Addressing high-risk behaviours
Welcome to the winter edition of IMPACT. At the time of writing this column, we are in the midst of developing Burnet’s five-year strategic plan. This is an important time for the Institute as we review our past five years and plan for our future.

Since 2005, our budget and staff numbers have more than doubled; we have merged with the former Austin Research Institute; we have built and now occupy our new building; and have emerged in a strong financial position. Our international public health programs now make up almost half of the Institute’s workload and our laboratory research programs have expanded significantly to encompass a broader spectrum of diseases.

Among all this change and growth, our basic mission remains fast and that is to achieve better health for poor and vulnerable communities in Australia and internationally through research, education and public health.

While addressing health problems of these communities in many different ways, we will focus especially on growing and expanding our research and public health programs in infectious diseases such as HIV, hepatitis viruses, influenza, malaria, tuberculosis and other sexually transmitted infections. We will also emphasise social and behavioural studies, particularly those involving alcohol and drug use and their link to the risk of infectious diseases.

Importantly, we will continue to provide research across a broad spectrum of health issues that face society. In this edition of IMPACT we discuss the important topic of safe injecting rooms. Burnet was commissioned to undertake a study on the potential and viability of establishing a supervised injecting facility (SIF) in Melbourne by the Yarra Drug and Health Forum. The research revealed substantial evidence that providing such a facility has positive benefits for both the community and those who inject. This is an issue that requires open debate with research and evidence available to make appropriate decisions.

This is also an important time for the Institute with the 50th anniversary of Sir Frank Macfarlane Burnet (after whom the Institute is named) receiving his Nobel Prize for Medicine together with Sir Peter Medawar in 1960. The legacy Sir Frank left is enormously significant with breakthroughs in our understanding of infectious diseases and the immune system and for his contribution to disease prevention and treatment in many different settings. Our next issue of IMPACT will feature the life and work of Burnet and we look forward to celebrating his achievements later this year.

I hope you enjoy reading about this and much more that has gone on at Burnet in recent months.

Professor Brendan Crabb,
Director and CEO
Parliamentarians honour Sir Frank Macfarlane Burnet’s Nobel Prize

2010 marks the 50th anniversary year of Sir Frank Macfarlane Burnet receiving his Nobel Prize for Medicine. On Monday 31 May, Federal Parliamentarians, representatives from the NHMRC, AusAID, and the Department of Health and Ageing gathered at Parliament House in Canberra to celebrate the anniversary and learn more about the work of the Institute named in his honour.

More than 80 guests heard from speakers including: the Hon. Mark Butler, MP, Parliamentary Secretary for Health; the Hon. Julie Bishop, MP, Deputy Opposition Leader and Shadow Minister for Foreign Affairs; together with Burnet Institute representatives Professor Brendan Crabb, Director and CEO; Chair, Mr Alastair Lucas and Board members Ms Natasha Stott Despoja and the Hon. Barry Jones, AO.

The Governor of Victoria launches the Sir Zelman Cowen Foundation

More than 100 guests gathered at Government House on Tuesday 8 June to celebrate the launch of the Sir Zelman Cowen Foundation for Medical Research and Public Health. The Governor of Victoria, and Patron-in-Chief of the Burnet Institute, Professor David de Kretser officially launched the Foundation, and Fellow Patron the Rt Hon. Malcolm Fraser, AC, delivered the keynote address.

Funds raised by the Foundation will enable the Institute to attract and pay for leading scientists and public health professionals through research fellowships.

Director of the Foundation, Ms Ruth Rosh said, “Many of these gifted young people are forced to seek work overseas purely because funds are not provided for their research during the early to mid part of their career. These scientific ‘stars of the future’ need our support and encouragement without having to relocate overseas and contributing to Australia’s ‘brain drain’”.

If you would like to know more about the Foundation, please contact Ruth at ruth.rosh@burnet.edu.au or call her on (03) 9282 2111.

Gust-McKenzie Medal Awarded

Associate Professor Paul Dietze, Head of the Alcohol and Other Drug Research Group at Burnet’s Centre for Population Health, is the 2010 recipient of the Gust-McKenzie Medal. Upon receiving the medal at the Institute’s Annual General Meeting in May, Paul thanked his team for their contribution to his win. Paul has been with the Institute for three years.

