IMPACT

THE NEWSLETTER OF THE MACFARLANE BURNET INSTITUTE
FOR MEDICAL RESEARCH AND PUBLIC HEALTH | AUTUMN 2006

Incorporating Research for Life

VACCINES FOR CANCER?

A new approach to treatment

INSIDE THE LOCKER ROOM

Sexual health and risk behaviour in young men

BURNET & AUSTIN RESEARCH INSTITUTES MERGE

World-class researchers join together to form a new 'Super-Institute'

SPECIAL REPORT ENCLOSED

Burnet Institute
Incorporating
Austin Research Institute
Joining together for a healthier world

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INSIDE

DIRECTOR'S **REPORT**

Welcome to the first issue of *IMPACT* for 2006 which is now incorporating *Research for Life* – the newsletter of the former Austin Research Institute.

The Austin Research Institute merged with the Burnet Institute on 1 January this year, and is now operating as one organisation – Burnet Institute – across the Alfred Medical Research and Education Precinct (AMREP) and Austin Hospital campus.

The merger was a logical and strategic step given the complementary nature of the research programs of the two institutes, and the potential to develop and extend these programs into the future.

With an increased critical mass of 200 scientists and public health professionals, the creation of this new 'Super-Institute' will enrich our current research and public health programs, and enable us to tackle new disease challenges.

The Institute will continue to operate over two sites until 2007/08, when new laboratories adjacent to Burnet's existing building are expected to be completed, and staff from the Austin campus will join Burnet staff at AMREP.

As a result of the merger we have broadened our research to include diseases such as malaria, rotavirus and influenza; and enhanced our immunology research capacity in the development of vaccines for not only the major infectious diseases threatening the region, but also vaccines for cancers such as breast, lung and colon.

Benefits of the merger are already being recognised, with new research grants being awarded for the development of prevention strategies for avian influenza, with some of the work being performed collaboratively at both Burnet campuses.

The merging of the two institutes is a very exciting stage in the development of Burnet and it will enable us to pursue our innovative research and public health programs with a greater vigour leading to improved outcomes for a healthier world.

I would like to take this opportunity to welcome the staff and the many supporters of the Austin Research Institute to Burnet. We look forward to a very productive future together.

Professor Steve Wesselingh, Director

Burnet Institute
Incorporating
Austin Research Institute
Joining together for a healthier world

IMPACT is the newsletter of the Macfarlane Burnet Institute for Medical Research and Public Health Ltd (Burnet Institute) now incorporating the Austin Research Institute.
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Where special purpose appeals included in this newsletter are oversubscribed, excess funds will be allocated to projects of a similar nature at the discretion of the Director of the Burnet Institute. Contributors will be notified of the specific project that funds are redirected to.

Australian Government
AusAID

sexual health and risk behaviours

IN YOUNG MEN IN RURAL AND REGIONAL FOOTBALL CLUBS

Young men are not typically known for their candidness when it comes to matters relating to sex. Apart from the boastful comment here or there to a mate, discussing sexual health and behaviours is generally avoided as much as humanly possible. Or so goes the stereotype.

To develop strategies to help improve the health of young people in rural and regional Victoria, the Burnet Institute's Centre for Epidemiology and Population Health Research (CEPHR) implemented a study to investigate the sexual health and risk behaviours of young men in these areas. Judy Gold, a member of the team at CEPHR, undertook this investigation as part of her Honours program. And where better to track down young men then at local footy clubs…

The study titled: *Uncontested Possessions and Key Positions* investigated sexual health and risk behaviour in young males, a high-risk population that has been traditionally difficult to study. Football clubs provide an ideal opportunity to reach young males from non-metropolitan areas and outside the education system.

One hundred and eight young men, aged between 16 and 29, from four football clubs outside of metropolitan Melbourne were recruited for the project. Participants were asked to complete a 10-minute questionnaire on their sexual activity, knowledge and history of sexually transmitted infections (STIs) and alcohol and drug use. In addition, 92 participants provided a urine sample which was tested for three common STIs.

Participating clubs received two signed match-day footballs and each participant received a 'show bag' containing health information materials and condoms.

The project revealed 86 participants (80%) were sexually active, with 33 (39%) reporting new sexual partners within the past three months. Condom use in the past year was irregular, with only 21 (25.6%) of sexually active participants always using a condom, and 18 (55%) participants with new sexual partners only using condoms some of the time or never.

Three urine samples tested positive for chlamydia infection – a prevalence of 3.9% amongst sexually active participants. Thirty one participants (35.6%) were deemed 'at risk' of contracting an STI as they had two or more sexual partners in the past year or a new sexual partner in the past three months and did not use condoms all of the time. Interestingly however, only nine (29%) correctly perceived themselves to be 'at risk'.

The questionnaire showed that knowledge of STIs, HIV and hepatitis C was low, with many of the questions having 'Don't Know' nominated by a majority of participants. Although few had ever discussed sex or STIs with their doctor, 80 (74%) stated they would be comfortable with a yearly STI check-up.

Alcohol and other drug use were very common, with reported levels of short-term risky alcohol consumption exceeding national figures. High levels of alcohol consumption, as well as drug use in the past month, were more common among participants who had higher numbers of sexual partners in the past three months and the past year.

