Mr Sydney Ploughman
Ms Marilla Lowe	Mr & Mrs Grae & Barbara Raymond	Ms Penelope Wells	Mr Jack Purtell
Mr & Mrs P G & F M Lowry	Mrs Colleen Read	Mr Peter Whelan	Ms Gweneth Joyce Purton
Mrs Elaine Lyons	Mrs Jan Rees	Mr & Mrs A Whish-Wilson	Ms Susan Rapley
Mr & Mrs J MacDonald	Mr & Mrs C H Rennie	Mrs Marion Whittle	Mrs Kathryn Rayner
Mrs Judith Mackay	Mrs Janet Richardson	Mrs Margaret Williams	Mrs Margaret Rostron
Mr William Mansbridge	Mr Warwick Risby	Mrs Joan Williamson	Mr Keith Topfer
Mr Ralph Markham	Mr & Mrs P & A Roach	Mr & Mrs Ken & Jeanette Wills	Ms Diane Woodward
Mrs Judith Marsh	Mr David Roberts	Ms Beverley Wilson	Mr Graeme David Woolley
Miss Betty Mathers	Ms Marilyn Roberts	Ms Christine Wilson	
Mr Ian Matterson	Mrs Meg Robinson	Mr Ron Wisbey	
Mrs Claire Matthews	Mr John Rogers	The Hon. R.C Wood	
Ms Cheryl Matthews	Mrs Joan Rollins	Mrs Doreen Woods	
Miss Mary McCulloch	Mr & Mrs RW & FM Russon	Mrs Ros Woolcock	
Mr Vic McDermott	Mrs Elizabeth Ruthven	Mr & Mrs P & L Woolley	
Mrs Anne McDonald	Ms Roslyn Saltmarsh	Mr Michael Woolley	
Mr Dugald McDougall	Mr & Mrs CF & UJ Saville	Mrs Esma Woolley	
Mrs Cynthia McDougall	Mr & Mrs G Seymour	Mrs Margaret Woudwyk	
Mrs Judith McDougall			



# Income Statement for the year ended 31 December 2006

	31/12/06	31/12/05
	\$	\$
<b>Revenue</b>		
Commonwealth Government grants	2,810,006	1,891,305
Tasmanian Government grants	759,909	984,701
University of Tasmania	807,780	724,896
Menzies Foundation	125,000	125,000
Atlantic Philanthropies (New building project)	6,500,000	1,000,000
Other contracts & agreements	1,653,529	493,310
Donations	141,937	174,690
Bequest and donation transfers from UTAS and UTAS Foundation	90,428	0
Bequests	3,703	88,397
Interest from trust investments	186,395	110,633
Interest from research accounts	26,838	
Other income	335,365	278,832
<b>Total Revenue</b>	<b>13,440,890</b>	<b>5,871,765</b>
<b>Expenses</b>		
Salaries and on-costs	3,893,797	3,165,234.94
New building project contribution	6,500,000	1,000,000
General consultancy services	1,197,906	338,993
Scholarships	102,320	96,691
New appointment expenses	71,337	31,915
Staff development	67,133	59,237
Public relations and marketing	60,264	69,244.04
Administration & operating costs	361,021	227,603
General travel	198,569	216,355
Infrastructure charges	7,250	20,770
Equipment purchases	75,800	57,030
Hire of facilities and equipment	100,018	37,720
Repairs and maintenance	30,425	43,063
Electricity	8,551	9,085
Depreciation plant and equipment	57,561	64,222
<b>Total Expenses</b>	<b>12,731,951</b>	<b>5,437,161</b>
<b>Operating Result</b>	<b>708,939</b>	<b>434,604</b>

