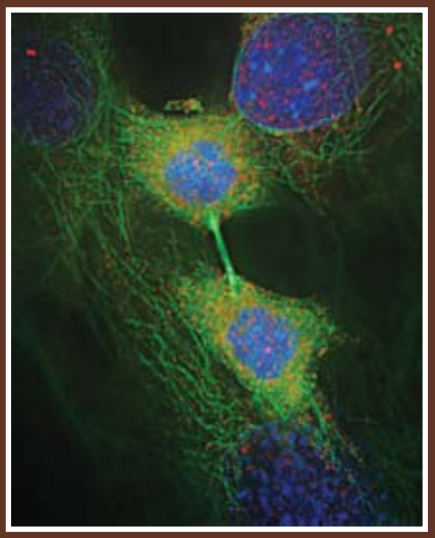
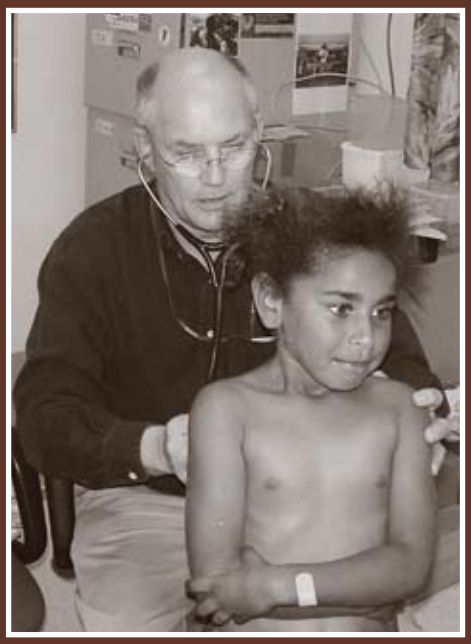
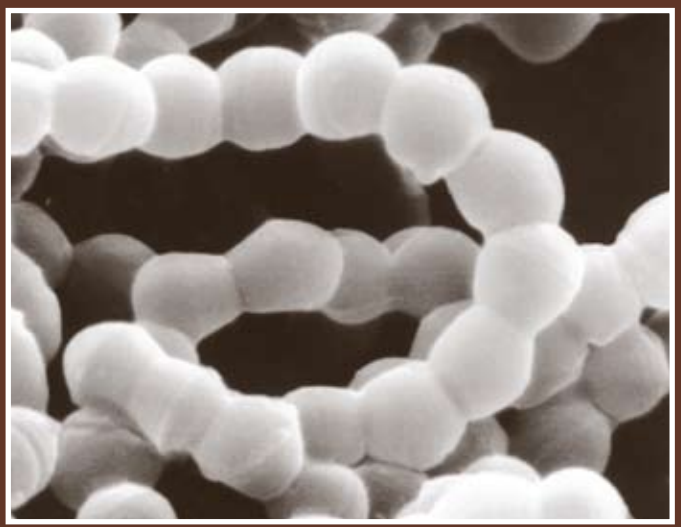
Queensland Institute of
Medical Research
2007 - 2008







Queensland Institute of Medical Research

Director
Professor Michael Good

Deputy Director
Professor Adèle Green

Our Vision

To be a world renowned medical research institution

Our Mission

Better health through medical research

Our Philosophy

QIMR supports scientists who perform world-class medical research aimed at improving the health and well-being of all people

Our Logo

The QIMR logo is comprised of superimposed benzene rings which symbolise one of the fundamental molecular arrangements of the chemicals which make up living things

For further copies of this report, phone 3362 0222, email enquiries@qimr.edu.au or download from www.qimr.edu.au

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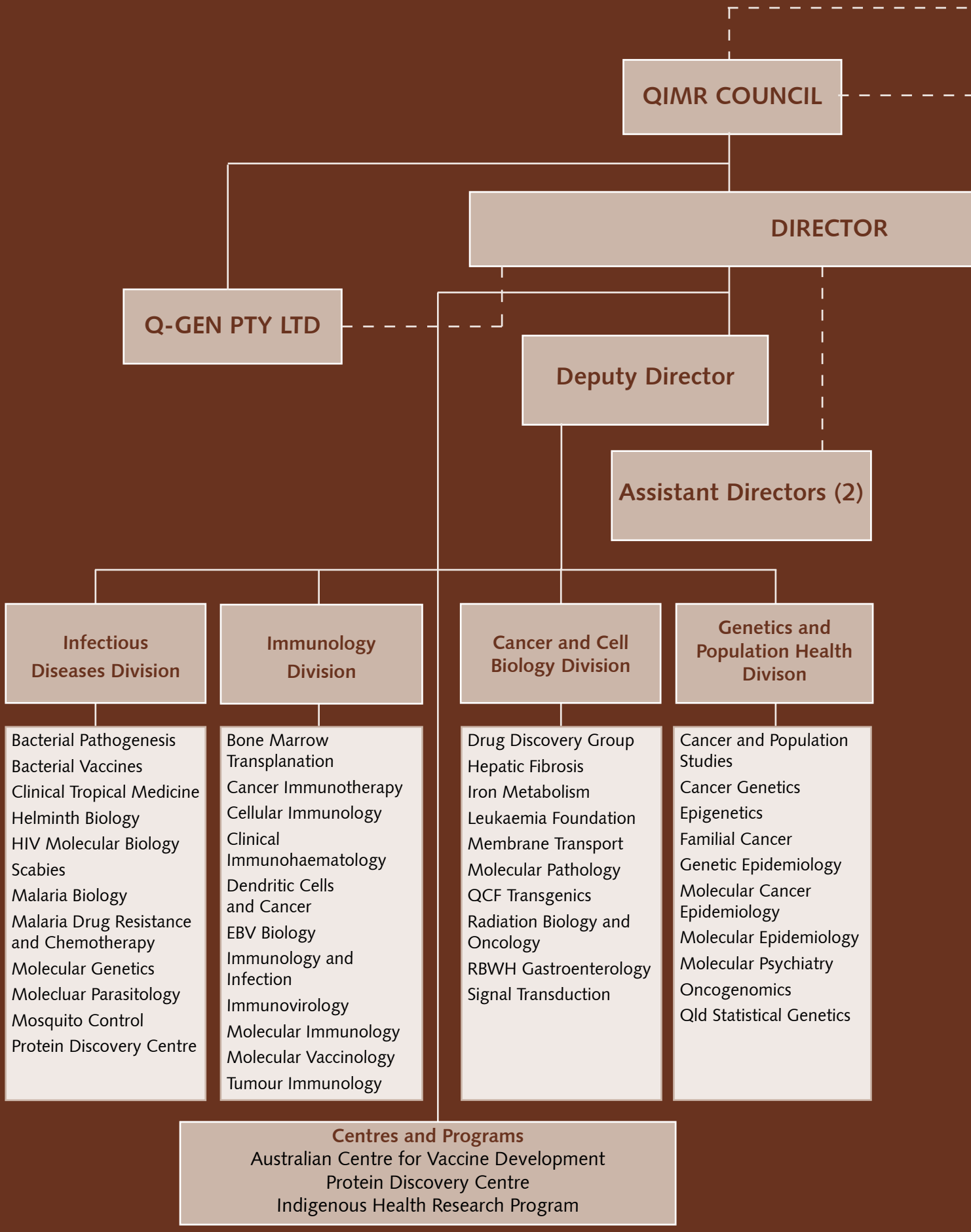
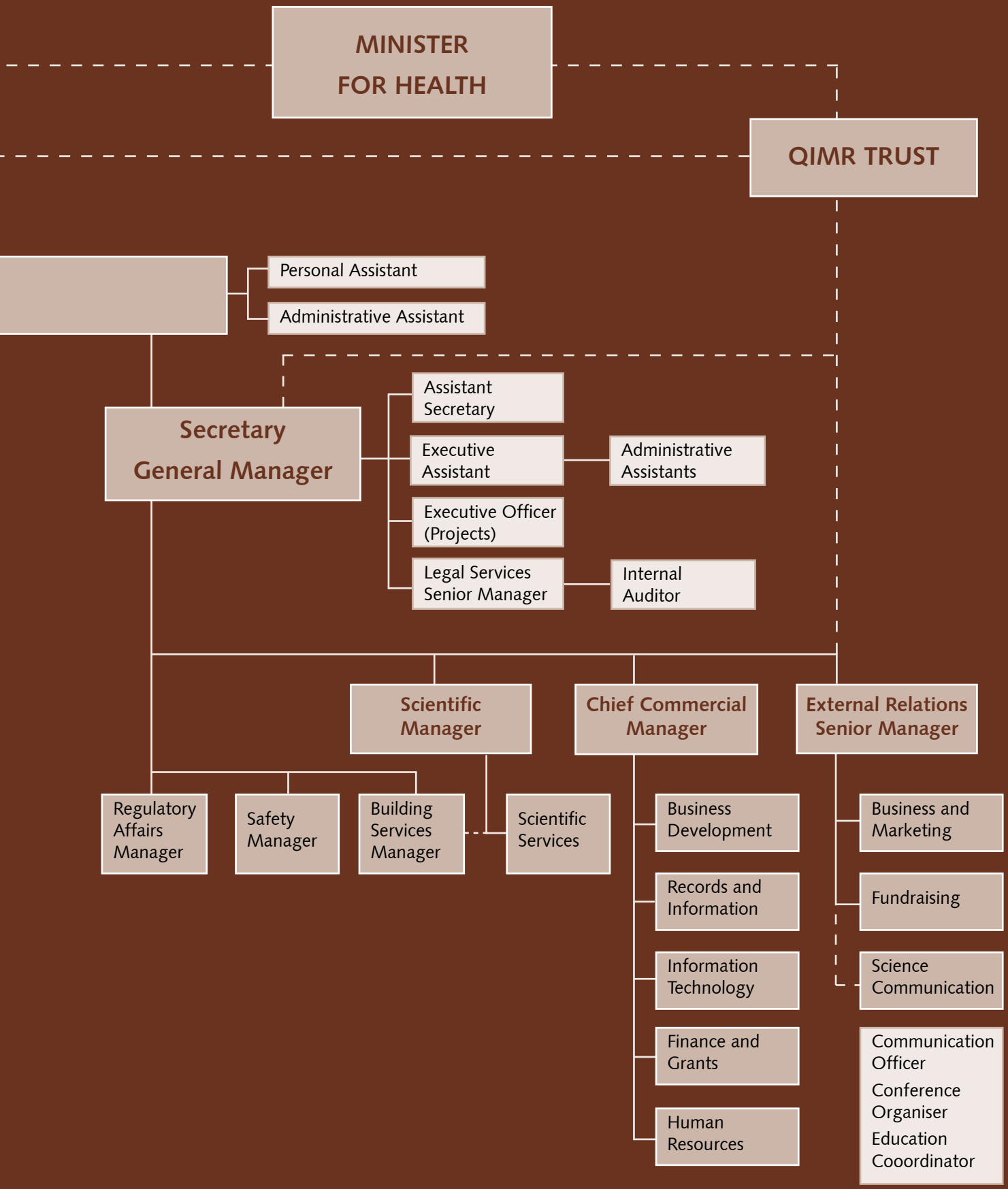
Organisational Structure




MINISTER FOR HEALTH
QIMR TRUST
Personal Assistant
Administrative Assistant
Secretary General Manager
Assistant Secretary
Executive Assistant
Administrative Assistants
Executive Officer (Projects)
Legal Services Senior Manager
Internal Auditor
Scientific Manager
Chief Commercial Manager
External Relations Senior Manager
Regulatory Affairs Manager
Safety Manager
Building Services Manager
Scientific Services
Business Development
Records and Information
Information Technology
Finance and Grants
Human Resources
Business and Marketing
Fundraising
Science Communication
Communication Officer
Conference Organiser
Education Cooordinator

Chairman's Report

Sir Bruce Watson AC

The strength of the Queensland Institute of Medical Research is enhanced by the dedication and talent of scientific staff in their commitment to QIMR's vision of better health through medical research.

Highlights of some scientific achievements include:-

- Commencement of world first immunotherapy trials for Nasopharyngeal cancer in collaboration with The University of Hong Kong and The Queen Mary Hospital.
- Agreement to license technology to develop a vaccine that will target rheumatic heart disease with Merck (USA).
- Consolidated outstanding success in dengue control most recently with greater than 98% control in two South Vietnamese provinces.

The success and reputation of QIMR as an internationally recognised independent medical research institute is built on an annual grant ($5.955m) from Queensland Health and from competitive peer-reviewed research grants ($39.447m).

The QIMR Trust which was established to assist Council in fundraising and investments in order to support QIMR research activities contributed $2.417m this financial year.

Planning for the construction of the QIMR Smart State Medical Research Centre, a 13-storey medical research centre has commenced. This will be built on the site of the Queensland Radium Institute and will link the Bancroft Centre and Clive Berghofer Cancer Research Centre.

In September 2007, the QIMR Council commissioned KPMG to undertake a review of the Institute's corporate structure. The extensive review resulted in the enhancement of the corporate structure by the introduction of a number of key strategic positions. Implementation of the recommendations has been a staged process commencing with the appointment of a General Manager, Chief Commercial Manager and an External Relations Manager.

The Council of QIMR would like to thank all the staff and its many volunteers for another successful year.

Sir Bruce Watson

Council Members

Sir Bruce Watson AC BE (Elec) BCom (Chair)

Sir Bruce Watson was born in Queensland in 1928. In 1956 he joined MIM Holdings Limited and became General Manager of the Agnew Nickel Mining Joint Venture in Western Australia in 1975. In 1977, he returned to Brisbane as a Director and later as CEO and Chairman of MIM Holdings Limited. Sir Bruce has been a Member of the Supervisory Board of Metallgesellschaft AG, a Director of Boral Limited, ASARCO Inc, National Australia Bank Limited and Chairman of the Gas Corporation of Queensland Limited. From 1992 to 1995 Sir Bruce served as National President of the Australian Institute of Company Directors and in 1992 as President of the Australasian Institute of Mining and Metallurgy. In June 1985 he was knighted in recognition of his most distinguished service to Queensland industry and in 2004 Sir Bruce was made a Companion of the Order of Australia.

Mr Paul Wright AM, FAIM, FAICD (Deputy Chairman) (to 31 December 2007)

Paul has combined banking, health, hospitality and consulting into a career which has encompassed over 25 years in senior executive management with a breadth and depth in leadership roles. He has been General Manager Queensland and Northern Territory of Medical Benefits Fund of Australia Limited and provided executive services as General Manager to The Brisbane Club.

Paul has also been a company director for more than 20 years and has served as Chairman/ President of the Australian Institute of Management and the Royal Flying Doctor Service (completing his second term as Chairman in November 2007). He is Chairman of Phoenix Eagle Company Pty Ltd, BSES Limited and serves on the on the boards of the Royal Flying Doctor Service (Queensland Section), PQ Lifestyles Pty Ltd, Queensland Fruit and Vegetable Growers and the Australian Sugar Industry Alliance. Paul was also the Chairman of the Queensland Institute of Medical Research Trust from 4 May 2000 until 31 December 2007.

Professor Peter Brooks MD FRACP FRCP Edin FAFRM FAFPHM MD Lund (Hon Causa)

Professor Brooks was Foundation Professor of Rheumatology at the University of Sydney prior to becoming Professor of Medicine at St Vincent's Hospital, Sydney in 1992. He was appointed Executive Dean of Health Sciences at the University of Queensland in 1998, has extensive research experience in basic inflammation and treatment of rheumatic diseases and has been a member of the Fellowships Committee and Partnerships Committee of the NHMRC.

Professor Emeritus Bryan Campbell AM MD BS FRACP FRACMA

Professor Campbell was formerly Chief Health Officer Queensland and Head of The University of Queensland Medical School.

Mr Paul Wright AM

Professor Peter Brooks

Professor Emeritus Bryan Campell AM

Professor Judith Clements

Mr Christopher Coyne

He has been a Councillor of the Royal Australasian College of Physicians, the Royal Australian College of Medical Administrators and a member of the National Health and Medical Research Council. He was Deputy Chair of the Australian Health Ethics Committee and a member of the NHMRC Embryo Research Licensing Committee until June 2006.

Professor Judith Clements BAppSc MAppSc PhD

Professor Clements has over 20 years experience as a basic researcher in biomedical research, primarily in the general field of molecular endocrinology. Her current research seeks understanding of the molecular basis of hormone dependent and urogenital cancers such as prostate, breast, ovarian and endometrial carcinoma. She is currently Program Leader of the Hormone-Dependent Cancer Program within the Institute of Health and Biomedical Innovation at Queensland University of Technology and also an NHMRC Principal Research Fellow. In 2007 Professor Clements was awarded the prestigious international Frey-Werle Foundation Gold Medal for her significant contributions to the kallikrein protease field.

Mr Christopher Coyne LLB

Christopher Coyne is a solicitor of the Supreme Court of Queensland. He was admitted as a solicitor in 1979 and was a partner in the national law firm Clayton Utz from 1984 to 2002. He was appointed an Adjunct Professor at The University of Queensland School of Law in 2000. He is Chair of the Mater Health Services Human Research Committee, a member of the Australian Health Ethics Committee and former member of the NHMRC Gene Related Therapy Research Advisory Panel. Chris is Chairman of the Queensland Law Society's captive insurer, Lexon and a director of the Incorporated Council for Law reporting for the State of Queensland. He is a sitting member of the Queensland Commercial and Consumer Tribunal.

Mr Paul Fennelly BA LLB

Mr Fennelly has wide experience in financial management, business and public administration. He is currently a Director with Westpac Institutional Bank where his focus is on major equity investments, primarily in the area of alternative asset classes, including infrastructure, public private partnerships, property and private equity. From January 2002 - 2006 Mr Fennelly was Director-General of the then Department of State Development; concurrently he served as the Co-ordinator-General from 2002-2005. Prior to joining the Queensland Government he was Victorian Director of the Australian Industry Group which is the nation's largest industry association.

Professor Lyn Griffiths BSc (Hons) PhD

Professor Griffiths is Director of the Griffith Institute for Health and Medical Research and the Genomics Research Centre at Griffith University. She has expertise in human molecular genetics, undertaking research to map and identify genes involved in common complex human disorders, including studies on migraine, CVD risk, MS and certain types of cancer. Her research has been well funded by national competitive grants and industry and she has authored ~140 peer-reviewed publications to date in molecular genetics international journals. She is a past ASMR Director, Current Member and past Chair of the Scientific Program Committee for the next International Congress of Human Genetics and has been awarded the Centenary Medal for Distinguished Service to Education and Medical Research.

Professor Alan Lopez BSc (Hons), MS PhD, HonFAFPHM
(to 1 June 2008)

Professor Lopez is Professor of Medical Statistics and Population Health and Head of the School of Population Health at the University of Queensland. Prior to joining the University in January 2003, he worked at the World Health Organization in Geneva, Switzerland, for 22 years where he held a series of technical and senior managerial posts including Chief Epidemiologist in WHO's Tobacco Control Program (1992-95), Manager of WHO's Program on Substance Abuse (1996-98), Director of the Epidemiology and Burden of Disease Unit (1999-2001), Senior Science Advisor to the Director – General (2002) and Adjunct Professor at Harvard University since 2005.

He has published widely on mortality analysis and causes of death, including the impact of

the global tobacco epidemic, and on the global descriptive epidemiology of major diseases, injuries and risk factors. He is the co-author with Christopher Murray of the seminal Global Burden of Disease Study (1996) which has greatly influenced debates about priority setting and resource allocation in health. He has been awarded major research grants in epidemiology, health services research and population health, chairs the Health and Medical Research Council of Queensland, and is an honorary fellow of the Australasian Faculty of Public Health Medicine.

Assoc Prof Paula Marlton MB BS (Hons I) FRACP FRACPA

Paula Marlton is the Head of Leukaemia and Lymphoma Services at the Princess Alexandra Hospital where she is also Deputy Director of Haematology. Her previous appointments include three years at the MD Anderson Cancer Centre in Houston Texas. She has extensive experience in clinical research including the role of principal investigator for national trials and ongoing involvement in translational research in haematologic malignancies. She was the founding Chair of the Australasian Leukaemia and Lymphoma Group Laboratory Science Committee and has established and continues to direct the PricewaterhouseCoopers Leukaemia and Lymphoma Tissue Bank.Other professional activities include serving on the Board of the Leukaemia Foundation, drug advisory Boards, government and college advisory committees as well as a wide range of academic and clinical services.

Dr Jeannette Young MB BS FRACMA MBA AFACHSE

Dr Young has been the Chief Health Officer for Queensland since August 2005. In her previous position she was the Executive Director of medical Services at the Princess Alexandra Hospital in Brisbane for six years where she was responsible for the provision of Medical services across the hospital and a member of the executive team. She came to the position following four years as the Director of Medical Services at the Rockhampton Base Hospital. Prior to that she spent nine years at Westmead Hospital in Sydney working, initially, in the area of emergency medicine followed by responsibility for medico-legal issues and management of junior medical staff.

As the Chief Health Officer she is responsible for mental health policy and legislation, population health services policy and regulation, disaster planning and private facility licensing. She is a member of the Queensland Medical Board, the Radiation Advisory Council, co-chairs the Queensland Emergency Medical System Advisory Committee, chairs the Queensland Blood Advisory Committee and is Queensland's representative on the National Health and Medical Research Council, the Australian Health Protection Committee and the AHMAC Clinical, Technical and Ethical Principal Committee.

Mr Paul Fennelly

Professor Lyn Griffiths

Professor Alan Lopez

Dr Paula Marlton

Dr Jeannette Young

From the Director

Professor Michael Good AO

The Institute has undergone significant restructuring during the year following the major review processes of 2006. Research now takes place under four major divisions and laboratories within these have been reorganised to form more cohesive, collaborative units. A major review of the corporate sector by KPMG during the period also resulted in significant improvements to the structure of support services.

People and events

The new research Divisions comprise Genetics and Population Health – headed by Professor Emma Whitelaw, Immunology headed by Professor Geoff Hill, Cancer and Cell Biology led by Associate Professor Greg Anderson and Infectious Diseases led by Associate Professor James McCarthy. Many thanks to retiring heads of the previous divisions Dr Amanda Spurdle and Dr Chris Schmidt.

Following the recommendations of the KPMG corporate review, the Institute welcomed Dr Julie-Ann Tarr as General Manager in November 2007 and both Ms Vivienne Johnson as External Relations Manager and Ms Donna Hancock as Chief Commercial Manager in June 2008.

Professor Perry Bartlett, Director of the Queensland Brain Institute gave the Derrick-Mackerras Memorial Lecture in October. Entitled "New Brains for Old.", Professor Perry described the process of neurogenesis and how the stimulation of this process may ameliorate a wide range of diseases of the mind. The lecture was a fitting precursor to the appointment of Professor Breakspear in March 2008 who will head the Institute's new Mental Health Research Division.

Two public fora were held at QIMR during the year, the Dementia Outreach Symposium in October in recognition of Dementia Awareness Month and the Vaccine Journey in November as part of the Queensland Department of Science, Technology and Innovation's Show Us Your Genes Program.

I was delighted to be appointed as one of 10 members of the Steering Committee for 2020 with the role of leading 100 top thinkers concerned with a long-term national health strategy. The Summit was held at Parliament House in Canberra in April. Professor Emma Whitelaw was also an active participant in the Health stream

Research highlights

Institute scientists produced a further 299 scientific publications this year with over 40 being published in high impact journals.

A number of scientists within the Genetics and Population Health Division are now involved in the emerging field of genome-wide association studies and are working with international consortia to identify new genes which underlie many important diseases.

Within the Immunology Division this year a Phase III trial for an immunotherapy for metastatic melanoma has been completed and a peptide-based clinical

trial of a new antigen-based immunotherapeutic vaccine to combat nasopharyngeal carcinoma has begun in China. In conjunction with UQ scientist Dr Khromykh and his group, the Immunovirology Laboratory has also illustrated the efficacy of a new type of vaccine for flaviviruses. A novel approach to a malaria vaccine based on ultra low doses of whole parasites has been developed which is proceeding towards a Phase I vaccine trial.

Achievements within the Cancer and Cell Biology Division include the identification of proteins hSSB1 and hSSB2 as critical for maintenance of genomic stability, the first comprehensive description of senatixin, the protein defective in ataxia oculomotor apraxia type 2 and the demonstration that SmcHD1 is physically associated with the inactive X chromosome and is required for silencing many genes.

In the infectious Diseases Division the secretomes of parasitic hookworms and liver flukes were characterised, a suppressor of HIV-1 reverse transcription was identified, new methods for getting antimalarial drugs into the parasite were determined, new antimicrobials were developed against three protozoan parasites and community-based dengue control programs in central Vietnam were proven to be effective and low-cost. We are on track to trial a novel peptide vaccine to prevent rheumatic heart disease next year. Our Indigenous population suffer the highest rate of rheumatic heart disease in the world.

New building

This year plans have progressed significantly for our new building, which will be situated between the Bancroft Centre and the Clive Berghofer Cancer Research Centre. It is planned that the building will be a 13-storey facility linking both existing buildings and provide for a much needed increase in space for cancer and infectious disease research. It will also house our new Mental Health Research Division and high school research laboratories to provide work experience and training for high school students and their teachers throughout Queensland

Awards and achievements

Each year, QIMR scientists receive prestigious awards and accolades. Congratulations are due to our Patron Her Excellency, Ms Quentin Bryce in particular who in April was announced as Australia's first female Governor General. In the 2008 Queen's Birthday Honours List, I was made an Officer of the Order of Australia in June

Her Excellency, Ms Quentin Bryce, Governor of Queensland and Patron of QIMR, who was announced as first female Governor General of Australia in April 2008

From left: Prof Michael Good, Prof Perry Bartlett and Prof Andrew Boyd following the Derrick-Mackkeras Memorial Lecture in October 2007

for service to medical research, particularly in the fields of infectious disease immunology and vaccine technology, through leadership roles at QIMR and contributions to education. This honour only came about because of the support, enthusiasm and creativity of those around me and thus, in a very real sense, it reflects the hard work and dedication of the entire Institute - scientists, general staff and students.

Professor Dave Kemp was awarded the Medal of the Order of Australia (OAM) in January 2008 for service to medical research as a molecular biologist, particularly in the areas of tropical health and infectious diseases, through contributions to Indigenous health and to professional organisations. Professor Nick Martin who heads the Genetic Epidemiology Laboratory was elected to the prestigious Australian Academy of Science for his important contributions to the genetics of human behaviour and complex diseases. Professor Emma Whitelaw, Head of the Genetics and Population Health Division received the 2008 Julian Wells Medal, awarded annually to an Australian scientist who has made an outstanding contribution to our understanding of gene action, genome organisation or genomic evolution.

The Institute's 2007 High Achievement Awards were presented by QIMR Chair Sir Bruce Watson AC in a ceremony preceding the Derrick-Mackerras Memorial Lecture. Institute Fellowships were awarded to Mr Ian Goddard and Ms Helen Luckoff.

The Ralph Doherty QIMR Science Prize went to Professor Georgia Trench. Bancroft Medals were awarded to Associate Professor Tom Sculley, Mrs Lynn Green and a new QIMR Postdoctoral Prize went to Dr Patricia Valery from the Indigenous Health Research Program and Humanitarian Awards were presented to Mr Sean Ryan, General Manager of Nova 106.9 and Mr Graeme Ewin, Grand Master of the Lodge of Free and Accepted Masons of Queensland. Their contributions to QIMR were extraordinary.

Grants and funding success

New NHMRC awards for this period included 21 Project Grants and two Program Grants. QIMR researchers also won two new Fellowships, four Career Development Awards and six Postdoctoral Training Fellowships. A new NIH Grant was awarded to Professor Nick Hayward to investigate pathways from genotype and environment to melanoma. Four new ARC grants were awarded and a special Australian Cancer Research Foundation Grant received by Professor Emma Whitelaw and colleagues to establish the Australian Cancer Research Foundation Centre for Cancer Epigenetics. The Cancer Council of Queensland awarded nine new Project Grants, and the Leukaemia Foundation of Queensland continues to provide significant ongoing support for the Leukaemia Foundation Laboratory headed by Professor Andrew Boyd.

The Development and Marketing Department continued to raise funds from a range of other sources including donations, bequests and corporate sponsorship. A further three year contract with Suncorp was signed to continue the important community awareness Sunwise program and support of QIMR's melanoma research.

QIMR is always very grateful for the continuing support it receives from its visionary sponsors, The Atlantic Philanthropies, Mr Clive Berghofer and the many other donors both small and large who contribute so generously to medical research in Queensland. Particular thanks go to Dr Graham Cavaye of St Lucia who has established a QIMR Scholarship in memory of his wife Diana who became a Fellow of the Institute in 2002.

Concluding, I would like to extend my sincere thanks to all at QIMR for their on-going contributions and support to this great Institute. I also thank the Council and Trust members and all others who have served on QIMR Committees. The Institute owes particular thanks to our inspirational Chairman, Sir Bruce Watson for his vision and dedication to QIMR over the many years. On behalf of the Institute I would like to record our thanks to retiring Trust Chairman Mr Paul Wright AM and Trust member John Garnsey. The Trust does an outstanding service for the Institute and these two members will be greatly missed. QIMR is a great place to work, has wonderful staff, talented students, and a stellar international reputation. It has been my privilege and honour to be its Director.

Michael Good

RESEARCH

Research is conducted in 43 discrete laboratories under four different Divisions, each with a major focus.

Important collaborations take place within and between these Divisions, as well as with external entities.

Genetics and Population Health Division

Cancer and Population Studies

Cancer Genetics

Epigenetics

Familial Cancer

Genetic Epidemiology

Molecular Cancer Epidemiology

Molecular Psychiatry

Oncogenomics

Queensland Statistical Genetics

Cancer and Cell Biology Division

Drug Discovery Group

Hepatic Fibrosis

Iron Metabolism

Leukaemia Foundation

Membrane Transport

Molecular Pathology

QCF Transgenics

Radiation Biology and Oncology

RBWH Gastroenterology

Signal Transduction

Immunology Division

Bone Marrow Transplantation

Cancer Immunotherapy

Cellular Immunology

Clinical Immunohaematology

Dendritic Cells and Cancer

Epstein-Barr Virus Biology

Immunology and Infection

Immunovirology

Molecular Immunology

Molecular Vaccinology

Tumour Immunology

Infectious Diseases Division

Bacterial Pathogenesis

Bacterial Vaccines

Clinical Tropical Medicine

Helminth Biology

HIV Molecular Virology

Scabies

Malaria Biology

Malaria Drug Resistance and Chemotherapy

Molecular Genetics

Molecular Parasitology

Mosquito Control

Protein Discovery Centre

GENETICS AND POPULATION HEALTH

Prof Emma Whitelaw heads the Genetics and Population Health Division

This year the Division of Genetics and Population Health has expanded with the addition of a number of laboratories that are applying genetic and epidemiological tools to the study of cancer and other diseases. Now included are: the Cancer Genetics Laboratory, the Familial Cancer Laboratory, the Oncogenomics Laboratory and the Queensland Statistical Genetics Laboratory. This brings the total number of laboratories in the Division to 11 and has resulted in a powerful concentration of intellectual knowledge in the area of complex diseases.

Over the last year it has become clear that genome-wide association studies (GWAS) can work. International consortia are identifying new genes underlying many important diseases and a number of scientists in the Division have been involved in these pioneering studies. The next challenge is to understand the mechanistic role that these genes are playing in the initiation and progression of the diseases. The combination of molecular and cellular expertise within the Division, and the Institute at large, should ensure a valuable contribution to this emerging field.