Dr Margaret Hellard, Head of the Centre for Epidemiology and Population Health Research said the results of the study would be provided to the Victorian Department of Human Services with the aim of improving information and services for young men in non-metropolitan areas.

Some educational information given to participants.

"Recently the Commonwealth Government nominated chlamydia control and prevention as a national STI priority area and identified that further information, such as prevalence and risk-factors in different sub-populations, is needed before a screening program can be introduced," Dr Hellard said.

The study methodology and results from *Uncontested Possessions and Key Positions* will help inform future research and the development of suitable public health chlamydia screening programs in non-metropolitan regions.

For more information on this project, contact Dr Margaret Hellard, Head of the Centre for Epidemiology and Population Health Research on + 61 3 9282 2111.

More than 88,000 new cases of cancer are diagnosed in Australia each year, and while the disease has relatively high awareness within the community, effective treatments are still to be found for many cancers. Professor Vasso Apostolopoulos, senior researcher, The Sir Zelman Cowen Research Fellow and NHMRC R Douglas Research Fellow has been part of the research team who over the past decade have made several major discoveries in cancer immunotherapy research.

Vaccines for Cancer?

A novel approach to prevention and treatment

Despite increasing survival rates for many common cancers, cancer is still the leading cause of death in Australia. More than 36,000 people die from cancer each year. One in three men and one in four women will be directly affected by cancer before the age of 75.

Scientists at the Burnet Institute are taking a novel approach to cancer prevention using vaccines which are providing hope for the development of a more effective, preventative strategy, and perhaps a less traumatic treatment program for those with the disease.

Professor Apostolopoulos, the head of Burnet's Austin campus Immunology and Vaccine Laboratory, with her team and many other colleagues at the Institute, are investigating how cancer cells are recognised or ignored by the immune system, and are developing techniques to stimulate immune responses to destroy specific cancer cells.

Work is focusing on the most commonly diagnosed adenocarcinomas such as breast, lung, colon, ovary and pancreas, where the outcome of this research will have the greatest impact. These are much more difficult to immunise against than virus-associated cancers, such as cervical cancer, where strong immune responses can be very effective as recently shown by Professor Ian Frazer in Brisbane.

The science behind the vaccine is based on the fact that these cancers frequently make very large amounts of a protein called mucin 1 (MUC1), which distinguishes tumour cells from normal tissues. Scientists can make a synthetic fragment of MUC1 and link it to the sugar molecule, mannan, to form a vaccine antigen (M-FP). The vaccine antigen stimulates T-cells (white blood cells) to destroy the cancer cells.

Professor Apostolopoulos said the development of the vaccine had the potential to revolutionise the treatment for people living with a range of cancers and opened up new possibilities for the use of vaccines as a cancer prevention strategy.

While it will be some time before the use of vaccines for the treatment and prevention of cancers becomes available, clinical trials are currently

Head, Immunology and Vaccine Laboratory (Austin campus)

PROFESSOR VASSO APOSTOLOPOULOS

Vasso started at the Austin Research Institute as a BSc (Hons) student, working there until February 1998 when she was awarded a CJ Martin Research Fellowship to work at the Scripps Research Institute in the United States. Returning to Australia in 2001, Vasso established the Immunology and Vaccine Laboratory where she is continuing her work on developing cancer vaccines.

Early this year, Vasso gave birth to her first child, Vivian.

Vasso's achievements have been recognised with over 70 major awards including:

- Young Australian of the Year Award 1997 (Victoria);
- Order of Brigadier General from the President of Greece 1997;
- Network Ten/Herald Sun Young Achiever of the Year Award 1997;
- Gold Cross of St Andrews 1998;
- Scientific Achievements Award from the University of Patras, Greece 2000;
- Victorian Tall Poppy Award 2002;
- Victorian Honour Roll of Women 2004 inductee;
- Australia Day Ambassador 2005.

The team at the Immunology and Vaccine Laboratory.

underway in a number of centres around Australia and overseas.

"Phase I clinical trials of the vaccine have been completed in patients with MUC1+ adenocarcinomas in Victoria, Queensland and Athens, and have shown promising results. On the basis of these results an expanded clinical trial is now in progress," said Professor Apostolopoulos.

Professor Apostolopoulos said if results from new clinical trials proved favourable the commercialisation of the vaccine could begin with treatments available to patients within five years or so.

The vaccine treatment approach is also being improved by using special hormones (cytokines) which improve the efficacy of the vaccine by further helping in the stimulation of the T-cell response against the cancer cells.

In addition, other research at the Institute is investigating the use of the vaccine with dendritic cells to stimulate a greater immune response to cancer cells.

Dendritic cells are the body's cells principally responsible for recruiting the immune system against invading microbes or mutated cells. Patients' dendritic cells are collected by a process known as leukapheresis and exposed to the M-FP vaccine. These vaccine-loaded cells are then injected into the skin of the cancer patients.

It has become clear during the past four years that this method and the specific features of the research strategy do stimulate a strong immune response in patients. However, it is too soon to assess if these immune responses provide a long-term benefit to assist in cancer treatment. The effect of the vaccine can be rapidly measured in ovarian cancer; this is one of the objectives of a current Phase II clinical trial to be completed within a year.

