

scope

From theory to therapy

For the past decade the Malaghan Institute has been focused on translating our basic biomedical research into real results for patients. Turning a novel theory into a therapy that is practised in the clinic however, is not a trivial process. Scientific breakthroughs cannot be forced or even predicted, as exemplified by the "accidental" discovery of penicillin by Alexander Fleming in 1928, which went on to revolutionise modern medicine.

The Malaghan Institute is recognised internationally as a leading immunology research Institute and we are proud of our excellent track record for taking our benchwork science into the clinic. Like Fleming, our scientists are skilled at recognising the potential of unexpected findings and this has played a critical role in shaping how we do things.

As a result of recent developments in our cutting-edge basic research programmes, we have been able to expand and diversify our clinical work and are proud to update you on these initiatives in this issue of Scope.

"Whilst the potential benefits of our research are global, our focus remains on improving the health and wellbeing of New Zealanders,"

Prof Graham Le Gros, Director.



Collecting blood for clinical research.

Cancer treatment options: surgery, drugs, radiation ... the immune system

An area of rapid growth at the Malaghan Institute is our cancer immunotherapy programme.

An early 20th century surgeon, Dr William Coley, is often credited with first recognising the potential of the immune system for treating cancer. He showed that he could control the growth of some tumours by injecting his patients with mixtures of killed bacteria (called Coley's Toxins) to stimulate an immune response. Although this was a rather crude approach to cancer treatment, the basic premise of cancer immunotherapy remains the same – to stimulate the immune system to recognise and destroy cancerous cells.

The Malaghan Institute is currently testing the feasibility and safety of using cancer immunotherapy in combination with chemotherapy to treat patients with glioblastoma multiforme (GBM), a highly aggressive brain tumour that is ultimately fatal. This Phase I clinical trial is being overseen by Dr Ian Hermans, in collaboration with Wellington Hospital neurosurgeon Mr Martin Hunn, and Dr David Hamilton from the Wellington Blood and Cancer Centre.



Wellington Hospital Neurosurgeon Mr Martin Hunn.

Supporting this clinical programme is Mr Hunn's PhD research at the Malaghan Institute into the identification of ways to direct the immune response against GBM tumour stem cells, which are resistant to current cancer treatments. It is the tumour stem cells that give rise to the disease and are thought to be responsible for tumour regrowth and metastasis, so their elimination is essential for complete remission.

Breaking news - Malaghan Institute joins effort to cure breast cancer

In the first of its kind for the Malaghan Institute, our considerable knowledge and clinical expertise in dendritic cell-based cancer immunotherapy will now also be applied to breast cancer.

This is a highly significant development because New Zealand has the third highest death rate from breast cancer in the Western world and new therapies are needed urgently if we are to turn this statistic around.

This initiative has been made possible by funding from the Breast Cancer Research Trust, Auckland, which is committed to finding a cure for breast cancer by 2018.

The goal of this latest research is to provide the necessary "proof of principle" that will lead to Phase I/II breast cancer vaccine clinical trials



Up-and-coming Malaghan Institute breast cancer researchers (from left to right): Dr Troels Petersen, Dr Melanie McConnell and Dr Heli Matilainen.

and the hope of an eventual cure for this devastating disease.

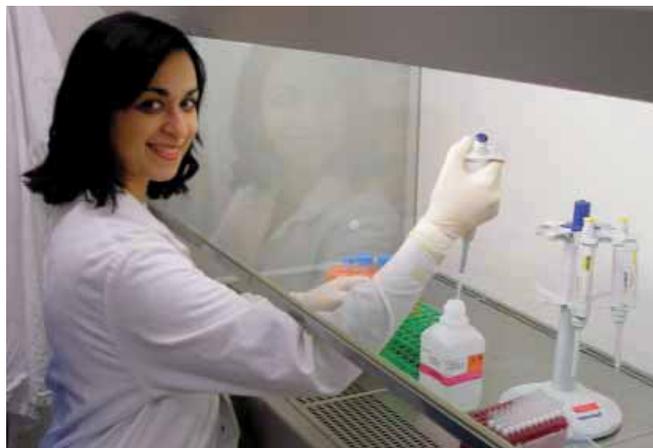
Protecting our children from Rotavirus

Complementing the Institute's cancer vaccine programme is the research of the Infectious Diseases Group, whose ultimate goal is to use vaccination to reduce the incidence of infectious disease in New Zealand.