The recent acquisition of an Illumina Genome Analyzer deep sequencing platform places QIMR at the forefront of medical research institutes in Australia in terms of genome-wide research capabilities. The Australian Cancer Research Foundation provided the funds to buy this machine as part of a large grant to establish the ACRF Centre of Cancer Epigenetics. This is a joint venture between five Laboratory Heads in this Division – Professor Emma Whitelaw, Professor Georgia Chenevix-Trench, Professor Nick Hayward, Associate Professor Joanne Young – and two from the Cancer and Cell Biology Division – Professor Martin Lavin and Associate Professor Amanda Spurdle. There are a number of laboratories in the Division that are now exploring the role of epigenetics in the aetiology of disease. It is hoped that the characterisation of the epigenome in various disease states will provide new insights into the gene - environment interactions associated with the development of complex diseases.

On a separate note, the Indigenous Health Research Program is blossoming, with increasing numbers of collaborative ventures with other laboratories in the Institute. Similarly, the Molecular Psychiatry Laboratory is extending its partnerships with other clinical researchers in Queensland.

From left: Dr Corinne Lendon – Molecular Psychiatry, Prof Georgia Chenevix-Trench – Cancer Genetics and Prof Emma Whitelaw – Epigentics

Prof Adèle Green – Cancer and Population Studies, Assoc Prof Joanne Young – Familial Cancer, Dr Amanda Spurdle – Molecular Cancer Epidemiology and Prof Nick Hayward – Oncogenomics

Prof Nick Martin – Genetic Epidemiology, Assoc Prof Grant Montgomery – Molecular Epidemiology and Prof Peter Visscher – Queensland Statistical Genetics

Cancer and Population Studies

Laboratory Head: Professor Adèle Green AC

Members of the Cancer and Population Studies Group investigate the causes and natural histories of cancers and other chronic diseases and so seek to generate evidence for their prevention.

Highlights

Completed recruitment of 1500 women with endometrial cancer and 750 control women for the Australian National Endometrial Cancer Study.

The Australian Cancer Study Program showed significant biological interaction whereby obesity substantially increases risk of oesophageal cancer among people with acid reflux.

Cost-effectiveness analysis of enforced solarium regulations in Australia (commissioned by the Australian Radiation Protection and Nuclear Safety Agency) substantially contributed to implementation of restrictions of solaria use by those under 18 years and by fair-skinned people.

The Cancer and Population Studies Group currently study five main types of cancers: ovarian, endometrial, oesophageal, pancreatic and skin. The group's primary aim is to identify the role of environmental factors in causing these cancers and how genes may modify the causal effect. In the last year the focus has continued on causes that can be modified e.g. smoking, consumption of certain foods and in certain patterns, body weight at various ages, excessive sun exposure etc, as well as less mutable factors like women's reproductive histories. Through collaborations with laboratory colleagues, molecular markers in biological samples obtained from project participants have been analysed. Another study, in collaboration with clinicians around Australia and behavioural scientists, follows the course of ovarian and oesophageal cancers after diagnosis including patients' quality of life.

Members of the Cancer and Population Studies Nutrition Team: (from left) Jolieke van der Pols, Kiri Ibiebele, Maricel Hughes

The group's Australian Cancer Study Program 2002-2006 was featured in an NHMRC publication *10 of the Best Research Projects, 2008*. The first paper from the study, which showed that obesity substantially increases risk of oesophageal cancer among people with acid reflux, was selected by the Editor of *Gut* for online publication and media release in October 2007, generating worldwide interest.

Research into Indigenous health and related training and education has increased and our collaborations have diversified under the leadership of Associate Professor Gail Garvey. Projects are being conducted on asthma and bronchiectasis in Indigenous children, diabetes in youth of the Torres Strait Islands and the quality of health care of Aboriginal and Torres Strait Islander cancer patients in Queensland. Collaborative studies of dementia are being developed.

This laboratory is the base for the QIMR-RBWH Statistics Unit which has continued to provide a statistical consultancy service to QIMR and RBWH, and to collaborate with scientists and clinicians on projects on inflammatory bowel disease, various cancers, infectious diseases, nursing and health services research. The popularity of ongoing statistics training seminars and workshops has continued.

Cancer Genetics

Laboratory Head: Professor Georgia Chenevix-Trench

This laboratory investigates why some people get cancer, and how these cancers develop from a normal cell, particularly breast and ovarian cancer, which are often found together in the same families and share many similar characteristics.

The previously known breast cancer susceptibility genes, *BRCA1, BRCA2, ATM* and *CHEK2*, account for only about two percent of all breast cancers, mainly those in women with a strong family history of the disease. Since the discovery in this laboratory last year, with the Breast Cancer Association Consortium (BCAC), of six *low-risk* breast cancer genes, this group has shown that the genetic variant in FGFR2 is more strongly related to estrogen-positive breast cancer, than estrogen-negative, and to *BRCA2*-related breast cancer than *BRCA1* (which are mostly estrogen-negative).

This laboratory also found, with the Consortium of Investigators of Modifiers of *BRCA1/2* (CIMBA), that the *MAP3K1* SNP appears only to modify the risk of *BRCA2*-related breast cancer. Understanding the heterogeneity in breast cancer may eventually lead to improvements in prevention, early detection and treatment.

Scientists in this laboratory have also assessed the association between polymorphisms in the *ABCB1* gene (which encodes p-glycoprotein) and progression-free survival in patients from the Australian Ovarian Cancer Study (AOCS) treated with paclitaxel/carboplatin. Women who carried the minor alleles of *ABCB1* were significantly less likely to relapse following treatment compared to homozygote wildtype carriers. If this finding is confirmed in independent datasets, it will have important implications in cancer patients treated with taxane-based therapies.

In collaboration with the Cancer Molecular Epidemiology Laboratory, a large expression profiling project of lymphoblastoid cell lines from women with different forms of inherited breast cancer has also been completed. This has shown that different types of mutation are associated with different expression profiles, which has important implications for using these sort of approaches to determine which genetic variants are likely to be disease-related.

Highlights

Completed an evaluation of expression profiling of lymphoblastoid cell lines to classify women with familial breast cancer.

Identified new, potential ovarian cancer susceptibility loci.

Demonstrated that breast cancer susceptibility genes found last year through genome-wide studies increase the risk for only specific subsets of breast cancer.

Demonstrated that different genotypes of ABCB1 respond differently to taxane-based chemotherapy.

The Epigenetics Laboratory aims at understanding the role of epigenetics in the determination of phenotype in mammals, both mice and humans

Epigenetics

Laboratory Head: Professor Emma Whitelaw

Highlights

Identified a role for Trim28 in obesity and infertility in the mouse and showed that mice heterozygous for a null allele also display behavioural abnormalities.

Made a new mouse model for polydactyly, called Twinkle Toes. Polydactyly affects a small percentage of human newborns. In collaboration with Dr Carol Wicking at IMB, we are further characterising the molecular basis of this phenotype.

Queensland node of the Australian Phenomics Network

This year the Epigenetics Laboratory has taken on a large mouse mutagenesis project as part of the Australian Phenomics Network. The aim is to provide a national resource of mouse models of human disease that will be made freely available to researchers across the country. Funding has come from the Federal Government through the National Collaborative Infrastructure Scheme (NCRIS). The laboratory has been fortunate in recruiting Dr Trevor Epp, who was a core facility manager at the Centre for Modelling Human Disease in Toronto, to manage this project. The project is funded to produce 2,500 mice each year carrying random chemically-induced mutations that can be screened for any phenotype by any researcher working in Australia.

A screen for genes involved in epigenetic reprogramming

In collaboration with Dr Graham Kay of QIMR and and Dr Marnie Blewitt of WEHI, a new protein, SmchD1, involved in female X-inactivation (Blewitt et al, 2008) has been characterised and uncovered. This protein appears to be involved in the maintenance of X-inactivation and may provide a link between transcription silencing and DNA methylation of the inactive X. Dr Neil Youngson, with support from the QIMR histology team, is looking at the functional activity of epigenetic modifiers in the zygote, the sperm and the egg.

ACRF Center for Cancer Epigenetics – a search for chromatin caretakers

In collaboration with Georgia Chenevix-Trench, Nick Hayward, Joanne Young, Amanda Spurdle, Martin Lavin and Sunil Lakhani, and with financial support from the Australian Cancer Research Foundation, the ACRF Centre for Cancer Epigenetics has been established. The primary aim of this project is to identify genes involved in cancer in humans. It will piggy-back off the mouse mutagenesis screen for genes involved in epigenetic reprogramming and assumes that mice carrying mutations in these genes will have an increased risk of cancer. Once these chromatin caretakers have been identified, it will be possible to investigate whether families with increased risks of various cancers carry mutations in the human homologs.

Familial Cancer

Laboratory Head: Dr Joanne Young

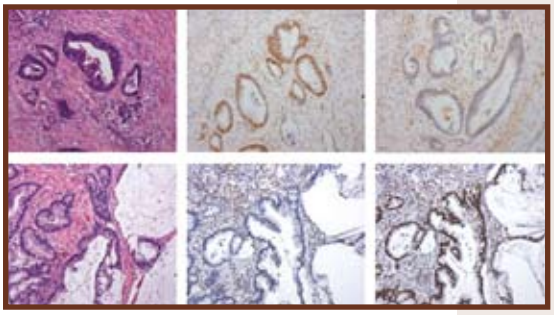
The Familial Cancer Laboratory studies the genetic changes that make some families more susceptible to either colorectal or endometrial cancer, or both, at several levels; the molecular pathology of the tumours, studies of the patient and their relatives, and translation of the findings to cancer patients in the population

This year, the laboratory has continued to investigate the spectrum of disease and the germline genetic variants in people predisposed to develop serrated polyps. People with hyperplastic polyposis syndrome (HPS), which is a severe form of serrated neoplasia predisposition, have been studied, also families with many members affected by serrated polyps and colorectal cancer, as well as people in the multi-ethnic population of Melbourne who have developed serrated pathway cancers. With the assistance of a grant from Cancer Council Queensland, over 150 people from all over the world with HPS have been studied. This work has confirmed previous findings from this laboratory (originally performed in a relatively small group of patients from a multi-ethnic patient population in New Zealand) that HPS is most often a condition found in northern Europeans. Studies of smoking history in these patients demonstrated that HPS patients who continued to smoke developed more serrated polyps than those who quit smoking or who have never smoked. In addition, the HPS patients in this study showed a colorectal cancer incidence of 40% with 25% of these presenting with 2-4 simultaneous cancers. These findings suggest that it is very important to screen HPS patients for colorectal cancer.

Gene hunting activities have progressed well in the past year. Through work supported by the National Cancer Institute, a cluster of genes have been identified on chromosome 2q which demonstrates linkage in four families where many kindred members are affected with serrated polyps and cancer. In 110 patients with HPS, a genome-wide case-control association study was carried out using one million polymorphisms. From this, several genetic loci have been identified which are highly associated with HPS, and which are currently undergoing exploration and confirmatory studies.

Findings in the HPS patients are being extended to the serrated cancer patients in the population with the assistance of a grant from the National Health and Medical Research Council. The significance of this work is that it has the potential to identify people at increased risk for colorectal cancer in the population.

Loss of DNA repair proteins in colorectal cancers can be demonstrated by special tissue stains



Highlights

Found that smoking increases polyp numbers in hyperplastic polyposis patients.

Confirmed the link between hyperplastic polyposis and northern European ancestry.

Demonstrated an increased family history of colorectal cancer in hyperplastic polyposis.

Identified three genetic loci with linkage to hyperplastic polyposis.

Showed involvement of breast cancer as a spectrum tumour in some Lynch syndrome families.

Genetic Epidemiology

Laboratory Head: Professor Nick Martin

This group investigates the pattern of disease in families, particularly identical and non-identical twins, to assess the relative importance of genes and environment in a variety of important health problems and to locate the genes responsible using genetic linkage and association analysis.

Highlights

Discovered basis of blue/brown eye colour – a SNP in HERC2.

Discovered highly significant association with melanoma on chromosome 20.

Discovered new red hair colour gene.

Discovered new SNPs influencing cholesterol and other cardiovascular risk factors.

Discovered major linkage peak for migraine on chromosome 10.

Alcohol consumption is associated with many medical and social variables. Genetic factors account for about two thirds of the susceptibility to alcoholism in both women and men in Australia. The alcohol dehydrogenase gene complex on chromosome 4 is a prime candidate region. This laboratory has now typed SNPs throughout this region in 4,500 twins and found major effects on alcohol metabolism, alcohol consumption, alcohol problems and the diagnosis of alcoholism itself.

Another focus is the way melanoma runs in families. Much of the year has been spent investigating the role of pigmentation genes as melanoma risk factors. The key SNP responsible for blue/brown eye colour was found in intron 86 of the HERC2 gene, upstream of the OCA2 gene, already known as the cause of albinism, and separately implicated in melanoma risk.

In a genome-wide association scan for melanoma a new region on chromosome 20 was found that appears to account for 11% of attributable risk of melanoma; this was published in *Nature* Genetics and received worldwide attention.

It is clear that moles (melanocytic naevi) are a major risk factor for melanoma. It is therefore important that more is known about the factors responsible for development and change of moles. Moles are being counted and mapped in over 1000 pairs of Brisbane 12 year old twins and these will be followed up at their fourteenth birthday. The laboratory has also shown that individual differences in moliness in this sample are largely genetic and has recently completed a genome scan that indicates a number of chromosomal regions of major effect. One region of major interest is the ANRIL gene close to CDKN2A, which also contains SNPs associated with type 2 diabetes and myocardial infarction.

A 610,000 SNP GWAS is currently being performed on this entire collection to find more genes. Similar scans are underway for over 10,000 of our adult twins and relatives who are phenotyped in multiple domains.

Molecular Epidemiology

Laboratory Head: Dr Grant Montgomery

The Molecular Epidemiology Group investigates complex diseases in families using high throughput genomics platforms to identify genes and pathways contributing to disease risk.

This group works with a number of national and international consortia to identify genes and gene pathways contributing to risk for common human diseases. An important focus is projects in women's health with projects on the genetics of endometriosis and dizygotic twinning. The group also work on a range of other diseases including melanoma, migraine, depression, alcohol, nicotine and drug dependence.

One of the aims in this laboratory is to identify genes that influence risk for endometriosis. A large collection of affected sister pair families and triad families (a case and two parents) have been assembled, including 3,900 women with clinically diagnosed endometriosis. A genome wide scan found significant evidence for a region on chromosome 10 linked to disease. In collaboration with colleagues at Oxford University, a second region on chromosome 7 significantly linked to endometriosis in families with multiple cases of disease has also been identified. A number of candidate genes previously implicated in endometriosis risk have been tested, but none have shown association in our families.

Another project is attempting to understand why twins run in some families. Finding the gene(s) responsible for twinning is likely to provide insights into mechanisms of female fertility and may have practical implications for controlling fertility and infertility. Mutations in the ovarian growth factor gene GDF9 in a small number of families that significantly increase the chance of having twins have been identified. No mutations in the closely related ovarian growth factor BMP15 were found.

The laboratory supports a range of studies in Genetic Epidemiology by maintaining the large biobank of samples for twin and family studies. The laboratory uses Sequenom MassARRAY and Illumina genomics platforms for high throughput genotyping and gene expression analyses. Genotyping services (zygosity testing and SNP genotyping) are provided for a range of projects.

Highlights

Established that common genetic factors influence susceptibility to both migraine and endometriosis.

Grants awarded from the NHMRC and Wellcome Trust to conduct a large genome wide association study of endometriosis cases with samples from Australia and the UK.

Members of the Molecular Epidemiology Laboratory

Molecular Cancer Epidemiology

Laboratory Head: Dr Amanda Spurdle

This laboratory studies breast and ovarian cancer, endometrial cancer, colon cancer and prostate cancer, with a focus on identifying molecular signatures of normal and tumour tissue that can point to the genetic and environmental causes of these cancers.

Highlights

Found evidence that mutations in the breast cancer *BRCA1* genes may increase the risk of endometrial cancer – especially in women who use Tamoxifen.

Showed that genes on the X chromosome are likely to influence age at onset of breast cancer in BRCA1 mutation carriers.

Discovered that simple analytical approaches combining array expression data and publically available genome-wide association data can be used to identify variants most likely to alter gene expression.

Case and control recruitment for the national endometrial cancer case-control family study ANECS is now complete. Detailed analysis of risk factor information is underway and testing for high-risk mutations is ongoing. The laboratory now has evidence that the breast cancer gene *BRCA1* may contribute in part to risk of endometrial cancer from examination of the histopathological examination of prior breast cancers of endometrial cancer patients.

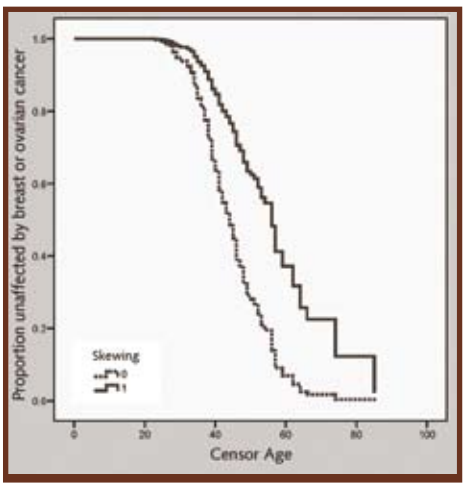
In a parallel study of breast cancer families, convincing evidence has also been found that Tamoxifen use in *BRCA1* carriers is associated with increased risk of endometrial cancer. This has important implications for management of *BRCA1* mutation carriers, since Tamoxifen is considered an option for prevention of breast cancer in high-risk individuals.

Novel findings show that skewed X inactivation (expression of one X chromosome more than the other) occurs more commonly in carriers of BRCA1 mutations, supporting previous reports that BRCA1 plays a role in X inactivation. In addition, the frequency of skewing is associated with a later age at onset of breast cancer in BRCA1 carriers, providing evidence that X-linked genes may modify age at onset of breast cancer.

This group has also shown that a novel combination approach of assessing overlapping candidates identified from expression array analysis and candidates identified from publically available genome-wide association data, can be used to identify a subset of irradiation responsive genes as high priority candidate *BRCA1/2* modifier genes.

This has also shown that simple analytical approaches may be used to identify genes and underlying genetic risk factors interacting with exogenous stimulants to cause or modify any disease, without *a priori* knowledge of the pathways involved.

Age at onset of breast cancer in skewed and non-skewed BRCA1 mutation carriers.



Molecular Psychiatry

Laboratory Head: Dr Corinne Lendon

This laboratory comprises two groups, one which seeks to identify the genetic and environmental factors involved in dementia and cognitive ability, and the other which researches the genetics of schizophrenia.

The LAW study is a longitudinal investigation of the health of aging women that has been going for five years. In collaboration with geriatric psychiatrists and neuropsychologists, the laboratory collected DNA, RNA and plasma proteins from 500 participants along with the first round of six monthly assessments of anxiety, depression and cognitive ability for association studies. Cognitively normal individuals will also be used as controls with the planned collection of Australian dementia cases.

The laboratory's existing case-control DNA collections from the UK have this year contributed to the discovery of putative Alzheimer disease (AD) risk genes. CALHM1 is located to a previously linked region on chromosome 10 and this group has found it influences Ca^{2+} homeostasis, Aß (amyloid) levels and a variant alter risk for AD (Cell, Jun 2008). This successful collaboration has resulted in the laboratory joining the European Consortium Genome Wide AD Association Study, 'GWALZ'. In addition to searching for genes, Drs Antonia Pritchard and Corinne Lendon have an ongoing program of functional studies on the differential control of ApoE (a proven risk factor of AD) allele and isoform expression using human blood and brain cell models.

For Dementia Awareness Month in October 2007, the laboratory organised a very successful dementia workshop at QIMR that brought together Queensland researchers from diverse fields to hear of each others research in order to foster collaboration and inform the public. As a direct result, research was included as the fourth work group of a new Queensland Health Statewide Dementia Clinical Network. Dr Lendon was appointed to the steering committee and co-facilitates the Research work group.

Professor Mowry, Liz Holliday, Cheryl Filippich, Heather Smith and Dale Nyholt have completed Illumina fine mapping of a region in which they found linkage in the Indian Schizophrenia (SZ) case-control cohort. Sequencing of the implicated candidate genes has begun. Together with the primary investigator Professor Stan Catts, Professor Mowry has brought bloods from 121 SZ cases to QIMR for cell transformation to contribute to the national resource of the Australia SZ Research Bank (ASRB). A broadening of phenotype using similar research approaches has been undertaken with the initiation of a pilot collection of cases and controls for a genetic investigation of depression.

Highlights

Collected first round of samples and clinical data for Longitudinal Ageing Women's study for studies of cognition, anxiety and depression.

Contributed to study of several new dementia genes, including novel gene in chromosome 10 linked region.

Refined differential allele expression techniques for ongoing CNS cell line functional studies.

Contributed to new European dementia GWAS.

Initiated a pilot study of depression.

Completed Illumina fine mapping of locus in Indian schizophrenia cohorts.

Collected year 1 of national ASRB schizophrenia cohort.

This laboratory identifies novel cancer genes and studies the way in which defects in these genes are associated with cancer predisposition or development.

Oncogenomics

Laboratory Head: Professor Nicholas Hayward

Highlights

Showed that neonatal UVR induces melanocyte hyperactivation and migration to the epidermal basal layer in melanoma-prone mice.

Showed that IL-18 is a marker for UVR-induced melanoma both in mice and humans.

Revealed roles for menin in regulating transcription, cell cycle and chromatin remodeling.

Participated in studies that identified novel pigmentation genes.

Identified the mutation responsible for blue/ brown eye colour.

Determined a number of key effectors of p14ARF in melanoma development.

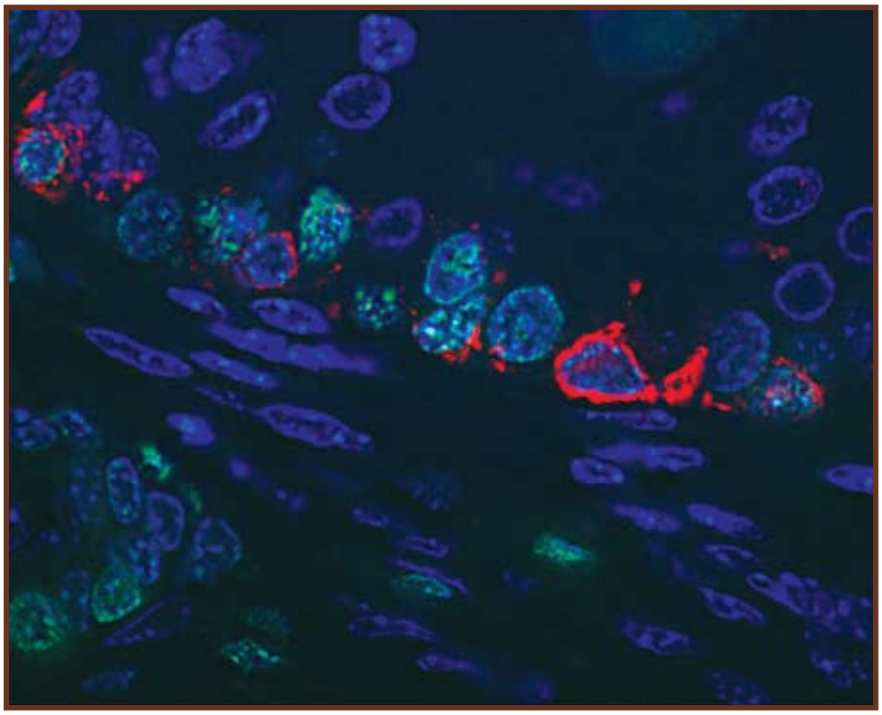
Identified genomic regions of common gain or loss in oesophageal cancer.

Work with mouse models of UVR-induced melanoma suggests a role for melanocyte proliferative response to UVR in melanoma induction, along with a possible role for melanocyte stem cells in response to UVR.

In addition, this laboratory showed that IL-18 is a somatic marker for UVR-induced melanoma in both mice and humans.

The Oncogenomics Laboratory gene expression profiling studies in multiple endocrine neoplasia type I (MEN1) have revealed a number of key genes and pathways disrupted in the absence of the tumour suppressor menin. Gata6 appears to be commonly down-regulated in each of the main endocrine tumour types associated with MEN1, as is the cell cycle regulator p18. In MEN1-associated gonadal tumours CSFR1 appears to be an important oncoprotein.

Is sunburn enough to initiate cancer? This photo shows what's happening to skin 24hrs after sunburn. Melanocytes, the precursors to melanoma are staining red (Tyrp-1) and are undergoing proliferation shown by the green nucleus (Ki-67) with neighbouring cells blue (Hoechst). What activates melanocytes to grow uncontrollably into cancers is unknown. By studying responses after sunburn,this laboratory seeks ways to prevent melanoma.



Queensland Statistical Genetics

Laboratory Head: Professor Peter Visscher

QSTAG specialises in quantitative and statistical genetics, population genetics, human genetics and bioinformatics, with the ultimate aim of trying to understand the genetic basis of differences in risk to disease and other phenotypes between individuals. In our research we use theoretical derivations, simulation studies, development of new analytical methods & tools and advanced statistical analyses of data from QIMR and collaborators.

DNA pooling is a relatively cheap technique to use in a case-control study to map genes affecting common disease. This laboratory further advanced the analysis of genome-wide association studies using pooling and this work ultimately led to the discovery of a genetic variant that predisposes to melanoma.

Mitochondria are maternally inherited and have been an important source of variation for population genetics studies. Mitochondrial genetic variants can also predispose to disease. In collaboration with the Molecular Epidemiology and Genetic Epidrmiology Laboratories, 69 mitochondrial variants in 4,000 individuals from 1,000 families were genotyped. The genetic structure in the Australian population was estimated from these markers and quantified the statistical power to detect association with disease and these markers (publications in *European Journal of Human Genetics, May 2008* and in *Genome Research, June 2008*).

In collaboration with the Universities of Edinburgh and Sheffield, the laboratory showed that natural selection can be in unexpected directions, depending on the correlation structure of component traits of Darwinian fitness. This was published in *Science, January 2008)*.

Genome-wide association studies between genetic markers and disease has revolutionised the field of complex disease studies in the last two years. QSTAG was the first to show that such studies could be used to predict the risk of disease of healthy individuals, without having to know the causal mutations or biological functional pathways. This was published in *Genome Research, October 2007)*.

The laboratory was invited to write a review article for *Nature Reviews Genetics* and a News and Views article for *Nature Genetics*.

In mental health research, QSTAG obtained membership of the International Schizophrenia Consortium. A manuscript showing that rare chromosomsal deletions are more common in schizophrenia cases than in matched controls is being published in *Nature*.

Highlights

Completed dissection of Darwinian fitness in a natural population.

Demonstrated that genome-wide association studies can be used to predict the risk of disease for healthy indidivuals.

Contributed to a landmark study that showed that schizophrenia cases have, on average, more rare chromosomal deletions and insertions than matched controls.

IMMUNOLOGY

Prof Geoff Hill heads the Immunology Division

The Division has undergone restructuring over the last year with separation of the large Infectious Disease and Immunology division into two separate entities in order to make each more manageable in size. The newly created Immunology Division now has 11 laboratories but still has a significant focus on tumour and infectious disease based immunology. We have had a very successful year with a number of prestigious personal honours awarded and important landmark studies published in high impact journals across a wide breadth of fields.

The focus of the Immunology Division is improved understanding of the immune system and in particular its interplay with infectious agents and neoplastic cells. By expanding this knowledge base the ultimate aim of the Division is to provide improved ability to diagnose and treat infectious diseases and malignancies. Highlights of this year have included:

- Demonstration of the effects of differing *Plasmodium* strains on dendritic cell function and the effects of TNF generated during infection on subsequent dendritic cell function.
- Description of the effect and mechanisms by which graft-versus-host disease corrupts dendritic cell differentiation.
- Description of the effect of clonal competition for peptide-MHC complexes on the $CD8^+$ T-cell répertoire sélection in a persistent viral infection.
- Completion of Phase III trials by in prostate cancer and metastatic melanoma.
- Demonstration that the antigen HLA-A1 does not present EBV antigens for immune recognition, thus presenting a potential explanation for the increased risk of mononucleosis and EBV+ Hodgkins disease in this group.
- Development of novel assays to better profile EBV-positive lymphomas.
- Development of a new antigen based vaccine designed to control nasopharyngeal carcinoma and commencement of a peptide based clinical trial for the treatment of nasopharyngeal carcinoma
- Identification of the ability of NKT cells to exacerbate leshmaniasis and a paradoxical ability of natural regulatory T cells to promote cerebral malaria.

HEADS OF THE IMMUNOLOGY DIVISION LABORATORIES

From left: Assoc Prof Scott Burrows – Cellular Immunology, Dr Chris Schmidt – Cancer Immunology and Assoc Prof Andreas Suhrbier – Immunovirology

Dr Chris Engwerda – Immunology and Infection, Prof Michael Good – Molecular Immunology, Dr Denise Doolan – Molecular Vaccinology and Prof Geoff Hill – Bone Marrow Transplantation (Missing: Prof Denis Moss – EBV Biology)

Assoc Prof Maher Gandhi – Clinical Immunohaematology, Assoc Prof Rajiv Khanna – Tumour Immunology and Assoc Prof Alejandro Lopez – Dendritic Cells and Cancer

Bone Marrow Transplantation

Laboratory Head: Professor Geoff Hill

The Bone Marrow Transplantation Laboratory works towards understanding the mechanisms by which transplant recipients eradicate leukaemia but also develop life-threatening complications, particularly graft-versus-host disease.

Highlights

Identified direct and indirect signaling pathways for G-CSF mediated T cell suppression.

Delineated the effects of GVHD on plasmacytoid dendritic cell (pDC) reconstitution and immunity.

Demonstrated a transient expansion of immature pDC post transplant which ameliorate GVHD.

Discovered an NKT mediated pathogenic pathway by which G-CSF induces GVHD post transplant.

Described the pleiotropic effects of IFNg on GVHD.

The Bone Marrow Transplantation Laboratory continues to investigate the mechanisms of graft-versus-host disease (GVHD) and graft-versus-leukemia effects after haematopoietic stem cell transplantation. In the last year, a large body of work on cytokine dependent stem cell mobilisation and the immunological effects therein has been finalised, leading to the completion of studies in multiple new models of clinically relevant GVHD. Subsequent work on the effect of NKT cell activation by G-CSF or glycolipid administration after bone marrow transplantation, and effects on GVHD have also been completed and presentation of this work at international meetings has begun.

Late onset, chronic GVHD, has become an increasing clinical problem without any effective therapy at present. This laboratory is prioritising new studies in this field in an attempt to better understand the process and develop effective therapeutics. This follows the introduction of a number of new inbred animal strains and cytokine knock outs that have particular promise in their preliminary studies in this field.

New studies have also progressed on plasmacytoid and conventional dendritic cells and their role in antigen presentation following a successful NHMRC project grant in 2008 to Dr Kelli MacDonald. These studies utilise a number of new and highly novel reagents and will, for the first time, allow determination of alloantigen specific donor T cell responses in the presence or absence of specific antigen presenting cell subsets. Also in this area, multiple subsets of regulatory T cells that expand post transplant have been identified. The laboratory is now using newly generated transgenic lines that allow examination of their capacity to inhibit effector T cell responses and the antigen specificity of inhibition *in vivo*.

Members of the Bone Marrow Transplantation Group: Back row: Renee Robb, Geoff Hill, Alistair Don, Stuart Olver. Front row: Kate Markey, Vanessa Rowe, Rachel Kuns and Kelli MacDonald

Cancer Immunotherapy

Laboratory Head: Dr Chris Schmidt

Understanding how the immune system succeeds in its fight against malignancies is central to the future development of cancer immunotherapies, and the focus of research in this laboratory.