Using similar technology, research by several groups at the Institute is also being directed to develop vaccines against infectious diseases such as malaria, influenza, HIV and other common diseases such as diabetes and multiple sclerosis.

Much of the M-FP vaccine work undertaken in this program has been supported by the Austin Breast Cancer Foundation. The Foundation was initially established in 1994 by Bill Jane OAM to promote and assist in funding the breast cancer research undertaken at the Austin Research Institute – now part of the Burnet Institute.

The Foundation raises around $100,000 annually through several activities, largely its Bosom Buddies Ball, all proceeds of which are donated to the Institute to fund their breast cancer research projects. This year, the Bosom Buddies Ball will be held on Saturday 12 August. For more information about the Ball, contact Claire Gorst on +61 3 9287 0621.

Source: The Cancer Council Australia

news in brief

Spectacular!

Thank you to those who generously donated their old spectacles to be used by the elders in the tea plantations of Sri Lanka. One of the issues raised through working with the elders on our project is the high proportion of older people needing glasses. The donated spectacles have been taken to Sri Lanka where they will be processed and classified in Colombo and distributed to those who need them. More spectacles are welcome – please send or drop them into the Burnet Institute.

CONFLICT IN CONGO: world's deadliest humanitarian crisis

Nearly four million people have died since conflict began in the war-torn Democratic Republic of Congo, a nationwide household mortality survey by the Burnet Institute and the International Rescue Committee (IRC) has shown. The report was published in international medical journal, *The Lancet* on 7 January 2006.

The report was co-authored by Ben Coghlan, Brad Otto and Tony Stewart, all from Burnet's Centre for International Health, and by colleagues from the IRC. Lead author of the report, Dr Ben Coghlan says, "The war in Congo is the world's deadliest humanitarian crisis in the past 60 years. There has been little response from the international community to this disaster and international engagement remains completely out of proportion to humanitarian need."

Findings from the report indicate that improvements in security, coupled with the provision of humanitarian aid, would save hundreds of thousands of lives.


BEN COGHLAN

The report has received widespread attention in the international media, and the US has recently introduced a Bill to increase aid to the DR Congo. The report was instrumental in the launch of an humanitarian action plan by the United Nations and the European Commission to meet the needs of 30 million vulnerable Congolese.

Christmas Appeal Thanks

Thank you to all those who supported Burnet's Christmas Appeal. $23,000 has been raised to help support our peer education program in Laos. Funds raised will help those most vulnerable protect themselves from the spread of HIV and other sexually transmitted infections.

Clinical trial for new hep C treatment process


Prof Eric Gowans

A clinical trial will shortly get underway to test a new hepatitis C treatment process, developed by Professor Eric Gowans and his team at Burnet, which is likely to minimise the damaging outcome of the virus. Only patients who have failed conventional therapy will be eligible to enrol in the new trial.

The new treatment process will involve the maturing of a patient's dendritic cells (white blood cells) in the laboratory, and then transfusing the cells back into the patient.

"The current best practice treatment for the hepatitis C virus infection is a combination therapy with interferon and ribavirin that can eliminate the infection in approximately 50 per cent of individuals. However, this therapy is highly toxic and expensive, and patients need to be selected carefully," Professor Gowans said.

The project forms part of a collaboration between the Burnet Institute, Melbourne University, Monash Medical Centre, The Red Cross Blood Bank, The Alfred hospital and the Peter MacCallum Cancer Institute.

Avian flu research projects underway

New avian influenza vaccines which are heat stable and easy to administer are urgently needed to help protect Australia's poultry industry. Avian influenza is common in birds and can cause devastating outbreaks in chickens. The Burnet Institute, University of Melbourne, Monash University and Dow AgroSciences are involved in an Australian Research Council-linkage project working on the hypothesis that an oral, plant-made avian influenza vaccine will protect chickens from disease. Plant-made vaccines represent a rapid and feasible alternative to traditional egg-based production systems, with real potential to provide protection against disease.

STOP PRESS

The National Health and Medical Research Council has just announced funding in excess of $600,000 for four new Burnet Institute avian influenza research projects. The projects will focus on the development of new vaccine approaches for humans and the development of rapid diagnostic tests.

SPECIAL REPORT

Burnet Institute & Austin Research Institute merger

The merger of the Burnet Institute and Austin Research Institute officially took effect on 1 January 2006, bringing together two of Australia's leading research and public health institutes under one banner, the Burnet Institute. The Burnet Institute takes its name from Sir Frank Macfarlane Burnet, one of Australia's greatest immunologists who had an interest in virology and cancer.

The new Burnet Institute will be operating across two campuses – The Alfred Medical Research and Education Precinct (AMREP) and the Austin Hospital – for the next two years, with the Austin staff moving to the Burnet Institute's AMREP site in 2008, when new laboratories within The Alfred Centre are completed.

The merger of the institutes brings together two groups of world-class researchers, with significant benefits for research and development into infectious diseases, immunology and the development of vaccines.

The merger has won strong support from staff and other major stakeholders who recognised the need to build a greater critical mass of scientists to address the increasing concerns around a range of existing, new and emerging diseases.

In addition, the merger will result in reduced infrastructure costs and will satisfy the need for the Austin Research Institute staff to be housed in more appropriate purpose-built laboratories.