One particular virus of interest is Rotavirus, which causes severe diarrhoea and vomiting in children under the age of two. Infection with this virus leads to approximately 1000 hospitalisations in this country each year and a vaccine is the most effective public health measure for reducing the severity of this disease.

Two rotavirus vaccines have been recommended for inclusion in the national immunisation schedule but have yet to be funded. Since the potential effectiveness of the vaccines could be influenced by the particular types of Rotavirus causing the infections, a national, multicentre rotavirus strain surveillance study was established in 2005 to monitor New Zealand epidemics.

Sample collection for this study was completed in 2008, the striking findings of which revealed a strong geographical link between the different



Rotavirus researcher Clarissa Chandrahasen.

rotavirus strains. For example during the first year of study the strains prevalent in the South Island differed significantly from those most prevalent in the North Island.

The reason for these differences is unknown, but this study will be essential for making informed decisions about the introduction of the rotavirus vaccines.

Why are some people more prone to gout?

The goal of our cancer immunotherapy and infectious diseases research is to turn on the immune system. To treat gout however, we need to turn it off.

Described as the "King of diseases and disease of Kings," gout is one of the most painful forms of arthritis and is caused by the build-up of crystals of uric acid in and around the joints. The immune system reacts to the crystals as if they were viruses or bacteria and it is the resulting inflammation that leads to pain.

In 2006 the Arthritis & Inflammation Group launched a Gouty Arthritis clinical study to determine why some individuals are more prone to developing gout than others. The study, which has now been completed, revealed that the immune cells isolated from gout patients may be 'primed' to

respond to gout causing uric acid crystals, releasing higher levels of inflammation-causing agents that contribute to disease onset and severity.

These results will provide the basis for the development of new preventative strategies aimed at blocking this priming phenomenon for improved management of gout.



Arthritis & Inflammation Group Leader Dr Jacquie Harper.

Latest News

Minister of Health visits Institute



Malaghan Institute Director Prof Graham Le Gros, Trust Board Chairman Mr Graham Malaghan and the Minister of Health, the Honourable Tony Ryall.

On 12 August 2009, New Zealand's Minister of Health, the Honourable Tony Ryall, visited the Malaghan Institute to see firsthand some of the positive outcomes of the Government's investment in health research. Although the Institute doesn't receive any direct Government funding, our scientists continue to compete well for contestable research grants from Crown agencies such as the Health Research Council of New Zealand.

Send us your email address

You spoke, we listened - the Malaghan Institute is moving into the 21st century with electronic

communications in 2010! This is a more cost effective way of keeping our supporters informed of the very latest in research updates, breakthroughs and current events. Please register your interest with Vicky Hale at vhale@malaghan.org.nz. For those who prefer hard copy versions of the Scope newsletters, do not fret, we will continue to post these to you.

Exciting new Auckland fundraising initiative

For those of you living in the upper North Island, you may be interested to know that we now have a Malaghan Institute representative based in the area. Over the next year, Annabel Lush (pictured below) will be making an effort to contact all of our supporters in the Northern Region, and would love to help you with any questions you might have about the Institute or our fundraising activities. Her office is based in Ellerslie and Annabel can be contacted at alush@malaghan.org.nz or (09) 525 2539.



Annabel Lush

The Ultimate Gift

The ultimate gift to show your support for the research of the Malaghan Institute, and our hope for a disease-free future, is a bequest in your will.

As a charity, the Malaghan Institute relies on the generosity of its supporters to continue our work, and a gift in your will is a way of ensuring our research into Cancer, Asthma, Arthritis, Multiple Sclerosis and Infectious Diseases will protect future generations from disease well beyond your lifetime.

To receive information about leaving a gift in your will and how these funds are managed, please tick the box below and enter your contact details on the reverse of this form.

