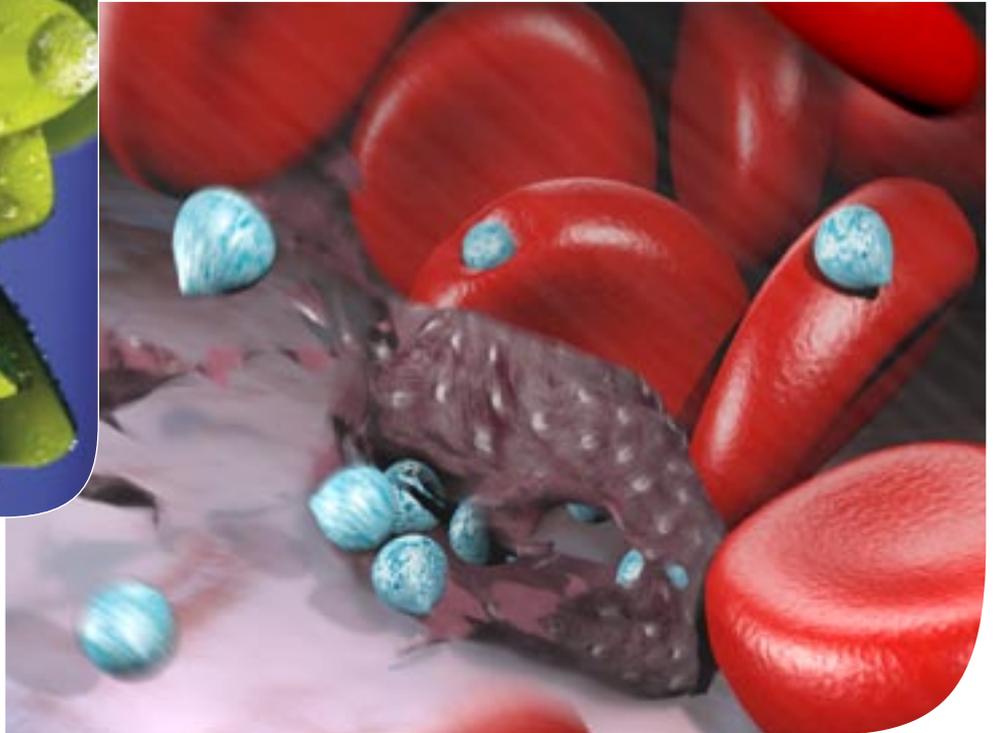


Number 44
Spring 2005

bulletin



A red blood cell, infected with malarial parasites, bursts and releases small merozoites which go on to infect more cells.

Image: WEHI

Director receives international scholarship to fight malaria

Menzies Research Institute Director, Professor Simon Foote, has been awarded US\$350,000 over five years as a Howard Hughes Medical Institute (HHMI) International Research Scholar to fight the debilitating parasitic disease, malaria.

Professor Foote says it is a great honour to be awarded this international scholarship, with the award providing the Institute the opportunity to further expand its medical research in Tasmania.