Burnet Institute
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> Bringing the two institutes together is more than just one plus one. It creates a 'Super-Institute' which enables us to attract and retain the very best people.

PROFESSOR STEVE WESSELINGH

Joining together for a healthier community

The Burnet Institute is now one of the top five medical research institutes in Australia and has consolidated its position as the leading infectious diseases research and public health group in the region.

The recent merger with the Austin Research Institute means that the Burnet Institute's current research capability will be significantly enhanced, and the new Institute will be well positioned to explore new innovative research and development opportunities, particularly in the development of cancer vaccines.

This is a merger of two leading research organisations with outstanding records, complementary cultures and a shared vision for a healthier world.

Director of the 'new' Burnet Institute, Professor Steve Wesselingh, says the 'Super-Institute' will employ nearly 300 researchers, doctors and public health professionals who will cover everything from laboratory-based virology and immunology through to public health programs.

"That makes us a very significant player in Australia's response to infectious disease threats – a position strongly supported by the State Government," Professor Wesselingh said.

"The motivation for the merger stemmed from the identification of the Burnet's need to play a more important role in vaccine development. While we had strong programs in virology, epidemiology and field programs, we needed to bolster our immunology capability.

"We recognised that researchers at the Austin Research Institute were strongly focused on how the immune system can be harnessed to attack diseases, such as cancer and the synergies between our two areas of expertise were obvious," he says.

That's the history – what about the future for the new Burnet?

Professor Wesselingh says the new institute will create greater opportunities for the translation of research into tangible public health outcomes.

"This is at the heart of what we do and what is expected of us as a global player."

Joining Professor Wesselingh is Professor Mark Hogarth, former Director of the Austin Research Institute (ARI) and now Head of the Burnet Institute's Austin campus and Director of Research Strategy and Commercialisation.

Professor Hogarth is very clear about the benefits of the new Burnet.

"This is an organisation profoundly interested in the development of new disease prevention and treatments. And that's what medical research must focus on.

"What is required these days to achieve the right outcomes," he says, "are critical mass, 21st century facilites and the ability to recruit the best researchers in the world. The new Burnet Institute offers all three.

"Our two organisations are perfectly complementary in the work that we do – the Burnet has a huge presence in virology and public health, while the ARI has a big presence in immunology and especially vaccine development for infection and for cancer.

"We can now use our combined strengths

1986
Macfarlane Burnet Centre for Medical Research established at Fairfield Infectious Diseases Hospital with Founding Director Professor Ian Gust and Founding Chairman The Hon Geoffrey Connard

1989
Institute becomes an incorporated entity

2001
Name changed to Macfarlane Burnet Institute for Medical Research and Public Health Limited (trading as Burnet Institute) to reflect the increase in public health programs undertaken by the Institute

2002
Burnet moves to The Alfred Medical Research and Education Precinct in Commercial Road, Prahran. Building officially opened by the Minister for Health, The Hon John Thwaites

2005
Austin Research Institute signs Memorandum of Understanding with Burnet Institute

2006
Austin Research Institute officially merges with the Burnet Institute on 1 January

to more effectively address some of the most pressing public health issues of our time such as avian flu, hepatitis, cancer, and the development of appropriate vaccines for people in developing countries," he says.

"The benefits of the merger affect not only the researchers but the community as a whole, both in Australia and the region. The combined strength of ARI and Burnet immunologists together with the Monash Immunology Department at The Alfred hosptial will be one of the largest gatherings of immunologists and 'vaccinologists' in Australia.

"We'll be able to make more efficient use of scarce resources, access a greater diversity of input into our research programs, and, most importantly, more rapidly translate research into improved outcomes for patients," Professor Hogarth says.

"The new Burnet is leading the way. It is one of the first mergers of two highly productive research institutes in Australia. The ready support of our staff, patrons and friends for the merger and the runs we are already putting on the board suggest that it will not be the last."

"This is a truly international Institute born and developed in Melbourne. We should be very proud of what we have created because it will make a difference to many people."

PROFESSOR MARK HOGARTH

Scientists focus on the future

The scientific staff of the Burnet AMREP and Austin campus recently held an intensive three-day retreat workshop to look at the integration of the two institutes and develop a new organisational structure for the scientific research programs of the new Burnet Institute.

The retreat workshop provided an opportunity for scientists from both campuses to mix, and get to know one another in a relaxed environment, and to actively plan the overall complex laboratory program structure to take the merged Institute into the future.

Professor Steve Wesselingh, Director of the Burnet Institute said the workshop was

invaluable and helped identify issues that were of concern to staff as a result of the merger.

"Planning the way forward is critical to the future success of the merged Institute. Obviously, bringing two groups of people together is sometimes difficult, and the workshop provided a great opportunity for a collaborative approach to the merger, with staff having significant input into the new laboratory organisational structure," he said.