The Cancer Immunotherapy Laboratory has developed a platform technology for manufacturing dendritic cell-based vaccines that can be cryopreserved, allowing timely, uniform and relatively economical delivery.

The clinical efficacy of frozen vaccines was initially shown in the setting of metastatic melanoma, in conjunction with the Mater Adult Hospital. This has now been successfully extended to the aggressive brain cancer Glioblastoma, in collaboration with the Royal Brisbane Hospital.

In addition, a clinical trial for patients with advanced Prostate cancer that included one patient with resolution of metastatic and primary disease was completed in 2007. This trial was a collaboration with Professor R A Gardiner from the Royal Brisbane and Women's Hospital and provided an important proof of concept for the use of immunotherapy for metastatic carcinomas.

In the less advanced setting of regional metastatic disease, and in collaboration with Professor MG O'Rourke from the Mater Adult Hospital, Associate Professor Mark Smithers from the Princess Alexandra Hospital and Dr Ian Hermans of the Malaghan Institute NZ, the therapy was shown to give no benefit in progression-free survival for patients with less advanced, regional metastatic melanoma.

In order to improve immunotherapy design, the immune response of successfully treated patients needs to be fully characterised. In collaboration with Dr Thomas Wölfel from Mainz, the precise molecules targeted by patients with complete clinical responses have been identified, facilitating the detailed examination of their anti-tumour immune responses.

Using information gained from these trials, further innovations in dendritic cell culture have been researched, and will be incorporated into a second trial for Glioblastoma in association with Dr D Walker at the Wesley Hospital.

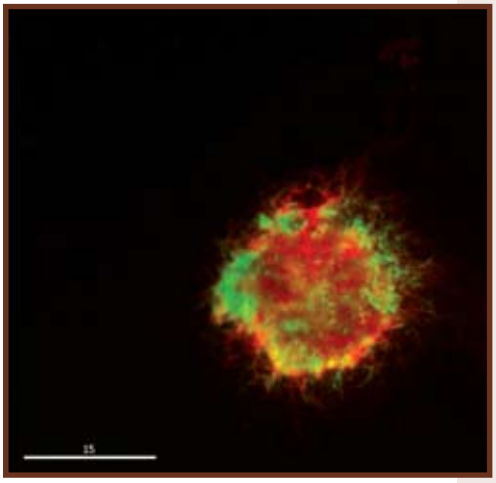
Highlights

Successfully completed a dendritic cell trial for patients with advanced Prostate cancer.

Completed a Phase III randomised placebo controlled trial for patients with resected regional metastatic melanoma (Stage III B/C), indicating no improvement in progression-free survival.

Developed a high yield, automatable dendritic cell manufacture technology.

Completed a detailed characterisation of the CD8 anti-tumour response in patients with complete resolution of metastatic disease.



Dendritic cells used in patient vaccination express CD83 (red) on dendritic processes and peripheral actin filaments (green). Photo taken by Julianne Pichler using a DeltaVision microscope

Cellular Immunology

Laboratory Head: Assoc Prof Scott Burrows

The main focus of the Cellular Immunology Laboratory is the cytotoxic T lymphocyte (CTL) and factors controlling its primary function in recognising and killing virus-infected cells.

Highlights

Discovered widespread variation in the sequence of the EBNA1 protein of EBV and showed that this variation influences immune recognition.

Showed that the common tissue antigen HLA-A1 does not present Epstein-Barr virus antigens for immune recognition.

Epstein-Barr virus (EBV) is present at high frequency in all human populations and is associated with several malignancies, including Hodgkin lymphoma, Burkitt lymphoma, and nasopharyngeal carcinoma.

The EBNA1 protein is perhaps the most widely studied EBV protein because it is present in all EBV-associated malignancies. Much research to date has focused exclusively on a single strain of EBV. By sequencing the gene that encodes this protein in EBV strains from many different people, scientists in this laboratory have discovered considerable EBNA1 sequence variation across the population. Importantly, they further showed that this EBNA1 sequence variation greatly influences the immune response to this virus. Thus a vaccine based on the commonly studied laboratory EBV strain may not be optimal for controlling the strains most frequently encountered by people.

Foreign peptide epitopes are present on the surface of virus-infected cells and these are recognised by the T lymphocytes of the immune system only when bound to cell surface molecules called histocompatibility antigens (HLAs) in humans. These HLAs are a highly polymorphic class of molecules, with each different HLA capable of binding a distinct set of antigenic peptides. Recent reports have shown that people who are positive for the common HLA-A1 allele are at increased risk of developing EBV-positive Hodgkin lymphoma and infectious mononucleosis (glandular fever). This group has recently suggested a mechanism for this association by showing that EBV has no peptides that can bind to HLA-A1. Thus T cell control over the proliferation of EBV-infected cells may be relatively inefficient in HLA-A1+ individuals, thereby contributing to an increased risk of acute infectious mononucleosis and EBV+ Hodgkin lymphoma.

Left: Rebekah Brennan examining a gel for bands Right: Melissa Bell looking after cell cultures

Clinical Immunohaematology

Laboratory Head: Assoc Prof Maher Gandhi

The major research interests in this laboratory involve viral and immune biomarkers, immuno-evasion, viral microRNA expression and optimisation of cellular immunotherapies for virus associated lymphomas.

The aetiology of lymphomas is poorly understood and the striking increase in its incidence rate in developed societies remains unexplained.

The concept of lymphoma as a virally induced malignancy is not surprising since viruses are implicated in approximately 15 percent of all cancers. However, lymphoma represents a complex multi-step process and, although viral associations have been identified, integration of the available epidemiological and scientific data poses substantial questions. The study of oncogenic viruses has and will continue to yield major insights into the pathogenesis of lymphoma. Likewise given that lymphoma is a cancer of the immune system, it is unsurprising that a spectrum of immune defects have been identified in lymphomas of various histologies.

Further research which is likely to uncover new lymphoma associations between both known and as yet unidentified viruses and immune defects, may provide cellular and pharmacological targeted antiviral therapy strategies for the treatment of malignant lymphoma, and ultimately may generate the most promising avenue for lymphoma prevention.

Using the herpes virus Epstein-Barr virus (EBV) as a model system, this group supports a range of studies that will heighten understanding of the viral associations and immune defects in lymphoma. The laboratory performs highly-detailed functional immunoassays, genetic biomarkers and viral tests on clinical samples obtained from lymphoma sufferers.

Assoc Prof Maher Gandhi, head of the Clinical Immunohaematology Laboratory

Highlights

Acquired and set up novel assays to profile EBV-positive lymphomas.

Established patient cohorts for a range of lymphomas of various histological subtypes.

Developed a collaboration with the Gold Coast Genomic Research Centre, Griffith University.

Defined a previously unidentified selective impairment of immunity and its mechanism in Post-Transplantation Lymphoproliferative disorders.

Dendritic Cells and Cancer

Laboratory Head: Dr Alejandro López

This laboratory explores the function of dendritic cells (DC) in patients with breast cancer and investigates the role of breast cancer stem cells in the generation of tumours. Resulting findings will yield novel DC-based immunotherapy.

Highlights

Established a reproducible system to generate mammospheres.

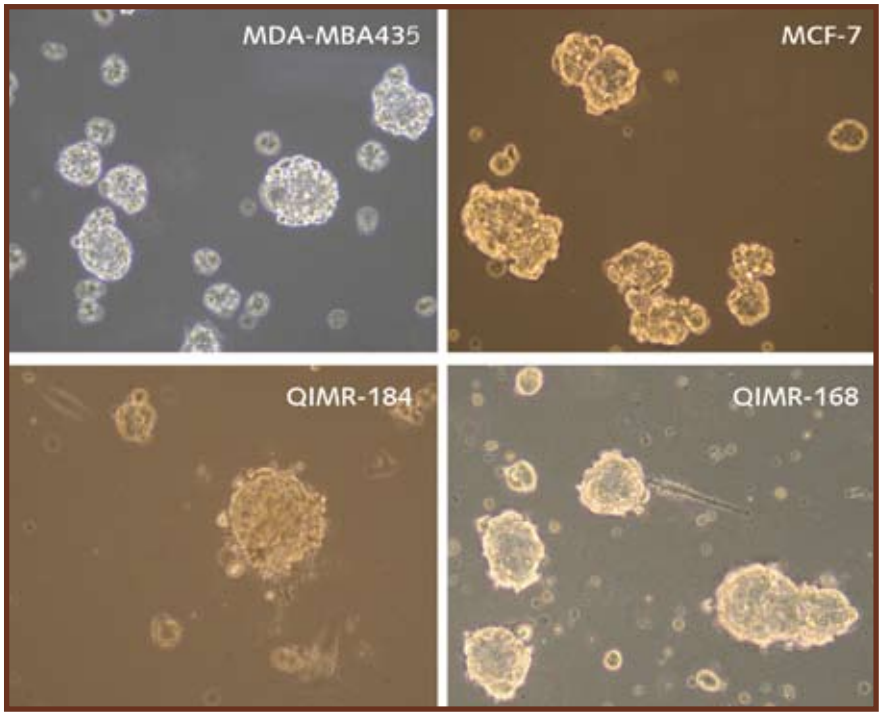
Generated stable, long-lasting sphere cultures derived from breast cancer cell lines.

Identified patterns of differential protein expression by sphere-forming cultures.

This laboratory has now established a culture system to reliably generate breast cancer stem cell (BCSC)-like spheres from primary breast tumours and established breast cancer lines. Xenografts of tumours generated in mice have shown that sphere-forming cultures are more efficient in inducing tumours in mice. More importantly, consecutive passages of these lines enhance the efficiency of BSCS-enriched sphere cultures to induce tumours *in vivo*.

In collaboration with Jeff Gorman from the Protein Discovery Centre, scientists in this laboratory are examining the protein expression of cells grown under sphere forming. This tool is providing valuable information on potential antigens that might be targeted by the immune system in a DC-based immunotherapy protocol.

Mammospheres grown in NSA medium from breast cancer cell lines MDA-MB35 and MCF-7 and primary breast cancer tumours QIMR 184-168



Epstein-Barr Virus Biology

Laboratory Head: Professor Denis Moss

This laboratory is committed to understanding the biology and immunology of two clinically important human pathogens, Epstein-Barr virus (EBV) and vaccinia virus. EBV laboratory findings are captured for use in human clinical trials.

A scrambled antigen-based formulation designed to control nasopharyngeal carcinoma (NPC)

A new formulation has been designed in this laboratory that includes all of the possible immunogenic determinants of proteins expressed within NPC biopsies. This formulation, referred to as SAVINE, is undergoing pre-clinical testing. Interestingly, it appears that this immune response includes both $CD4^+$ and $CD8^+$ cells. The results indicate that this formulation, when delivered in a replication-deficient adenovirus, is capable of activating immune responses from both healthy individuals and NPC patients. These results provide a platform for future clinical trials.

A peptide-based clinical trial for nasopharyngeal carcinoma

A clinical trial has begun using NPC patients recruited from the Head and Neck Clinic at Princess Alexandra Hospital in collaboration with Professor Bill Coman and colleagues. This trial involves adoptive transfer of *in vitro* activated T cells from NPC patients. Activation of T cells involves the use of a peptide encoded within a protein associated with NPC. This procedure is conducted within the QGen facility of QIMR. To date two patients have been treated without ill effects. Clinical efficacy is still under investigation.

Highlights

Began a clinical trial in NPC patients in collaboration with Princess Alexandra Hospital.

Defined the immune response in healthy individuals and nasopharyngeal carcinoma patients using the SAVINE vaccine encoded within adenovirus.

Members of the EBV Biology Laboratory from left: Viviana Lutzky, Pauline Crooks, Denis Moss, Leanne Morrison, Michelle Martinez and Natasha Stevens

Immunology and Infection

Laboratory Head: Dr Christian Engwerda

This laboratory studies the host immune response during malaria and leishmaniasis, and aims to distinguish host immune responses to parasites that lead to control of disease and those that contribute to tissue pathology.

Highlights

Identified the cytokine LIGHT as an important component of the host immune response during malaria and visceral leishmaniasis.

Discovered that therapeutic activation of NKT cells during visceral leishmaniasis can exacerbate disease.

Identified an important role for VCAM-1 in dendritic cell activation following *Leishmania donovani* infection.

Discovered a panel of novel and known molecules expressed in the brains of mice with experimental cerebral malaria caused by *Plasmodium berghei* ANKA.

Identified a single nucleotide polymorphism in the galectin-2 gene that is strongly associated with increased risk of cerebral malaria in Papuan children.

In the past year, this laboratory has made several important discoveries that advanced understanding of disease progression in malaria and visceral leishmaniasis. New pathogenic roles have been identified for the TNF family member LIGHT in both diseases. Important regulatory functions have also been identified for NKT cells during visceral leishmaniasis, as well as a critical role for VCAM-1/VLA-4 interactions in dendritic cell cytokine production early during *Leishmania donovani* infection.

Research on cerebral malaria in the laboratory has uncovered a number of novel and known molecules that are expressed in the brains of mice with cerebral malaria caused by *Plasmodium berghei* ANKA. Common strategies to prevent and modulate cerebral malaria in different mouse strains that may point towards strategies to treat severe malaria in people have also been identified.

Studies on malaria patients have now commenced through collaborations with Dr Nick Anstey of the Menzies School of Health Research in Darwin and researchers at the National Institute of Health Research and Development (NIHRD), Indonesia to test whether discoveries regarding disease pathogenesis in mouse models of malaria apply to human disease.

In collaboration with the Molecular Epidemiology Laboratory, extensive analysis of the TNF and lymphotoxin gene locus (TNF and lymphotoxin play important roles in mouse malaria models) have been conducted in Papuan Highlanders who have migrated from a malaria-free area to a malaria endemic area. No strong associations with any single nucleotide polymorphisms (SNPs) and risk of developing severe malaria syndromes in this population were found. However, a SNP in the galectin-2 gene that regulates gene transcription was identified as strongly associated with increased risk of cerebral malaria in Papuan Highlander children. Galectin-2 has previously been shown to play an important role in transporting lymphotoxin out of cells, and hence, may regulate lymphotoxin levels during malaria infection and play a role in determining if cerebral malaria develops in children. These studies are ongoing and it is hoped they will identify new targets for therapies to treat cerebral malaria patients.

Fabian Rivera at work in the Immunology and Infection Laboratory

Immunovirology

Laboratory Head: Assoc Prof Andreas Suhrbier

Commissariat à l'Énergie Atomique

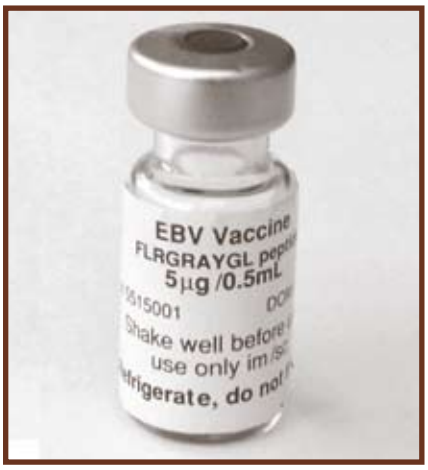
The Immunovirology Laboratory is exploiting new knowledge about interactions between viruses and the immune system to develop novel anti-viral and anti-cancer strategies.

A human Phase I glandular fever vaccine trial has finally been completed after a 2-12 year follow up. The vaccine, which induced Epstein Barr virus (EBV) specific CD8 T cells, was found to be well tolerated and, importantly, caused no immunological perturbations when vaccinees naturally acquired EBV. One out of two of the placebo vaccinees who acquired EBV developed glandular fever, whereas four out of four vaccinees who acquired EBV after completing peptide vaccination seroconverted without disease. Although these numbers were too low for statistical significance, the study certainly illustrated that this type of vaccine is immunologically safe in the context of EBV primary infections.

In collaboration with Dr Khromykh's group at The University of Queensland this laboratory has illustrated the efficacy of a new type of DNA vaccine for flaviviruses, such as West Nile virus and dengue. This *DNA* vaccine with a kick essentially allows two rounds of virus particle production *in vivo*, without the generation of infectious virus. The immunity and protection generated by this new DNA vaccine was significantly better than existing DNA vaccines against flaviviruses. The study was published in *Nature Biotechnology*.

Ongoing research in collaboration with Drs S Mahalingham from the University of Canberra and P Roques from Commissariat à l'Énergie Atomique, Paris, into alphaviruses that cause joint pain/arthritis, like Ross River and chikungunya viruses, has again highlighted the important role of macrophages in the disease process. Increasing insights into how macrophages are excessively activated and cause disease should lead the way to better treatments for these diseases.

This laboratory also found evidence that calpain may be an important protease used by human papilloma virus (HPV) to cause cancer, with calpain inhibitors potentially finding utility in the treatment of HPV associated tumours. Ongoing work on SerpinB2 in collaboration with Dr Antalis of the University of Maryland in the USA also illustrated that calpain may be a target for this protease inhibitor.



Highlights

Completed a Phase I clinical trial for glandular fever. The vaccine was well tolerated, induced appropriate immune responses and indicated efficacy.

Illustrated that human papilloma virus transformation may involve the calcium activated protease calpain.

The vaccine used in a Phase 1 human trial against Epstein-Barr virus induced glandular fever (or kissing disease)

The Molecular Immunology Laboratory studies the immune response to pathogens with the goals of understanding pathogenesis and developing vaccines.

Molecular Immunology

Laboratory Head: Professor Michael Good

Highlights

Showed soluble CD38 significantly extends the lifespan of antibody memory.

Demonstrated strain and species – transcending malaria immunity following ultra low dose killed parasite vaccination with CpG.

Demonstrated that a dual antigen vaccine (targeting M protein and SfbI) delivered intranasally can elicit better protective immunity against streptococcus compared to single antigen vaccines

Demonstrated a lipid-based M protein streptococcal vaccine could stimulate mucosal immunity and reduce colonisation in the throat

Demonstrated that experimental mannosylated HPV vaccines synthesised using a lipid-based delivery system can prevent the development of HPV-16 associated tumours and were self-adjuvanting.

The Molecular Immunology Laboratory is interested in immunity, pathogenesis and vaccine development for some infectious agents of global importance principally malaria parasites and group A streptococcus (GAS).

Research by the immuno-pathogenesis group within the laboratory has predominantly focused on dendritic cell function and memory responses to malaria primarily in the mouse. This is the work of Dr Michelle Wykes and her team and builds on the central role of DCs to cell mediated immunity and the observations that infection with *Plasmodium* can cause apoptosis of memory and/or effector T and B cells specific for the parasite.

Dr Alberto Pinzon-Charry and colleagues have also studied human DC responses to malaria. In collaboration with Dr Tonia Woodberry and Dr Nick Anstey from the Menzies School of Medical Research in Darwin, they are currently performing detailed analyses of dendritic cell function in patients infected with *P. falciparum* and *P. vivax* in the field setting. This is the first time a detailed assessment of the function of circulating dendritic cells, key antigen presenting cells, has been performed.

In the mouse model of infection, a novel malaria vaccine strategy combining low doses of whole parasite extract adjuvanted in CpG is proposed.

A significant amount of preclinical research has confirmed the efficacy and safety of this approach and plans are currently advancing for a Phase I human clinical trial in collaboration with Dr James McCarthy and Dr Denise Doolan and their groups.

Group A streptococcus is the causative pathogen of rheumatic fever and rheumatic heart disease which are estimated to cause approximately 350,000 deaths each year. Dr Colleen Olive and her colleagues, using a synthetic lipid-based vaccine adjuvant delivery system and conserved epitopes of the streptococcal M protein and those of a second protein, SfbI, have aimed to develop a vaccine that can elicit broad-spectrum immunity against many different group A streptococcal strains. They have demonstrated the efficacy of this approach in preclinical studies using a mouse intranasal model and studies have progressed to understanding the immunology of this vaccine-induced protection and improving vaccine potency. The Molecular Immunology Laboratory's work on GAS is in close association with the Bacterial Vaccines Laboratory of Dr Michael Batzloff.

Dr Olive is also interested in using similar technologies in vaccine design for *Helicobacter pylori* and human papillomavirus.

Molecular Vaccinology

Laboratory Head: Dr Denise Doolan

The focus in this laboratory is on understanding the molecular basis of immunity to malaria and identifying the antigenic targets of this immunity with the ultimate aim developing a malaria vaccine.

In one aspect of research in this laboratory, *Plasmodium falciparum* protein microarrays are being screened with sera from individuals experimentally or naturally exposed to malaria. This is to characterise differences between individuals or populations with regard to the profile of antigens recognised, correlate these responses with protection status, and identify novel parasite antigens that may represent good candidates for vaccine development. A protein microarray chip containing 2,320 *P. falciparum* proteins has been generated and screened with sera from individuals experimentally immunised with radiation-attenuated *P. falciparum* sporozoites who are either protected or not protected against parasite challenge. Several proteins have been identified that are preferentially recognised by protected individuals and therefore may be good vaccine targets. The chip has also been screened with sera from semi-immune adults in Kenya with lifelong exposure to malaria, and from children in Ghana who are developing anti-malarial immunity.

The profile of antigens recognised by individuals naturally exposed to malaria differs from those of individuals experimentally immunised with sporozoites, and between adults and children naturally exposed to malaria but with different clinical histories. Data show a distinct pattern of acquisition of antibodies against *Plasmodium* antigens with age.

In other studies, this group is investigating the mechanisms of protective immunity to malaria. Since understanding the molecular basis of this immunity requires a more comprehensive approach than can be achieved with classical immunoassays, multi-parameter T-cell-based immune assays are being developed that require minimal sample volumes to comprehensively characterise the fine specificity of this immunity in both humans and rodent models.

A third area of research is evaluating novel adjuvants that are suitable for human use for their immunogenicity and capacity to enhance the protective immunity of a whole blood-stage parasite vaccine, in a rodent model of malaria. A panel of promising adjuvants have been identified that are currently under investigation.

Highlights

Identified several antigens that may be good targets of an infection-blocking malaria vaccine since they are preferentially recognized by individuals who are protected against *Plasmodium* sporozoite challenge, but not by individuals who are not protected.

Showed, on a proteome-wide scale, that *P. falciparum* antigen-specific antibody reactivities are acquired with age and that the profile of antigen reactivities differs with protection status.

Members of the Molecular Vaccinology Laboratory – from left: Angela Trieu, Kathy Buttigieg, Penny Groves, Simon Apte, Denise Doolan, Andrew Redmond

This laboratory seeks a deeper understanding of the mechanisms by which an immune response to tumors may be generated, augmented and applied to the inhibition of tumour growth.

Tumour Immunology

Laboratory Head: Assoc Prof Rajiv Khanna

Highlights

Initiated a Phase I/II clinical trial to test the efficacy of a therapeutic vaccine in NPC patients as part of a collaborative study with the University of Hong Kong.

The Tumour Immunology Laboratory is involved in the development of therapeutic vaccine for EBV-associated cancers nasopharyngeal carcinoma (NPC) and Hodgkin's lymphoma (HL). One such strategy currently under consideration is based on specifically enhancing human immune response to EBV proteins expressed in these cancers. Since both these cancers express identical viral proteins, it is anticipated that a common immunotherapeutic protocol may provide curative benefit to cancer bearing patients. Immunogenic determinants have been successfully identified from the EBV proteins expressed in NPC and HD and laboratory tests have shown that killer T cells specific for these determinants can efficiently kill these cancer cells. Using these viral determinants this group has designed a therapeutic vaccine, E1-LMPpoly™,which has been extensively tested in preclinical studies and shown very promising results. In early 2008, a Phase I/II clinical trial was initiated to test the efficacy of this therapeutic vaccine in NPC patients. This study has been initiated in collaboration with the University of Hong Kong. In addition, our group is also negotiating with biotech companies to explore their potential involvement in the future development and commercialisation of this vaccine.

Other ongoing studies focus on understanding how persistent viruses like EBV and CMV avoid immune surveillance during latent infection through reduction in the synthesis of virally encoded proteins. Although antigen presentation critically depends on the level of viral protein synthesis, the precise mechanism used to regulate the generation of antigenic peptide precursors remains elusive. This laboratory has demonstrated that a purine-overloaded virally-encoded mRNA lacking secondary structure significantly impacts the efficiency of protein translation and prevents endogenous antigen presentation. Reducing this purine bias through the generation of constructs expressing codon-modified sequences, while maintaining the encoded protein sequence, both increased the stem-loop structure of the corresponding mRNA and dramatically enhanced self-synthesis of the viral protein. As a consequence, a higher number of HLA-peptide complexes were detected on the surface of cells expressing this viral protein. Furthermore, these cells were more efficiently recognised by virus-specific T cells compared with those expressing the same antigen expressed by a purine-biased mRNA. These findings delineate a mechanism by which viruses regulate self-synthesis of proteins and offer an effective strategy to evade $CD8^+$ T cell-mediated immune regulation.

CANCER AND CELL BIOLOGY

Prof Greg Anderson heads the Cancer and Cell Biology Division

This Division consists of 10 laboratories which collaborate vigorously with other QIMR Divisions and encompasses strong research interactions with the Royal Brisbane and Women's Hospital and The University of Queensland. Individual laboratories also have research collaborations with various hospitals to assist in the translation of research findings into clinical outcomes. Research ranges from specific investigations of the molecular and genetic aberrations of tumour cells to clinical and pathological studies of cancers and other disorders such as iron loading disease haemochromatosis.

Tumours studied include melanoma, leukaemia, breast, liver and colorectal cancer. Research themes include the normal mechanisms that control cell growth and division, the DNA damage response and DNA repair, mechanisms of iron homeostasis in the liver and intestine, development of mouse models to study in vitro functions of cancer genes, developing screening tools for early detection of cancers and devising strategies for cancer treatment, and the investigation of liver disease in both the adult and paediatric populations. Highlights this year include:

- Demonstration that SmcHD1 is physically associated with the inactive X chromosome and is required for silencing many genes.
- Identification of a novel adhesion molecule lost in melanoma that helps cell migration and invasion.
- Identification of the novel ssDNA binding proteins hSSB1 and hSSB2 as critical for maintenance of genomic stability.
- Demonstration that many mutations in transferrin receptor 2 lead to aberrant localisation of the protein.
- Demonstration that pleomorphic variant lobular breast carcinoma shows molecular overlaps with classic lobular cancers.
- First comprehensive description of senataxin, the protein defective in ataxia oculomotor apraxia type 2.
- Definition of the penetrance of the iron overload disease haemochromatosis in a large unselected Caucasian population.
- Identification of gene changes in normal bowel that can predict increased risk of having a bowel polyp.
- Demonstration that lymphotoxin-beta receptor on hepatic stellate cells is required for wound healing and liver fibrosis.

HEADS OF THE CANCER AND CELL BIOLOGY DIVISION LABORATORIES

From left: Prof Peter Parsons – Drug Discovery Group, Prof Barbara Leggett – RBWH Gastroenterology (Missing: Prof Andrew Boyd - Leukaemia Foundation)

Prof Sunil Lakhani – Molecular Pathology, Dr KumKum Khanna – Signal Transduction, Prof Grant Ramm – Hepatic Fibrosis

Prof Martin Lavin – Radiation Biology and Oncology, Prof Greg Anderson – Iron Metabolism, Dr Graham Kay – QCF Transgenics, Assoc Prof Nathan Subramaniam – Membrane Transport

Drug Discovery Group

Laboratory Head: Professor Peter Parsons

This laboratory combines expertise in cancer biology with genomics and drug discovery. Cell communication networks in sun-induced cancers, cancers of the head and neck, and ovarian cancer reveal responses that address important issues of prevention and treatment.

Highlights

Showed that expression of the MIC-1 cytokine is regulated by a specific factor in melanoma, and may influence the immune system.

Identified a novel adhesion molecule lost in melanoma that helps cell migration and invasion.

Established a lentiviral expression system for ablation of expression using engineered microRNA.

Discovered small molecules that are selectively toxic for tumour compared with normal human cells.

The overall theme of the Drug Discovery Group is to identify and study the function of genes that are important in the development and treatment of certain cancers, with the longer term aim of discovering agents that can be aimed at specific targets. Several such genes have been identified in melanoma, ovarian cancer, squamous cell carcinoma of the head and neck, and breast cancer and are being followed up at the functional level.

The above approaches, when applied, have led to reagents for both over-expression or knock-down of targets being developed, and been applied to several gene candidates for the progression of melanoma, ovarian cancer and head and neck cancer. The laboratory has extensively examined the role of a novel cytokine that was found to be highly expressed in metastatic melanoma. The group have shown this cytokine to be necessary for tumorigenicity in a mouse model, and controlled by a melanocyte-specific factor. Preliminary evidence has suggested that this cytokine may block the detection of the melanoma by the immune system. Further work has been carried out with this cytokine with squamous cell carcinoma cell lines derived from head and neck tumours, and immunohistochemistry has been conducted on a larger number of tumours to confirm the association of several candidate genes with poor prognosis of these tumours. The response of the transfected cells lines to current anticancer drugs was also examined.

A novel adhesion molecule has been identified as being lost in melanoma, and has been successfully re-expressed in melanoma cell lines. The resulting cells showed a decrease in motility and invasive capacity in *in vitro* experiments, suggesting loss of this adhesion molecule has a role in invasion of this disease.

The drug discovery program has expanded from anticancer screening to a range of other assays to detect antioxidant and anti-inflammatory activities. Some of this screening flagged the need to deal with purification of water-soluble compounds from natural sources. An LC-MS instrument was commissioned which will greatly assist in the deconvolution of complex mixtures. This machine was funded in part by a grant from the Ian Potter Foundation. The chemical library was sourced from a variety of natural products, as a collaborative arrangement with an Australian company, and a small synthetic library provided by collaborators at Griffith University has yielded some promising candidates.

Hepatic Fibrosis

Laboratory Head: Assoc Prof Grant Ramm

The Hepatic Fibrosis Group investigates the cellular and molecular mechanisms of scar tissue formation in the liver, leading to fibrosis and cirrhosis in serious liver diseases of adults, such as haemochromatosis, and children including cystic fibrosis and biliary atresia.

Haemochromatosis:

Our research investigates the mechanisms which cause liver tissue injury in the iron overload disease, hereditary haemochromatosis. We have demonstrated that ferritin, an intracellular iron storage protein, can induce an inflammatory response in hepatic stellate cells which aids in the process of fibrogenesis. This occurs independently of iron and functions via a second messenger pathway involving PI-3 kinase, PKCζ, MAP kinase and NFκB. The receptor which elicits this signal remains unknown and is the subject of current investigation. In our clinical studies we have developed a model for the accurate diagnosis of cirrhosis in haemochromatosis. The current gold standard dictates that patients with a serum ferritin >1000μg/L require a liver biopsy to rule out cirrhosis, however, 60% of these patients do not have cirrhosis. We have now shown that if patients have both elevated serum ferritin + serum hyaluronic acid levels, 100% of these patients will have cirrhosis, obviating the need for costly, invasive liver biopsy.

Cystic Fibrosis Liver Disease and Biliary Atresia:

Our research group also investigates the mechanisms which cause fibrosis and cirrhosis in the paediatric cholestatic liver diseases, cystic fibrosis and extrahepatic biliary atresia. We have demonstrated that hepatocytes and bile duct cells express a key chemokine, monocyte chematoxis protein-1 (MCP-1), responsible for hepatic stellate cell recruitment in liver injury. Our research has now identified a specific bile acid, taurine-conjugated cholic acid, which induces the expression of MCP-1 in hepatocytes and we propose that the retention of this bile acid in hepatocytes (due to bile duct obstruction) causes hepatic stellate cell chemotaxis to the site of the expanding scar margin in biliary disease thus initiating fibrosis and the subsequent development of cirrhosis. Our current research is directed toward identifying the signalling pathways elicited by taurocholic acid which induces MCP-1 expression in the liver.