The medal is named in honour of the founding Directors of the Burnet and Austin Research Institutes, Professor Ian Gust, AO, and Emeritus Professor Ian McKenzie, AM. The award is given to a Burnet mid-career staff member in recognition of excellence in research and/or public health.

Professor Ian Gust, Professor Ian McKenzie, Professor Brendan Crabb with Associate Professor Paul Dietze – 2010 Gust-McKenzie Medal winner.

The Hon. Julie Bishop, MP, Deputy Leader of the Federal Opposition and Shadow Minister for Foreign Affairs (left), with The Right Hon. Baroness Amos, PC, British High Commissioner to Australia.

Brendan Crabb, Lady Cowen, The Governor, David de Kretsa, Dame Elizabeth Murdoch (seated), Gilda Tachedjian, Mrs de Kretsa, Rt Hon. Malcolm Fraser, Alastair Lucas.

OUR MEDICAL EQUIPMENT APPEAL: Thank you to everyone who has so generously supported our Medical Equipment Appeal for urgently-required autoclave machines, a critical component in sterilising our research laboratory equipment and reagents. To date nearly $131,000 has been raised. For more information about supporting our Appeal, please visit burnet.edu.au.
Supervised injecting facilities: do they work?

A decade has passed since supervised injecting places were last seriously considered (and then rejected) as an option for Victoria. But the debate – and, more significantly, the evidence – has moved on from the days of the Bracks government. It is now timely for a considered and dispassionate review of this harm-reduction option.

Lotte believes Sydney’s supervised injecting room saved her life. “I’ve overdosed before, when I was living rough... was lucky, my mate called the ambos and they brought me round.” She’d injected in a hurry, in a car, concerned that police were close by. The heroin was too strong and she passed out.

Now she attends the Sydney facility, where she can take her drugs in a secure environment, with medically trained staff close by. “They give us clean needles and teach us safe ways to inject. They talk to us like people, not junkies, tell us where we can get help for other stuff. If I hadn’t gone there, I’d be dead on the streets, I know I would.”

Supervised injecting rooms have been around for 20 years, providing clean and safe places for drug users to inject. Of the 76 around the world, mainly in Europe, Scandinavia and North America, there’s just one in Australia, in Sydney’s Kings Cross.

The evidence points to three main conclusions: the facilities reap benefits for individual and public health; they render improvements in public amenity and community well-being; and they need to be part of a broader harm-reduction response.

The facilities attract the most marginalised and stigmatised drug users: the homeless, sex workers, former prisoners, frequent injectors, and poly-drug users. Of Sydney’s clients, three-quarters had never previously been in contact with a drug agency, and these are the ones most likely to be engaged in high-risk activities, such as needle sharing. For them, life on the street is unhygienic and often dangerous, leaving them vulnerable and liable to injecting drugs in dirty, rushed conditions, where overdoses, needle sharing and injuries linked to poor injecting techniques are everyday realities.

Evidence from across the globe shows that supervised injecting rooms can ameliorate these problems. Sydney’s has attracted more than 12,000 vulnerable clients in nine years and supervised more than half a million injections: injections that took place off the streets, away from the public, with safe disposal of injecting material.

A Burnet Institute study found that two-thirds of injecting
THEY GIVE US CLEAN NEEDLES AND TEACH US SAFE WAYS TO INJECT. THEY TALK TO US LIKE PEOPLE, NOT JUNKIES, TELL US WHERE WE CAN GET HELP FOR OTHER STUFF. IF I HADN’T GONE THERE, I’D BE DEAD ON THE STREETS, I KNOW I WOULD.”

Lotte
OVERDOSE IS A HUGE RISK TO DRUG USERS ON THE STREET, AS LOTTE’S EXPERIENCE SHOWS. THE SYDNEY FACILITY HAS DEALT WITH 3,500 CASES OF OVERDOSE, WITH NO FATALITIES.”

If we factor in the primary healthcare these facilities offer, alongside problems deflected through teaching injecting techniques, then the cost benefits and returns on investment increase. Some European facilities have ‘contact cafes’ where drug users can relax with staff and peers, receiving health promotion, counselling and much-needed assistance can occur.