1980
Research Centre for Cancer and Transplantation based at The University of Melbourne

1990
The Austin Research Institute, a company limited by guarantee, is incorporated on 1 June. Founding Director is Professor Ian McKenzie with Mr Harry M Hearn as Founding President and Chairman

1991
The Austin Research Institute transferred to Austin Hospital and is officially opened by Founding Patrons, Nobby Clark and Sir Edward 'Weary' Dunlop on 25 November

1995
Austin Breast Cancer Foundation established under Chairman Mr Bill Jane OAM

2004
The Sir Zelman Cowen Cancer Foundation launched

2005
Institute signs Memorandum of Understanding with Burnet Institute

PATRONS AND FRIENDS

"This is indeed an exciting opportunity for both institutes and the future of medical research in Australia."

MR JOHN LANDY AC, MBE, GOVERNOR OF VICTORIA

"…it is an exciting prospect for the future…"

RT HON MALCOLM FRASER AC, CH

"…a very sensible move…"

THE HON JUSTICE MICHAEL KIRBY AC, CMG

"I am sure that we, the Austin Research Institute, shall look forward to a very good future with the Burnet Institute."

RT HON SIR ZELMAN COWEN AK

"…this will combine the strengths of both organisations which will provide many benefits and should assist in ensuring the undertaking of further valuable scientific projects…"

MR JEREMY WURM, MANAGING DIRECTOR, BROOKER CONSULTING

Merger broadens research opportunities for scientists

A growth in the number of researchers studying the way the cells of the immune system interact and respond to invasion by foreign antigens will enable a greater understanding of infectious diseases. Research into diseases in which the immune system doesn't behave as it should such as lupus and rheumatoid arthritis, as well as some cancers, will be a major benefit of the merger between the Burnet Institute and Austin Research Institute. So too will, the translation of this research into tangible public health benefits for many resource-poor communities in our region.

Associate Professor Rose Ffrench, a senior immunologist with the Burnet Institute (AMREP), said the merger will enable the development of new technologies to advance the study of the immune system, especially in the way cells in the body respond to various challenges.

"Our ability to develop a greater understanding of basic immunology will allow us to further improve our research into the development of vaccines for a range of disease states," Associate Professor Ffrench said.

One of the major areas of focus of the merged Institutes is in the technology to modify antigens and Virus Like Particles (VLPs) to make them more immunogenic and produce a greater immune response in the body. A combination of these technologies will produce better vaccines.

Associate Professor David Anderson, Deputy Director of the Burnet Institute said "the merger of the two institutes is a real boost to the study of immunology and will also certainly broaden our ability to look at a greater range of infectious diseases such as malaria, rotavirus, and Respiratory Syncytial Virus. We will also continue our vital work on HIV, measles and the hepatitis viruses. He also added that the merger will bring further commercialisation opportunities which will enable the Institute's research to be developed into benefits for many communities.

Senior immunologists Associate Professors Rose Ffrench and Magda Plebanski discuss research opportunities.

Associate Professor Magda Plebanski, senior immunologist at the Burnet's Austin campus, agrees the merger has built a much stronger base to work from, with a greater ability to strengthen existing approaches to new and emerging diseases. She is enthusiastic about how her research into how infectious agents can trick and evade the immune system to survive in humans may be enhanced in future collaborative studies with Burnet's investigators who study the life-cycle and molecular biology of the infectious agent itself and evade the immune system, being enhanced by Burnet's advanced molecular analysis of infectious pathogen biology.

"Given the Burnet Institute has worked in many regions of the world where infectious diseases are a significant problem and has built a strong reputation, we are keen to extend our research programs and our ability to have an impact beyond our borders," Associate Professor Magda Plebanski said.

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It is estimated that half the world's population is under the age of 25 – the largest youth generation in history. Sadly, the majority of this generation will never have known a world without AIDS.


JO HAYTER

the importance of engaging young people

Every day 14,000 people are infected with HIV, and UNAIDS estimates that half the new HIV infections worldwide are among 15-24 year olds. Of those in this age group living with HIV, 63 per cent live in sub-Saharan Africa and 21 per cent in the Asia Pacific region. In Eastern Europe and Central Asia, more than 80 per cent of those living with HIV are under the age of 30. But statistics aside, why is it so important to engage young people around issues of risk, sexuality and HIV?

Around the world, young people are facing challenges that push them to the forefront of risk and vulnerability. What do we mean by risk and vulnerability? Risk taking and experimentation with sexual behaviour, alcohol and drugs – all of these are seen as a common 'rite of passage' for many young people. Without the knowledge and skills to protect themselves, what is considered by their peers as 'normal' behaviour can quickly become high-risk for young people especially in terms of their health.

Lisa Renkin, International HIV and Development Specialist with the Burnet Institute's Centre for International Health, says in many resource-poor countries around the world there are multiple reasons why young people are particularly vulnerable.

"It's not simply a sense of freedom or curiosity that can lead young people to engage in risky behaviours. Unemployment and an uncertain future can drive youth to experiment – often unsafely – with relationships, sexual behaviour, alcohol and drugs.

"Poverty can force both young women and men into circumstances where earning money takes precedence over protecting themselves. Sex work or sex for favours carries the risk of infections such as HIV, particularly when negotiation for safer sex with someone older or more powerful is difficult," she said.

In many countries, sex and drugs can be taboo topics, where basic education on sexual health and HIV is seen as inappropriate or is simply not available – in some cases, condoms or family planning advice are only made available to married couples.