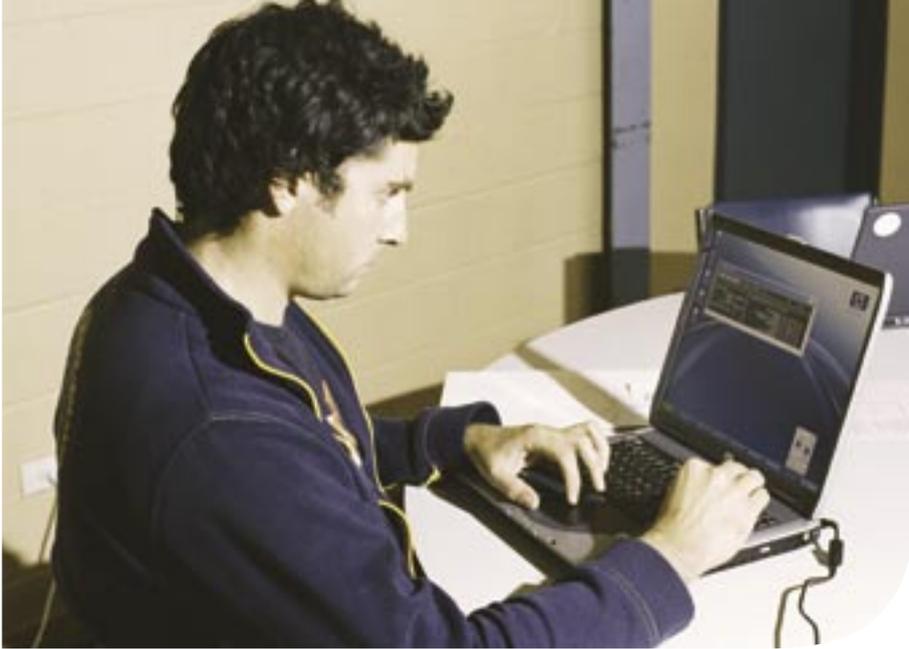
“This funding will allow the Menzies Research Institute to expand its genetic research program to include malaria, which is the third most lethal disease in the world. Malaria infects 250 million people and kills more than two million worldwide each year. With the parasite’s increasing resistance to anti-malarial drugs, and mosquito resistance to insecticides, there is a worldwide need for innovative research into malaria,” Professor Foote said.

The HHMI International Research Scholar funding will assist Professor Foote to better understand how a person’s immune system fights malaria. He will do this by infecting laboratory mice that have rare genetic mutations with malaria, and studying the mutations that allow the animals to survive infection.

“This research will contribute to the global understanding of host response to malaria and lead to the development of new, more effective anti-malarial therapies,” he said.

Professor Foote has extensive experience in infectious diseases and parasitology through his work at the Walter and Eliza Hall Institute of Medical Research in Melbourne, where he has a continuing appointment for fifty percent of his time as Joint-Head of the Genetics and Bioinformatics Division until the end of 2005.

The HHMI has awarded US \$17.5 million to 42 outstanding scientists in 20 countries to tackle the mysteries of infectious and parasitic disease.



Participants answer a series of questionnaires on demographic and lifestyle information

CDAH study is tracking health around the country



The Childhood Determinants of Adult Health (CDAH) study recently travelled to the Northern Territory and Queensland to run follow-up clinics for participants 20 years after they were studied as school children.

CDAH is run by the Menzies Research Institute in collaboration with the International Diabetes Institute and the Centre for Adolescent Health in Melbourne. It involves more than 5,000 participants across Australia who in 1985 were part of the Australian Schools Health and Fitness Survey.

This study's principal aim is to determine how much physical and lifestyle factors in childhood contribute to the risk of developing heart disease and type 2 diabetes in later life. Much of what we know about the importance of lifestyle factors, such as diet and physical activity, and the role of blood pressure and cholesterol levels, comes from research in adults, but some studies have shown that the same factors are associated with early stages of disease even in childhood.

Fieldwork has already been conducted in Tasmania (May 2004), Victoria (July-Sept 2004) and South Australia (November 2004).

CDAH hit northern Australia in mid-

April, with three days of clinics at the Charles Darwin University in Darwin. Participants from the Northern Territory were pleased to be included in the national study.

Clinics began in Queensland in late April. They were well attended by participants living both locally and in remote areas. One participant travelled 11 hours from the outback to attend his appointment in Townsville. Another made the trip to Rockhampton from Wellington, New Zealand, so that she

could take part. Many others travelled up to four hours each way from areas such as Mackay, Cairns and Gladstone. Almost 1,000 participants have now attended CDAH clinics.

In order to conduct clinics, nine cubic metres of equipment and supplies are transported between venues by a removalist company. Blood samples collected during fieldwork are rushed back to the MedVet laboratory in Adelaide within hours of their collection.