KEY FINDINGS

Burnet Institute was recently commissioned by the Yarra Drug and Health Forum to undertake research into the viability of supervised injecting facilities for Melbourne. The key findings of the report, generated through a review of published and unpublished literature and key expert consultation, are highlighted below.

SUPERVISED INJECTING FACILITIES IMPROVE:

- Individual and public health
- Public amenity
- Comprehensive harm reduction.

MELBOURNE CURRENTLY HAS:

- Prominence of public injecting
- High rates of hepatitis C amongst injecting drug users
- High occurrence of serious and potentially serious injecting-related injuries and disease amongst injecting drug users
- High numbers of fatal and non-fatal overdoses occurring in public places
- Community concern around publicly discarded injecting equipment.

APPROACHES TO SUPERVISED INJECTING FACILITIES REQUIRE:

- Political and community support
  – Strong relationships with other service providers such as local government, community and welfare services are essential
  – Police relationships are particularly important
  – Strong supporters and champions needed in government
  – Community understanding of the role and purpose of a Safe Injecting Facility (SIF) built through education and participation.

- Focus on rigorous evaluation
  – Explore impact on public health via overdose and disease prevention
  – Calculate cost savings to health and emergency services
  – Review acceptability by target group and access to, and utilisation of, the service
  – Monitor provision of referrals to drug treatment.

- A range of accessible services
  – Employment of a range of workers including nurses and social workers
  – Provide fixed site and outreach services
  – Locate SIF near existing drug markets
  – Provide an integrated range of health and welfare services
  – Provide spaces in which client engagement for referral and other assistance can occur.
trust building. A fifth of Sydney’s clients were referred to health and social services, including drug treatment.

What of concerns over a ‘honey-pot’ effect? The Sydney R
\section{Resuscitation room.}

Development of an advocacy strategy will be imperative in gaining community and political support:
- Build on current media attention on needle and syringe programs which has followed the release of the evaluation of the cost-effectiveness of needle and syringe programs in Australia (NCHECR, 2009)
- Review political climate to determine potential for renewed support for a SIF following former Premier Steve Bracks’ comments that a SIF would not be funded during the life of the Victorian Labor Government.

Investigating the cost-benefit of a potential Melbourne SIF:
- Determine whether funding a SIF would impact negatively on existing funding for current harm reduction services
- Develop a minimum standard for operations which details the funding that would be required to run a SIF in Melbourne.

Investigating the viability of integrating a SIF with existing harm reduction and treatment services:
- Explore locations such as needle and syringe programs and primary health care settings as potential sites
- Explore at least one possible pilot site and seek agreement for participation in a pilot service.

If you would like to know about this report please contact Robert Power on (03) 9282 2111.
Adolescent girls and family planning: understanding the barriers

Adolescent pregnancy is an important and far-reaching public health issue. Dr Natalie Gray, Women’s and Children’s Health Specialist from Burnet’s Centre for International Health (CIH), tells us about a program aimed at increasing adolescent girls’ access to family planning in Asia and the Pacific. Through Compass, the AusAID funded Women’s and Children’s Health Knowledge Hub, CIH is undertaking research to provide governments, policymakers and non-government organisations with a better understanding of the barriers adolescent girls face in accessing family planning information and services, and how they can be overcome.
Adolescent pregnancy is common throughout Asia and the Pacific; for example, 25 per cent of women report giving birth to their first baby between the ages of 10 and 19. In Lombok, Indonesia, this figure is closer to 50 per cent; in Bangladesh, it is 60 per cent. For most of these girls, early marriage and social pressure to prove their fertility, combined with limited knowledge of family planning and poor access to contraception, leave them with little choice but to commence childbearing while they are themselves still children.

Pregnancy has dire consequences for many adolescent girls. Girls aged 15 to 19 are twice as likely to die from causes related to pregnancy and birth as women aged 20 years and older; girls aged 10 to 14 years are five times as likely to die. Globally, more adolescent girls die as a result of pregnancy and birth than from any other cause.

For every girl who dies, many more suffer terribly. Obstetric fistula, which leads to incontinence and social exclusion, is more common in adolescents; and babies born to adolescent girls are more likely to die during their first month of life than babies of adult women. Many adolescent girls who fall pregnant are also forced to leave school, reducing their education and limiting their livelihood opportunities. This increases their dependence on their husbands and families, and reinforces the cycle of poverty of their families and communities.