While youth represents a significant percentage of those being affected by HIV, young people also represent the biggest hope we have for battling the epidemic. Lisa says that for information to translate into behaviour change, it needs to be communicated in ways that are creative and appropriate – culturally, socially and relevant to youth. Messages need to be accessible to young people – using methods that young people can or want to relate to and accept.


MIKE TOOLE

Through Burnet's peer education programs we design brochures and posters highlighting the risks of HIV and STI transmission which are in the local language for the local people. In the Lao PDR, Burnet's young peer educators design and implement their own program interventions to work with young people in their community. Given the freedom to respond to HIV in their own way, these young people have developed innovative and culturally effective methods to mobilise their peers around responding to the threat of HIV. Some of the activities include: outreach in discotheques and beer halls; involving dance troupes, games and quizzes; radio spots on popular radio programs for young people; health education camps; vocational training; and sponsoring of soccer and other sporting teams.

"Peer education is one of most successful models for reaching young people, where youth are engaged in designing and delivering interventions for their own peer group. The Burnet Institute realises this and understands that continuing to work with young people to prevent the spread of HIV and other sexually transmitted infections is vital," Lisa said.

The Institute is working with vulnerable groups – including young people – in the Lao PDR, the Pacific, Papua New Guinea, Myanmar, Vietnam, Indonesia, Tibet and Mozambique.

This year, the Burnet Institute will be scaling-up its global peer education program. If you would like to make a donation please contact Gillian on +61 3 9282 2207.

Tibet, China | ERIKA JACOBSON

The Burnet Institute office in Tibet, China has been actively involved in the dissemination of HIV awareness information within the Lhasa community since 1999. With a team comprising of five national staff and one expatriate program manager, our work centres on intensive outreach to vulnerable groups and the continued production of behaviour change communication materials in Tibetan and Chinese languages. Our range of materials is always growing and thanks to recent support from the Canada Fund we have added six new products to our selection of HIV awareness materials. We now have a sexually transmitted infections (STIs) booklet tackling the five most common STIs in the region, an HIV and hygiene booklet aimed at sex workers, a condom poster that has been distributed for use in schools, and a set of playing cards with HIV information. We also widely distribute condoms and lubricants.

The Burnet office has strong links with government agencies, especially the health bureau, and on their request we have recently started to hold presentations to members of the general public. These presentations have been well received and we've been invited to continue disseminating sexual health, STI and HIV information to the public.


ERIKA JACOBSEN

Women at a family planning training workshop receive Burnet's HIV awareness booklets.

In November last year, over 100 people from government and non-government agencies attended a seminar organised by the Burnet office. It was probably the first of its kind in Lhasa and talks were delivered by Burnet's technical experts, Dr Wendy Holmes, Dr Chris Morgan and Dr Damien Morgan. This was followed the next day with a World AIDS Day outreach in the streets of Lhasa. We are proud to say that most of the materials used by government agencies about HIV awareness are developed and produced by Burnet.


ERIKA JACOBSEN


DAMIEN MORGAN

FAR LEFT: Wangmo giving a condom demonstration.

LEFT: Burnet Tibet team – from left to right: Project Officer Choedak; Project Officer Wangmo; Program Manager Erika Jacobson; Finance and Administration Officer Kelsang Dikye; and front, Project Coordinator Tenzin Norbu.

Mozambique | ROBYN WHITNEY

Our capacity building work with Mozambican non-government organisations (NGOs) is progressing very well, despite the unexpected departure of our Country Representative, Lindsey Breslin, in December due to her father's ill health. Lindsey made a significant contribution to Burnet's work in Mozambique and we miss her very much. She reports life back in the United States and Colorado takes a bit of getting used to after many years of living and working in tropical Southern Africa.

Our new Country Representative, Dr Paulo Proto de Souza, a Brazilian public health clinician with many years experience in HIV programming, will arrive in Maputo in early April. Paulo is currently working in Papua New Guinea and is looking forward to returning to Mozambique after thirteen years. Paulo was the World Health Organization representative in Mozambique during a very difficult time in the country's history. We are looking forward to working with Paulo over the next three years to further increase the capacity of local organisations to respond to the increasing HIV epidemic in Mozambique.

Burnet Mozambique staff.

Mozambique has high HIV prevalence and in the central provinces where Burnet works it is estimated that close to 17 per cent of the adult population and around 21 per cent of pregnant women are HIV positive. Statistics on rates of infection are conservative estimates only as surveillance is limited and deeply entrenched stigma and discrimination within communities continues to prevent many people from being tested and seeking treatment.

Local civil society organisations are relatively new in Mozambique and lack basic organisational and technical skills to both mobilise resources and effectively deliver quality prevention, care and support services to HIV-affected communities. The Mozambican government cannot respond to the epidemic comprehensively without the involvement of strong civil society organisations. Therefore, Burnet's five-year capacity building program focuses on building both technical and organisational skills of local NGOs. We are currently in the process of training a core group of local trainers and mentors who will soon commence training programs for NGOs. Training on its own would be pointless. Therefore, Burnet's approach involves the trainers and mentors continuing to provide ongoing technical support (during and after training) as the NGOs start to seek funding and apply their newly acquired skills in HIV responses and organisational management. By supporting the development of local organisations, Burnet is assisting key community organisations to gain the practical skills they need to access their own resources and implement HIV prevention, care and support programs to meet the increasing needs of children, families and communities in the hard-hit central provinces of Mozambique.