Highlights

Identified a role for Protein Kinase C (PKC) in the activation cascade of hepatic stellate cells.

Demonstrated that hepatic stellate cells express a receptor for lymphotoxin-beta and when this receptor is knocked out in mice, they lack Th1 immune signalling which inhibits wound healing and liver fibrosis.

Identified a role for hepatic macrophages in the repair phase of liver injury through the recruitment of neutrophils leading to liver scar digestion in a model of children's cholestatic liver disease.

Iron Metabolism

Laboratory Head: Professor Greg Anderson

The Iron Metabolism Laboratory focuses on understanding the homeostasis of the essential trace element iron in the body and the natural history of disorders of iron metabolism such as the iron loading disease haemochromatosis.

Highlights

Defined the penetrance of the iron overload disease haemochromatosis in a large unselected Caucasian population.

Examined the mechanism of iron absorption in neonates at the molecular level.

Identified key factors involved in the modulating expression of the iron regulatory peptide hepcidin.

Defined the contributions of proteins of iron metabolism in oesophageal cancer.

Identified a role for iron in the propagation of the innate immune response.

Iron is essential for a large number of critical cellular processes but its concentration in the body must be kept within defined limits. Too little iron can result in anaemia while too much can cause damage to vital organs such as the liver and heart. A central goal of the Iron Metabolism Laboratory is to understand the mechanisms of cellular iron transport and the way in which these processes are regulated. A particular theme is to describe the pathways of intestinal iron absorption and to understand how absorption is altered in disorders of iron metabolism such as haemochromatosis and thalassaemia.

Much of the recent work in this laboratory has been directed towards understanding physiological variations in iron absorption at the molecular level. This work has helped define the mechanism by which the liver-derived regulatory peptide hepcidin alters the expression of key iron transport molecules in the intestine, and thus iron absorption, and also how the body directs hepcidin to bring about these effects.

Key recent studies have examined the molecular basis of the extremely high intestinal iron absorption in neonates, investigated the role of iron in the inflammation-dependent changes in hepcidin, and studied the effects of alcohol on hepcidin expression. A major recent focus in the laboratory has been on intestinal haem iron absorption, and this work is continuing to examine the role played by the haem-degrading enzyme, haem oxygenase, in this process.

This group also maintains a strong interest in the pathogenesis, penetrance and genetics of the iron loading disorder haemochromatosis and has recently contributed to a major study to define the true penetrance of haemochromatosis-related disease in Caucasion populations. A number of other studies into the natural history of this common human disease are ongoing.

Leukaemia Foundation

Laboratory Head: Professor Andrew Boyd

In collaboration with The University of Queensland

The Leukaemia Foundation of Queensland Laboratory is seeking to understand the role of critical cellular proteins in the causation and evolution of leukaemia and other cancers.

Staff in the Leukaemia Foundation Research Unit explore the roles of cancer associated proteins and examine whether these are potential targets for anti-cancer therapies.

Eph Proteins

Beginning with isolation of these genes in leukaemia, a major focus is the Eph family of receptors and their ligands, the ephrins, in cancer and other cellular processes. These are highly regulated during development and generally over-expressed in malignancies. EphA3, which was isolated in leukaemia, remains a focus of this laboratory.The mechanism of over-expression in cancer is being explored and also the use of monoclonal antibodies as potential anti-cancer therapies. Over-expression of EphA3 has recently been noted in prostate cancer and the role of Ephs and ephrins in this disease is now being investigated. EphA3 also affects hematopoietic cell development and treatment with antagonists of EphA3 increasing bone marrow stem cell mobilisation into the peripheral vascular system and decreasing homing to the bone marrow. The laboratory has also studied the role of EphA1 during development and in colorectal cancer progression using a number of mouse models. In the human, EphA1 and EphA2 show coordinated patterns of regulation during colorectal cancer progression from benign to malignant. In the past this group has developed an EphA4 knockout mouse which proved not to be useful as a cancer model but showed a surprising response to spinal cord injury, being able to fully recover from paraplegia. The use of inhibitors of EphA4 in spinal cord injury is now being explored in collaboration with the Queensland Brain Institute.

Fat1 protocadherin

Another leukaemia associated protein is Fat1 which is found in mutated form in T cell leukaemia. The laboratory continues to explore this phenomenon in collaboration with investigators at University of Newcastle. This mutant protein is a candidate target for novel therapeutics.

Mcl-1

The role of Mcl-1 in leukaemia and other cancers has also been investigated. The group has found a Mcl-1 to be critically important in glioma where it is a potential therapeutic target. The regulation of this gene by specific transcription factors is a feature of glioma which suggests further therapeutic approaches.

Highlights

Characterised the EphA1 receptor during development and the progression of colorectal cancer.

Explored the role of EphA3 in hematopoietic cell development, stem cell homing and cell mobilisation.

Identificatied a novel single nucleotide polymorphism in the promoter of the anti-apoptotic protein, Mcl-1. Targeting this protein or its associated transcription factor may benefit survival outcomes for sufferers of glioma and other cancers.

Formed a collaboration with CSL Pty Ltd to develop novel therapeutics for spinal cord injuries.

Membrane Transport

Laboratory Head: Assoc Prof Nathan Subramaniam

This laboratory studies how iron metabolism is regulated by the liver. Identification of the molecules involved in iron metabolism, and defining the way they work has major implications for the treatment of iron-related disorders such as hereditary haemochromatosis and anaemia.

Highlights

Demonstrated that many mutations in transferrin receptor 2 lead to aberrant localisation of the protein.

Showed that mutations in hemojuvelin can disrupt localisation, trafficking and secretion of the protein.

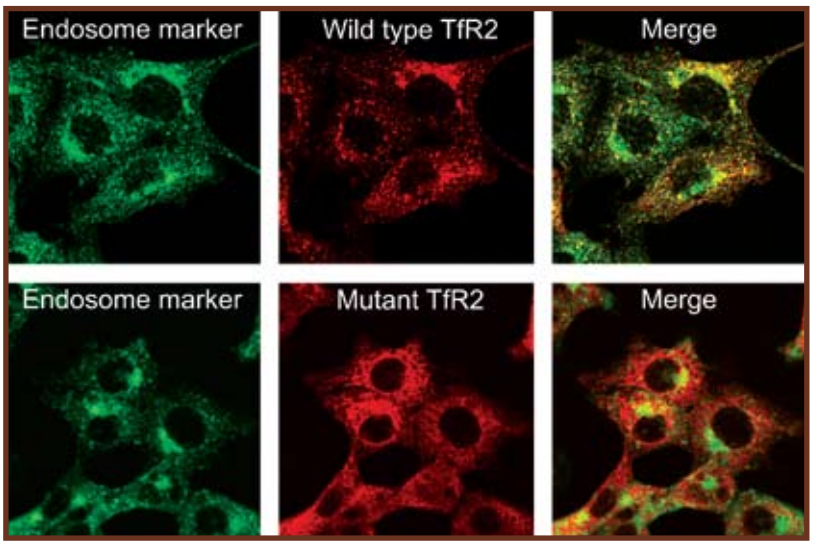
Demonstrated that mutations in hemojuvelin affect hepcidin expression.

This laboratory has previously shown that many of the proteins involved in regulating iron metabolism are expressed at high levels in the liver. Mutations in the genes encoding these proteins are linked to the iron overload disorder haemochromatosis.

They have also characterised a protein called transferrin receptor 2 which is found to be mutated in a form of hereditary haemochromatosis, Type 3 HH. Their studies have shown that transferrin receptor 2 is important in regulating serum levels of the peptide hepcidin which in turn regulates the absorption of iron in the intestine and it's recycling by macrophages. This then affects the level of iron circulating in the blood.

The group has characterised several of the mutations of transferrin receptor 2 which cause iron overload in patients using molecular and cellular studies and recently shown that a number of these mutations affect the ability of the protein to be transported to the surface of the cell. These mutations cause the protein to be retained inside the cell instead, affecting the ability of the protein to regulate iron levels.

The laboratory previously identified the first cases of juvenile haemochromatosis in Australia. Juvenile haemochromatosis is a severe form of iron overload which presents much earlier in life than the adult form. If left untreated it can cause severe complications and affect the liver, endocrine glands and heart. The group has studied the protein, hemojuvelin, mutated in many cases of juvenile hemochromatosis. These studies show that while some mutated proteins are trafficked differently in the cell, they have the same disruptive effect on iron metabolism.



Top row: wild-type Transferrin Receptor 2 is present on the cell surface and in endosomes

Bottom row: mutant Transferrin Receptor 2 is retained in the endoplasmic reticulum

Molecular Pathology

Laboratory Head: Professor Sunil Lakhani

In collaboration with The University of Queensland

The focus in this laboratory is the genetics, molecular pathology and cell biology of breast cancer with the goal of improving the classification and diagnosis of this disease.

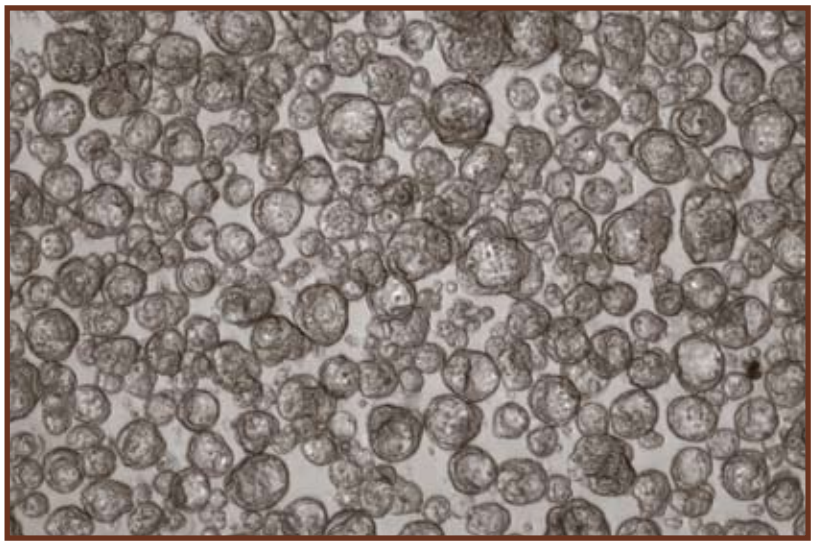
This laboratory is engaged in understanding the molecular pathology of *in situ* and invasive lobular carcinoma, a subtype of breast cancer that has unique morphology, molecular profile and metastatic patterns. The tumour type also has a familial association and material from familial cases is now being collected in order to investigate the genetic predisposition to this tumour. The tumour tends to infiltrate diffusely making radiological assessment difficult in some cases and so the biology of tumours that present as discrete masses compared to more diffuse tumours is also being studied.

This group have also investigated the mechanisms by which basal like breast cancers metastasize to the brain and attempted to delineate the critical pathways that allow colonisation. Therapeutic targets that may prevent the growth in the brain have also been investigated.

Normal tissues from reduction mammoplasties and from mastectomy specimens are now being collected to try and isolate putative stem cells and test their ability to form mammospheres. This work is supplemented by breast cancer cell line work. The laboratory is also attempting to develop new markers for the identification of putative stem cells and investigating their role in the heterogeneity of breast cancer.

The tissue bank is continuing to expand with collections of normal breast and/or breast tumour tissue from nearly 300 patients, reduction mammoplasty specimens from 26 patients and brain metastases from several patients whom developed breast or other primary cancers.

BT474 breast cancer cells growing as mammospheres in suspension culture



Highlights

Demonstrated that pleomorphic variant lobular carcinoma shows molecular overlaps with classic lobular cancers.

Showed that E-cadherin staining pattern may be aberrant in lobular lesions and therefore these should not be classified as ductal cancers.

Found molecular evidence for microglandular adenosis being a non-obligate precursor for the development of invasive carcinoma.

Established a potential mechanism for breast cancer cells colonising the brain.

Investigated the properties of breast cancer stem cells *in vitro.*

Found that exposure of epithelial cells to different hormones affects cell plasticity.

QCF Transgenics

Laboratory Head: Dr Graham Kay

The main research areas of the laboratory aim to further our understanding of basic developmental epigenetics (X chromosome inactivation) and diseases such as cancer (melanoma and multiple endocrine neoplasia).

Highlights

Showed that SmcHD1 is physically associated with the inactive X chromosome and, in the absence of SmcHD1 many genes on the inactive X fail to silence correctly resulting in female embryonic lethality.

Found that compound deletion of Rb1 and p53 in melanocytes is ineffectual in facilitating melanoma *in vivo*, but disrupts cellular homeostasis *in vitro*.

Using embryo-specific, rather than total, Men1 disruption, identified an essential requirement for Men1 in perinatal viability associated with deformation of skeletal, cardiac and craniofacial tissues.

Epigenetic control of gene expression is fundamental in orchestrating the correct functioning of the genome during normal embryonic development and in disease. X chromosome inactivation is an epigenetic mechanism that achieves dosage equivalence for expressed X-linked genes between males and females. Many of the paradigms of epigenetic silencing initially identified in X inactivation also apply to autosomal genes.This group has recently shown that SmcHD1, a largely uncharacterised gene, has a critical role in X inactivation. In the absence of SmcHD1 some of the epigenetic modifications of the normal inactive X are retained, but none of the genes on the inactive X elect become hypermethylation in their CpG islands. As a result many genes on the inactive X fail to become silenced suggesting that SmcHD1 has a direct role in linking early X inactivation signals with CpG island hypermethylation and stable silencing of X-linked genes. The group also showed that SmcHD1 protein co-localises with the inactive X chromosome.

Melanomas metastasise early and are then intractable to treatment. Loss of the main familial melanoma gene CDKN2A causes the simultaneous deregulation of the p16/cdk-cyclin/pocket protein and Arf/Mdm2/p53 pathways. Mouse models have been generated where Rb1 and p53 are specifically deleted in melanocytes and no pigmentation defects or melanoma was found. Melanocytes isolated from these animals acquire a transformed phenotype and loss of pigmentation when cultured *in vitro*. Consequently, the laboratory hypothesises that *in vivo* melanoma formation requires the deregulation of not just Rb1 and p53 and that other factors must also be deregulated. This is being tested using animals where other components of these pathways are deregulated, for example p107 and p130 with or without Arf.

Men1 is the tumour suppressor gene responsible for the cancer predisposition syndrome multiple endocrine neoplasia type 1 (MEN 1). Men1 is essential for development, with homozygous deletion in mice associated with mid-gestational lethality. This group have recently inactivated the Men1 gene specifically in the embryo, but not the extra-embryonic tissues, and discovered that the mid-gestation lethality and associated developmental defects of Men1-constitutive null E12.5 embryos are the result of placental insufficiency. In addition, they identified a critical requirement for Men1 in perinatal viability suggesting that it plays a vital role in later stages of development. Further studies will elucidate the specific gestational roles of Men1 and determine the mechanism by which it functions as a cell growth regulator.

Radiation Biology and Oncology

Laboratory Head: Professor Martin Lavin

In collaboration with The University of Queensland

DNA damage response and its role in maintaining the integrity of DNA to minimise the risk of cancer and neurodegeneration are the major focus of research activities in this laboratory.

The major objective of this group is to investigate the mechanisms that maintain the integrity of the genome to minimise the risk of cancer and other pathologies.

The research program is divided into three major areas: DNA damage response, early detection of prostate cancer and the development of human therapeutics. Over the years the laboratory has focused on the human genetic disorder ataxia-telangiectasia (A-T) as a model system to investigate cancer development and neurodegeneration. More recently, we have extended these studies to include several other disorders that overlap with A-T in their clinical phenotype. The expectation was that this common clinical phenotype would be explained by a defect in some aspect of DNA damage recognition, and/or DNA repair. This turned out to be the case for both ataxia oculomotor apraxia type 1 (AOA1) and ataxia oculomotor apraxia type 2 (AOA2).

Several projects are underway on the role of ATM, the protein defective in A-T. Progress has been made in describing additional autophosphosphorylation sites important in the activation of ATM. This group has also identified Rad50, a member of the Mrell complex (Mrell/Rad50/Nbs1) that acts as a sensor of DNA double strand breaks, as a new substrate for ATM. Studies are underway to investigate the functional significance of Rad50 phosphorylation.

The laboratory reported the first comprehensive description of the characteristics of senataxin, the protein defective in AOA2. Cells from AOA2 patients are sensitive to oxidising agents and they show evidence of oxidative stress. This protein has a role in protecting cells against this form of stress. Progress was also made on the function of aprataxin, defective in AOA1. This data demonstrated that it binds to a protein involved in DNA double strand break repair. A role in this process is being investigated.

In collaboration with Professor Gardiner, The University of Queensland, the laboratory has made important progress in developing biomarkers for prostate cancer. Greater complexity in the prostate cancer gene (PCA3) has been demonstrated, and as a consequence, researchers are now able to design more sensitive assays that differentiate benign prostate hyperplasia from prostate cancer. Work is underway to identify additional biomarkers for diagnosis and prognosis of this disease.

The final program is being carried out by the Venomics group as part of a collaborative program with QrxPharma, supported by a second ARC Linkage grant. The proteome of 20 Australian snake venoms have been successfully described as part of that study.

Highlights

Produced the first comprehensive description of senataxin, the protein defective in AOA2.

Completed a comprehensive description of the proteome of 20 Australian snake venoms.

Characterised two candidate anti-bleeding agents in the Australian common brown snake venom.

Identified a novel biomarker of metastases in prostate cancer.

Characterised a novel form of AOA.

This laboratory identifies genetic changes which define distinct subtypes of colon cancers and premalignant polyps with the aim of predicting the clinical behaviour of these tumours.

RBWH Gastroenterology

Laboratory Head: Professor Barbara Leggett

In collaboration with the Royal Brisbane and Women's Hospital Foundation

Highlights

Identified gene changes in normal bowel biopsies that can predict increased risk of having a bowel polyp.

Identified gene changes that predict aggressive clinical behaviour of a subset of bowel polyps.

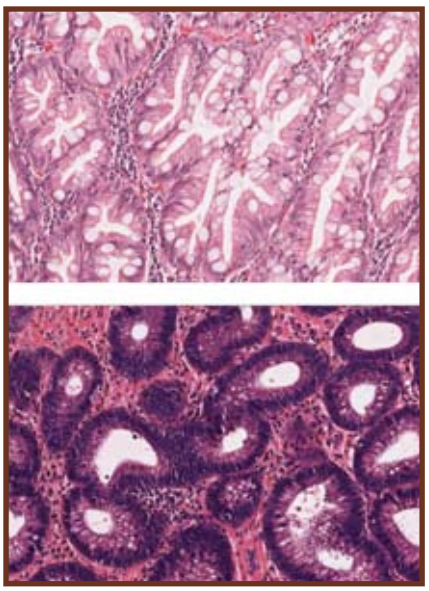
Established a link between cigarette smoking and development of a disease characterised by multiple bowel polyps and increased risk of bowel cancer.

Found that SLC5A8 is commonly inactivated in serrated polyps.

Profiled over 700 bowel cancers for multiple gene changes and discovered there are four main subgroups of bowel cancers, each requiring different clinical management

Established clinical testing for *BRAF* and *K-ras* gene mutation.

The main areas of research in the Conjoint Gastroenterology Laboratory reflect the major stages in the development of colorectal cancer: (1) early molecular changes in normal bowel tissue that may predict risk of future neoplasia (2) molecular features characteristic of premalignant polyps and (3) subtypes of bowel cancers that have defined molecular and clinical features. In particular, the group has focused on better defining the serrated pathway of tumour development that describes the evolution of histologically serrated precursor polyps to cancers showing widespread changes in DNA methylation. In a series of normal bowel biopsies collected from patients undergoing routine colonoscopy, DNA methylation changes in relation to anatomical site in the colon, age and pathology have been characterised. Whilst methylation levels of most markers examined increased with increasing age, an independent association between methylation of certain markers and presence of colorectal polyps was also identified. In a further series of colorectal polyps, molecular features characteristic of an advanced subtype of polyp called a tubulovillous adenoma were identified. This study will contribute to recommendations for patient surveillance based on the use of molecular markers to predict malignant potential. Over 700 primary colorectal cancers have been examined and two 'methylator' pathways based on synergy with either K-ras or BRAF mutation have been identified. It is now possible to predict response of advanced colorectal cancer to the therapeutic agent cetuximab based on K-ras mutation status. Clinical testing for K-ras mutation has recently been introduced and this is being used by oncologists to determine the most appropriate therapeutic regime for patients.



Microscopic features for a serrated pathway polyp (above) and a traditional pathway polyp (below). Serrated pathway polyps have a distinctive morphology and frequently have mutation of the BRAF oncogene. Tubular adonomas are the precursor of the traditional pathway and have a strikingly different morphology. These do not have BRAF mutations but may show mutation of the K-ras oncogene.

Signal Transduction

Laboratory Head: Dr Kum Kum Khanna

This laboratory researches signal transduction pathways involved in the detection, signalling or repair of DNA damage and seeks other genes in these pathways which might have similar involvement in cancer susceptibility by preventing the generation of mutations in DNA.

Two novel ssDNA binding proteins, hSSB1 and hSSB2, which are more closely related to both the bacterial and archaeal SSB proteins than to RPA, the major SSB in eukaryotes, have been functionally identified and characterised. hSSB1 is ubiquitously expressed while hSSB2 is mainly expressed in thymus, testis, heart and kidney. hSSB1 is critical for maintenance of genomic stability. Depletion of hSSB1 abrogates the cellular response to DSBs, including arrest of cell division and activation of repair of DNA damage. On the other hand, SSB2 is specifically required for DNA damage repair. A knockout mouse model of hSSB1 has been generated and a knockout mouse model of SSB2 is currently being generated, to help understand their *in vivo* physiological functions.

This group has also identified two novel regulators of cytokinesis, the final stage of cell division that divides the cytoplasm equally between two daughter cells. Cytokinesis begins with ingression of the cleavage furrow at the cell equator. Cleavage furrow ingression requires co-operative function of the actin-myosin II contractile ring to complete cytokinesis. The laboratory has shown that the actin-binding protein, EPLIN, associates with the cleavage furrow during cytokinesis.

Eplin is essential for local accumulation of key proteins required to complete the final stages of ingression and cytokinesis. Cytokinesis failure results in aneuploidy, increasing genomic instability frequently observed in cancer. Given EPLIN is frequently lost in tumors and that its absence leads to multinucleation and aneuploidy, it is possible that loss of EPLIN is one of the crucial steps required for oncogenic progression.

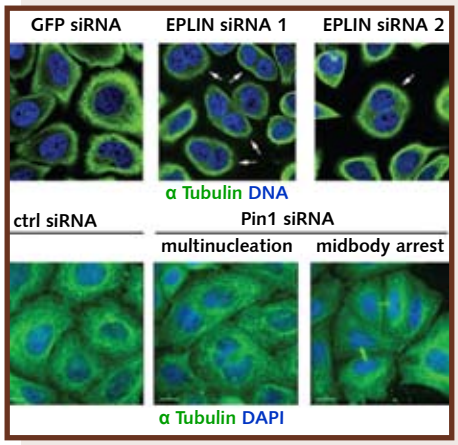
The other regulator of cytokinesis identified by this laboratory is the peptidyl-prolyl isomerase Pin1. Pin1 regulates a diverse array of processes including cell cycle progression. The group has provided evidence that Pin1 regulates the final stages of cytokinesis by binding to the midbody ring component Cep55 during mitosis. This binding induces Polo-like kinase 1 (Plk1)-mediated phosphorylation of Cep55 at the centrosome, which is important for Cep55's later function at the midbody ring during cytokinesis. Importantly, Pin1 and Cep55 act in the same pathway to regulate cytokinesis. These data are the first evidence that Pin1 regulates the final stages of cell division and provide more rationale as to how pathological levels of Pin1 can stimulate tumourigenesis.

Highlights

Identified and characterised novel ssDNA binding protein, hSSB1 and hSSB2 critical for maintenance of genomic stability.

Characterised Eplin and Pin1 as novel regulators of cytokinesis.

Characterised BcoR-L1 as a regulator of chromatin structure during mitosis.



Eplin- depleted and Pin1-depleted cells show defective cytokinesis as marked by presence of multinucleated cells or cells arrested at the midbody stage (thin cytoplasmic bridge connecting two daughter cells)

INFECTIOUS DISEASES

Assoc Prof James McCarthy heads the Infectious Diseases Division

The 12 laboratories that comprise the Infectious Diseases Division study how a range of important pathogenic organisms cause illness, and search for better ways to diagnose and treat them as well as ways to prevent them with vaccines. A major emphasis in work undertaken in the Division is on pathogens that disproportionately affect people living in the developing world and tropics.

Pathogens studied include parasites such as malaria, worms, scabies, and giardia, as well as HIV, Streptococci and mosquito-borne viral diseases. One laboratory in the group is engaged in undertaking research using the powerful proteomic technology.

In the last 12 months members of the Division have successfully secured funding for their studies from prestigious bodies including the NHMRC Program and Project Grant system, as well as the Gates Foundation. Dr Michael Batzloff has successfully established the new Bacterial Vaccines Laboratory where he continues to develop a vaccine for Group A Streptococcal infection, aiming to begin a first-in-man clinical trial in 2009.

Research highlights in the past year have included:

- The discovery that cellular factors stimulate the HIV virus to begin replication within the cell.
- The development of a method to study drug resistance in *Plasmodium vivax*, an important and understudied strain of the malaria parasite.
- The demonstration that human genetic variation in the cytokine gene interleukin 5 is associated with variation in susceptibility to schistosomiasis and intestinal worms.
- The development of a new and powerful technique to determine the age of mosquitoes, an important determinant of their ability to transmit disease.

HEADS OF THE INFECTIOUS DISEASES DIVISION LABORATORIES

From left: Dr David Harrich – HIV Molecular Virology, Prof Kadaba Sriprakash – Bacterial Pathogenesis, Dr Michael Batzloff – Bacterial Vaccines

Assoc Prof James McCarthy - Clinical Tropical Medicine, Assoc Prof Peter Upcroft – Molecular Genetics, Dr Qin Cheng – Malaria Drug Resistance and Chemotherapy, Prof Don McManus – Molecular Parasitology

Dr Peter Ryan – Mosquito Control, Prof Jeff Gorman – Protein Discovery Centre

Dr Don Gardiner – Malaria Biology, Dr Alex Loukas – Helminth Biology

This laboratory undertakes research into Streptococci and Staphylococci, bacteria which cause a wide range of potentially fatal diseases in humans.

Bacterial Pathogenesis

Laboratory Head: Professor Kadaba Sriprakash

Highlights

Showed that interspecies transduction and conjugations occurs between streptococci in natural habitats.

Expressed the anti-streptococcal peptide vaccine (J14) developed at QIMR on the surface of the commensal bacterium *Streptococcus gordonii*.

Demonstrated that novel polymer-antibiotic coatings reduce the attachment of *Staphylococcus aureus* and *Staphylococcus epidermidis* to the surface of medical implants.

A major goal in this laboratory is the investigation of causes and consequences of genetic diversity that occurs in streptococcal populations around the world. This year the group demonstrated that DNA is being horizontally transferred between group G streptococcus, group A streptococcus and group B streptococcus in nature. These genetic transfers may contribute to rapid population drift and may be important in the generation of new streptococcal strains with different capacities to cause disease.

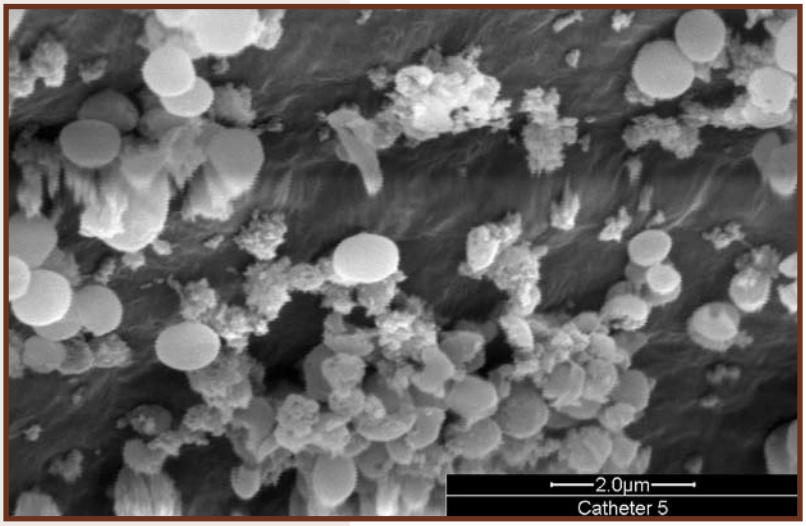
As part of a collaborative study with the Molecular Immunology and Bacterial Vaccines Laboratories at QIMR and Indian collaborators, the high diversity of group A streptococcal and group G streptococcal strains circulating in India has also been demonstrated.

For a streptococcal vaccine to be effective for the people India, it must therefore target a part of the streptococci that is conserved between all strains. The peptide vaccine (J8/J14) being developed at QIMR fulfills this requirement.

New strategies for vaccine delivery are also being developed. These systems may enable the delivery of vaccine antigens directly to mucosal surfaces and engender site-specific immune responses. A live bacterial delivery system has been produced in which J14 is expressed on the surface of the harmless bacteria *Streptococcus gordonii*. The effectiveness of this live vaccine in protecting against streptococcal diseases is currently being tested.

In collaboration with colleagues at QUT, new synthetic coatings for surgical implants are being developed. After trauma surgery, orthopaedic implants often become colonised with bacteria, resulting in serious post-surgical infections. This collaboration has demonstrated that novel polymer-antibiotic coatings reduce initial attachment of bacteria to these implants, and subsequently reduce biofilm formation. In a new collaboration with Griffith University and the Royal Brisbane Hospital, the laboratory also commenced a project investigating the bacteria that colonise the surface of intravascular catheters.

Scanning electron micrograph of Staphylococcus aureus *on the surface of an intravascular device.*



Bacterial Vaccines

Laboratory Head: Dr Michael Batzloff

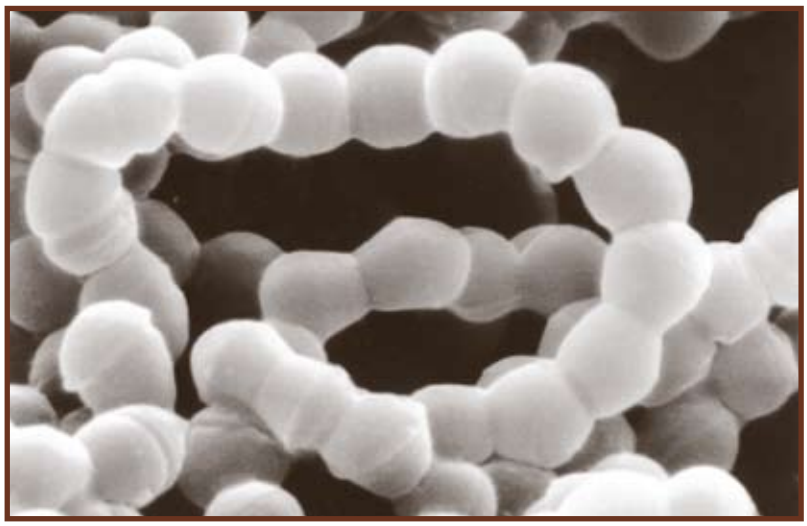
The focus of this laboratory is the identification, characterisation and evaluation of potential vaccine candidates for Group A streptococcus (*Streptococcus pyogenes* GAS), and other bacterial pathogens.