Many old school friendships have been rekindled at the CDAH clinics, with participants often coming face-to-face with classmates from 20 years ago. Participants who are unable to attend a clinic are still able to contribute by having a blood sample collected off-site, completing questionnaires, or even doing a short questionnaire over the phone.

The next stops are New South Wales and the Australian Capital Territory. The CDAH team is travelling throughout these regions in September and October stopping in Armidale, Hurstville, Newcastle, Sydney, Parramatta, Orange and Canberra.

Researchers at the Institute have already begun looking at preliminary data collected over the past year. Associate Professor Alison Venn presented early findings to the Australian Institute of Food Science and Technology Convention in Sydney in July on childhood determinants of obesity in young adults.

“Obesity is a major public health problem in Australia. While there is evidence from international studies showing that obesity often persists



Queensland clinic participants enjoy a healthy Sanitarium breakfast



Ultrasound measurement of the carotid artery

from childhood into adult life, there has been little research in Australia to examine the range of childhood factors that influence adult obesity," she said. Results from the CDAH study have confirmed that obesity in childhood tends to persist.

"What we can see is that if you are an obese child, your chances of being an obese adult are very much increased. But it is also the case that the majority of young adults who are obese were actually normal weight as children."



Endurance fitness is evaluated using a bicycle ergometer

Associate Professor Venn said that these results highlight the significance of efforts to prevent or reduce obesity in childhood, but also the importance of strategies to prevent obesity in late adolescence and early adulthood.

A team of PhD students and postdoctoral fellows is working on the study, and a new PhD student will join the team soon to examine the influence of physical activity on mental health.

New project – Literacy Pathways



Five to ten percent of primary school children fail to learn to read at the standard expected of their intelligence and educational and cultural background. Past research has shown that some children with normal intelligence have reading problems because of problems coordinating both eyes to read visual images.

A new project at the Menzies Research Institute called "Literacy Pathways" will screen for vision coordination problems among children with low literacy. Students at Summerdale Primary School in northern Tasmania recently participated in a pilot of this project where they underwent a variety of exercises to test their vision coordination and visual acuity, or sharpness.

Children who were found to have problems with their binocular vision have been invited to participate in an educational trial designed to improve their reading. The project will evaluate the relative success of techniques such as traditional reading recovery, phonics programs and eye training exercises. The project is funded by a grant from the Australian Research Council.



Bone marrow lesions have been found to be significantly associated with knee pain

TASOAC study breaks through on pain

The Menzies Research Institute's Tasmanian Older Adult Cohort Study, or TASOAC, is believed to be the world's largest magnetic resonance imaging (MRI) research project focusing on osteoarthritis.

Osteoarthritis is a major cause of disability in elderly Australians. Knee osteoarthritis affects approximately 30 per cent of Australians over 65. Available treatment is very costly and there are no preventative strategies currently available.

Researchers at the Institute are using MRI to record changes in the joints of participants, who are aged between 50 and 79 years. MRI scans provide images of the bone, cartilage and other tissue of a joint, allowing researchers to observe changes over time and detect early changes that are not discernable by the more traditional X-ray.

One thousand and seventy-four Tasmanians have been through the doors of the TASOAC clinics since they began in 2002. The research team is currently about half way through seeing participants for the second time.

Predisposition to osteoarthritis is not well understood, although it is known that some environmental factors such as low vitamin D levels, high body weight and injury can influence the development of knee osteoarthritis. One hypothesis that the TASOAC study is investigating is that physical activity is protective against the development and progression of osteoarthritis.

A recent significant finding by the TASOAC team is that bone marrow lesions (BML) in the knee are strongly related to pain. From 500 participants aged 50 years and over, 239 participants reported knee pain, of which 41% were found to have BML in the knee, and 261 participants reported no knee pain with 28% found to have BML. It was found that BML were significantly associated with knee pain independently of other factors including defects in the cartilage and radiographic knee osteoarthritis. This finding provides new insight into prevention and management of knee pain.