TALKING HEADS

Professor Mark Hogarth, Head,
Helen Macpherson Smith Trust Inflammatory Diseases Laboratory

Our laboratory has made major discoveries looking at the way white blood cells, which normally protect us from infection, can also become unregulated and cause diseases such as rheumatoid arthritis and lupus, where the immune system attacks the body it is supposed to protect.

Our studies focus on Fc receptors which are one of the most important families of molecules in the immune system. They are found on the outside of white blood cells and have many roles, normally controlling immune responses and eliminating bacteria and viruses. Our studies on the role of Fc receptors in disease focus on two distinct areas – first, where the Fc receptors play a key role in the destruction of tissues such as joints and kidneys by an aberrant immune system in autoimmune diseases like rheumatoid arthritis and lupus. Our second area relates to infection. Fc receptors are important in resistance to infection – some bacteria and viruses cleverly try to 'hijack' these receptors in a bid to avoid their own destruction; they include dengue virus, Ross River fever virus and bacteria such as golden staph. The Fc receptors are also important in resistance to HIV infection. We are studying how the 'hijacking' occurs and ways to prevent it.

Our studies over the last 15 years have involved multidisciplinary teams of scientists, doctors and students from around the world. We have also been involved with commercial partners which has led to the development of possible new treatments for rheumatoid arthritis, and we are continuing to expand our studies to apply this knowledge to the development of treatment and vaccines for lupus, cancer and infectious disease.

working partnerships

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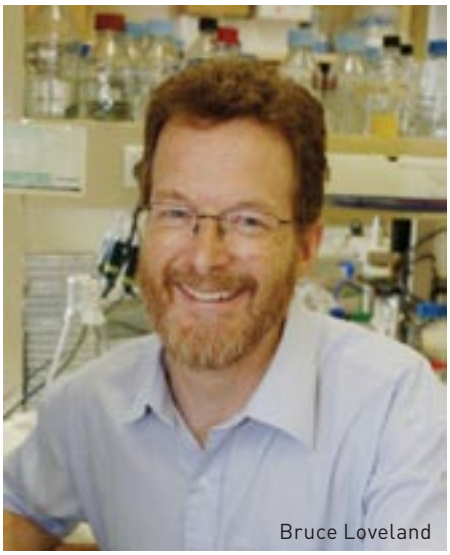
Clinical trials – Burnet Austin campus, Austin Hospital, Centre for Blood Cell Therapies and PRIMA BioMed Ltd

Since 2001, Bruce Loveland and his Austin Research Institute (now Burnet Institute) colleagues and laboratory group have been collaborating with clinicians and cancer trial nurses at the Austin Hospital, and with the Centre for Blood Cell Therapies (CBCT) at the Peter Macallum Cancer Centre. The research is focused on translating laboratory studies of human immunity in cancer to clinical trials. This work has largely been funded by the biotech company, PRIMA BioMed Ltd. It is clear that immune responses are important in whether cancer appears and progresses, or regresses. However, the immune system walks on a knife-edge between being effective and being overwhelmed. This collaborative work took data from laboratory studies of specific human white blood cells (monocyte-derived dendritic cells) and their ability to be loaded with protein antigens into Phase I and Phase II trials. It also investigated the immune responses cancer patients had to this vaccine antigen and how these responses could be measured using assays of antibody and T-cell-mediated immunity to follow clinically relevant changes. The research has provided a strong foundation for better basic research and potential for further translation to clinical trials and perhaps commercialisation.



Bruce Loveland

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Simon Baldwin, Rapid Assessment of Drug Issues, Myanmar

For three months in 2005, Simon Baldwin from the Burnet Institute's Centre for Harm Reduction lived and worked in Myanmar. Simon worked with CARE, the Asian Harm Reduction Network and Medecins du Monde, to design and implement a rapid assessment of drug use in 18 townships. Simon's work involved training 25 local researchers in how to collect data about drug use and risk behaviours associated with the spread of HIV. Researchers were also trained in how to identify and design appropriate interventions which can be quickly implemented to prevent further spread of HIV.

Injecting drugs using unsterile equipment remains a major driving force behind the HIV epidemic in Myanmar, and right across Asia. Because HIV can spread extremely quickly among people who inject drugs, it is important that researchers don't spend large amounts of time documenting risk behaviours using sophisticated and timely research designs. Rather, the principle of a rapid assessment is to use quick, efficient and the least technical methods to collect enough information so that interventions can be quickly developed.

The implementation of the rapid assessment occurred in three phases. Firstly, the Burnet Institute's Centre for Harm Reduction was responsible for designing the methodology used in the rapid assessment. Following this, a series of trainings were conducted with staff from partner agencies in the techniques required to conduct the rapid assessment.The third phase involved each partner agency conducting a series of rapid assessments in different townships. Eighteen township sites, chosen from a list of HIV hot-spots, were selected to participate.

LOKENDRA BUBU RAI

Local researchers trained to undertake the rapid assessment in Myanmar.

The results from the rapid assessments will be used to continue Burnet's efforts to reduce the burden of HIV in Myanmar.