The research done by the Women’s and Children’s Health Knowledge Hub has already provided interesting results. A review of data from nine countries – Bangladesh, Cambodia, Indonesia, Papua New Guinea, The Philippines, Solomon Islands, Timor-Leste, Vanuatu and Vietnam – has revealed that, compared with adult women, adolescent girls are less likely to use modern methods of contraception, know where to get a condom or believe that they could actually get one, discuss family planning with a community health worker or at a clinic, or be exposed to family planning messages in the media.

While much is known about the barriers, few interventions to overcome them have been evaluated in Asia or the Pacific. To address this, Burnet’s CIH is currently currently undertaking research in partnership with Wan Smol Bag, a local non-government organisation providing reproductive health information and care to young people in Vanuatu. CIH’s Dr Elissa Kennedy and David Humphreys are also contributing to this large research project which asks adolescents how they would most like to access family planning information and services, and how they believe the barriers to accessing contraceptives could best be overcome.

The knowledge generated by this research will inform policy and programs to make a real difference to the lives of adolescent girls in Vanuatu. CIH plans to continue to prioritise this work, as investing in the provision of family planning information and services for adolescent girls is an investment not only in the health, education and livelihoods of those girls themselves, but also in the health and wellbeing of their future children, their families, and their communities.

More information about this project can be found at burnet.edu.au or by calling (03) 9282 2111.
The FaceSpace Project

A group of young researchers from Burnet’s Centre for Population Health, led by Dr Mark Stoové, Alisa Pedrana and Judy Gold, has brought together a diverse team from the health promotion, information systems and creative spheres to work on ‘The FaceSpace Project’. The project, funded by the Victorian Department of Health, is innovative new research that aims to use social networking sites to deliver sexual health messages to key at-risk groups, young people and gay men.

The FaceSpace Project involved the creation of fictional characters that interact on social networking sites like Facebook. Through videos, photos and scripted dialogue, a narrative was developed into which health promotion messages were embedded. To ensure the project’s success, Burnet enlisted the expertise of the Department of Information Systems at the University of Melbourne, X:MACHINE Productions, and the Victorian AIDS Council/Gay Men’s Health Centre, who make up the project collaborators.

For us to truly understand the interaction between people and technology, the Department of Information Systems provided invaluable information to ensure we maintained these interactions between our project and its users. Burnet has also worked very closely with the Victorian AIDS Council (VAC) in the gay men’s arm of the project. The VAC has contributed considerable knowledge in relating to the target audience, as well as script-writing expertise, to ensure that the narrative is a true reflection of the issues, topics and behaviours of gay men – not a glossy sitcom populated by stereotypes.

X:MACHINE Productions, a theatre performance company, brought the creative capability to the project, providing skills in the area of integrating new media and emerging communications technologies with performance arts.

Beyond this group, the Centre for Population Health has also involved other community organisations, research groups and a sexual health educator to provide input into the planning, implementation and evaluation of the project. To date, the project has attracted nearly 2,000 supporters with over 800 interactions, and counting. Some of the most valuable things to come out of the project are the lessons learned regarding the complexities of delivering health promotion via social networking media, and attracting and maintaining fans. However, the collaborative partnerships that the project has formed will grow and strengthen beyond the project, allowing Burnet to continue to deliver innovative and novel research.

For more information about the project go to: burnet.edu.au/facebook

IMF celebrates a first for Burnet and Victoria

For the first time, Victoria’s leading biotech scientists will be able to access an accredited facility locally to support their clinical trials of novel vaccines and immunotherapies.

The Burnet ImmunoMonitoring Facility (IMF) is the first facility of its kind to receive R&D accreditation in Victoria from the National Association of Testing Authorities of Australia (NATA) and only the fifth nationwide.

Associate Professor Rosemary Ffrench, who established the Burnet IMF, said its development and accreditation by NATA will significantly advance the development of novel vaccines for diseases such as HIV and hepatitis C and is a major addition to Victoria’s biotech industry.

“The IMF will produce high quality data on the action of these new agents which will assist in obtaining regulatory authority approval to progress in clinical trials and eventual licensing of new vaccines,” Associate Professor Ffrench said. The Burnet Institute has a highly successful track record of translating its research in the areas of virology and immunology into new vaccines, diagnostics, treatments and public health outcomes.