Established on the 1st January 2008, the core focus of this new laboratory is the development of a vaccine that will prevent group A streptococcus infection. The laboratory's leading vaccine candidate is J8 which was originally developed by Professor Michael Good. Several projects in the laboratory expand on the J8 concept including the typing of clinical isolates, enhancing peptide efficacy through specific peptide substitutions, vaccine evaluation and assay development.

The laboratory is involved in the typing of clinical isolates of group A, C and G streptococcus which have been collected as part of a series of epidemiology studies being conducted in the Pacific. This group has received over 1,000 isolates which have been emm typed and sequenced typed for each of the C-repeat cassettes present in the M-protein.

The laboratory has also investigated the possibility of making specific amino acid substitutions within the J8 peptide which would enhance peptide immunogenicity and efficacy. A restricted peptide library was constructed with single amino acid substitutions and this library was screened with sera. Using data generated from this library a series of subsequent peptide containing two amino acid substitutions were made. The group is currently investigating the immunogenicity and efficacy of these new peptides.

As part of the evaluation of the J8 peptide using a series of different carriers and adjutants an *in vivo* model for vaccine efficacy has been developed using a bioluminescent GAS strain that will allow for monitoring of bacterial bio-burden.



Scanning electron microscopy of group A streptococcus. Group A streptococcus typically forms long chains of bacteria.

Highlights

A large diversity of group A, C and G streptococcal isolates was found in a Pacific island nation.

Showed that peptide immunigenicity can be enhanced through specific conserved amino acid substitutions.

Showed that passive transfer of hyper immune sera raised against the vaccine candidate J8 can protect mice and reduce bio-burden when administered in homologous or heterologous compartments *in vivo*.

Clinical Tropical Medicine

Laboratory Head: Assoc Prof James McCarthy

Joint appointment with the Royal Brisbane and Women's Hospital

This laboratory researches how malaria and other parasites cause disease and how parasites become resistant to drugs used to treat them. The group also identifies new drugs and drug targets, and develops novel diagnostic techniques.

Highlights

Demonstrated that new, synthetic, histonedeacetylase inhibitors have potent and selective activity *in vitro* against *Plasmodium falciparum* and appear to be acting via inhibition of malaria parasite histonedeacetylase activity.

Demonstrated potential utility of insecticide synergists in reversing tolerance to pyrethroid –based acaricides.

Developed highly sensitive molecular (HRM) and enzymatic assays to investigate multiple mechanisms of drug resistance in scabies.

Demonstrated the sensitivity of various monoclonal antibodies used in malaria rapid diagnostic tests and determined the epitopes recognised by these MAbs.

Ongoing funding from the NHMRC and Queensland Government has supported further work to define the mechanisms of drug resistance in scabies, the development of diagnostic tests for drug resistance in scabies, and approaches to overcome it. Study of the histone deacytelase enzyme pathway in the malaria parasite is leading to the development of new drugs.

Continuing work on drug resistance in hookworms has led to presentations at the World Bank by Dr McCarthy and his collaborator Dr Andrew Kotze from CSIRO.

Ongoing collaboration with Dr Qin Cheng on improving Rapid Diagnostic Tests for malaria continues to be funded by the Gates Foundation through FIND.

The laboratory is playing a key role in the conduct of a number of Phase I clinical trials of novel vaccines, including a vaccine for the Group A streptococcus, with Professor Michael Good and Dr Michael Batzloff, and a malaria vaccine with Professor Robin Anders at La Trobe University, the latter funded by the Gates foundation through MVI.

Work on the antimalarial activity of HIV protease inhibitors continues in collaboration with Don Gardiner's laboratory, with a focus on defining the target of HIV protease inhibitors in the malaria parasite and study of their possible clinical impact. Together with Indonesian and Thai collaborators, the laboratory published work showing that these drugs are active at clinically relevant concentrations against both *Plasmodium vivax* and *Plasmodium falciparum* field isolates. This may have important implications for HIV-infected patients resident in areas where multi-drug resistant *P. vivax* or *P. falciparum* is found.

A new collaboration with Dr Michael James from the Genetic Epidemiology Group at QIMR has enabled the use of MassARRAY SNP technology for quantitative assessment of resistance-associated genotypes in nematode parasite populations under drug selection pressure in mass drug administration programs. It was also demonstrated that alterations in sensitivity of hookworm parasites to pyrantel is associated with rearrangement of Nicotinic Acid Acetylcholine receptor subunits.

Helminth Biology

Laboratory Head: Dr Alex Loukas

The Helminth Biology Laboratory explores the molecular basis of host-parasite interactions, with a particular emphasis on the proteins secreted by parasitic helminths and their efficacy as vaccines and novel therapeutics for autoimmune disorders.

Scientists in this laboratory have been focusing on the development of their major hookworm vaccine antigen, Na-APR-1. Na-APR-1, a protease that is involved in blood-feeding. Because it is difficult to express in recombinant form, this group have developed monoclonal antibodies to this enzyme and mapped their epitopes to identify a smaller fragment of APR-1 that induced neutralizing antibodies and could be easily expressed. This fragment is now expressed as a chimera with other hookworm vaccine antigens. Additional hookworm proteases and their roles in a multi-enzyme haemoglobinolysis cascade have been determined.

A large family of proteins associated with hookworm invasion of the host have been identified, and these proteins are the subject of structural biology and vaccine studies. The group's Sm-TSP-2 schistosomiasis vaccine is in process development and will enter clinical trials in 2009 with funding from Sabin Vaccine Institute. New efficacious schistosome vaccine antigens have also been identified which are under development.

With other QIMR scientists and with clinicians both from Townsville and the Mater Hospital, the ability of hookworms to treat coeliac disease is being investigated.

Parasitic worms suppress inflammation associated with autoimmune disorders including inflammatory bowel diseases. Coeliac disease provides an excellent model by which the effect of worms and their secreted proteins can be assessed, because the etiology of the disease is well known. By strictly avoiding gluten in their diets coeliac patients can remain symptom free, so a clinical trial has been initiated to assess the effect of hookworms on coeliac inflammation after gluten challenge. This is a unique opportunity to look at the systemic and local (gut) immune responses in humans experimentally infected with hookworms, and the nature of the bystander effect that worm-induced immune suppression elicits.

With the Protein Discovery Centre, proteomics have been used to characterise the secretomes of hookworms and liver flukes. This collaboration is interested in the immunotherapeutic potential of hookworm secreted proteins and the roles of liver fluke proteins in the initiation of liver cancer.

Highlights

With colleagues from QIMR and local hospitals a clinical trial to test whether hookworm infection can treat coeliac disease was initiated.

Characterised the secretomes of parasitic hookworms and liver flukes.

Developed expression processes for vaccine antigens for schistosomes and hookworms and constructed soluble chimeras fusing vaccine antigens from both parasites with an ultimate view to a single polypeptide vaccine for the two major human helminths.

HIV Molecular Virology

Laboratory Head: Dr David Harrich

The principal focus in this laboratory is detailed analysis of a step in HIV replication called reverse transcription. During this process, HIV is able to convert its genetic material composed of RNA into a form compatible with human DNA.

Highlights

Found that Tat stimulates reverse transcriptase activity *in vitro*.

Isolated HIV-1 core capable of advanced reverse transcription.

Signature Tat mutations identified in an HIV-1 cohort.

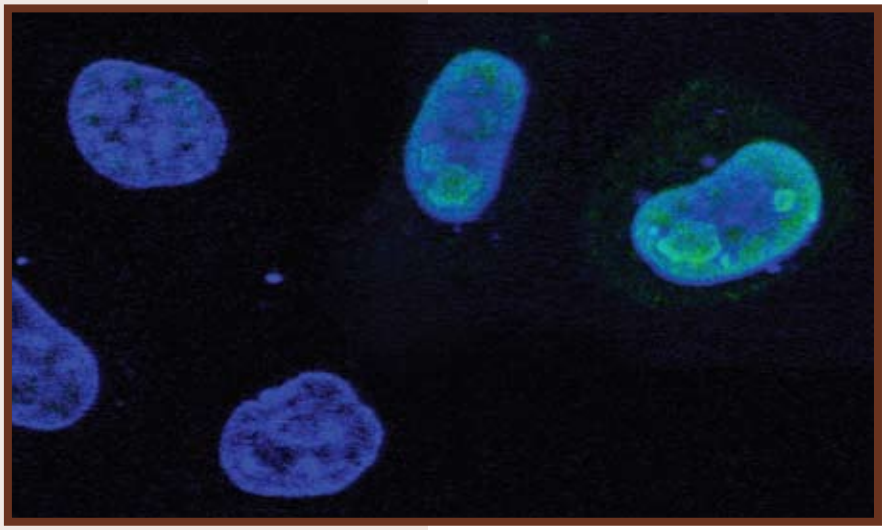
First demonstration that cell factors stimulate reverse transcription of partially permeabilised HIV-1.

A suppressor of HIV-1 reverse transcription identified.

Studies of HIV-1 lacking a functional tat gene in this laboratory demonstrated a decrease in reverse transcription efficiency following infection of T-cells. These studies were extended to show that recombinant Tat stimulated reverse transcription by HIV-1 reverse transcriptase (RT) in vitro by 2-3 fold. It is possible that this system could be used to search for new HIV-1 inhibitors that block Tat.

Also investigated was the nature and functional consequences of mutations in the tat gene within an epidemiologically-linked AIDS transmission cohort consisting of a non-progressing donor and two normal progressing recipients. These studies could lead to understanding Tat-induced HIV pathogenesis.

The HIV-1 Tat protein is localised in the nucleus (blue) of the cell.



HIV-1 reverse transcription studies have revealed three novel discoveries in this laboratory. Firstly, that mutations in HIV-1 RNA lead to increased reverse transcription but greatly reduced virus replication. Why this blocked HIV-1 growth is not known.

Secondly, core-like particles were purified and identified in this active fraction by electron microscopy. This showed that these HIV-1 macromolecules were capable of authentic reverse transcription, where previously they were believed to require an uncoating activity.

It has been suggested that uncoating and reverse transcription proceeded by the ordered disassembly of core, and cell factors may assist this process. Observations in this laboratory that a mammalian cell factor/s enables the reconstitution of an efficient RTC from delipidated virions is consistent with this model of uncoating. This *in vitro* reconstitution system will enable the many unanswered questions regarding uncoating and early RTC formation to be addressed.

The process of identifying what factor/s are responsible for this effect is now underway. Identification of such factor/s would reveal a novel therapeutic target against HIV-1.

Scabies

Laboratory Head: Professor David Kemp

Work in this laboratory concentrates on the control of diseases caused by the scabies mites *Sarcoptes scabiei*

Scabies is a disease caused by burrowing of the ectoparasitic mite *Sarcoptes scabiei* into the lower stratum corneum. Until recently there were no molecular studies on scabies because of the difficulty of obtaining mites. This laboratory has solved that problem by constructing a library of expressed *S. scabiei* sequences from mites obtained from skin shed into the bedding of patients with the severe form of the disease, crusted scabies.

Over 40,000 of these clones have now been sequenced and searched for homologues of a major allergen of house dust mites, the group 3 serine protease. Unexpectedly, a multigene family was identified which have the amino acids essential for catalysis mutated and thus cannot function as active proteases by any known mechanism (Scabies Mite Inactivated Protease Paralogues,SMIPPs). This data suggests that the genes for SMIPPs have been amplified in the scabies mite to mediate novel host defence evasion strategies that the parasite has evolved as an adaptation to parasitism of the epidermis. This may present unanticipated approaches to protective intervention.

In collaboration with Ashley Buckle, James Whisstock and Rob Pike of Monash University, a high resolution structure for two SMIPPs have been determined and binding properties studied.

All SMIPPs tested have been shown to inhibit complement, and as demonstrated – that the gut of the mite contains plasma – complement may be the central target of SMIPPs.

In collaboration with Anna Blom and Frida Bergström at Lund University in Malmö, Sweden the laboratory has confirmed that SMIPP-Ss inhibit all 3 complement pathways independently, that they inhibit at the start of each cascade and that they bind to C1q and MBL, maybe also to C3b and properdin.

Sar s 3 is the only member of the multigene family with a functional catalytic triad exhibiting proteolytic activity. Its substrate specificity was determined using a bacteriophage peptide display library to reveal a preference for substrates containing a RSG/A sequence. The group searched a human proteome database with the phage display data using the Prediction of Protease Specificity (PoPS) program. This work predicted several epidermal proteins within the top 4 percent of potential targets, with profilaggrin and keratin 1 scoring highest as predicted substrates of Sar s 3.

Highlights

Produced crystal structures of two SMIPPs, in collaboration with A Buckle *et al* at Monash University.

Determined the substrate specificity of Sar s 3, in collaboration with R Pike at Monash University.

Discovered that SMIPPs inhibit complement, defined the interactions in collaboration with A Blom from Lund University in Sweden.

This laboratory uses transgenic approaches to investigate targets, mechanism of action and antimalarial drug resistance. These studies are essential in the current era of multi-drug resistant (MDR) malaria.

Malaria Biology

Laboratory Head: Dr Donald Gardiner

Highlights

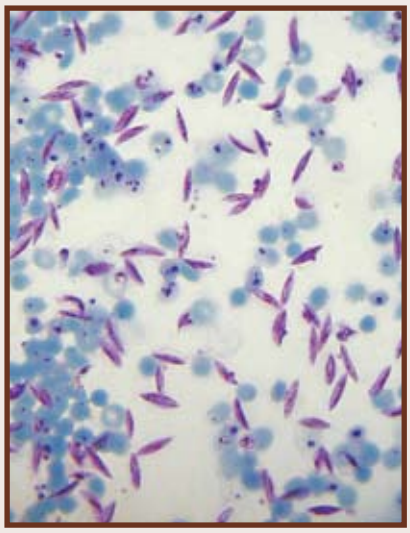
Identified novel protein motif necessary for protein transport in *Plasmdoium falciparum.*

Identified a novel protein in *P. falciparum* that is involved in creating the structure of *P. falciparum* organelles.

Determined new ways in which to get antimalarial drugs into the parasite.

Identified novel aminopeptidase inhibitors.

Created transgenic parasite clones that will allow detailed examination of gametocytogenesis.



Plasmodium falciparum gametocytes

While this laboratory investigates the biology of malaria parasites at a number of levels, research is focused on the identification of new antimalarial drugs and targets which are urgently required to combat drug resistant malaria parasites.

Four groups of antimalarial drugs and/or their proposed antimalarial targets are currently being worked on: the antiretroviral protease inhibitors (APIs), the aminopeptidases inhibitors, the histone deactylase (HDAC) inhibitors and hypoxanthine-guanine-xanthine phosphoribosyltransferase inhibitors. Research has focused on investigating the roles of the aminopeptidase enzymes in *Plasmodium falciparum* and investigating the antimalarial activity of the APIs.

Antiretroviral Protease Inhibitor

This project began in 2004 when, with collaborators from the Clinical and Tropical Medicine Laboratory, it was demonstrated that a number of APIs can kill malaria parasites at clinically relevant concentrations. Work is currently underway to identify the target for these drugs in the malaria parasite so that their apparent unique action can be exploited, and to explore the clinical relevance of API antimalarial activity in HIV/malaria co-infected individuals.

Aminopeptidase Inhibitor

In collaboration with colleagues from The University of Technology Sydney, The University of Virginia and Wrocław University of Technology the laboratory has been working to characterise Pf aminopeptidases and to assess the antimalarial activity of aminopeptidase inhibitors. Aminopeptidases are responsible for the final stages of protein degradation and are essential in all living cells. Two grants have recently been awarded from the National Institutes of Health in the United States to perform high-throughput screening of small chemical libraries to identify novel inhibitors.

Gametocytogenesis

Gametocytes form the sexual stage of the malarial parasite's lifecycle and are essential for transmission of this disease from the human host to the mosquito vector, yet very little is known about this complex process. In collaboration with Dr Katharine Trenholme from the Molecular Immunology Laboratory, the time in the life-cycle that the parasite switches from asexual to sexual reproduction has been identified, as well as a number of compounds which can affect the rate of switching. This information will now allow identification of the genes involved in switching, and may eventually lead to novel ways to prevent transmission of the parasite.

Malaria Drug Resistance and Chemotherapy

Laboratory Head: Dr Qin Cheng

In collaboration with the Australian Army Malaria Institute

This laboratory studies the mechanisms and factors influencing the development and spread of drug resistance in malaria parasites, and investigates ways to improve the diagnosis and treatment of malaria.

The artemisinin derivatives are widely used for the treatment of *Plasmodium falciparum*. However, up to 40 percent of patients fail treatment when artemisinins are used alone. This laboratory has investigated growth arrest in parasites following exposure to artemisinin drugs as a potential cause for treatment failure. The outcome from this research will lead to the more effective use of the artemisinin class of drugs.

The amplification of the pfmdr1 gene is also associated with increasing tolerabilities to artemisinin derivatives. This group has observed a decrease in pfmdr1 copy number after artemisinin selection pressure is withdrawn from parasite cultures, suggesting that having multiple copies of the pfmdr1 gene is not a favourable state for the parasite. Investigations of the stability and fitness of the parasites with pfmdr1 amplifications will improve our understanding of the evolution of drug resistance.

Rapid and accurate diagnosis is essential for appropriate treatment of malaria infections. Malaria Rapid Diagnostic Tests (RDTs) offer such diagnosis in the field. The laboratory has been working with the World Health Organisation to investigate possible causes for observed variation in RDT sensitivity. Variations in antigen coding sequences and expression levels and gene deletions for their impact on RDT performance were investigated.

As a member of the Malaria RDT Quality Assurance Network, the laboratory is also involved in RDT product testing and quality assurance. The results will provide clear guidance to countries and agencies on the quality of commercial RDTs and their appropriateness for different geographic regions.

Various intervention strategies such as vector control, better diagnosis and treatment and personal protection measures have been employed to control malaria, however the relative success of these interventions is difficult to evaluate. A stochastic simulation model of malaria transmission has been used by this group to investigate the long-term outcomes of different intervention strategies to help optimise malaria control and elimination efforts.

Highlights

Defined the duration of growth arrest and the parasite recovery rates following exposures to artemisinin drugs.

Observed that amplification of the pfmdr1 gene resulting from drug selection is not stable after the drug pressure is withdrawn.

Compared variation of pfhrp2 antigen in ~400 *P. falciparum* isolates originating from 38 countries and identified, for the first time, field *P. falciparum* parasites with pfhrp2 and pfhrp3 deletions.

Established statistical techniques to improve the accuracy of antimalarial efficacy estimated from field trials.

Investigated outcomes of different malaria intervention strategies using a computer simulation model.

Molecular Genetics

Laboratory Head: Assoc Prof Peter Upcroft

This laboratory works on the three most common protozoan parasites of medical importance, the sexually transmitted *Trichomonas vaginalis,* the intestinal parasite *Giardia duodenalis* and the invasive *Entamoeba histolytica.*

Highlights

Developed novel antimicrobials against, *Trichomonas vaginalis, Giardia duodenalis*, and *Entamoeba histolytica*.

Developed second and third generation novel nitroimidazoles, based on lead compounds generated from metronidazole as a base, in collaboration with Vanelle.

Synthesised 1000 new nitroimidazole derivatives from the laboratory's lead compounds using click chemistry with collaborators Sharpless, Gillin and Eckman.

Used the *Giardia* and *Trichomonas* genome sequencing databases to characterise, identify and/or confirm drug targets, as well as activation and resistance mechanisms.

Metronidazole is the drug of first choice against *Giardia* and the only drug group effective against *Trichomonas* and *Entamoeba* systemically.

This laboratory has utilised the data from the *Trichomonas* Genome database they published last year, and the analogous *Giardia* database to confirm and extend their earlier protein identification, purification and sequencing data to identify mechanisms of action, activation and resistance of the organisms to metronidazole.

Complementary to this work on drug activation, resistance and genome sequencing, the group has been developing new antiprotozoan compounds. These have been developed from the synthesis of novel derivatives of drugs such as metronidazole, which are known to be effective in many cases, but resistance has been identified. A new generation of 5-nitroimidazole compounds has been developed which the laboratory showed are more effective than metronidazole. Some of these are also effective against metronidazole-resistant organisms, demonstrating that the long-term effectiveness of this group of compounds can be maintained, and that there is no single broad-spectrum resistance mechanism, such as multiple drug resistance, to this class of compound that cannot be circumvented.

These results encouraged the group to apply to the US NIH for funding to develop this approach further, particularly because two of the organisms, *Giardia* and *Entamoeba,* are regarded as biodefence priorities. Collaborations have been established with colleagues, Gillin and Eckmann at the University of California, San Diego and Nobel Laureate for chemistry, B Sharpless from the Scripps Research Institute who developed *click chemistry*, an ideal approach for synthesizing thousands of designer derivatives from lead compounds rapidly, in high yields, and high purity. From the first thousand compounds synthesized, novel drugs have been obtained that are over 100 times more effective than metronidazole *in vitro*. These have lead to new rounds of syntheses to generate compounds that have other desirable chemical and biological characteristics, such as solubility, lipophilicity and bioavailability. These findings have encouraged the laboratory to extend this approach to other microorganisms for which the 5-nitroimidazoles have been effective agents in the past but are now less useful because of clinical resistance, and also to organisms for which there is no current effective treatment.

Molecular Parasitology

Laboratory Head: Professor Don McManus

This laboratory researches the biology and epidemiology of parasitic worms of humans and works on developing new interventions and diagnostic procedures that will lead to their elimination.

Schistosomiasis research is focused primarily in China and is aimed at:

- Providing new insights into the prophylactic effects of artemether against *Schistosoma japonicum* infection and determining the effectiveness of combined artemether and praziquantel treatment as an adjunct to control
- Increasing knowledge of environmental and genetic factors involved in predisposition to infection, and analysing molecular and cellular mechanisms leading to formation of fibrotic hepatic lesions.
- Determining importance of buffalo reservoirs in the persistence of human schistosomiasis transmission.
- Pursuing genomics and post-genomics research on existing and newly discovered *S. japonicum* molecules that are candidate vaccine and diagnostic targets.
- Developing and validating a mathematical model for improved and sustainable schistosomiasis morbidity control in China.

The laboratory is using a gene microarray containing the majority of the schistosome transcriptome, along with proteomics analysis and laser capture microscopy to investigate differential gene expression during different stages of the schistosome lifecycle, strain variation and the effect of drugs and vaccines on schistosome worms.They also focus on schistosome iron metabolism, dyneins, secreted enzymes and surface molecules, including receptors such as the insulin receptor, which are potential novel targets for drugs and vaccines.

Work on echinococcosis includes major field and epidemiological studies in China, and further development of a highly sensitive and specific blood test (based on a recombinant antigen, EpC1) for diagnosis of patients infected with cystic hydatid disease and its application for detection of the disease in sheep and marsupials.

Successful vaccination trials have been undertaken in China against echinococcosis in dog definitive hosts using recombinant antigens expressed by the mature adult worm. This work is important because it provides proof of principle that vaccination of the dog host against *E. granulosus* is feasible using recombinantly-derived proteins. Several company partners have indicated interest in pursuing the commercial development of the vaccine for use against *E. granulosus* and also *E. multilocularis*, the cause of alveolar echinococcosis, a serious, often fatal disease of humans.

Highlights

Showed that variants in the IL-5 gene contribute to risk of acute schistosomiasis, the manifestation of a hyper-allergenic response to infection with *S. japonicum.*

Completed double blind trials with two DNA vaccines in buffaloes in China with encouraging protective efficacy.

Completed a large, rigorous cluster design drug-based intervention trial in China which underpins the rationale for development and implementation of a veterinary-based anti-schistosome vaccine for use in buffaloes.

Successfully used a customised schistosome microarray to provide a complete profile of the differential variation in metabolism, ion regulation and tegumental function, during the *S. japonicum* lifecycle.

Mosquito Control

Laboratory Head: Dr Peter Ryan

Research in the Mosquito Control Laboratory focuses on the biology and control of mosquito-borne viruses such as dengue, Ross River virus and Barmah Forest virus.

Highlights

Determined the environmental affects on new transcriptional profiling age grading method for the global dengue vector – *Aedes aegypti.*

Defined the bionomics of *Ae. aegypti* in central Vietnam as a precursor to development of an intervention strategy against dengue involving life shortening *Wolbachia.*

Evaluated a range of biorationals to control *Verrallina funerea* mosquitoes – vectors of Ross River and Barmah Forest viruses in coastal areas in Australia.

Monitored the impact of rural water supply infrastructure on dengue transmission risk in southern Vietnam.

Showed that community based dengue control programs in central Vietnam were effective and low-cost interventions.

Collaborative research with The University of Queensland and James Cook University has continued on the development of robust age grading methods for mosquito vectors. The potential environmental effects on the transcription profiles of key age responsive genes in this group's *Aedes aegypti* age prediction model were examined. Larval and adult diets did not significantly influence transcription of key age responsive genes. However, as expected, transcription of two genes was influenced by ambient temperature. These transcriptional age grading methods will soon be applied under field conditions in Vietnam with the aim of developing a future intervention strategy involving life-shortening *Wolbachia*. In preparation for such a strategy, an 18 month longitudinal study has been completed of the bionomics of *Ae. aegypti* on an island field site in central Vietnam that could be a potential location for a future intervention.

The Mosquito Control Laboratory continues to expand its community based dengue control programs in Vietnam in collaboration with the Ministry of Health and the Australian Foundation for the Peoples of Asia and the Pacific. These programs have utilised naturally occurring mosquito predators (*Mesocyclops*) and community based methods to reduce mosquito numbers and dengue disease cases. Ms Hoang Le Nguyen evaluated the long-term sustainability of these community based dengue control programs in central Vietnam and found they were well-sustained four years after cessation of program funding. These programs therefore represent an affordable option for dengue prevention in central Vietnam, with a total estimated cost of AU$ 0.13 per household per year.

Research assistant Lance Maddock testing the residual efficacy of mosquito adulticides applied to leaf surfaces in a laboratory setting.

Protein Discovery Centre

Laboratory Head: Professor Jeff Gorman

The Protein Discovery Centre aims to discover the identities of proteins involved in or affected by physiological and disease processes and the influence of post-translational modifications on the ways proteins function and interact.

Research over the past year continued to focus on analysis post-translational modifications that regulate signal-activated transcription factors, determination of the mechanisms by which the medically significant respiratory syncytial virus interferes with the ability of infected cells to mount an innate immune response and development of methodologies for analysis and quantitation of protein phosphorylation.

Previously uncontemplated modifications have been identified on the Dioxin receptor transcription factor which functions to respond to xenobiotic exposure and in developmental processes. The very high sensitivity of MALD-TOF/TOF-MS/MS was used to identify putative modifications and the very high mass accuracy OrbiTrap mass spectrometer subsequently used to confirm the identities of the modifications. This same combination of mass spectrometry technologies was also vital in determining that the enzyme FIH is the sole enzyme that hydroxylates hiypoxia inducible factor *in vivo*. This achievement involved the use of murine cells with FIH conditionally knocked out.

The laboratory has also determined that the non-structural protein NS1 of respiratory syncytial virus (RSV) is acetylated on a serine residue and detected cellular proteins that interact with NS1 and NS2.

The proteomes of cells infected with recombinant RSV were also examined to identify changes in cellular protein expression in response to infection with this virus.

The Centre used a model avirulent isolate of the avian virus – Newcastle disease virus, which also has highly modified proteins, to develop a specific protocol for the identification and quantification of the phosphorylation of proteins from a variety of cellular and infectious disease agent protein systems. The intention is to apply these new protocols to a range of biological systems, including via collaboration with QIMR and external scientists.

Researcher Keyur Dave at work in the Protein Discovery Centre

Highlights

Optimised phospho-peptide enrichment protocols developed and applied to isolate phosphopeptides from the Dioxin receptor and the Newcastle disease virus proteome.

Deployed new protocols for quantification of protein phosphorylation in the Dioxin receptor and to verify the presence of sulfonation rather than phosphorylation on two serine residues.

Identified 20 sites of phosphorylation in the proteome of Newcastle disease virus.

Established that the factor inhibiting Hypoxia Inducible Factor (HIF) is likely to be the sole asparagines hydroxylase to hydroxylate the regulatory asparagine in the C-terminal transactiviation domain of HIF.

INDIGENOUS HEALTH RESEARCH

Assoc Prof Gail Garvey heads the Indigenous Health Research Program

The program seeks to increase the number of research projects developed in partnership with Aboriginal and Torres Strait Islander communities and to increase the number of Aboriginal and Torres Strait Islander postgraduate students and researchers working on these projects.

A broad range of Indigenous research projects are conducted across the Institute with colleagues from the different Divisions on topics such as:

- Cancer diagnosis, survival and treatment
- Healthy skin – scabies treatment and control.
- Group A Streptococcus – vaccine development.
- Dementia – prevalence and service delivery.
- Bronchiectasis – history and risk factors.
- Type 2 diabetes – associated risk factors.

Cancer survivorship issues including supportive care needs and survival prospects of Indigenous cancer patients.

A pilot project is currently being conducted in collaboration with The Cancer Council Queensland to investigate the treatment options, perspectives and understanding of cancer and the supportive care needs of Indigenous cancer patients in Queensland.

High prevalence of metabolic syndrome amongst the youth of the Torres Strait Islands of Australia

A cross-sectional study of Indigenous children residing in the Torres Strait has been conducted to assess the prevalence of risk factors associated with cardiovascular disease and type 2 diabetes. 158 youths were screened, a representative sample of outer islanders for which there was nearly 100 percent response rate. 31 percent were overweight, 15 percent obese, and 38 percent had a large waist circumference. Half the high school youths showed signs of insulin resistance and these were more pronounced in females. With regard to other factors indicative of metabolic syndrome, 17 percent had high triglycerides, 57 percent low HDL-C and 27 percent were hypertensive. Eighteen youths, mostly females, were diagnosed with metabolic syndrome (17 percent, 95 percent CI 10-24) and two with type 2 diabetes. These preliminary findings show a striking high number of overweight or obese youths who showed, at young ages, signs of early onset of

associated conditions such as type 2 diabetes and metabolic syndrome. These findings have important public health implications for the region.

Multicentre Bronchiectasis Study

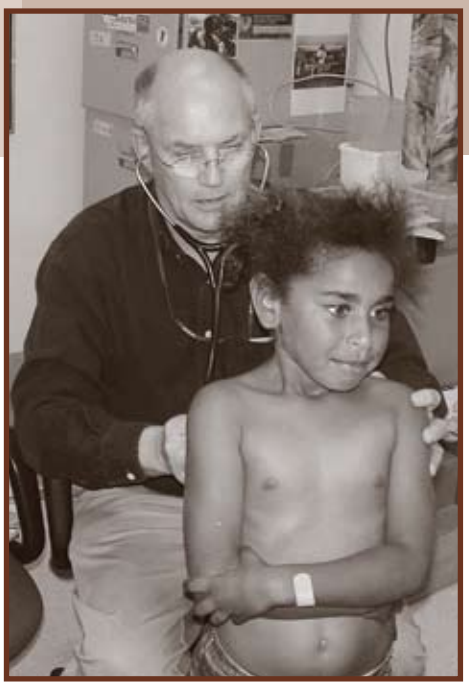
Chronic suppurative lung disease (CSLD) and bronchiectasis contribute to the high burden of respiratory disease in Indigenous children worldwide. The high rates of CSLD among Indigenous populations in affluent countries have resulted in this collaborative study which includes the Alaskan native people, Aboriginal and Torres Strait Islanders and New Zealand Maori and Pacific Islanders.