Yes, please send me information on how I can leave a gift in my will and invest in a disease-free future



Malaghan Institute Open Day



Members of the public getting involved in Open Day activities.



To celebrate its 30 year history of pioneering research into the immune system and how it can be harnessed for the treatment of diseases such as cancer, asthma, arthritis, multiple sclerosis and infectious disease, the Malaghan Institute of Medical Research opened its doors to the general public of Wellington on Sunday, 9 August 2009.

This was the first Open Day of the Institute's Kelburn campus facility, with around 140 people taking advantage of this unique opportunity to see inside New Zealand's premier vaccine and immunology research centre. Individuals who attended the Open Day were given the chance to try their hands at being scientists at a range of activities. They were then taken on a tour of the Institute, where they were shown how we make our cancer vaccines.

The Malaghan Institute was officially opened on 26 July 1979, in rented premises at the Wellington School of Medicine, though its history dates back even earlier to the late 1960's. In 2004 the Malaghan Institute relocated to its current purpose-built facility at Victoria University of Wellington. During this time the Institute has grown from a base of around 10 individuals to its current size of over 80 scientists and support staff.

For the past three decades the Malaghan Institute has relied on the generosity of the public to help us realise our vision of more effective treatment options for New Zealanders affected by disease, and we would like to take this opportunity to thank all of our donors for their continued support.

This newsletter was generously supported by:



0800 MALAGHAN (0800 625 244) TO MAKE A CREDIT CARD DONATION



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(If you wish a stamp would help our efforts)

- I/We enclose a donation of \$ _____ .00
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Expiry __ / __ Signature

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Please send me information on how I can leave a gift in my will and invest in a disease-free future

Please call 0800 MALAGHAN (0800 625 244) to find out how to become a regular donor

What's been happening...

Just Paterson

Ian Paterson, his family and the team at Just Paterson Real Estate in Wellington have recently suffered a great tragedy with the loss of their wife, mother and mentor Sally Paterson. Out of this heartbreak has come a determination to support medical research at the Malaghan Institute in the hope that others will not have to suffer the loss of a loved one from cancer. The company has pledged their support by way of a percentage of their professional fees to come directly to the Institute for our cancer vaccine clinical trial and they are hoping to raise at least \$50,000 over the next twelve months. The scientists here at the Malaghan Institute would like to offer their sincere condolences and thanks to the family and team at Just Paterson Real Estate for their bravery in turning this sad loss into such a wonderful affirmation in memory of Sally.

Annual Report note

The Malaghan Institute has changed its financial year end to the 31st of July (previously 31st December). This means we will not be producing a full Annual Report until after August 2010, but in the meantime will have our updated audited accounts available from late October.

Golf Tournaments

Hawkes Bay - 30th October - Hastings Golf Club

Auckland - 30th October - The Grange Golf Club

Wellington - 13th November - Manor Park Golf Club

We are still looking for corporate sponsors for these tournaments so why not treat your staff or clients to a fantastic day out – as well as helping a great cause. **For more information please email Tanya: tfulcher@malaghan.org.nz**

Lollipop Appeal call for volunteers

We are in the planning stages for next year's lollipop street appeal and are always on the lookout for volunteers! If you live in the greater Wellington area (anywhere south of Otaki) and think you might have an hour or two to spare on Friday the 26th of February 2010, please contact Tanya on 04 499 6914 x811 or tfulcher@malaghan.org.nz

We would love to hear from you.



Spot Prize Winners

Last year the Wellington Friends held a function at the New Zealand Academy of Fine Arts with Terry (pictured above) and Ann Hall being the lucky winners of a spot prize draw for a luxurious Lexus for a weekend, plus accommodation at Parihua Resort in Martinborough. Terry and Ann wrote a lovely letter extending their grateful thanks to the Malaghan Institute, Lexus and the Parihua Resort, for a most enjoyable weekend.

Buzz Channel Surveys

Did you know that you can help the Malaghan Institute raise additional funds just by filling in an occasional online survey? Buzz Channel donates a minimum of \$1 each time a survey is completed by someone who has nominated the Malaghan Institute. All you need to do to help is visit www.buzzthepeople.co.nz and register – make sure to tell your family and friends too!