TASOAC is currently seeking funding to enable additional biochemical testing of blood samples. This additional testing will analyse various bone cartilage markers, inflammation and vitamin D levels, and will provide further insight into the complexities of osteoarthritis and pain.



TASOAC Study Coordinator Catrina Boon with the new ultra low temperature freezer

A celebration of the Art of Christmas

The true spirit of Christmas shone through early this year to support medical research in Tasmania. Twelve Tasmanian artists donated original pieces of artwork to the Menzies Research Institute depicting their interpretation of Christmas and the celebration of life.

The artwork was showcased to the Tasmanian business community, set amongst a forest of Christmas trees, at the *Art of Christmas* cocktail function on Thursday 28 July. The Institute, with the support of local businesses, has reproduced the artwork into high quality Christmas cards for businesses and the community.

Renowned Tasmanian artist Michael Weitnauer said he was delighted to be able to help the Institute raise funds for medical research. "I was honoured to be asked to participate in this worthwhile fundraising effort. The Menzies Research Institute conducts vital studies into diseases which affect all Tasmanians in some way or another," he said.

Other featured artists included Tom Samek, Thomas Andersen and Leigh Oates. Both established and emerging artists were invited to donate an art piece;

two remarkable pieces were donated by students from the Tasmanian School of Art.

The *Art of Christmas* cocktail function raised more than \$8,000 for medical research at the Institute. The evening was organised with generous assistance from Tasmanian businesses Direction by Design, Beyond PR, Wrest Point and Display Works. A host of other businesses, listed overleaf, also helped to make the event possible.

Businesses and Institute supporters now have the opportunity to order personalised corporate Christmas cards printed with their logo and greeting of choice. Orders for personalised cards close on 14 October.

The unique cards will also be available for sale to the general public from reception at the Menzies Research Institute and at the Combined Charities Christmas Card and Gift Shop in Hobart from mid October. The 3 art pieces shown above are still available for purchase. For more information, see the Institute's website or phone Julia Garry, Development Officer, on 6226 7750.

New freezer - Thanks to you!

In June this year we asked our committed supporters to financially contribute to the purchase of an ultra low temperature freezer. In late July, thanks to the generosity of many both locally and interstate, we were able to purchase a new freezer which has now been installed in the Liverpool St building.

Researchers at the Menzies Research Institute collect specimens daily for a range of research projects, including research into prostate cancer, osteoarthritis, multiple sclerosis, heart disease, diabetes and epilepsy.

New research projects in the areas of Parkinson's disease, colorectal cancer, non-melanoma skin cancer and dementia also require the collection of various samples. There was insufficient storage capacity to accommodate samples for this new research in our current freezer facilities – it has been estimated in the coming year researchers will require storage and freezer space for more than 12,000 specimens.

The new freezer is central to the Institute's plans to deepen our research programs to investigate more disease areas affecting the health of people in Tasmania and beyond. It has enhanced our capacity for sample storage and will save valuable funds which were previously spent on outsourcing freezer services. Thank you to all donors who contributed to the purchase of this essential piece of equipment.



Institute Director Simon Foote and artist Michael Weitnauer

Publications

The following papers from the Menzies Research Institute have been published since the last issue of the Bulletin.

Andreasyan K, Ponsonby AL, Dwyer T*, Kemp A, Dear KBG, Cochrane J*, Carmichael A. A differing pattern of association between dietary fish and allergen-specific subgroups of atopy. Allergy 2005;60(5):671-7.*

We examined the role of fish intake in the development of atopic disease with particular reference to the possibility of differential effects on allergen-specific subgroups of sensitisation. We have demonstrated a differential effect of fish intake for sensitisation to different aeroallergens. This may be due to the different timing of allergen exposure during early life. Fish consumption significantly decreased the risk for ryegrass-pure sensitisation in comparison with HDM-pure sensitisation.