Two studies within this project are being conducted: an observational and an intervention arm.

The observational arm has started with 99 children enrolled to date. The interventional study starts in 2008. This is the first study to prospectively document the clinical course and therapy of chronic moist cough and bronchiectasis in Indigenous children. The research is supported by the NHMRC and Telstra Foundation.

Dementia

A pilot project is underway to investigate Indigenous people's understanding of dementia. This is a collaborative project being conducted with the CRC Dementia at QUT, the Centre for Rural and remote Health (USQ) and Alzheimer's Australia.



Above: Dr Brent Masters of the Royal Children's Hospital conducting a respiratory checkup with one of the outer islands children during the QIMR Asthma Education Intervention Project.

Below: Assoc Prof Gail Garvey with baby Edward on Coconut Island during community visits in the Torres Strait.

JOINT RESEARCH

Australian Centre for International and Tropical Health (ACITH)

with The University of Queensland

Priorities for the Public Health Education and Research Program phase 4 list chronic disease, Indigenous health and biosecurity/disaster response as priorities, while ensuring that core competencies in biostatistics and epidemiology are maintained.

Apart from a role in training post-graduate students, ACITH members also deliver specialist lectures and seminars in tertiary teaching, public and professional seminars.

In Indigenous health, Associate Professor Gail Garvey is creating a consolidated working relationship with UQ partners and Indigenous groups. This group is currently reviewing their portfolio of research in both chronic and infectious diseases. Both consortium members have representatives on the CRC for Aboriginal Health, based at the Menzies School of Health Research, Darwin. In conjunction with the National Centre for Epidemiology and Population Health at ANU, Vanessa Clements is expected to finish her Masters of Applied Epidemiology degree by mid 2008.

A joint RBWH-QIMR Biostatistics unit headed by Professor Peter O'Rourke gave monthly seminars and workshops during the 2007. Attendance totalled 248, of which approximately 50% were from health professionals outside of ACITH. The program was modified for 2008.

This program is especially designed to improve core competencies necessary for public health research and evidence-based policy formulation. Kylie-Ann Mallitt is congratulated for her outstanding results through the Australian Biostatistics Collaboration.

With respect to biosecurity and tropical health research and training, $155 million was obtained for a third QIMR building which will include a PC3/QC3 Australian Biosecurity Response Facility, a tropical epidemiology floor and a teaching and education floor for primary and secondary students, undergraduates and graduates and regional visitors. Given the Australian government budget announcement in May 2008 regarding incentives for students in mathematics and science, and the Australian Academy of Science promoting the concept of closer working ties between schools and scientists, QIMR's decision to allocate space for education and training must be regarded as an important move regionally and nationally.

Activities with the Australian Biosecurity CRC for Emerging Infectious Diseases have been enhanced through one new project and support for their rebid for a second round of funding. In April 2008, Dr Archie Clements joined ACITH as a joint appointment between our UQ partners and QIMR. To increase output of decision-support tools, web-based early detection systems and risk analysis, he will examine the problem of the numerous pathogens which may cause encephalitis, and in conjunction with collaborators from Australia and Vietnam, deliver a better notification system.

Assoc Prof Gail Garvey and Vanessa Clements from the Indigenous Health Research Program

Q-Pharm Pty Limited

with The University of Queensland

Q-Pharm specialises in the conduct of early phase clinical trials (Phase I/II trials) and bioequivalence and bioavailability studies. The company conducts trials on pharmaceutical, biotechnology and complementary medicine products spanning the areas of therapeutic, diagnostic and prophylactic agents.

Q-Pharm concluded its sixth year of trading as a private company on 30 June 2007. Year six proved to be a very challenging one for the company.

The decline in the domestic bioequivalence market which had been predicted for several years occurred more sharply than expected as a consequence of takeover and merger activities among our major clients for these services. This caused a number of significant adjustments and economies within the company.

Gross revenue from operations fell below the budget forecast for the first time in the company's history, and resulted in a modest trading loss.

Growth has continued in Phase I/II clinical trials which now account for more than 50 percemt of revenue (compared with percent in 2002/2003). This growth lessened the impact of the decline in the bioequivalence sector.

The bioanalytical laboratory, which obtained most of its work from the bioequivalence activities, was merged into the ADME laboratory of our sister organisation, TetraQ. This resulted in substantial cost savings and has strengthened the TetraQ laboratory which now provides Q-Pharm's bioanalytical requirements under a formal strategic alliance.

A healthy diversification of the company's client base has continued in accordance with the business plan. A growing percentage of Q-Pharm's business is sourced from international clients predominantly in North America

Q-Pharm continues to play a leading role as a member of the Queensland Clinical Trials Network and has been actively involved in promoting both the company's and Queensland's capabilities at various national and international conferences.

The company has undertaken a major restructure of its clinical operations to adapt to the changed mix of the services being provided, and believes it is now well positioned to resume growth.

Wayne Hooper, the founding CEO, retired from that position on 30 June, 2008 and has been succeeded by Terry Hurst who was previously General Manager.

Q-Gen Pty Ltd

Q-Gen marked its sixth year in operation in 2008 and this year, welcomed Dr Michael Gerometta as new Chief Operating Officer.

Michael comes to Q-Gen with 19 years experience at Agen Biomedical, most recently as Research and Product Development Director. Over the past eight years he has been responsible for the chemistry, manufacturing and controls (CMC), pre-clinical programme and patent management for Agen's ThromboView® project, a blood clot imaging agent. He managed the manufacture and development of ThromboView® in-house at Agen and outsourced the process in preparation for late-stage commercialisation.

Previously he has worked at Biotech Australia, Sydney and together with earlier positions at Agen, developed numerous successful immunodiagnostic assays for the medical, veterinary and food industries across various diagnostic platforms for the laboratory and point-of-care. He was awarded his PhD in biotechnology from the Queensland University of Technology and has a degree in chemistry from the University of Technology in Sydney. Mike's expertise in mammalian expression, antibody production and human therapeutic development programs will be a valuable resource to all of our clients especially those entering into the translational development area for the first time.

Changes to the Board include a new Chairman, Ms Lynda O'Grady BCom (Hons), FAICD, who has held several senior positions with Telstra Corporation, most recently as Executive Director and Chief of Products. She has also held senior executive roles at ACP Magazines Ltd, the publishing division of PBL, and at Alcatel.

This year marks the formalisation of Q-Gen's foray into Active Pharmaceutical Ingredients, having now received a licence from the Therapeutic Goods Administration for this new capability. As a result, Q-Gen has commenced two commercial contracts with a national and international partner for the production of API's in this year and begun production of a reagent for an *in vitro* diagnostic test for the first time.

In cell therapy, QIMR and Dr Rajiv Khanna commenced work with Q-Gen for a new Phase I clinical trial into nasopharyngeal carcinoma which has commenced in Hong Kong with product manufactured and supplied from Q-Gen. This is separate to the alternative T-cell based cellular therapy being produced for Professor Moss's phase I clinical trial into the same disease. Additionally Q-Gen is gearing up to continue the investigational work into a Phase I therapy for glioma in collaboration with the Wesley Hospital's Dr David Walker and QIMR's Dr Chris Schmidt.

On a funding level, Q-Gen was successful in procuring NCRIS funding and State Government co-contributions for four years to subsidise access for Australian researchers into the facility through the Research Infrastructure Support Services Limited initiative. These funds will become available by application in the 2008/2009 calendar year.

Griffith Medical Research College

with Griffith University

The Griffith Medical Research College (GMRC) was established in 2004 as a joint initiative of Griffith University and the QIMR with the aim of encouraging collaboration between researchers of both organisations.

Approximately 100 staff from the QIMR and GU are members of the GMRC, many of whom participate in joint research projects and co-supervise postgraduate research students.

GMRC highlights for the 2007-2008 year included:

- An award of over $100,000 in seed funding grants to QIMR and Griffith University researchers to study genetic associations in different diseases and the economics of ovarian cancer.

  Griffiths and Visscher: *New methods to map disease genes in an admixed founder population.*

  Scuffham, Webb and Green: *Economic assessment of treatment in advanced ovarian cancer.*

  Halford, Martin, Shum, Wright and Andrews: *Genetic markers for human reasoning processes.*

- The GMRC held a colloquium session as part of the Gold Coast Health and Medical Research Congress on the 7 December 2007. Collaborative research projects were presented by GMRC members.
- Professor Emma Whitelaw from QIMR was awarded an ARC grant through the GMRC.
- The appointment of Dr Albert Mellick as the GMRC Research Fellow who will investigate the role of Atm in bone biology and human bone disease.

Cooperative Research Centre for Aboriginal Health

The Cooperative Research Centre for Aboriginal Health (CRCAH) is a Darwin based centre and brings together the Aboriginal health sector, government health agencies and research institutions.

It was established in 2003 and is governed by an Aboriginal-majority board with representation from 12 core partners of which QIMR is one. Its vision is one of sustained improvements in Aboriginal health through strategic research and development.

QIMR is an active partner through its in-kind contributions to research, research transfer activities, student research, education and training activities, capacity development activities, administration and meetings.

Projects which involve QIMR include: research towards vaccines in tropical health and cancer in Aboriginal and Torres Strait Islander peoples, scabies vaccines and Group A Streptococcus and its associated diseases – rheumatic fever and rheumatic heart disease.

The CRCAH contributes to supporting Aboriginal students studying at QIMR by scholarships and QIMR is an important part of the Centre's educational and training program.

The Board and executive of the CRCAH are currently seeking government and private sector support to establish a more permanent independent Aboriginal-led Institute to take over the valuable work of the CRC when it's funding ends in 2010.

CORPORATE SERVICES

Science at QIMR has always been assisted by a dedicated group of corporate staff who provide support in finance, information technology, human resources, regulatory affairs, safety, records and information, scientific services and building services.

Dr Julie-Anne Tarr
General Manager

The Corporate Division was formerly led by a Chief Operating Officer. Due to the KPMG recommendations endorsed by QIMR Council in May 2008, the Corporate Division welcomes Dr Julie-Anne Tarr as its General Manager, Ms Donna Hancock as Chief Commercial Manager and Ms Vivienne Johnson as head of the new External Relations Group.

Dr Tarr is a commercial lawyer by training with a strong background in academia and research as well as in start up and change management operations. She holds a BA from Wisconsin, a Juris Doctorate in law from Cornell, an LLM in intellectual property from Monash and a PhD from the University of Queensland.

Ms Donna Hancock is responsible for ensuring corporate services, finance, records, information technology, grants, business development and human resources are enhanced. Donna has an extensive background in finance, business planning, business development, systems development and commercial management, having worked for over 20 years as a senior executive with BHP Billiton. She holds a Bachelor of Commerce and Master of Business Administration and is a current member of the Pharmacists Board of Queensland.

Ms Johnson provides strategic direction and quality assurance for aspects of QIMR's public relations, marketing, media, communication and fundraising. Vivienne has more than 20 years marketing and communication experience in both the public and private sectors and her qualifications include a Master of Business in Communication Management.

Finance

The Finance team has continued to develop strategies to enhance and support the integration of financial information and reporting both for internal users and external stakeholders. This year, as the grants portfolio continues to expand both in terms of grants awarded and collaborative arrangements, capability has been increased with the doubling of Grants Officers from two to four. In addition, support for the External Relations team has been further developed and financial and auditing services for Q-Gen Pty Ltd, a wholly controlled entity of QIMR, have been provided.

The team has also responded to increasing compliance requirements, particularly in the area of audit of Australian and off-shore project grants, and has embarked on enhancement of documentation of financial procedures.

Information Technology

The past year saw a substantial increase in QIMR's data storage capacity with further expansion of the

existing SAN (Storage Access Network). This necessitated a commensurate extension of backup infrastructure to accommodate the burgeoning growth in data, particularly large volumes of data generated by computer controlled scientific equipment. New servers have also been purchased to provide the processing power required by a modern medical research institute.

A very successful collaboration between IT and the Mosquito Control Laboratory provided an opportunity to demonstrate a web based virus surveillance system, developed by IT, to colleagues in Vietnam. This was an exciting first direct involvement for IT in an international research project which has the potential to greatly improve disease outbreak management through the tracking and monitoring of the incidence of viral infections.

A major project nearing completion is the provision of disaster recovery facilities for QIMR's information technology infrastructure. Critical services have now been set up on servers at a dedicated disaster recovery facility to provide business continuity for IT based services, should the unthinkable happen. A secure network link into this facility has also been established.

Resource booking for all QIMR's shared resources was successfully moved online using a familiar standard interface that provides ease of use and remote access from outside the QIMR network.

Planning also continues for the information technology and communications infrastructure required for the new Smart State Medical Research Centre (SSMRC) building

Human Resources

Human Resources continued to provide support and advice to QIMR staff on a broad range of human resource and employee relations issues. Demand for high volume staff administration continued, with 850 appointments and reappointments and recruitment for 76 positions during the year.

The number of staff resignations received as a percentage of staff was just under 10 percent, representing a reduction in voluntary turnover of approximately 3.5 percent from the previous year.

Negotiations for a collective Workplace Agreement in the federal jurisdiction were successfully concluded with the new agreement coming into effect in December 2007. Implementation of the agreed initiatives was commenced and is expected that this will continue over the life of the agreement. The agreement provides a number of benefits for staff, including salary increases of 4% per annum, enhanced provisions for professional development and career progression for research staff, improved organisational

Ms Donna Hancock
Chief Commercial Manager

Ms Vivienne Johnson
Senior Manager
External Relations

flexibility with respect to over award payments, and more flexible leave arrangements, including extended annual leave on half pay, purchased leave arrangements and ability to use accrued time over the Christmas closure period.

Following QIMR's associated transition from the state to federal industrial jurisdiction, changes to employment conditions and administrative practices that were necessary to comply with legislative requirements were also implemented.

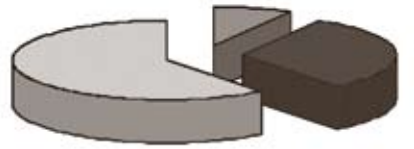
Regulatory Affairs

The Regulatory Affairs team maintains QIMR's compliance with the regulatory requirements which govern scientific research. Two relevant key documents guiding institutions and researchers in the responsible and ethical research conduct were handed down in 2007: Australian Code for the Responsible Conduct of Research and the revised National Statement on Ethical Conduct in Human Research. This facilitated a review of QIMR policies and implementation of improvements in QIMR's research governance framework. The team continued to assist QIMR scientists and external clients by providing regulatory and research ethics advice and assistance, by facilitating access to efficient and high quality ethics review services, and by assisting with the management of QIMR-sponsored clinical trials. Ms Brenda Rosser joined the Regulatory Affairs team in March 2008.

The QIMR Human Research Ethics Committee (HREC) continued to provide an efficient ethics review service to the commercial clinical trials company, Q-Pharm. Approximately 40% of the HREC's workload was associated with review and oversight of commercially sponsored clinical trials. The HREC and its secretariat continued to deliver excellent turnaround times – 97% of Q-Pharm protocols submitted for HREC review were approved within four to five weeks from submission.

QIMR-HREC approvals 2007-2008

QIMR-AEC approvals 2007-2008



To assess compliance with the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes QIMR Animal Ethics Committee (AEC) activities were reviewed in March 2008 by the Queensland Department of Primary Industries and Fisheries. Regulatory Affairs staff and several committee members attended the National Research Ethics Conference and Information Sessions on the new National Statement, the Australian and New Zealand Council for the Care of Animals in Research and Teaching scientific meeting and the Annual Congress of the Australian Association of Regulatory and Clinical Scientists. HREC Chair participated in the Queensland HREC Chairs Forum and the HREC Chairs Roundtable facilitated by the NHMRC. AEC Chair participated in the Queensland AEC Chairs Group meetings.

Safety

The Safety Committee has again had a busy year, reviewing 283 separate projects consisting of 347 safety, 302 risk management and 132 Office of the Gene Technology Regulator form reviews during its 11 meetings. In addition, the committee assisted the Safety Manager in reviewing and commenting on a complete rewrite and update of the safety manual including the radiation safety and protection plan.

The Safety Office managed a number of Workcover cases during the period but the majority of these claims for compensation arose through journey injuries coming to or from work and were not accidents in the work place. Even though the number of staff at

QIMR has increased over the last three to five years the number of accidents has not. The Safety staff investigated the suitability of a number of electronic training packages for staff to undertake their annual safety and fire training online and have recently signed a contract for this to begin.

The Safety Manager, with the help of the Communications Officer Jann O'Keefe, has also established new safety pages on the QIMR intranet. All information relating to workplace health and safety, radiation safety, accidents and rehabilitation is accessible from this point.

Records and Information Services (RIS)

Recordkeeping and Archives is committed to records management practices that are innovative, improve organisational efficiency and comply with all relevant government legislation and best practice guidelines. This year, records management systems and practices have been strengthened with the progressive implementaion of TRIM Context – QIMR's Electronic Documents and Records Management System (EDRMS). Currently there are a number of pilot groups using TRIM in their day-to-day activities in order to improve efficiency and ensure their records are stored appropriately.

RIS is also implementing the current recordkeeping plan to strengthen staff accountability and recordkeeping systems and practices. Key outcomes this year include:

- Development of appropriate recordkeeping policies and guidelines.
- Review and upgrade of the business classification scheme and titling standards.
- Development of recordkeeping training programs for staff.
- Appropriate registration of laboratory notebooks.
- Development of archiving and disposal procedures.
- Capturing of recruitment records.
- Development of a vital records plan.

Information Services focuses on improving staff access to information through development of a range of resources. There are a number of ongoing projects and development tasks underway to further improve the support of research and education at QIMR, including:

- Improved user facilities and access to information resources.
- Improved search portals.
- Development of applicable copyright frameworks for QIMR's needs.
- An electronic catalogue of all QIMR print material.

The journal subscription base has been rapidly built from zero at the start of 2008 to 320 journals by June 2008. There are an additional 450 journals to be made available over the coming months.

Scientific Services

The Scientific Services Division facilitates QIMR research through provision of a wide range of services covering scientific and laboratory support including access to both general equipment and specialised instruments and equipment. The dedicated staff in Glassware Services, the Animal Facility and Stores, Purchasing and Freight departments who provide sterile glassware, the best environment for our biological research models in the Animal Facility and ensure the timely procurement of goods, services and equipment have worked tirelessly towards operational excellence this year.

Access to expertise in advanced technology platforms within the areas of histotechnology, flow cytometry and microscopy and analytical services is provided by highly skilled and motivated technicians and professional scientists. In the past year, this group have worked collaboratively with researchers to provide the highest quality of service in the face of increasingly complex new technologies.

Providing all QIMR scientists with access to the core scientific equipment required for their work is the function of the QIMR Equipment

Committee. Applications for equipment from scientists are critically reviewed in-house ensuring research priorities are met and that equipment is of benefit to a range of research endeavours. QIMR has continued to upgrade its instrumentation in high demand areas such as high throughput gene expression analysis or small molecule analysis, high resolution digital microscopy and fluorescence activated cell sorting analysis. The highlights of the year's acquisitions included: the DeltaVision Restoration Imaging Microscope which was partially funded by Queensland Freemasons and will be used by researchers involved in infectious diseases, cancer and immunology studies; the PerkinElmer API 3200 Mass Spectrometer partially funded by The Ian Potter Foundation which will benefit drug discovery and vaccine development research projects; and the BD FACSCanto Analyser to be used by groups researching immunotherapy and cell biology.

Building Services

Level 6 water restriction measures have been put in place complete with a comprehensive metering arrangement for our reverse osmosis systems and cooling towers.

An upgrade of the Bancroft Centre building management system has commenced to allow for integration with the Clive Berghofer Cancer Research Centre and the management system to be installed in the new SSMRC.. The new system has web-based control and a server has been installed for building management connections to allow Building Services staff to access the system from anywhere on campus.

The upgrade of the CCTV system has been completed and video storage capacity on a hard drive system has been increased to one terabyte. Measures have also been put in place to meet the Queensland Government's requirement for assessment of terrorism risks. Work has also commenced on upgrading the security system software to allow full integration with the new SSMRC building.

Modifications to areas on Level D Bancroft are nearing completion. Personnel from Level F Bancroft will relocate to level D to accommodate the increased number of staff. Modifications are underway to the Insectary on Level J which will increase the size of the quarantine approved area allowing more quarantine approved work to be undertaken.

Design works for the new SSMRC are well underway and Building Services are heavily involved with the ongoing design process and documentation.

Dr Graham Kay, head of the QCF Transgenics Laboratory uses the new Delta Vision microscope to observe genetically modified mouse melanocytes undergoing aberrant cell division

Business Development

A key goal of the Business Development Office is the identification and protection of QIMR's intellectual property and research materials with minimal disruption in the exchange of information. QIMR has a combined intellectual property portfolio of 15 patent families managed by the office, and also acts as trustee for intellectual property belonging to the participants of the CRC for Vaccine Technologies. On many occasions QIMR acts on behalf of the Queensland Department of Health in the licensing of their intellectual property.

The office is also the point of contact for commercial contract research. Currently QIMR has contracts with over 20 national and international biotechnology and pharmaceutical companies. Contract research carried out in QIMR has resulted in the discovery and development of cancer therapeutic agents and other commercial products.

Throughout the past year the business development office continued to develop strategic partnerships with other medical research institutes, universities and pharmaceutical companies through the negiotation of collaborative research agreements, contract research, contract manufacture, clinical trials arrangements and licensing of QIMR's own technology. QIMR and Merck announced a collobrative effort to develop a vaccine against Group A strep alongside a silimar program involving the Naional Institutes of Health.

The office played an important role in QIMR acting as clinical trial sponsor for the malarira vaccine trial (MSP2) funded by the Program for appropiate Technologies in Health (PATH).

Facilitating the introduction of technologies developed at the institute to the marketplace is important so that these innovations can benefit the public. In this role the office seeks the most appropriate home for each technology and works closely with inventors to identify potential commercial opportunities. Inventions are then marketed to companies best positioned to make these innovations commercial realities. Once a strong candidate for licensing is identified a license agreement is negotiated that works for both sides to enable the transfer of the technology.

During the past year, QIMR announced the licensing of the cancer target hSSB1 to the CRC for Cancer Therapeutics.

Replikun Biotech Pty Ltd

Replikun's proprietary technology, the Kunjin Replicon, builds vaccines that fight against immune evasion. The company was formed in March 2005. In March 2008 the company was awarded Queensland Government ISUS Funding.

Replikun is completing the manufacture of GMP master and working cell banks at Q-Gen Pty Ltd which will be important assets as the company seeks to create value by partnering its technology with biopharmaceutical companies.

Vaccine Solutions Pty Ltd

Vaccine Solutions was established by the CRC for Vaccine Technology to commercialise their intellectual property. Since the winding down of the CRC in June 2006, Vaccine Solutions remains in place to manage existing licensing agreements resulting from CRC activities.

Adipogen Pty Ltd

Adipogen was established by UQ using intellectual property developed by UQ staff and the Queensland Department of Health.QIMR manages the interests of Queensland Health in the commercialisation of the intellectual property and is a minor shareholder in Adipogen. Since December 2007 the intellectual property assets of Adipogen were merged with assets of Chemgenix to a new company Verva Pharmaceuticals Limited.

Patents

Patent	Inventor	Number
Patent Families Managed By QIMR		
Novel Molecules	Toni Antalis	PCT/AU1995/00085
Immunogenic Agent and Pharmaceutical Composition for use against homologous and heterologous pathogens	Michael Good	PCT/AU2004/00080
G-CSF Derivative for inducing immunological tolerance	Geoff Hill	PCT/AU2004/00116
Polytope Vaccines	Andreas Suhrbier	PCT/AU1995/00461
Synthetic peptides and vaccines comprising the same	Michael Good	PCT/AU1995/00681
Cytotoxic T-cell epitopes	Denis Moss	PCT/AU1995/00140
EBV CTL epitopes	Rajiv Khanna	PCT/AU1997/00328
CTL epitopes from EBV	Scott Burrows	PCT/AU1998/00531
EBV peptide epitopes, polyepitopes and delivery system therefor	Rajiv Khanna	PCT/AU2003/01451
Novel hCMV cytotoxic T cell epitopes, polyepitopes, composition comprising same and diagnostic and prophylactic and therapeutics uses therefor	Rajiv Khanna	PCT/AU/2002/0089
Human cytomegalovirus immunotherapy	Rajiv Khanna	PCT/AU2005/00178
Anchored MAP	Istvan Toth	PCT/AU199347154
Novel human ssDNA binding proteins and methods of cancer diagnosis	Kum Kum Khanna	PCT/AU2008/000181
Therapeutic antibodies, antibody fragments and antibody conjugates	Michael Good	US 11/950217
QIMR Patent Families Managed outside QIMR		
Detection of Genes	Catherine Hyland	PCT/AU1994/00506
Receptor Ligand System and Assay	Andrew Boyd	USA 7,037,662
Modulation of Cell Adhesion and Tumour Cell Metastasis	Andrew Boyd	PCT/AU2004/000142
Flavivirus Vaccine Delivery System	Andreas Suhrbier	PCT/AU02/01598
Flavivirus Replicon Packaging System	Andreas Suhrbier	PCT/AU2004/000752
Flavivirus Replicon Delivery System	Alex Khromykh	PCT/AU98/00993
Flaviviral Replicon constructs for Tumour Therapy	Andreas Suhrbier	PCT/AU2006/000198
A Method for Treatment	Andrew Boyd	PCT/AU1999/00931
Differentiation modulating agents and uses therefore	Johannes Prins	PCT/AU2005/000008
A Method of treatment and agents useful for same	Geoff Hill	PCT/AU02/01512
Treatment for EBV associated disease	Denis Moss	PCT/AU2006/001854
Vaccine	Michael Batzloff	US 10/706,275
Melanoma-Associated MHC Class 1 Associated Oligopeptide and its use	Chris Schmidt	PCT/EP2006/008533
A Novel Receptor-Type Tyrosine Kinase and use therefor	Andrew Boyd	PCT/AU2006/55299B2
Patent Families Resulting from Contract Research Performed at QIMR		
Use of angeloyl-substituted ingenones in combination with other agents to treat cancer	Andreas Suhrbier	PCT/AU2006/001700
Treatment of solid tumours	Andreas Suhrbier	PCT/AU2005/001827
Chaperonin 10 modulators of toll-like receptors inducible cytokine and cytokine secretion	Andreas Suhrbier	PCT/AU2005/000041
Therapeutic Agents I	Peter Parsons	PCT/AU2001/00679
Therapeutic Agents II	Peter Parsons	PCT/AU2001/00680
Therapeutic Agents III	Peter Parsons	PCT/AU2001/00678
Patents Families Administered by QIMR as Trustee for the CRC-Vaccine Technology		
T helper epitopes	David Jackson	PCT/AU00/00070
Expression of hydrophobic proteins	Elizabeth Webb	PCT/AU03/00910
Novel immunogenic lipopeptides comprising T-helper and cytotoxic T lymphocye (CTL) epitope	David Jackson	PCT/AU03/01019
Novel immunogenic lipopeptides comprising T-helper and B-cell epitopes	David Jackson	PCT/AU03/01018
Truncated LHRH formulations	David Jackson	PCT/AU05/001383
Immunogenic Molecules	David Jackson	PCT/AU06/000162

Development and Marketing

The Development and Marketing Department continues to pursue and develop relationships within the corporate sector in Queensland and throughout Australia. Its success in this regard was acknowledged in August 2007 when QIMR was the recipient of the Prime Minister's Award for Excellence in Business Partnerships – Queensland Large Business Winner in recognition of its successful partnership with Suncorp.

In September 2007, Suncorp renewed its partnership contract for a second three year term. A highlight of the partnership was the 2008 launch of Suncorp Sunwise – an initiative to raise awareness of skin cancer within the community and impress the importance of sun safety preventive measures, as well as raise funds for QIMR's research in this field. Cornerstone activities of the Suncorp partnership have included:

- The Sunwise media launch of findings from QIMR's Dr Louisa Gordon's ARPANSA (Australian Radiation Protection and Nuclear Safety Agency) solaria research resulting in significant public debate and government legislation on the regulation of solariums in Australia.
- A series of community fora in Brisbane where QIMR presented latest information on skin cancers types.
- Provision of Suncorp/QIMR tents, microscopes and free sunscreen at South Bank parklands for the USM Events Criterion Race Day and Australia Day celebrations.
- Suncorp raising more than $100,000 for QIMR in addition to the sponsorship component of the partnership.

Global mining group Xstrata were also welcomed to the corporate partnership portfolio this year with the creation of the three year Xstrata Fellowship in Skin Cancer and Melanoma Research. The aim of this fellowship is the further training of an outstanding QIMR scientist in the early stages of their career and the development of a risk prediction tool that will endow practitioners with a more sophisticated predicative ability for melanoma and other types of skin cancer. With two out of three Queenslanders affected by some type of skin cancer in their lifetime, the broader community benefit from such a fellowship is significant.

Of equal importance is QIMR's community engagement program. The role of the department is to share the research progress with the community at large and inform them of advances in health and medical research. This year, community liaison personnel spoke with more than 6,500 members of the public in a range of forums including tours of our facilities, presentations to community groups or through individual visits to current supporters.

Financial support from the community continues to be strong with many donors choosing to make substantial gestures of financial support to the work of our scientists while others have made provision in their wills to direct portions of their estates to QIMR.

The Development and Marketing Department underwent significant change over 2007/08 which in the latter part of the period saw the incorporation of the department into the new External Relations Group and the appointment of Vivienne Johnson to the role of Senior Manager, External Relations. The new External Relations department which will have a broader focus than the former Development and Marketing Department.