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Burnet and Helen Macpherson Smith Trust

The Helen Macpherson Smith Trust has provided funds for the Burnet Institute to engage Dr Ian Birchall to investigate philanthropic funding opportunities in the USA to limit HIV transmission in the resource-poor regions of Papua New Guinea (PNG) and the South West Pacific Islands. The proposed collaboration between Rush University Medical Centre, Chicago, the Burnet Institute, and the PNG Institute for Medical Research will build upon basic immunological and virological research to produce point-of-care diagnostic tests and intervention strategies for a range of sexually transmitted infections.

As current test procedures are expensive, require modern laboratory facilities and are inappropriate for use in resource-poor environments, the proposed consortium will employ its proven ability to translate new biodetection technologies into economical, rapid, easy to perform and read diagnostic tests designed for use in primary care clinics.

events

STAFF SPOTLIGHT
Magdalena Plebanski

Sex, Drugs and Rock n' Roll

ANNE MASON

Burnet was at the Melbourne Big Day Out again this year, surveying young people as part of the Centre for Epidemiology and Population Health Research's study investigating sexual behaviour and drug use in young people. Almost 1000 surveys were completed, which will form the basis of an 18-month study looking at the impact of SMS and email messaging on the sexual risk behaviour of young men and women.

Anaconda

More than 900 competitors took part in the Anaconda Adventure Race, of which the Burnet Institute was the official charity partner. Five dollars from every corporate team entry, along with funds raised from a raffle and auction were donated to Burnet.

Burnet Open Day

Ever wanted to go behind the scenes of a research lab? Or wondered how an overseas development agency works? Burnet is planning an Open Day on Sunday 21 May – check our website for details or call + 61 3 9282 2240.

Melbourne World AIDS Day Concert

At the Melbourne World AIDS Day Concert last year, the World AIDS Day flags were flying high in the heart of Melbourne's Federation Square. From noon until well after nine on Sunday 27 November, bands and special guests entertained and informed the crowd who kept up a steady flow throughout the day. The concert was officially opened by Burnet patron, Senator Natasha Stott Despoja and Burnet's Director, Professor Steve Wesselingh. Around 500 names were added to the World AIDS Day 'I Promise' petition, urging government to increase HIV funding for countries overseas. For info on our next concert, keep an eye on worldaidsday.com.au throughout the year.

NORMAN McCOURT

Like the nightmare flat mate, pathogens make themselves at home in our bodies, moving the furniture around so it doesn't even feel like home anymore… Indeed, vaccines designed to act in a healthy host often fail to eliminate pathogens that have evolved ways to sabotage the immune system.

The adaptive interplay between host and pathogen has fascinated me since starting infectious diseases/immunology research some 20 years ago in Mexico.

I moved to the UK for my PhD, and as a Postdoctoral Fellow in Oxford, during a field trip in The Gambia, West Africa, I was convinced by the eminent Australian immunologist, Ian McKenzie, to come here: vibrant immunology, great city… How could I resist?

I feel fortunate as I see my team duck behind benches as I prowl for 'beautiful data'. It is not only fascinating to try to outwit pathogens to design vaccines, but vaccines are critically needed. Third World killer diseases of children such as rotavirus and malaria, as well as diseases of the elderly such as Respiratory Syncytial Virus (RSV) and cancer affect millions. We work on defining mechanisms of immune evasion by pathogens, as well as developing practical vaccine approaches. Our simple, nano-vaccine approaches are currently being used in collaborations working on Alzheimer's and foot-and-mouth disease.

My scientific roots in Poland, Mexico, England and Africa commit me to try to prevent human suffering. Here in Australia, I make my stand in the war against pathogens…and cheeky flat mates!

EDUCATION 2006

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The Centre for International Health coordinates the Graduate Diploma of International Health, the Master of Public Health – International Health stream and offered for the first time in 2006, the Master of International Health (Monash University).

Courses and workshops run by the Centre for International Health cover topics including: primary health care, HIV strategic planning, behaviour change, applied research, health information systems and refugee health.

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The Centre for Harm Reduction also coordinates two short courses – Harm Reduction: Controlling HIV in drug users, and the Global Impacts of Drug Use, both in conjunction with the University of Melbourne. These courses draw on the expertise of staff across the Institute.

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For detailed information on these courses visit our website www.burnet.edu.au

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Burnet has a number of PhD and Honours students from a variety of universities, both locally and internationally. Burnet also hosts Bachelor of Science undergraduate students as part of their coursework.

12th Annual Bosom Buddies Charity Ball

Saturday 12 August 2006 | Savoy Ballroom, Grand Hyatt, Melbourne

Since 1994, the Austin Breast Cancer Foundation has raised much-needed funds to support vital breast cancer research at the Austin Research Institute. Under the leadership of the Chairman, Mr Bill Jane OAM, the Foundation's voluntary committee raises in excess of $125,000 each year from the annual black tie Bosom Buddies Ball.

We extend a special invitation to you to participate in and support this year's Annual Bosom Buddies Ball – supporting cancer research at the Burnet Institute incorporating the Austin Research Institute.

Proudly sponsored by Network Ten.

Black Tie event | To make a booking please contact Claire Gorst on +61 3 9287 0621.

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