# Balance Sheet

## as at 31 December 2006

	31/12/06	31/12/05
	\$	\$
<b>Current Assets</b>		
Funds Held by University of Tasmania	3,013,190	3,763,392
Receivables	348,298	133,339
Prepayments	47,661	43,381
<b>Total Current Assets</b>	<b>3,409,149</b>	<b>3,940,112</b>
<b>Non-Current Assets</b>		
Plant and Equipment	742,311	553,471
Less Accumulated Depreciation	(332,494)	(274,933)
<b>Total Non-Current Assets</b>	<b>409,817</b>	<b>278,538</b>
<b>Total Assets</b>	<b>3,818,966</b>	<b>4,218,650</b>
<b>Current Liabilities</b>		
Creditors and accruals	31,335	77,819
Salary accrual	-	-
Creditors - New building project contribution	-	1,000,000
Income received in advance	-	73,557
Provision for Annual Leave	89,055	77,637
<b>Total Current Liabilities</b>	<b>120,390</b>	<b>1,229,013</b>
<b>Total Liabilities</b>	<b>120,390</b>	<b>1,229,013</b>
<b>Net Assets</b>	<b>3,698,576</b>	<b>2,989,637</b>
<b>Equity</b>		
Opening Retained Surplus	2,989,637	2,555,033
Add: Profit / (Loss) for the Period	708,939	434,604
<b>Total Equity</b>	<b>3,698,576</b>	<b>2,989,637</b>

## 1. Summary of Significant Policies

The University of Tasmania prepares general purpose financial statements which are audited by the Tasmanian Auditor-General. A copy of the latest audited statements is available, upon request, from Financial Services.

These financial statements represent those transactions and balances specifically pertaining to the Menzies Research Institute. The statements do not include all disclosures required by Australian equivalents to International Financial Reporting Standards.

Relevant accounting policies which have been adopted in the preparation of the attached Income Statement and Balance Sheet of the Menzies Research Institute are:

### a) Basis of Accounting

The financial statements have been prepared on the accrual basis of accounting using the historic cost convention unless otherwise stated.

### b) Trust Funds

The University of Tasmania, holds a number of trust fund accounts on behalf of the Menzies Research Institute. Investment earnings in respect of these trust fund accounts is distributed to the Menzies Research Institute, however the trust fund account balances, totalling \$619,185 at 31 December 2006, are not reflected in the attached Balance Sheet. During 2006, \$56,932 from these trust fund accounts were transferred to the Menzies Research Institute as revenue.

In addition, the Menzies Research Institute holds a number of trust accounts. The balance of the accounts totalling \$581,331 at 31 December 2006 is reflected in the attached Balance Sheet.

### c) Plant and Equipment

Plant and equipment is brought to account, and carried at cost, where the value is greater than ten thousand dollars.

Plant and equipment is depreciated on a straight line basis over its useful life commencing from the time the asset is held ready for use. Depreciation rates for plant and equipment applicable during 2005 are 10% - 33%, and this is consistent with the prior year.

Gains and losses on disposals are determined by comparing proceeds with carrying amount. These are included in the income statement.

### d) Creditors and accruals

These amounts represent liabilities for goods and services provided to the Menzies Research Institute prior to the end of the year which are unpaid. The amounts are unsecured and are normally settled within 30 days.



## e) Employee entitlements

### Wages and salaries, and sick leave

Liabilities for wages and salaries are recognised as payables in respect of employees' services up to the reporting date. Sick leave entitlements provided to the employees of the University are non-vesting and are based on a cumulative sick leave system. Liabilities for non-accumulating sick leave are recognised when the leave is taken.

### Annual leave

Liabilities for annual leave in respect to non-academic staff are recognised and measured as the amount unpaid at the reporting date at current pay rates in respect of employees' service up to that date. Related on-costs have been included in the provision. Annual leave for academic staff is deemed to be taken in the year in which it is accrued, hence no provision is made in respect of these employees.

### Long service leave

The University charges a levy on the salaries of certain staff and has assumed the liability for long service leave.

## Statement of Certification

We certify that the financial statements reflect an accurate record of income and expenditure recorded through the University of Tasmania's financial system, together with assets and liabilities specific to the Menzies Research Institute.

### Mark Bennett

General Manager  
Menzies Research Institute

DATE: 4 April 2007

### Bernard Lillis

Executive Director,  
Finance & Administration and Chief Financial Officer  
University of Tasmania



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An Institute of  
the University  
of Tasmania.