Dr Louisa Gordon fields media questions at the Sunwise 2008 media launch

Official Committees

QIMR Council

Sir Bruce Watson (Chair)
Mr Paul Wright (Deputy Chair) (to 31 Dec 07)
Prof Bryan Campbell
Prof Peter Brooks
Mr Christopher Coyne
Prof Judith Clements
Mr Paul Fennelly
Prof Lyn Griffiths
Prof Alan Lopez (to June 08)
Dr Paula Marlton
Dr Jeannette Young

Committees reporting to Council:

Finance and Audit Committee
Sir Bruce Watson (Chair)
Prof Bryan Campbell
Mr Rod Wylie

Appointments and Promotions Committee
Prof Peter Brooks (Chair)
Prof Graham Brown
Prof Julie Campbell
Prof Judith Clements
Dr Andrew Cuthbertson
Prof Lyn Griffiths
Prof Alan Lopez (to Jun 08)
Prof James McCluskey
Prof Joe Trapani
Prof Michael Good (ex officio)

Animal Ethics Committee (AEC)

Scientific Sub-Committee (AEC)

Human Research Ethics Committee (HREC)
Dr Ian Wilkey (Chair)
Dr Roger Allison
Ms Madeline Brennan (from June 08)
Sr Regis Dunne
Mr Angus Edmonds
Ms Clare Endicott
Ms Patricia Johnson (to June 08)
Ms Claire Riethmuller (to Feb 08)
Mr David Russell
Dr Christopher Schmidt
Dr Greg Lawrence (to May 08)
Dr Katharine Trenholme (from May 07)
Dr Tom Sculley (from May 07)
Dr Julie-Anne Tarr (ex officio) (from Feb 07)
Dr Agnieszka Mitchell (ex officio)
Ms Rebecca Lacey – Secretary

Scientific Sub-Committee (HREC)
Dr Peter Parsons (Chair) (to 5 June 08)
Dr Katharine Trenholme (Chair) (from Jul 08)
Dr Ian Wilkey (Deputy Chair)
Dr Greg Lawrence
Dr Alex Loukas
Dr Christopher Schmidt
Ms Dixie Statham
Dr Agnieszka Mitchell
Dr Helen Leonard
Dr Kadaba Sriprakash
Dr Marion Woods
Dr James Doecke
Dr Brett Stringer
Mrs Rebecca Lacey – Secretary

Clinical Trial Protocol Committee (CTPC)
Dr Peter Roeser (Chair)
Dr Jason Lickliter (Deputy Chair) (to Feb08)
Dr Graham Radford-Smith (Deputy Chair) (from Mar 08)
Dr Wendy Chung
Dr Agnieszka Mitchell
Prof Andrew Boyd
Dr Suzanne Elliott
Dr Greg Lawrence (to May 08)
A/Prof James McCarthy
Prof Denis Moss
Dr Christopher Schmidt
Ms Allison McLean (to May 08)
Dr Lesley Ross-Lee
Dr Geoff Beadle
Dr Michael Moore
Dr James Doecke
Mrs Rebecca Lacey – Secretary

Council Personnel Administration Committee
Sir Bruce Watson (Chair)
Ms Patricia McCormack
Mr Rod Wylie
Mr Paul Wright (to Dec 07)

Committees reporting to the Director:

Senior Executive Team (SET)
Prof Michael Good (Chair)
Prof Adèle Green
Prof Andrew Boyd
Ms Natalie Karger (from March 08)
Prof Martin Lavin
Dr Stephen Clark (to Dec 07)
Dr Julie-Anne Tarr (from December 07)
Dr Michele Sheumack (to Jan 07)
Ms Nerida Fox - Secretary

Safety Committee
Dr Helen Leonard (Chair)
Dr Glen Boyle (Deputy Chair)
Dr Michael Batzloff
Mr Brendan Butcher (from May 08)
Mr Ron Buttenshaw
Dr Stephen Clark (to Dec 07)
Mr Paul Collins
Dr Juan Cooper
Ms Gwen Cuthbert
Ms Michelle Down
Dr Geoff Gobert
Mr Andrew King
Dr Agnieszka Mitchell
Prof Denis Moss
Dr Christine Rzepczyk
Mr Alan Stockman
Dr Julie-Anne Tarr (from January 08)
A/Prof Peter Upcroft
Ms Jo Chow - Secretary

Equipment Committee
Dr Juan Cooper (Chair)
Prof Andrew Boyd
Ms Allison McLean
Mr Chris Ward
Dr Greg Anderson
A/Prof James McCarthy
Dr Emma Whitelaw
Dr Geoff Hill

Higher Degrees Committee
Dr Nathan Subramaniam (Chair) (from Aug 07)
Dr Tom Sculley (to Dec07)
Prof Michael Good
Dr Nathan Subramaniam
Dr Sergei Kozlov
Dr Kevin Spring
Dr Peter Ryan
Dr Katherine Trenholme
Dr Malcolm Jones
Dr Kelli MacDonald
Dr Margie Wright
Dr Patricia Valery
Dr Grant Montgomery
Mr Matt Dixon (to Dec 07)
Ms Michelle Neller
Ms Nicci Wayte
Ms Simone Cross
Prof Joy Cumming
Dr Terry Walsh
A/Prof Geoff Marks (to Dec 07))
Prof Gail Williams (from December 07)
A/Prof Alan Lawson
Dr Judith Greer

Joint Consultative Committee
Ms Nicole Green (Chair)
Dr Grant Ramm (to Jun 08)
Prof Emma Whitelaw (from Jun 08)
Dr Penny Webb
Dr David McMillan
Prof Michael Good
Dr Stephen Clark (to Dec 07)
Dr Julie-Anne Tarr (from Dec 07)
Mr Paul Collins
Ms Pauline Buratwoski
QPSU Representative
QNU Representative

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Prof Andrew Boyd (Deputy Chair)
Dr Paul Bartley
Dr Geoff Beadle
Dr Ian Bunce
Dr Don Cameron
Prof Adèle Green
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Dr Barbara Leggett
Dr Joseph McCormack
Dr Paul Sandstrom
Dr Mark Smithers
Dr John Varghese
Dr Michael O'Rourke

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Dr David Whiteman
Dr Nick Hayward
Dr Georgia Chenevix-Trench
Dr Rajiv Khanna
Professor Emma Whitelaw (from Sep 07)

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Prof Denis Moss
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Dr Glen Boyle
Ms Simone Cross
Ms Jann O'Keefe
Ms Michelle Lagana (to Sep 07)
Mr Andrew van der Beek
Mr Felipe Beltran
Dr Arne Mould
Dr Darren Krause (to Oct 07)
Dr Vicki Whitehall
Ms Melina Georgousakis
Mr Sri Shekar (to June 07)

Committees reporting to SET

IT Committee
Dr Tom Sculley (Chair) (to Aug 07)
Dr Dale Nyholt (Chair) (from Aug 07)
Mr Christopher Ward
Dr Stephen Clark (to Dec 2007)
A/Prof Scott Burrows
Mr Mark Feodoroff
Ms Michelle Gatton
Ms Heather Matthews
Ms Nirmala Pandeya
Prof Peter Upcroft
Dr Nathan Subramaniam
Dr David Smyth
Dr Glen Boyle
Mr Mark Spanevello
Dr Nuri Gueven (to May 08)
Dr Agnieszka Mitchell
Dr Juan Cooper
Ms Jann O'Keefe

Strategic Science Committee
Prof Martin Lavin (Chair)
Assoc Prof Greg Anderson
Assoc Prof Gail Garvey
Prof Adele Green
Dr Geoff Hill
Assoc Prof James McCarthy
Prof Emma Whitelaw
Prof Michael Good (Ex Officio)
Mandie Quince (Secretary)

Clinical and Translational Research Committee
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Prof Adèle Green
Dr Geoff Hill
Dr Corinne Lendon
Dr Alex Loukas
Dr Agnieszka Mitchell
Dr Allison McLean
Assoc Prof James McCarthy
Prof Denis Moss
Prof Michael Good
Dr Grant Ramm
Dr Chris Schmidt
Dr Nathan Subramaniam
Mandie Quince (Secretary)

QIMR Trust
Mr Paul Wright (Chair) (to Dec 07)
Ms Jane Seawright (Convenor) (from Dec 07)
Mr John Garnsey (to Dec 07)
Mr Ian Manly
Mr Rod Wylie
Ms Margot de Groot (to Aug 07)
Ms Patricia McCormack
Ms Uschi Schreiber (to Dec 07)
Mr David Stirling

Committees reporting to Trust/ Council:

Investment Committee
Mr Rod Wylie (Chair)
Mr Bruce Phillips
Mr David Stirling

Marketing Committee
Mr John Garnsey (Chair) (to Dec 07)
Mr Ian Manly (Convenor) (from Feb 08)
Ms Margot de Groot (to Aug 07)
Ms Patricia McCormack (from Feb 08)
Ms Jane Seawright

TRAINING AND EDUCATION

Postgraduate Training

In the last year QIMR has admitted 42 new higher degree students and 24 visiting students. The student body at QIMR comprises 72 PhD, 5 Research Masters, 5 Coursework Masters and 8 Honours students.

The QIMR Summer Vacation Scholarship program attracted a record number of applications and 15 were awarded to undergraduate students giving them an opportunity to work on a defined and supervised research project at QIMR.

The QIMR High School Work Experience Program which runs during their school holidays enables students in Year 11 and 12 to experience the inner workings of a research institute.

The majority of students at QIMR are enrolled though the University of Queensland, the Queensland University of Technology or Griffith University.

The QIMR offers an outstanding environment for advanced training in biomedical research at an international level through the quality of its scientists, excellent research facilities, support services and an extensive network of international and national research collaborations. Postgraduate students are an important component of the health and medical research efforts at QIMR. The Institute seeks to impart them with a sound foundation and advanced training in health and medical research for subsequent careers in Australia and internationally.

QIMR's postgraduate students continue to make an impressive impact on the wider scientific community this year and have received numerous noteworthy awards. These include: Melina Georgousakis who was the Queensland Finalist for Young Australian of the Year in 2008, Postgraduate Science Finalist in the QLD Government Office for Women and won first prize for her presentation at the Australian Society of Medical Research Student Conference; Kate Markey who won the Peter Doherty Award for Best Postgraduate presentation at

Attendees at the third biennial QIMR Student Retreat

the Brisbane Immunology Group meeting; Matthew Dixon and Nadia Whitelaw who were the runners-up in the prestigious ASMR Queensland Premier's Postgraduate Awards; Mark Davies and Janelle Wright who were recognized for outstanding PhD theses and placed on the Dean's Commendation List; Enda Byrne who received the Endeavour International Postgraduate Scholarship; Najju Ranjit who received the Cala Patterson Publication Award from the Queensland University of Technology; Julie Balen, Melissa Burke and Simin Arabshahi who won awards for presentations at the School of Population Health Annual RHD Conference; Elizabeth Leddy who won a Smart State Scholarship; and Dr Daniel Worthley who won Smart State PhD funding and travel awards from AstraZeneca, GESA, The Queensland Cancer Council and the American Gastroenterology Association to attend conferences.

The third biennial QIMR Student Retreat was organised by the QIMR Student Society and took place at the Noosa North Shore Resort in Tewantin in September 2007. Besides oral and poster presentations from the students, a number of invited speakers from within QIMR and from the wider scientific community spoke on their own experiences of working in science, and gave advice to the students regarding completion of a successful PhD and the options available to them afterwards.

The conference ended with an excellent session on team-building by Mr Steve Clark.

The Higher Degrees Committee (HDC) evaluates students prior to their acceptance as candidates at the Institute, monitors student progress, provides education programs for students, establishes policy on student-related issues, and assesses applicants for travel awards, Honours and PhD top-up scholarships.

The monitoring of student progress is one of the most important activities and members of the HDC devote considerable time to the rigorous review of students during their study program. This year the HDC has undertaken more than 32 reviews of students.

Assoc Prof
Nathan Subramaniam
Chair HDC

Panel Discussion at the third biennial QIMR Student Retreat

Completed Students 2007 - 2008

Student	University QIMR Supervisor	Thesis Title
PhD		
Alyson Ashe	SMMB, US E Whitelaw	Modifiers of epigenetic gene silencing
Rong Bing	Medicine, UM L Powell	The role of protein kinase C zeta in hepatic fibrosis and stellate cell activation
Tim Bruxner	SMMB, US E Whitelaw	Characterisation of mutants influencing epigenetic gene silencing in the mouse
Anita Burgess	SPH, UQ J Upcroft	Drug resistance in *Trichomonas vaginalis* and *Giardia duodenalis*
David Chin	SMMS, UQ P Parsons, G Boyle	Novel prognostic markers in head and neck cancers
Belinda Cornes	Medicine, UQ N Martin	The aetiology of obesity in Australian families
Tania Crough	Medicine, UQ R Khanna	Virus-specific T cell dynamics
Mark Davies	SPH, UQ S Sriprakash	Genetic variation in *Streptococcus dysgalactiae* subspecies *equisimilis*: Virulence profiling and lateral gene transfer
Matthew Dixon	SPH, UQ D Gardiner K Trenholme	Gametocytogenesis in *Plasmodium falciparum*
Tegan Don	SMMS, UQ A Loukas	Pore-forming and saposin-like proteins from the gut of blood-feeding helminths
Magda Ellis	SPH, UQ D McManus	Familial aggregation of human helminth infection:a focus on genetic susceptibility to schistosomiasis japonica and associated markers of disease
Susan Jordan	SPH, UQ P Webb	Risk factors for ovarian cancer
Jessie Kelley	UQ	The functional characterisation of centrobin in endocytic trafficking and microtubule dynamics
Tessa Knox	SPH, UQ B Kay, P Ryan	Optimising surveillance of immature *Aedes aegypti* in Vietnam
Felicity Lose	Medicine, UQ A Spurdle	BRCA1 binding partners and breast cancer
John Miles	SPH, UQ S Burrows, S Silins	The cytotoxic T cell response to persistent human viruses
Kate Morley	Medicine, UQ S Treloar	Modelling smoking behaviour: from genes and environment to pharmacoeconomics
Edward Morris	Nottingham Uni G Hill	Immunoregulation of GVHD
David Raffelt	Life Sciences, QUT G Anderson	Expression and function of the iron regulatory protein hemojuvelin in muscle
Shahram Sadeghi MD	SPH, UQ D Whiteman	Molecular epidemiology and biomarkers of Oesophageal Cancer

Amila Suraweera	Medicine, UQ M Lavin	Senataxin and its role in ataxia oculomotor apraxia type 2
Alex Sykes	UQ J McCarthy	Diagnosis of strongyloidiasis with S. Ratti E/S antiserum
Janelle Wright	SPH, UQ T Sculley	Nuclear body formation by the Epstein-Barr Virus nucelar antigen-3 family proteins

Masters

Min-Huan Lin	Biotechnology, QUT D Harrich	Ubiquitination of HIV-1 Tat Protein
Hoang Le Nguyen	SPH, UQ P Ryan, B Kay	Evaluating the sustainability of a community-based dengue control project in central Vietnam
Nirav Patel	SMMS, UQ J Gorman	Proteomic analysis of cellular response to respiratory syncytial virus infection
Sugandha Ravishankar	Biotechnology, UQ N Hayward	Assessment of pharmacological inhibition of UVR-induced melanocyte proliferation
Suman Kumar Yekollu	Science, UQ M Gandhi	EBV specific immunoevasion mechanisms in EBV positive lymphomas
Vanessa Clements	NCEPH, ANU P Valery	Bound volme for the Degree of Master of Applied Epidemiology

Honours

Nauszikaa Farkas	Biological and Physical Sciences, GU D Gardiner	Investigation of peptide and PNA transport in *P. falciparum* - towards new drug delivery pathways
Zainab Dost	UQ J McCarthy	Towards formulating a malaria vaccine that utilizes an ultra-low dose of whole "killed" *Plasmodium falciparum* infected erythrocytes
Peter Giacomantonio	SMMS, UQ A Loukas	Characterisation and vaccine efficacy of tetraspanins from the tegument of *Schistosoma mansoni*
Imogen Gillions	QUT J A López and C Schmidt	Validation of a therapeutic murine melanoma model
Thibault Girard	University of Orlean, France, G Ramm, R Ruddell and M Philippe	Study of the Molecular Mechanism of Ferritin-Induced Activation of Hepatic Stellate Cells
Tim MacDonald	UQ, K Andrews	Investigation of *Plasmodium falciparum* aspartic proteases and aspartic protease inhibitors

CQU – Central Queensland University, GU = Griffith University, QUT = Queensland University of Technology, UE = University of Edinburgh, ULP = Université Louis Pasteur, France, UM = The University of Melbourne, UQ = The University of Queensland, US = University of Sydney, SMMB / School of Molecular and Microbial Biosciences

Student Awards

Recipient	Bestower	Award
Simin Arabshahi	UQ School of Population Health Research Higher Degrees Conference	Best Non-confirmed student presentation (1st) Outstanding Oral presentation section (3rd), Nov 2007
Julie Balen	SPH, UQ	Joint Runner-up Oral Presentation, Annual SPH Research Higher Degree Conference, Nov 2007
Melissa Burke	SPH, UQ	Joint Runner-up Oral Presentation, Annual SPH Research Higher Degree Conference, Nov 2007
Enda Byrne	UQ – UQILS – QIMR	Endeavour IPRS Award Jan 2008 – UQILAS Jan 2008 – Top-up fees, Jun 2008
Mark Davies	UQ	Dean's Commendation list, Outstanding PhD thesis, 2007
Matthew Dixon	Australian Society for Medical Research, Queensland	Runner-up Premier's Award, Postgraduate Student Category, May 2008
Melina Georgousakis	Queensland Government – Australian Society for Medical Research, Queensland – Queensland Government Office for Women	Queensland Finalist Young Australian of the Year 2008 – First Prize ASMR student oral presentation May 2008 – Post-graduate Science Finalist, 2007
Elizabeth Leddy	Queensland Government	SmartState Scholarship, Jan 2008
Kate Markey	Australian Society for Medical Research, Queensland – ASI / BIG	3rd Prize ASMR Student Presentation Jun 2008 – Peter Doherty Award for Best Post-Graduate Presentation Aug 2007
Tracey O'Mara	Institute of Health and Biomedical Innovation, QUT and Queensland Government Smart State	Top-up Scholarships, Jan 2008
Nirav Patel	UQ	Dean's Commendation List, High Achievment, 2008
Chris Peatey	QIMR	Dr Diana Cavaye Postgraduate Scholarship
Louise Randall	Australian Society for Immunology	Best Poster Prize, Dec 2007
Andrew Redmond	QIMR	QIMR Lawrie Powell Medical Postgraduate Scholarship, Dec 2007
Najju Ranjit	QUT	Carla Patterson Publication Award for best publication from a QUT early career researcher, Oct 2007
Nadia Whitelaw	Australian Society for Medical Research, Queensland	Runner-up Premier's Award, Postgraduate Student Category, May 2008
Philip Whiley	QIMR	QIMR Honours Scholarship
Marnie Wood	NHMRC	Medical Postgraduate PhD Scholarship
Daniel Worthley	Queensland Government – AstraZeneca – Gastroenterology Society of Australia – RBWH – Clinical Oncology Society of Australia – Queensland Cancer Council – AGA	Growing the SmartState PhD funding 2007 – Travel to Emerging Leaders Gastroenterology Workshop, Sweden 2007 – AstraZeneca Travel to Annual Digestive Diseases Conference, San Diego USA 2008 – Clinical Sciences Prize for best poster 2007 – Best abstract prize at COSA meeting – Travel to Cancer Epigentics Conference, Boston, USA 2008 – AGA Rustgi International Travel Grant
Janelle Wright	UQ	Dean's Commendation List, Outstanding quality and exceptionally innovative nature of research described in PhD thesis, 2007

Education Program

QIMR Education continues to increase its science outreach to include primary and high school students and their teachers, along with industry and government.

Scientists and staff at QIMR volunteer and respond to requests to engage with interested students at the primary, secondary and tertiary levels of science-related education. This includes hosting students in QIMR laboratories and facilities and communicating with them during student tours of QIMR or interacting directly at their schools or universities to promote medical research as a career path. A highlight each year is the two day High School Lecture Series which attracts over 300 students per day from some 40 schools. The students listen to lively scientific presentations and interact with dynamic researchers at QIMR, with the aim of enticing senior biology students into a science related field of study at the tertiary level.

Students attending the July 2007 High School Lectures came from both regional and metropolitan schools – as far north as the Sunshine Coast, from Southport and as far west as Toowoomba, including state, private and distance education sectors. Seminar topics included dementia, ovarian and breast cancer research, melanoma and prostate immunotherapy, malaria vaccine trials, genetic epidemiology studies on twins, obesity and oesophageal cancer risk and the importance of vaccine development to public and personal health.According to teachers, these lectures provide data that translates into real life health lessons for their students, reinforcing messages delivered in schools. Presenters at different stages of a medical research career provide challenging concepts for students at varying levels of intellectual ability. QIMR Director Michael Good and Deputy Director Adèle Green respectively welcome the students to QIMR highlighting both the benefits and challenges of being a scientist and being able to make a difference.

Melina Georgousakis dresses a high school student in protective laboratory clothing in a science demonstration at the Forest Lake State High School Science Fair

This year QIMRs' new schools webpages were launched with new web-based application forms and information on the science education programs. Since then, many more schools have contacted QIMR for tours and school visits, particularly the upper primary schools.

The High School Lab experience program, coordinated by Dr Derek Richard, offers grade 11 and 12 biology students up to four days in a laboratory shadowing a QIMR reseacher. This program has been extended to include grade 10 students involving a tour of QIMR facilities and then shadowing a researcher for the remainder of the day. Demand for this year 10 program has come from the new Academy State High Schools in Toowong and Southport that cater for academically gifted students in the field of Maths, Science and Technology and Health Sciences respectively.

Since tertiary enrolments in a science-related degree and in postgraduate research higher degrees have declined, it is more important than ever to engage with students early in their education and prior to making career choices, with the aim of championing a medical research career.

Offering professional development to biology teachers and partnering with them in schools continues with the QBEN group of biology teachers and Education Queensland who granted QIMR $50,000 to train teachers and year 11 and 12 students to conduct a folate metabolism research program in their biology labs in 2009.

GRANTS AND FUNDING

NHMRC Grants Awarded

(Excluding Equipment Grants, Fellowships and Scholarships)

Calendar Year :	2003	2004	2005	2006	2007	2008
	$'000	$'000	$'000	$'000	$'000	$'000
Project Grants - Standard	2,745	3,574	4,793	5,081	5,404	7,275
Project Grants - Genomics	394	-	-	820	800	780
Program Grants	2,965	4,421	5,427	5,321	4,310	6,349
Transitional Institute Grant (TIG)	900	900	900	900	-	-
Transitional Block Grant (TBG)	2,466	511	-	-	-	-
Development Grants	155	155	157	157	-	-
International Collaborative Grants	150	416	266	266	316	535
	9,775	**9,977**	**11,543**	**12,545**	**10,830**	**14,939**

NHMRC Fellowships and Scholarships Awarded

Calendar Year :	2003	2004	2005	2006	2007	2008
	$'000	$'000	$'000	$'000	$'000	$'000
Postgraduate Scholarships	92	59	172	198	131	151
Training Fellowships	620	435	566	303	889	1,444
Career Development Awards	511	607	884	999	925	924
Research Fellowships	788	1,305	1,549	1,611	2,046	2,092
	2,011	2,406	3,171	3,111	3,991	4,611
Total:	**11,786**	**12,383**	**14,714**	**15,656**	**14,821**	**19,550**

Major New Grants Awarded 2007-2008 (over $100,000)

Source	Chief Investigators and Project Title	Term	Period	Total Funds or QIMR Component of Funds
ACRF	WHITELAW E et al. : "ACRF Centre for Cancer Epigenetics."	1 yr	2008	$2,700,000
ARC	BOYD A : "Regulation of EphA3 receptor tyrosine kinase in vertebrate development." (Administered by The University of Queensland)	2 yrs	2007-08	$178,000
ARC	KHANNA K : "Understanding the role of the corepressor protein KAP1 in DNA damage response pathway." (Administered by Griffith University)	3 yrs	2008-10	$401,500
ARC	LAVIN M et al. : "Pre-clinical evaluation of snake venom proteins with therapeutic potential." (Administered by The University of Queensland)	3 yrs	2008-10	$260,535
ARC	WHITELAW E et al. : "The role of epigenetics in the early gestational programming of adult phenotype by ethanol." (Administered by Griffith University)	3 yrs	2008-10	$201,000
BROAD	CROESE J : "Inoculating celiac disease patients with the human hookworm Necator americanus: a small study evaluating immunity and gluten-sensitivity."	1 yr	2008	US$128,590
DANA	McMANUS D, LI Y : "Immunopathogenic mechanisms in human schistosomiasis."	2 yrs	2007-09	US$300,000
DEST-NCRIS	GANDHI M : "Optimisation and validation of an "A&EI-LMP all CTL Bank"." (Administered by Research Infrastructure Support Services Limited)	1 yr	2008-09	$100,000
DEST-NCRIS	GORMAN J : "To provide major proteomics services in Queensland, and in particular, the area of infectious diseases and biodefence."	4 yrs	2007-11	$1,900,000
DEST-NCRIS	WHITELAW E : "Implementing the Australian Phenomics Facility for the NCRIS's research capability known as Intergrated Biological Systems." (Administered by Australian National University)	5 yrs	2007-12	$1,000,000
LFQ	GANDHI M : "A novel mechanism of immunosuppression in B-cell lymphomas."	1 yr	2008	$100,000
NBCF	KHANNA K : "Cep55 over-expression a potential mechanism for tumorigenesis."	3 yrs	2008-10	$165,875
NHMRC	BARTLETT P et al. : "The use of soluble antagonists of EphA4 in spinal cord injuries." (Administered by The University of Queensland; QIMR Investigator: A. BOYD)	3 yrs	2008-10	$286,740
NHMRC	BATEMAN J et al. : "Proteomics of arthritis: Exploring mechanisms of cartilage degradation and biomarker identification." (Administered by Murdoch Children's Research Institute; QIMR Investigator: J GORMAN)	3 yrs	2008-10	$108,363
NHMRC	HARRICH D et al. : "Host cell factors increase the efficiency of HIV-1 reverse transcription."	3 yrs	2008-10	$610,025
NHMRC	HAYWARD N : "The role of PKA signalling in melanoma."	3 yrs	2008-10	$483,750
NHMRC	HAYWARD N et al. : "Understanding the development of pancreatic islet cell tumours."	3 yrs	2008-10	$555,500

NHMRC	JONES M et al. : "Molecular cascades determining asexual/sexual development in *Echinococcus granulossus*.	3 yrs	2008-10	300,000
NHMRC	KAY B et al. : "Development of innovative approaches to manage insect-transmitted diseases."	5 yrs	2008-12	$4,184,612
NHMRC	KAY G et al. : "Role of SmcHD1 in X chromosome inactivation."	3 yrs	2008-10	$466,625
NHMRC	KEMP D et al. : "Immunity and pathogenesis in tropical and infectious diseases: Implications for vaccines and drug development."	5 yrs	2008-12	$14,902,358
NHMRC	LI Y et al. : "Mechanisms of *in vivo* modulation of granulomatous inflammation in human schistosomiasis."	3 yrs	2008-10	265,500
NHMRC	MacDONALD K : "Inhibition of alloreactivity by modulation of antigen presenting cells."	3 yrs	2008-10	$483,750
NHMRC	MacGREGOR S : "Novel statistical genetic methods for DNA pooling."	3 yrs	2008-10	$205,809
NHMRC	MARTIN N : "Mapping genes for typical migraine using twin families."	2 yrs	2008-09	$439,124
NHMRC	McCARTHY J et al. : "Diagnostics for drug resistance in scabies."	3 yrs	2008-10	$334,875
NHMRC	McMILLAN D : "Identifying the physiological conditions that promote lateral gene transfer and evolution of new streptococcal pathovars."	3 yrs	2008-10	$398,875
NHMRC	MONTGOMERY G et al. : "A genome-wide association study for endometriosis susceptibility genes."	2 yrs	2008-09	$918,150
NHMRC	MOWRY B et al. : "Linkage and association studies of schizophrenia in an isolated population."	3 yrs	2008-10	$376,563
NHMRC	RAMM G et al. : "Role of chemoattractants in hepatic stellate cell recruitment and fibrogenesis in paediatric cholestatic liver disease."	3 yrs	2008-10	$565,500
NHMRC	RYAN P et al. : "Novel use of fungal entomopathogens for sustainable control of mosquito-borne viruses."	2 yrs	2008-09	$316,000
NHMRC	SACHDEV P et al. : "Gene-environment interaction in health brain ageing and age-related neurodegeneration." (Administered by University of New South Wales; QIMR Investigators N MARTIN, M WRIGHT)	5 yrs	2007-11	$216,720
NHMRC	SPANN K et al. : "The immunoregulatory domains and binding interactions of human respiratory syncytial virus non-structural proteins." (Administered by The University of Queensland; QIMR Investigator: J GORMAN)	3 yrs	2008-10	$197,000
NHMRC	SPRING K et al. : "Defining the genetic and epigenetic targets involved in serrated neoplasia of the colorectum."	2 yrs	2008-09	$314,000
NHMRC	SPURDLE A et al. : "Assessment of mismatch repair gene sequence variants for clinical relevance."	3 yrs	2008-10	$453,750

NHMRC	TELLAM J : “Enhanced translation of Epstein-Barr virus nuclear protein EBNA1 as a target for T cell-based immunotherapy.”	3 yrs	2008-10	$265,500
NHMRC	UPCROFT J et al. : “Mechanism of action of new 5-nitroimidazole drugs which are effective against metronidazole-resistant Giardia.”	3 yrs	2008-10	$280,500
NHMRC	VISSCHER P et al. : “Mapping eQTL to dissect the genetic basis of complex trait variation.”	3 yrs	2008-10	$693,250
NHMRC	WHITELAW E et al. : “Molecular basis of transgenerational epigenetic inheritance in mammals.”	3 yrs	2008-10	$458,750
NHMRC	WRAY N : “Accurate prediction of individual risk to disease from genome-wide association studies.”	3 yrs	2008-10	$258,625
NHMRC	WRIGHT M et al. : “Unravelling genetic influences on the human brain.”	3 yrs	2008-10	$712,500
NIH	HAYWARD N : “Pathways from genotype and environment to melanoma.”	5 yrs	2008-13	US$1,112,224
QDTRDI	GORMAN J : “Evolving Bio-Molecular Platforms and Informatics - Proteomics.”	4 yrs	2007-11	$2,000,000
QHSMART	McCARTHY J : “The mechamism of acaricidie resistance.”	3 yrs	2007-10	$566,250
TCCNSW	WHITEMAN D et al. : “STREP - PROBE-NET : Progression of Barrett’s Esophagus to Cancer Network.”	5 yrs	2008-12	$1,246,165
TCCQ	BOYD A et al. : “The role of EphA receptor tyrosine kinases in colorectal cancer.”	2 yrs	2008-09	$160,000
TCCQ	GUEVEN N et al. : “Protection against spontaneous and radiation-induced intestinal cancer by the novel antioxidant CTMIO.”	2 yrs	2008-09	$160,000
TCCQ	KHANNA K : “Cep55 over-expression a potential mechanism for tumorigenesis.”	3 yrs	2008-10	$162,750
TCCQ	KHANNA R et al. : “Therapeutic lymphoma-specific vaccination for immunocompromised individuals.”	2 yrs	2008-09	$159,500
TCCQ	NANCARROW D et al. : “The genetic basis for progression and prognosis od adenocarcinoma of the oesophagus.”	2 yrs	2008-09	$160,000
TCCQ	NEALE R et al. : “Understanding cutaneous papilloma virus infections and their association with squamous cell carcinoma of the skin.”	2 yrs	2008-09	$160,000
TCCQ	SPURDLE A et al. : “Characterisation of population-based endometrial cancer families: Redefinition of familial cancer syndromes.”	2 yrs	2008-09	$160,000
TCCQ	WEBB P et al. : “The insulin-like growth factor system, lifestyle and risk and prognosis of ovarian cancer.”	2 yrs	2008-09	$160,000
TCCQ	YOUNG J et al. : “The relationship between serrated pathway colorectal cancer and hyperplastic polyposis syndrome.”	2 yrs	2008-09	$160,000

AWARDS

Edward Derrick *Ian Mackerras*

Derrick-Mackerras Memorial Lecture

Each year, an eminent person is invited to deliver the Derrick-Mackerras Memorial Lecture, named after the Founding Director and Founding Deputy Director of QIMR. This year, Professor Bartlett, Director of the Queensland Brain Institute gave the lecture.