For more information on Burnet’s IMF, please contact Associate Professor Rose Ffrench on (03) 9282 2285
Talking Heads
Geoff Drenkhahn, Chief Operating Officer

After ten years with the Centre for International Health (CIH) Geoff Drenkhahn was appointed as Burnet’s first Chief Operating Officer in 2008. In addition to his CIH experience, Geoff had ten years with the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

My new role as Chief Operating Officer was part of a realignment and consolidation of services and activities undertaken to support our four Centres and the ever-increasing “institutional” responsibilities. As the leader of Corporate and Support Services I have responsibility for finance and HR, for public affairs and communications, fundraising, occupational health and safety, facility management and central laboratory services, IT, the Research Office and legal services, and for commercialisation and business development. I have also had the daunting task of delivering the Alfred Centre Stage 2 (ACS2) new building project to completion.

With the building next door now completed, a new personal focus is the strategy development for the Institute, looking at where we should be in five years and the best way to get there. This of course will be done with the Institute’s Director, Professor Brendan Crabb, the Board and other senior management and with widespread consultation. One aim is to ensure we provide the best possible environment for our staff to perform their work and develop their careers.

So while I still expect my days to be dominated by meetings, hopefully they will move from being with builders, bankers and lawyers to be with our staff and our leaders discussing ways to develop the Institute and our staff, and how to best achieve our goals and have a real impact.

I know it is a cliché, but after focusing on financial stability and then the provision of new physical facilities, it is now time to focus on our people.

Staff Spotlight
Jane Goller
RN, Research Officer, Centre for Population Health

I have a clinical background as a Registered Nurse and I have since studied a Master of Public Health and Master of Public Health Practice as part of the Victorian Public Health Training Scheme. In the latter degree I did a placement at Burnet in the Centre for Population Health (CPH) which led to a position here in 2006. At Burnet, I have worked on surveillance systems and evaluations of health programs and policies and I’m currently working on the Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance (ACCESS). I am managing a pilot chlamydia surveillance system in collaboration with Family Planning Clinics and Aboriginal Community Controlled Health Services (ACCHS).

I have really enjoyed establishing relationships with the eight ACCHS and affiliated organisations nationally that are involved with this project to develop a chlamydia surveillance system suitable to this sector. In May, we coordinated a workshop at Burnet involving representatives from ACCHS. It was a lot of work, yet very satisfying to be part of this opportunity for networking between site representatives and researchers.

Lately I have also worked with Professor Robert Power, Burnet’s Principal for Disease Prevention, on Burnet’s Aboriginal Health Initiative.

I like working at Burnet, I like what it stands for, being a registered NGO and it has provided me the unique opportunity to work and travel in many remote places in Australia.

Student Focus
Jacqueline Flynn

Centre you work in: Centre for Immunology

Supervisors: My main supervisor is Associate Professor Rosemary Ffrench from the Centre of Immunology. I also have two co-supervisors, Associate Professor David Anderson (Centre for Virology) and Professor Gregory Dore from the National Centre in HIV Epidemiology and Clinical Research in Sydney.

Currently studying: My PhD is enrolled through the Department of Immunology at Monash University. My thesis investigates the stimulation and maintenance of an effective T-cell response in acute hepatitis C virus (HCV).

Previous degrees: I completed a Bachelor of Biological Sciences with Honours at Monash University in 2002, and a Masters in Biotechnology at RMIT in 2005.

What is your average day? At the moment my day involves mainly thesis writing with some data analysis, reading journals and drafting papers. I am starting to really miss lab work and seeing my friends at work. I have a few more lab experiments to fit in before my thesis is submitted. Hopefully I will be able to submit in a few months, then I will be celebrating!
Taking Burnet’s laboratory expertise to PNG

Papua New Guinea (PNG) has one of the highest incidences of HIV outside Africa with 1.5 per cent of the population estimated to be infected. Fortunately antiretroviral therapy is becoming increasingly available to people living with HIV in PNG and in March this year, Megan Plate and Eman Aleksic from Burnet’s Centre for Virology were invited to PNG to train local scientists to perform low-cost HIV monitoring assays.