Cleland V, Venn A*, Fryer J*, Dwyer T*, Blizzard CL*. Parental exercise is associated with Australian children's extracurricular sports participation and cardiorespiratory fitness: A cross-sectional study. International Journal of Behavioural Nutrition and Physical Activity 2005;2(1):3.*

The relationship between parental physical activity and children's physical activity and cardiorespiratory fitness has not been well studied in the Australian context. Given the increasing focus on physical activity and childhood obesity, it is important to understand correlates of children's physical activity. The study concluded that parental exercise may influence their children's participation in extracurricular sports and their cardiorespiratory fitness levels. Understanding the correlates of children's extracurricular sport participation is important for the targeting of health promotion and public health interventions, and may influence children's future health status.

McKay J, Patterson B*, Craig J, Russell-Eggitt I, Wirth MG, Burdon KP, Hewitt AW, Cohn AC, Kerdraon Y, Mackey D. The telomere of human chromosome 1p contains at least two independent autosomal dominant congenital cataract genes. British Journal of Ophthalmology 2005;89(7):831-4.*

Multiple genetic causes of congenital cataract have been identified, both as a component of syndromes and in families that present with isolated congenital cataract. Linkage analysis was used to

map the genetic locus in a six generation Australian family presenting with total congenital cataract. Significant linkage was detected at the telomere of the p arm of chromosome 1. This is the third report of congenital cataract linkage to 1ptel. The critical region as defined by the shared haplotype in this family is clearly centromeric from the Volkmann cataract locus identified through study of a Danish family, indicating that two genes causing autosomal dominant congenital cataract map to the telomeric region of chromosome 1p.

Morley R, Moore VM, Dwyer T, Owens JA, Umstad MP, Carlin JB. Association between erythropoietin in cord blood of twins and size at birth: does it relate to gestational factors and to factors during labour or delivery? Paediatric Research 2005;57(5):680-684.*

We hypothesized that cord blood erythropoietin (EPO), a marker of fetal hypoxia, relates to gestational factors and not solely those associated with delivery. We investigated the association between birth weight SD score and cord blood EPO in 290 twins (145 pairs), assessing the influence of gestational versus perinatal factors by comparing the association in those who were delivered by elective caesarean (CS) with that in other delivery modes. Geometric mean EPO was higher in boys versus girls and increased with gestational age but was similar after elective CS versus other delivery modes. Because the association was seen after elective CS delivery, cord blood EPO must relate to factors during gestation, not just perinatal factors.

Ostberg A, Pittas F, Taylor B. Use of low-dose mitozantrone to treat aggressive multiple sclerosis: a single-centre open-label study using patient self-assessment and clinical measures of multiple sclerosis status. Internal Medicine 2005;35(7):382-7.*

There is significant evidence supporting the use of mitozantrone in the treatment of multiple sclerosis (MS) but few data on the subtypes of MS that respond or which measures of disease status are most useful. Thirty-one patients with active MS were commenced on mitozantrone 5 mg/m every 3 months. Low-dose mitozantrone was well tolerated and useful in active relapsing remitting MS in the short term; however, mitozantrone did not display any useful activity in secondary progressive MS patients over this time interval or at the mitozantrone dose used.

Stankovich J, Bahlo M, Rubio J, Wilkinson C, Thomson R, Banks A*, Foote S*, Speed T. Identifying nineteenth century*

genealogical links from genotypes. Human Genetics 2005;117(2-3):188-99.

We have developed a likelihood method to identify moderately distant genealogical relationships from genomewide scan data. The aim is to compare the genotypes of many pairs of people and identify those pairs most likely to be related to one another. Except in populations where there is a searchable electronic database containing virtually all genealogical links in the past six generations, the algorithm should be a useful aid for genealogists working on gene-mapping projects, both linkage studies and association studies

Grants

The following grants have been awarded to the Menzies Research Institute since the last issue of the Bulletin.

Perpetual Trustees Australia
Dickinson J, McKay J*.*

Tasmanian Prostate Cancer Study.
\$60,000

Howard Hughes Medical Institute
– International Research Scholars Program.
Foote S.*

Infectious diseases and parasitology.
\$US 350,000

**Menzies researchers.*

Diary Date: 3 March 2006

2006 Menzies Research Institute Golf Classic, Tasmania Golf Club

The Institute is pleased to announce that Corporate Express Office Equipment is once again presenting the Golf Classic in 2006. Collex is proud to be a major sponsor of the event.

It is anticipated this unique and worthwhile event will again attract record numbers! Corporate teams and individuals are invited to participate. Please join us for a day of fun, sun, excitement and (hopefully!) low scores.

Register your interest today, as places are limited. For more information, consult the Institute's website, or contact Community Relations Officer, Bill Avery on 6226 7707.

 **Corporate Express**
Office Equipment

Valued supporters: We thank our supporters for their generous contribution

Community

Australian Cricket Society, Tasmanian Branch
Building Group Apprenticeship Scheme
CSIRO - MIG Group
Eye Spy Signs
K-Mart
Lindisfarne School for Seniors
Lions Club of Glenorchy City
Lions Club of Orford Spring Bay
Lions Club of Sorell
Lodge Rosetta
Marketing & Research Associates
OMAR Marine Technology and Equipment
Rotary Club of Howrah
Rotary Club of Newnham
Rotary Club of Sorell
Southern Careers Expo Committee
St Helen's District Hospital
St Paul's Lodge No 88 TC
Tasmanian ASIC Women's Network
Tasmanian Cricket Association
War Widows Guild of Tasmania

Trust

Bessie Kable Trust

Everyday Angels

Mrs R Bonny
Mrs A Clarkson
Mr B Davidson
Ms E Evans
Mrs R Gostling
Mr & Mrs G Haas
Mrs M Keogh
Mrs M Knight
Mr S Mollard
Mrs W Noye
Mr K Paterson
Ms C Taylor
Mrs C Tennant
Mrs P Vallance

Individual

Mr & Mrs J Abbott
Hon D Adams MP
Mrs C Aird
Mr & Mrs P Albion
Mr D Baldwin
Mr H Baldwin
Ms M Barnden
Mrs B Bates
Dr T Beard
Mr & Mrs D Beath
Ms W Beveridge
Mrs R Bonny
Mrs J Bowden
Miss J Brabin
Mr & Mrs R Brain
Mr & Mrs C Brown
Mrs E Burgess
Mr P Byers
Mr S Catchpool
Mr G Cavanagh
Mr J Chalmers
Mrs G Chilcott
Mrs A Clarkson
Ms J Clough
Mr & Mrs T Coles
Mrs E Colman
Mrs D Cook
Mr B Cooley

Mr & Mrs T Cope
Dr & Mrs H Copeman
Mr & Mrs D Copping
Mrs T Coram
Mrs S Cordell
Ms J Cordell-Cooper
Mrs N Crew
Mr & Mrs I Crowden
Mr B Davidson
Mrs B Ditcham
Miss M Doering
Mr G Donnelly
Dr D Dubetz
Ms P Duggan
Mr L Dunn
Ms H Edington
Ms E Evans
Ms J Farrell
Dr & Mrs A Fenton
Mr & Mrs K Fenton
Mr H Foster
Mr & Mrs G Geard
Mrs A Gillard
Mrs M Gordon
Mrs N Gordon
Mrs R Gostling
Mrs W Gough
Mrs J Grimmond
Mr & Mrs G Haas
Mr B Haas
Mr P Hand
Mrs I Hardman
Mr & Mrs B Hatton
Mrs M Healy
Mrs E Hood
Mrs I Howe
Mr & Mrs G Hughes
Dr J Hunter
Mrs R Huxley
Miss H Jack
Mr & Mrs B Jackman
Mr & Mrs R Jones
Mr M Jones
Ms D Joyce
Mrs M Kays