To monitor a patient’s HIV viral load (the amount of virus in the blood) and CD4+ T-cell levels (an indicator of immune health), local laboratories must be equipped with the tools to monitor patients’ response to therapy. In Australia, this type of monitoring is common but involves the use of expensive and highly technical tests and equipment, making their use impractical in settings such as PNG. Alternative, low-cost HIV monitoring tests such as the Cavidi HIV viral load assay and Dynal CD4 assay are available, which do not require highly-trained staff, making them ideal for use in resource-constrained settings like PNG.

In March 2010, laboratory staff from Burnet’s Centre for Virology were invited to PNG to train local scientists to perform these low-cost HIV monitoring assays. The laboratory training program was conducted at Port Moresby General Hospital by Megan Plate, Quality Manager of Burnet’s Clinical Research Laboratory and Research Assistant, Eman Aleksic. The program consisted of hands-on training of two laboratory scientists who were tested for their proficiency, knowledge, and ability to complete the assays after the week-long training program. The PNG laboratory will use these assays in a trial study monitoring 100 HIV-positive patients who are commencing antiretroviral therapy and hopes to implement these tests for routine clinical use in PNG. Burnet’s Clinical Research lab has now trained staff in the Asia and Pacific regions including China, Indonesia and Fiji to use these low-cost HIV monitoring assays. These training programs allow clinicians to better monitor and care for their HIV positive patients when they begin receiving antiretroviral therapy.

Megan Plate, Quality Manager at Burnet, is observing trainee Malin Malagun, Research Assistant with the Clinton Foundation and Central Public Health Laboratories, conduct her first Cavidi assay at Port Moresby General Hospital, Papua New Guinea.

PROJECT NAME: Monitoring of the anti retrovirus treatment (ART) of HIV and AIDS in patients in Port Moresby General Hospital (PMGH) by CD4 count and HIV viral load.
FUNDING BODY: PNG National AIDS Council
COLLABORATORS: Dr Evelyn Koru Lavu, A/Director, Central Public Health Laboratory (CPHL); Dr Jessica Markby, Scientist, Clinton Foundation (Based in CPHL)
CO-INVESTIGATORS/COLLABORATORS: Dr G Tau; SSMO, Internal Medicine, Port Moresby General Hospital; Dr. Mark Paul, Lecturer in Internal Medicine, School of Medicine & Health Sciences; Professor Suzanne Crowe, Burnet Institute, Melbourne
LENGTH OF PROJECT: 2 years

UNDERSTANDING HOW HIV EVOLVES

One of the major challenges for our immune system when fighting HIV is the capacity of the virus to evolve and diversify. Redmond Smyth and Kate Jones from Burnet’s Mak Laboratory are helping to understand the process of viral evolution.

For an individual who has been infected with HIV for six years, it has been estimated that the levels of viral diversity within this individual will be greater than the annual global diversity of the influenza virus. This phenomenon highlights the enormous pressure HIV viral diversity imposes on our immune system.

Intermixing HIV genetic material between viral strains and the introduction of mutations into the genome via nucleic acid editing or misincorporation are the major tools HIV uses to achieve the viral diversification process. However, our understanding of this process has been hindered by the lack of appropriate systems for analysis.

In collaboration with Miles Davenport at UNSW, Redmond Smyth has developed a novel marker system and mathematical tools to address this problem. Similarly, Kate Jones has also provided direct evidence showing how a host cell nucleic acid editing enzyme is critical for HIV replication. Both of these works are now published in highly prestigious international journals, i.e. PLoS Computational Biology, and Journal of Biological Chemistry, respectively. These new discoveries will pave the way for us to understand the process of viral evolution and to develop new anti-virals to suppress the ability of HIV to cause disease.

PROJECT NAME: Viral Diversity
FUNDING BODY: NHMRC and Pfizer Foundation
COLLABORATORS: University of New South Wales
LENGTH OF PROJECT: Ongoing
New treatments hit their target

The Burnet Institute, along with its partners, is making exciting progress in the discovery of new targets for the treatment of disease. Many cancers, infections and autoimmune diseases affect millions of people causing a great deal of suffering not only for the patients but also for those around them and are a major burden on health care systems. Professor Mark Hogarth from Burnet’s Centre for Immunology explains how his team attempts to develop new therapeutics.

Monoclonal antibodies are very versatile treatments: they can cause cells to self destruct; they can carry and deliver highly toxic drugs that specifically kill a target cell; and because they are naturally part of the immune system they can harness immune killer cells and direct these to kill a target.

Our researchers have had a long and distinguished history in the development of new therapies using monoclonal antibodies, indeed some of the first human trials of antibody therapy in cancer were conducted by the scientists and physicians in our Centre for Immunology.

While we have developed very effective methods of making such antibodies, the future challenge is the identification of biomarkers that form ideal targets for therapeutic monoclonal antibodies. Such targets are found on cells causing the disease whether they are a particular cancer cell or inflammatory cell or a cell that maintains a chronically infected state.

A biomarker is a molecule specifically associated with a particular disease. To this day, however, relatively few diseases can be identified by a single molecule or biomarker. The challenge now is the discovery of new disease specific biomarkers that we can use as targets for these drugs.

The Centre for Immunology is working to discover new biomarkers on cancer cells, on inflammatory white blood cells or in the cells that promote chronic infection. We are part of a major international effort involving Australian and international groups utilising a range of sophisticated molecular technologies in an effort to identify genes and proteins that are specifically associated with a particular disease, for example in cancers such as ovarian, breast, colon and leukaemias, and inflammatory diseases including rheumatoid arthritis, lupus and chronic infections such as HIV, hepatitis and tuberculosis. This program is well advanced and we have already discovered potential new targets in a number of diseases.

To further the work of the consortium, a major international effort known as the Cooperative Research Centre for Biomarker Translation was established. It includes more than 150 scientists and clinicians, and is funded by contributions from the consortium members as well as the Australian Federal Government. Established in 2008 with the Centre for Immunology Head, Professor Mark Hogarth as CEO, the partners include the Burnet Institute and La Trobe University, the Women’s and Children’s Research Institute, South Australia Pathology, Mater Health Services and the Mater Medical Research Institute. The major international partners include Amgen Inc and BD Biosciences in California. The Centre’s collaborators extend beyond the participants with extensive interactions from the clinicians and scientists of the Austin Hospital and Alfred Health.

A recent meeting of the consortium in Australia was followed by a visit to the Burnet Institute by Dr Noel Warner, the worldwide Vice President of Scientific Affairs for BD Biosciences. In an interesting coincidence Dr Warner was the last PhD student of Sir Frank Macfarlane Burnet in the 1970s. Since then Noel has been living in the USA for over three decades and was one of the pioneers of commercialisation of monoclonal antibodies and their diagnostic uses with the Becton Dickenson company. The Burnet Institute and the Cooperative Research Centre have the opportunity to make a significant impact on major chronic diseases. A surprising number of diseases are still intractable and will require new diagnostics and new effective therapies, and the appropriate monoclonal antibodies can satisfy this need.
injecting illicit drugs, particularly heroin, has been a recognised phenomenon in Australia since the early 1970s. With it comes the associated potential harms and negative health consequences, including fatal and non-fatal overdose, blood-borne viral infections such as HIV and hepatitis B and C, and soft tissue and vascular problems.

Thanks to effective treatments for drug dependence, many Australians avoid the worst consequences of opiate injecting by taking a daily opiate-based pharmacotherapy, such as Biodone Forte, that helps them to reduce or cease injecting and concentrate on other aspects of their lives. There is now a large and ageing cohort of opiate-dependent people on pharmacotherapy treatment in Australia, and their health needs and health status are essentially unknown. The Alcohol and Other Drug Research Group at Burnet’s Centre for Population Health is supporting the project along with a small steering group made up from current pharmacists, drug and alcohol workers and the advocacy group for people who use drugs. This Melbourne-based project addresses an unexplored area – people who are opiate dependent and aged over 50 years.

Several important outcomes are anticipated, including an increased understanding of the potential burden of disease that this group of people will have on the health system over the next 20-30 years, and information that will improve systematic responses to their health needs. Findings will be used to advocate for specific service improvements targeted at older opiate users.

Researchers from the Malaria Genomic Epidemiology Laboratory in Burnet’s Centre for Population Health (CPH) have recently been awarded funding from the Wellcome Trust (UK) to study two of the six known human malaria parasites in collaboration with researchers at the London School of Hygiene and Tropical Medicine (UK) Mahidol University (Thailand) and University of Bamako (Mali).