The Lav Family
Mrs F Kenyon
Mrs M Keogh
Mr N King
Mrs M Knight
Mr D Lange
Miss E Lees
Mrs W Lees
Mr & Mrs D Lennox
Mrs L Leonard
Mrs J Longhurst
Mr & Mrs J MacDonald
Mr W Mansbridge
Mr I Matterson
Mr G McDermott
Mrs J McDougall
Mrs K McKeown
Mrs Y McNeice
Mr T McShane
Mr S Mollard
Mrs M Morris
Ms W Nichols
Mrs W Noye
Mrs S Oldham
Mr K Paterson
Mrs G Paton
Mr E Pettman
Mr E Phillips
Mr & Mrs A Plaister
Mr & Mrs J Ponsonby
Mrs F Pritchard
Mrs A Rand
Dr D Ratkowsky
Mr & Mrs G Raymond
Mr & Mrs A Rees
Mr & Mrs C Rennie
Mr & Mrs P & A Roach
Mr D Roberts
Mr J Rogers
Mrs J Rollins
Mrs E Ruthven
Ald E Ruzicka
Mrs V Sainty
Mr & Mrs C Saville
Mr A Sierink

Miss E Smith
Mr & Mrs H & N Smith
Mr C Sproule
Mrs M Stammers
Mrs P Stokes
Ms C Taylor
Mrs C Tennant
Mrs J Thompson
Mr L Trenham
Mr & Mrs D Trotman
Mrs P Vallance
Mr D Venn
Mrs S Vollprecht
Mr & Mrs R von Bibra
Mrs P Ward
Mr & Mrs J & F Watson
Ms L Weatherly
Ms M Whittle
Mr & Mrs L Wiggins
Ms C Wilson
Mr R Wilson
Mr R Wisbey
Mr & Mrs J Yates
Mr & Mrs M Yaxley
Dr B Young

Lasting Legacies

*Gifts of remembrance
have been made in
honour of:*

Mrs W Baird
Mr L Brittain
Mr R Cordell
Mr K Dennison
Mr P Glynn
Mr A Higgins
Mr R Holmes
Mr W Kenyon
Mr W Lever
Mrs B Littler
Mr A McKay
Mrs M Mundy

the Art of Christmas

The Menzies Research Institute wishes to acknowledge the following businesses for their support and commitment to the inaugural *Art of Christmas* event.

Supporters



Artery
Cascade Beverage Company
Eagle Plastics
Foot & Playsted Fine Printers
Hood Wines
Mansfield Builders
Osborne Images
Pumpkin Prints
Tasmanian Toner Cartridges

Art Sponsors



The Artists

Rebecca Adamczewski	Robyn Miller
Thomas Andersen	Rebecca Murdoch
Carmen Blyth	Leigh Oates
James Cuda	Georgina Pajak
Jan Dabrowski	Tom Samek
Cathy McAuliffe	Michael Weitnauer



Yes, I would like to help the Menzies Research Institute

I would like to make a one-off donation of \$_____

I would like to have monthly donations of \$_____ deducted from my credit card.

Please complete the following details:

Title: _____

Name: _____

Address: _____

Postcode: _____

Telephone: _____

Email: _____

Please accept my donation/s in the form of:

Cash Cheque/Money Order*

*Payable to the Menzies Research Institute

OR

Please debit my:

Visa MasterCard Bankcard

Credit Card No.: _____

Expiry Date: _____ / _____

Name on card: _____

Signature: _____

I/We wish that my/our donation be used for research purposes at the discretion of the Menzies Research Institute, unless a particular research purpose is stated as follows:

Thank you for your support.

All donations are directed to the Institute's research projects. All donations over \$2 are tax deductible.

Please post to:

Menzies Research Institute

Private Bag 23 Hobart TASMANIA 7001