Until recently, *Plasmodium ovale* was considered to be a single species but is now known to be two different species that co-circulate throughout Africa and Asia (*P. ovale curtisi* and *P. ovale wallikeri*). Burnet researchers involved in the project will investigate the prevalence of each species in Papua New Guinea (PNG) and develop new molecular tools to study the genetics of the two parasites worldwide. The information gained from the study is expected to provide insight into the scale of the disease caused by each species both within PNG and globally, and provide important knowledge for elimination programs. The PNG Institute of Medical Research (PNGIMR), one of Burnet’s key collaborators in the Asia and Pacific regions, will be integral to the success of the project through access to field sites and samples, while the project itself will provide the opportunity for training PNGIMR students thus strengthening existing links between our two institutes and building further research capacity in PNG.
Returning to the Samoa Ministry of Health after nine years, the Centre for International Health’s Chris Hagarty was warmly welcomed by his former colleagues, whom he would assist over the coming months to develop the Pacific Island nation’s first National Health Promotion Policy.

Samoa’s Ministry of Health recognises that many of the nation’s health problems such as stroke, heart disease and diabetes can be prevented through promotion of a healthy lifestyle. This is supported by evidence from the Pacific that informs us that successful health promotion is achieved through working with communities and other stakeholders – firstly, to identify the factors which impact on their health and wellbeing, and secondly, to develop their own solutions through which to address these.

This newly developed National Health Promotion Policy will guide all individuals and organisations in Samoa to undertake meaningful consultation with communities in order to ensure their activities and policies impact positively on health and wellbeing.

Just as this policy advocates for multi-sectoral, community-wide consultation in the development of health promotion activities and strategies, so too did the policy development process. Chris and his Ministry of Health colleagues consulted widely with community, government and non-government stakeholders throughout the country to ensure that all views were considered.

Consultations were conducted on both of the main islands, and sought out particularly vulnerable groups such as people with disabilities, to ensure a broad view of opinions and ideas were incorporated into the policy. Casting the consultation net widely contributes to a more informed and culturally appropriate policy.

Chris is quietly confident that if the level of community engagement in the development of the National Health Promotion Policy signals what can be expected from its implementation, then Samoa’s communities are well on the way to much improved health and wellbeing.

Photo above: Ualesi Silva, Samoa Ministry of Health, consulting with Women’s Committee representatives of ‘the Big Island of Savai‘.

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**HEALTHY AGEING: Sharing experience and knowledge across the region**

The Asia and Pacific regions are experiencing rapid ageing. There is an urgent need to re-orient primary health care and welfare services to better meet the needs of elders and their families. Dr Wendy Holmes from Burnet’s Centre for International Health is working with a team from across Asia and the Pacific to build leadership and to strengthen communities, health care systems and social welfare services.

Elders make valuable emotional, social and economic contributions to their communities, but when they are disabled or ill they are more likely to be a burden.

Investment in promotion of healthy ageing, prevention of disabilities and management of chronic conditions is currently neglected. Older people tend to be the poorest and most vulnerable group, especially since trends towards smaller families, migration and urbanisation have eroded family support.

Our AusAID funded Healthy Ageing Leadership Program has brought together professionals from six low and middle-income countries from different disciplines who are sharing experiences and knowledge in a participatory program, the first held at Burnet in Melbourne this July. Outcomes will include the establishment of a regional research hub for healthy ageing, a research agenda, development of advocacy and education tools, and action plans.

If you could like further information about this program, please contact Wendy Holmes on (03) 9282 2111, or visit us at burnet.edu.au

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**PROJECT NAME:** Strengthen Health Sector Policy and Regulatory Oversight – Technical Assistance to Develop Health Promotion Policy  
**FUNDING BODY:** Government of Samoa  
**LENGTH OF PROJECT:** Consultancy  
**CONTACT:** Chris Hagarty on (03) 8506 2380

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**PROJECT NAME:** Healthy Ageing Program  
**FUNDING BODY:** AusAID  
**COLLABORATORS:** PALM Foundation and Udayana University  
**CONTACT:** Dr Wendy Holmes (03) 9282 2165
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