2007	Professor Perry Bartlett	*New brains for old*
2006	Mr Jeff Kennett	*Advocacy can change priorities*
2005	Dr Stephen L. Hoffman	*Rationale and plans for moving from modern genomics, immunology, and molecular biology to basic parasitology and entomology to develop an effective malaria vaccine*
2004	Dr James Watson	*B2B – from bone to B cells*
2003	Professor Bob Williamson	*Human genes and cloning people: the medical realities and the public fears*
2002	Professor Fiona Stanley	*Public health, human rights and the development of civil societies. What has health and medical research got to do with social justice?*
2001	Sir Gustav Nossal	*The genomics revolution to prove a new model for Spaceship Earth*
2000	John M Vierling MD	*Human organ transplantation in the new millennium: understanding and controlling the immune response*
1999	Professor Frank Fenner	*Disease eradication and bioterrorism: opposite ends of a public health spectrum*
1998	Dr Lois "Lowitja" O'Donoghue	*Indigenous health: monitoring the vital signs*
1997	Professor Peter Doherty	*Killer cells and the control of viral infections*
1996	Professor Bridget M Ogilvie	*The support of medical research: people, programs and policies*
1995	Professor C Thomas Caskey	*Genetics and the future*
1994	Dr Baruch Blumberg	*Evolution, sex and the Hepatitis B virus*
1993	Professor M Ferguson-Smith	*Modern genetics research and its consequences for society*
1992	Professor J J Owen	*Life and death of cells in the immune system: implications for susceptibility to infections and disorders of the immune response*
1991	Professor Chev Kidson	*Genes, galaxies and ghosts! Science, medicine and the future of man*
1989	Paul Ehrlich	*Ecology and the human future: ecosystems health and public health*
1988	The Honourable Mike Ahern	*Overview of the history of the struggles and the successes in the development of science and technology policy in Queensland*
1985	Dr Louis H Miller	*Parasites and mankind: the challenge of malaria in human history*
1984	Dr Steven Jay Gould	*Evolution beyond Darwin*
1983	Dr Robyn Williams	*The future of medicine: five nightmares*
1982	Dr Carleton Gajdusek	*Unravelling causes of human disease: Lessons from adventures in East Asia and the Western Pacific*
1981	Professor Ralph Doherty	*Major contributions by Australians to medical science*

QIMR Fellows 2007 - Mrs Helen Luckoff and Mr Ian Goddard

QIMR Chair Sir Bruce Watson AC presents a Humanitarian Award to Sean Ryan of Nova 106.9

QIMR Bancroft Medallists 2007

The name Bancroft is synonymous with excellence in scientific and medical endeavour and is an enduring memorial to the family whose efforts did so much to shape the direction of biomedical scholarship in Queensland.

The QIMR Bancroft Medal is awarded annually to those who have made an outstanding contribution to the Institute. This year, two medals were bestowed – one to retiring scientist Associate Professor Tom Sculley and the other to Mrs Lynn Green from the Population Studies and Cancer Laboratory.

Other QIMR Awards

A number of other important QIMR Awards are given each year. The prestigious Ralph Doherty Science Prize for outstanding achievement and leadership in medical research went to Professor Georgia Chenevix-Trench and a newly created Postdoctoral Award to Dr Patricia Valery from the Indigenous Health Research Program. Special Humanitarian Awards were presented to Mr Sean Ryan, General Manager of Nova 106.9 and Mr Graeme Ewin, Grand Master of the Lodge of Free and Accepted Masons of Queensland.

QIMR Fellows

Outstanding individuals are named as Fellows of the Institute each year. This year, Ms Helen Luckoff and Mr Ian Goddard were named Fellows of QIMR.

2007 Helen Luckoff, Ian Goddard

2006 Mr David Lyons

2005 Paul Wright, John Kerr

2004 Peter Wills

2003 Bryan Campbell, Sam Coco, Clive Berghofer

2002 Diana Cavaye (dec) Sister Regis Mary Dunne

2001 Phillip Desbrow (dec) William O'Sullivan

2000 Lawrie Powell, Tom Veivers

1999 Michael Barry, Kay Ellem, IanTaylor

1998 Michael O'Rourke

1997 Peter Doherty, Paul Korner, Stephen Lynch

1996 *No Awards*

1995 Ted Brown

1994 Mervyn Eadie, Ian Wilkey, Bryan Emmerson

1993 Graham Mitchell

1992 Michael Alpers, Rod Wylie

1991 Chamlong Harinasuta, Chev Kidson, Peter Livingstone

1990 *No Awards*

1989 Sir Edward Stewart, Tao Yixun

1988 Mike Ahern, Sir Gustav Nossal, Neville McCarthy, Des O'Callaghan (posth), Frank Schofield

1987 *No Awards*

1986 Sir Bruce Watson AC, Natth Bhamarapravati, Sir Eric Saint, Louis Miller, Robert Shope

1985 Neville Davis, Robert Porter, Brian Wilson

1984 *No Awards*

1983 Douglas Gordon, Elizabeth Marks, Sir Anthony Epstein

1982 Carleton Gajdusek, David Henderson, Owen Powell, Julie Sulianti Saroso, Edwin Westaway, Vincent Zigas

1981 Sir McFarlane Burnet (dec) Ralph Doherty, Eric French,

Previous Bancroft Medallists

2007: Tom Sculley Lynn Green

2006: Michael Staley, Helen Leonard

2005: Mark Weaver

2004: Sue Cassidy

2003: Peter Parsons, Suzanne Elliott, Beth Dawe, Verien Conley

2002: Christine Borthwick, Peter Upcroft

2001: Erin Fleay, Heather Matthews

2000: Brian Kay, Alan Stockman Christopher Ward

1999: Sullivan and Nicolaides, QML

2007 Bancroft Medal Recipients Mrs Lynn Green and Associate Professor Tom Sculley

Other Awards

Recipient	Bestower of Award	Award
Dr Kathy Andrews	Australian Society for Medical Research	Winner ASMR Queensland Premier's Medical Research Awards – Senior Researcher Category, May 2008
Prof Georgia Chenevix-Trench	QIMR	2007 Ralph Doherty Award for outstanding achievement and leadership in medical research , Oct 2007
Dr Deepak Darshan	Gastroenterological Society of Queensland	Young Investigator Award Finalist
Dr Denise Doolan	Public Library of Science (PloS) ONE	Academic Editor, Jul 2007
Assoc Prof Maher Gandhi	Queensland Government	Smart State Fellowship for clinicians to undertake innovative research in Queensland, Jun 2008
Prof Michael Good	Australian Government	Officer of the Order of Australia (AO), Jun 2008
	The Royal Australasian College of Medical Administrators	Honorary Fellowship of The Royal Australasian College of Medical Administrators, Aug 2007
Dr Elke Hacker	ASMR	Runner Up ASMR Queensland Premier's Postgraduate Medical Research Awards
Assoc Prof Alejandro López	National Breast Cancer Foundation	Award for the Advancement of Breast Cancer Research, Feb 2008
Dr Stuart MacGregor	NHMRC	Career Development Award, Jan 2008
Prof Nick Martin	Australian Academy of Science	Fellow
Prof Don McManus	Parasites and Vectors	Elected to Editorial Board, Nov 2007
Dr Allan McRae	NHMRC	Postdoctoral Fellowship, Jan 2008
Dr Colleen Olive	Australian Centre for Vaccine Development	Emory Vaccine Centre Fellowship, Atlanta, USA, Oct 2007
Dr Mark Pearson	NHMRC	CJ Martin training award, Feb 2008
Dr Tamara Periera	Gastroenteroligical Society of Australian (GESA)	Phillip Bushell Foundation-GESA Post-Doctoral Research Fellowship
Prof Lawrie Powell	Australian Stem Cell Centre	Appointed Member of the Board
Dr Derek Richard	RBWH	Basic Sciences Award, 2007
Dr Danielle Smyth	Human Frontiers in Science	HFSP Short Term fellowship, Jun 2008
Dr Mitchell Stark	Cancer Council Queensland	DB Duncan Training Fellowship, Nov 2007
Dr Mai Tran	Fulbright Society	Fulbright postdoctoral fellowship Jul 2007
Dr John Whitfield	Australian Association of Clinical Biochemists	Current Concepts Lecturer, Jan 2008
Dr Charlene Willis	NHMRC	Peter Doherty training award, Feb 2008
Dr Patricia Valery	Australian Society for Medical Research	Finalist ASMR Queensland Premier's Postgraduate Medical Research Awards – Senior Researcher Category, May 2008
Dr Patricia Valery	QIMR	Postdoctoral Research Prize, Oct 2007
Prof Emma Whitelaw	Lorne Genome Inc.	Julian Wells Medal for outstanding contribution to genetics by an Australian, Feb 2008

Travel Awards and Poster Prizes

Kathy Andrews	Ian Potter Foundation	Attend ASTMH Meeting, Philadelphia, USA, Nov 2007
Simon Apte	Australian Society of Immunology	ASI Student travel bursary to ttend annual ASI Conference, Dec 2007
Beben Benyamin	QIMR Australian Twin Registry (ATR)	Attend and present at Joint 7th Human Genome Organisation (HUGO)-Pacific Meeting and 8th Asia-Pacific Conference on Human Genetics, Cebu, the Philippines, Apr 2008,
Emma Bolderson	DNA Repair Meeting, Madrid, Spain	Best Poster Prize
Michelle Gatton	CASS Foundation	Attend the 56th Annual Meeting of American Society of Tropical Medicine and Hygiene, Philadelphia, Pennsylvania, USA, Nov 2007
Elke Hacker	QIMR	Attend the conjoint 5th International Melanoma Research Congress and 11th International Pigment cell Conference, Japan, May 2008
Jason Jeffery	QIMR	Attend the 56th American Society for Tropical Medicine and Hygiene Annual Meeting, Philadelphia, Pennsylvania, USA.
Penelope Lind	QIMR Australian Twin Registry	Attend and present at RSA, Chicago, USA, Jul 2007 Attend and present at WCPG, Osaka, Japan – Apr 2008
Chanel Smart	Merck	Young Achiever Award for Conference Travel, Jun 2008
Danielle Smyth	ARC/NHMRC Research Network for Parasitology	Travel award to work at Instituto Fiocruz in Brazil for one month
Zhen Zhen Zhao	QIMR	Attend and present at HGVM, Toronto, Canada, Mar 2008

Dr Patricia Valery, winner of the newly created Postdoctoral Award

Mr Graeme Erwin, one of two recipient of a special Humanitarian Awards

Professor Georgia Chenevix-Trench received the Ralph Doherty Science Prize

Publications

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Ansems TM, van der Pols JC, Hughes MC, Ibiebele T, Marks GC and Green AC. Alcohol intake and risk of skin cancer: a prospective study. *European Journal of Clinical Nutrition* 62(12): 162-170, 2008

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Invited Lectures and Presentations

Assoc Prof Greg Anderson	
What you should know about iron absorption	Brisbane Interhospital Liver Group, Brisbane, Aug 2007
Co-ordinating body iron homeostasis: insights from mice and men	Institute of Infectious Diseases and Molecular Medicine, University of Cape Town. Cape Town, South Africa, Sep 2007
Dr Kathy Andrews	
Plasmodium falciparum histonedeacetylases: enzymes involved in gene regulation as new antimalarial drug targets	Molecular Approaches to Malaria (MAM2008), Lorne, Feb 2008
A "piggy-back" approach to antimalarial drug discovery: *Plasmodium falciparum* histonedeacetylases	Australian Society for Parasitology, Canberra, Jul 2007
Dr Alison Ashe	
A saturation screen for modifiers of epigenetic reprogramming	NGED early career researcher conference North Stradbroke Island, Nov 2007
Dr Glen Boyle	
MIC-1: a novel progression marker in melanoma	Australian and New Zealand Head and Neck Society, 9th Scientific Conference, Brisbane, Jul 2007
Mr Daniel Buchanan	
Molecular aspects of hyperplastic polyposis	Familial Cancer Meeting, Couran Cove, Aug 2007
Assoc Prof Scott Burrows	
Preferential binding of unusually long peptides to Class I human leukocyte antigens and its influence on T cell epitope selection	13th International Congress of Immunology Rio de Janeiro, Brazil, Aug 2007
Mapping of an immunodominant viral $CD8^+$ T cell epitope with a minimal length of 16 residues illustrates the broad peptide length specificity of some MHC class I molecules	2nd Australasian Vaccines and Immunotherapeutics Development Conference Surfers Paradise, May 2008
Prof Georgia Chenevix-Trench	
Identifying genetic modifiers of breast cancer risk in *BRCA1* and *BRCA2* mutation carriers in the Consortium of Investigators of Modifiers of *BRCA1* and *BRCA2* (CIMBA)	Australian Breast Cancer Conference, Melbourne, Nov 2007
Identification of new breast cancer susceptibility SNPs and the genetic revolution of 2007	Mildred Scheel Cancer Conference Bonn, Germany, Jun 2008 / Trinity College, Dublin, Ireland, May 2008
Identification of new breast cancer susceptibility SNPs through international consortium approaches	Lorne Cancer Conference, Lorne, Feb 2008
The genetic architecture of breast cancer, and novel approaches to finding new breast cancer genes	Hanson Institute, Adelaide, Nov 2007
Dr Qin Cheng	
New Insights into *Plasmodium vivax* relapses	56th Annual Meeting of American Society of Tropical Medicine and Hygiene, Philidelphia, USA, Nov 2007
Dr Suyinn Chong	
You can inherit more than DNA from your father	CSIRO Livestock Industries Nutrigenomics Workshop, Brisbane, Jul 2007
Modifiers of epigenetic reprogramming display paternal effects in the mouse	Epigenetics 2007 Conference, Perth, Nov 2007
Methods for studying epigenetic programming	Program Grant Meeting: University of Adelaide, Adelaide, Mar 2008
Epigenetics: the current state of play	ARC/NGED Forum, Cairns, Jun 2008
Dr Denise Doolan	
Plasmodium falciparum immunomics and vaccine development	Institute for the Biotechnology of Infectious Diseases, University of Technology, Sydney, Aug 2007 / Barcelona Centre for International Health Research (CRISEB). Barcelona, Spain, Jun 2008

Plasmodium falciparum immunomics	Brisbane Immunology Group Annual Retreat, Pelican Waters, Aug 2007
Malaria and cell mediated immunity	PATH Malaria Vaccine Initiative T cell Workshop, London, UK, Sep 2007
Development of a multi-antigen multi-stage adenovector-based malaria vaccine that induces robust T-cell and antibody responses	2nd Australasian Vaccines & Immunotherapeutics Development Conference, Surfers Paradise May 2008
Developing a multi-stage, multi-antigen adenovirus-vectored vaccine against *Plasmodium falciparum*	Keystone Symposium on Malaria: Immunology, Pathogenesis and Vaccine Perspectives, Alpbach, Austria, Jun 2008
Dr Christian Engwerda	
Dendritic cells and regulatory T cells in experimental cerebral malaria	ARC/NHMRC Research Network for Parasitology Conference, Canberra, Jul 2007 / Menzies School of Health Research, Darwin, Aug 2008
Balancing immunity and pathology in experimental cerebral malaria	School of Molecular and Biomedical Sciences, University of Adelaide, Adelaide, Oct 2007
The regulation of dendritic cell activation in visceral leishmaniasis	Dormy House II: Integrated functional genomics on the road to leishmaniasis control, The Cotswolds, UK, Sep 2007
Visceral leishmaniasis: cell-cell interactions in the spleen	Pasteur-WEHI Imaging Workshop, Melbourne, Jan 2008
The pathogenesis of experimental cerebral malaria during *Schistosoma mansoni* infection	Keystone Symposium, Malaria: Immunology, Pathogenesis and Vaccine Perspectives, Alpbach, Austria, Jun 2008
Dr Katja Fischer	
Towards structure and function: protease expression in *Pichia pastoris*	Qld Protein Expression Symposium 2007, Brisbane, Nov 2007
Dr Maher Gandhi	
Immunotherapy (Chair)	Haematology Society of Australia and New Zealand National Conference Gold Coast, Australia, Oct 2007
Immunity and Tolerance: A Question of Balance	Haematology Society of Australia and New Zealand State Conference Brisbane, Mar 2008
Australasian vaccines and immunotherapeutic development	Passive Vaccination of EBV-specific Immunity Gold Coast, May 2008
Dr Geoffrey Gobert	
Lifecycle analysis of *Schistosoma japonicum* by microarray	American Society for Tropical Medicine and Hygiene Annual Meeting, Philadelphia, USA, Nov 07
Microarray studies of *Schistosoma japonicum*	Faculty of Veterinary Science, The University of Melbourne, May 2008
Gene expression profiling of the developing schistosome	The Institute for the Biotechnology of Infectious Diseases, University of Technology, Sydney, Jun 2008
Professor Michael Good	
The challenges to control malaria: progress towards a vaccine	The Bancroft Oration, AMAQ, Brisbane, Aug 2007
Regulation of cell mediated immunity to malaria: vaccine implications	University of Technology, Sydney, Aug 2007
Vaccines to the developing world and the promises of new technologies	RACMA07, Gold Coast, Aug 2007
Towards a whole parasite blood stage vaccine	MVW 2007 - Malaria Vaccines for the World, Royal Society of Medicine, London, UK, Sep 2007
Challenges of collaborative research responsibilities for institutions under the code	NHMRC 2007 National Research Ethics Conference, Melbourne, Oct 2007
The challenges with developing a rheumatic fever vaccine	National Heart FoundationMelbourne, Oct 2007/ AusBiotech 2007, Brisbane, Oct 2007 / The Burnet Conference, WEHI, Melbourne, Oct 2007
Vaccines for the Developing World	Westmead Millennium Institute, Sydney, Nov 2007

Invited Lectures and Presentations

Developing a vaccine to prevent rheumatic heart disease	Stanley Wilkinson Memorial Oration, 21st Australian Orthodontic Congress, Gold Coast, Mar 2008
Towards the development of a Streptococcal vaccine	Australian Institute for Bioengineering and Nanotechnology (AIBN) Seminar, UQ, Brisbane, March 2008
Strategies for a protein peptide conjugate vaccine to prevent rheumatic fever – the challenges of approaching clinical trials and beyond	2nd Australian Vaccines & Immunotherapeutics Development Meeting (AVID), Gold Coast, May 2008
Like Minds	Queensland Academy for Science, Mathematics and Technology, Brisbane, May 2008
Pre-clinical development of a whole parasite blood stage vaccine	Keystone Symposia: Malaria: Immunology, Pathogenesis and Vaccine Perspectives, Alpbach, Austria, Jun 2008
Professor Jeff Gorman	
Quantitative Approaches for Analysis of Regulatory Post-Translational Modifications	Ninth International Symposium on Mass Spectrometry in the Health and Life Sciences, San Francisco USA, Jul 2007 / Centre for the Molecular Genetics of Development, The University of Adelaide Adelaide, South Australia, Nov 2007
Comparison of stable-isotope labeling strategies for quantification of phosphosite occupancy and differentiation between phosphorylation and sulfonation of the murine dioxin receptor	4th Conference of the Asian-Oceania Human Proteome Organisation, Cairns, Jun 2008
Professor Adèle Green	
Cutaneous melanoma of the head and neck: an epidemiologic perspective	Australia and New Zealand Head and Neck Society, 9th Annual Scientific Meeting, Brisbane, Jul 2007
Nambour skin cancer study 1986 -2007	Probus Club, Nambour, Aug 2007
Sun damage and nutrition: Epidemiologic evidence	World Congress of Dermatology Buenos Aires, South America, Oct 2007
Influence of diet on actinic skin damage: epidemiological study, Nambour, Australia	L'Oréal Research, Paris, France, Jun 2008
Causes and prevention of melanoma	Institut Gustav-Roissy Paris, France, Jun 2008
Dr Elke Hacker	
The role of ultraviolet radiation in molecular pathways to melanoma	Australian Society for Medical Research Queensland Postgraduate Student conference, Brisbane and Mutagenesis and Experimental Pathology Society of Australasia Annual Scientific meeting, Hobart, Nov 2007
Dr David Harrich	
Purification of cellular factors important for HIV-1 late DNA synthesis	Retrovirus meeting, Cold Spring Harbour, New York, May 2008
PRMT6 increases the stability of HIV-1 Tat in the cell	Gold Coast Health and Medical Research Conference , Sanctuary Cove, Dec 2007
From bench science to biotechnology in Queensland	Bioscience Outreach Symposium, Sydney, July 2007
Dr Nicholas Hayward	
Integrative functional genomics of melanoma: Correlating mRNA and miRNA expression with DNA copy number	4th International Melanoma Congress, New York, Nov 2007. 5th International Melanoma Research Congress, Sapporo, Japan, May 2008. International Melanoma Genetics Consortium, Paris, France, Jun 2008
Dr Geoff Hill	
Mouse models of BMT	The American Society of Bone Marrow Transplantation annual meeting, San Diego, USA, 2008
Role of IFNγ in allogeneic stem cell transplantation.	Charite lectures in Stem cell Therapy, Berlin, Germany, 2007
Flow cytometry and NKT cells in Transplantation.	International Society of Cellular Therapy, Sydney, 2007

Emerging concepts in GVHD and GVL.	Haematology Society of NZ annual meeting, Christchurch, New Zealand, 2008
Regulation of graft versus host reactions.	The Transplantation Society, Asia-Pacific Key Opinion Leaders meeting, Sydney, 2007
The influence of GVHD on immune reconstitution after stem cell transplantation.	Australian Society of Clinical Immunology and Allergy annual meeting, Perth, 2007
Advances in allogeneic stem cell transplantation.	Australian Transplant Coordinators Association and Transplant Nurses Association Annual Meeting, Melbourne, 2007
Tumour Immunology Workshop: Graft-versus leukaemia effects.	Australian Society of Immunology Annual Meeting, Sydney, 2007
Enhancement of GVL through novel NKT ligands.	Australian Centre for Vaccine Design (ACVD) annual meeting. Brisbane, 2007
New directions in transplantation.	Leukaemia Foundation Queensland, Brisbane, 2007
Interferon gamma and transplantation: More complex than we think.	Brisbane Immunology Group Annual meeting, Sunshine coast, 2007.
Growth factor administration in stem cell transplantation: Are they detrimental?	PA Hospital Research Week, Brisbane, 2008.
Dr Tim Hurst	
Mosquito Control	MOZ_01 – Mosquito Control Operator Training Course, Mackay, Aug 2007
Dr Malcolm Jones	
Presidential Address	Australian Society for Parasitology, Canberra, Jul 07
Vaccines for human parasitoses	Hainan Medical, College, Haikou, China, Jan 08
Schistosomiasis	Queensland Integrated Refugee Community Health Clinic, Brisbane, Nov 07
Prof David Kemp	
Scabies Allergen Homologues and Host Parasite interactions.	Australian Society for Clinical Immunology and Allergy, Perth, Nov 2007
Dr Kum Kum Khanna	
SSB1 and genome maintenance	International ataxia-telangiectasia workshop, Lake Biwa, Japan, Apr 2008
DNA damage signaling and repair; implication for cancer susceptibility	National Institute of Advanced Industrial Science and Technology, Tsukuba Science City, Japan, Apr 2008
SSB1, a novel player involved in regulation of DNA damage response and genomic stability	Seminar at Hanson Institute, IMVS, Adelaide, May 2008
Assoc Prof Rajiv Khanna	
Designing therapeutic vaccine for nasopharyngeal carcinoma	International East-West Symposium on Nasopharyngeal Carcinoma, Sunshine Coast, Jul 2007
Immune monitoring of transplant patients with CMV QuantiFERON	Joint Annual Scientific Meeting of Haematological Associations of Australasia (HAA), Gold Coast, Oct 2007
Virally-driven lymphogenesis	6th International Workshop on Non-Hodgkin's Lymphoma, Boston, USA, Nov 2007
Impact of cellular translation efficiency of viral proteins on defective ribosomal products and endogenous presentation of $CD8^+$ T cell epitopes	Channing laboratories, Brigham and Women's Hospital, Harvard Medical School, Boston, USA, Nov 2007
Translating EBV Immunology from Bench to Bedside: *Somnium Animadverto*	Department of Pathology, Chicago University, Chicago, USA, Nov 2007
Impact of protein translation and CD8+ T cell recognition	Annual conference of the Australasian Society for Immunology, Sydney, Dec 2007

Invited Lectures and Presentations

Immune regulation of Epstein-Barr virus: Implications for immunotherapies for EBV-associated malignancies	Tumour Immunology workshop at the Annual conference of the Australasian Society for Immunology, Sydney, Dec 2007
Herpesvirus infections in transplantation: Emerging therapies and diagnostic technologies	Indo-Australian Medical Biotechnology Conference, New Delhi, India, Feb 2008
Multiepitope vaccine strategy for Herpesvirus-associated diseases	Sir Mark Oliphant International Frontiers of Science and Technology: Vaccine and Immunotherapy Technologies, Canberra, April 2008
Professor Sunil Lakhani	
Plenary Lecture – Molecular diagnostics / Breast cancer genetics	1st KL Oncology Congress, Kuala Lumpur, Malaysia, Aug 2007
Targetted therapy / Molecular diagnostics	WASPalm, Kuala Lumpur, Malaysia, Aug 2007
Lobular carcinoma and its variants	European Society of Pathology, Istanbul, Turkey, Sep 2007
Molecular pathology of lobular carcinomas and variants	Australian Breast Cancer Conference, Parkville, Nov 2007
Lobular neoplasia / The myoepithelial cell in health and disease / Pathology of hereditary breast cancer	Harvard Medical School, Boston, USA, Jun 2008
Molecular pathology of lobular carcinomas of the breast	Technology Transfer in Diagnostic Pathology3rd Central European Regional Meeting, Visegrad, Hungary, May 2008
Dr Helen Leonard	
Isotope in Medical Research oral presentation at ARPS 32	2007 conference of the Australasian Radiation Safety and Protection Society, Brisbane, Oct 2007
Dr Kelli MacDonald	
Modification of T cell responses by stem cell mobilization requires direct signalling of the T cell by G-CSF and IL-10.	The Transplantation Society, Asian-Pacific New Key Opinion Leader Meeting, Sydney, 2007 and Australasian Society for Immunology, Sydney, Dec 2007.
Dr Alejandro López	
Dendritic Cells and Breast Cancer: the road ahead	Griffith University, Brisbane, Jan 2008
Dr Alex Loukas	
Vaccines against blood-feeding worms	Australian Vaccines and Immunotherapeutics Development conference, Gold Coast, May 2008
Tetraspanins as vaccines for schistosomiasis	Schistosomiasis Vaccines conference, Tirandentes, Brazil, May 2008
The Sm-TSP-2 schistosomiasis vaccine	American Society of tropical Medicine and Hygiene conference, Philadelphia, USA, Nov 2007
The Human Hookworm Vaccine Initiative	International Veterinary Immunology Symposium, Ouro Preto, Brazil, Aug 2007
The Sm-TSP-2 schistosomiasis vaccine	Fulbright awards dinner, Sydney, Jul 2007
Professor Nick Martin	
GWAS for moliness	6th Australasian Human Gene Mapping Meeting, Brisbane, Aug 2007
Genes for cognition	Festschrift for Prof Gina Geffen, UQ, Brisbane, Sep 2007
Genetics of brain structure and function	Amsterdam Neuroscience Colloquium, Amsterdam, The Netherlands, Oct 2007
Linkage for depression	International Congress of Psychiatric Genetics, New York, USA, Oct 2007
G x E for depression?	Novartis Symposium on GxE, Dunedin, NZ, Nov 2007
New results in gene mapping	ENGAGE Scientific Meeting, Amsterdam, The Netherlands, Dec 2007
Genetics of personality and cognition in adolescents	Gordon Conference on Behavior Genetics, Barga, Italy, Feb 2008

Hunting QTLs	21st International Workshop on Methodology of Twin and Family Studies, Boulder, USA, Mar 2008
Genetics of complex diseases of childhood	Perinatal Society of ANZ, Gold Coast, Apr 2008
A children of twins study of problem behaviours in childhood	International Association of Childhood and Adolescent Psychiatry, Istanbul, Turkey, May 2008
The GWAS revolution	New Fellows' Symposium, Australian Academy of Science, Canberra, May 2008
A twin study of economic risk taking	Behavior Genetics Association, Louisville, USA, Jun 2008
Dr Kelli MacDonald	
Modification of T cell responses by stem cell mobilization requires direct signalling of the T cell by G-CSF and IL-10	The Transplantation Society, Asian-Pacific New Key Opinion Leader Meeting, Sydney, 2007 and Australasian Society for Immunology, Sydney, Dec 2007
Assoc Prof James McCarthy	
Current knowledge about drug resistance and detection tools in the the treatment of soil transmitted helminths	WHO-World Bank Symposium: Monitoring of drug efficacy in large scale treatment programmes for human helminthiasis Washington DC, USA, Oct 2007
SNP analysis of beta-tubulin genes in human hookworm populations	Consortium for Anthelmintic Resistance SNPs, Ghent Belgium, Aug 2007
Design of clinical trails for assessment of anthelmintic resistance	Anthelmintic resistance in human soil transmitted nematodes, Ghent Belgium, Apr 2008
Dr Stuart MacGregor	
Mutiny on the Bounty: Genetic analysis of the Norfolk Island population	AMBeR Scientific meeting, Perth, Dec 2007
Prof Don McManus	
Genome biology of *Schistosoma japonicum*	Fourth International Workshop Meeting of *Schistosoma japonicum* Genome Project, Chinese National Human Genome Center, Shanghai, PR China, Jul 07
Control of schistosomiasis	7th Regional Network for Schistosomiasis+ (RNAS+), Lijiang, Yunnan Province, PR China, Sep 07
Vaccine development for schistosomiasis and echinococcosis	Symposium on echinococcosis, Ningxia Medical College, PR China, Oct 07
Bovine intervention trial for schistosomiasis	Wellcome Trust Asia-Pacific Networking Workshop, Beijing, China, Oct 07
Ongoing epidemiological studies of *Schistosoma japonicum* transmission in China including transmission blocking vaccine studies	American Society for Tropical Medicine and Hygiene Annual Meeting, Invited Symposium Speaker, Philadelphia, USA, Nov 07
Bovine vaccine for schistosomiasis	5th Wellcome Trust Schistosome Vaccine Workshop, Wuhu, Anhui, China, Dec 07
Schistosome genome and post-genomics	International Workshop Meeting of *Schistosoma japonicum* Genome Project, Chinese National Human Genome Center, Shanghai, PR China, May 08
Dr David McMillan	
Genetic variation, lateral gene transfer and streptococcal disease	Christian Medical College, Vellore, India, Nov 2007
Genetic variation and streptococcal disease	Indian Institutes of Science, Bangalore India, Nov 2007
Genetic variation and streptococcal disease	Jawaharlal Nehru University, New Delhi, India, Nov 2007
My experience of research in Germany	GerMANY Innovations, University of Wollongong, Wollongong, NSW, Australia, May 2008
Dr Arne Mould	
Global expression profiling of sex-cord stromal tumors from Men1 heterozygous mice identifies altered TGF-b signalling and decreased Gata6 and increased Csf1r expression.	American Association of Cancer Research Annual Scientific Meeting, San Diego, USA, Apr 2008

Invited Lectures and Presentations

Dr Grant Montgomery	
Genetic variants in GDF9 and BMP15 in mothers of dizygotic twins	Society for Reproductive Biology Annual Meeting, Christchurch, NZ, Sep 2007
The Search for Genes Contributing to Endometriosis Risk	World Congress of Endometriosis, Melbourne, Mar 2008
Genetic Research in Endometriosis	Vrije Universiteit Medical Centre (VUMC), Amsterdam, Netherlands, May 2008
Genetics of Endometriosis and Melanoma	Wellcome Trust Centre for Human Genetics, Oxford, UK, May 2008
Professor Denis Moss	
How close are we to treating NPC with the patient's own immune cells?	Second Asia-Africa International Network Symposium, Khon Kaen, Thailand, Feb 2008 / Australian and New Zealand Head and Neck Surgery Conference, Gold Coast, Jul 2007
Development of vaccine strategies for the immunotherapy of nasopharyngeal carcinoma	Australian Virology Conference, Fraser Island, Dec 2007
Dr Dale Nyholt	
The utility of family-based studies in the era of (potential) genome-wide association studies.	The 6th Australasian Human Gene Mappers Meeting, Brisbane, Aug 2007
HapMap, Ensembl and Other Bioinformatic Tools	Statistical Analysis of Complex Traits Workshop, Brisbane, Aug 2007
Dr Colleen Olive	
Preclinical evaluation of synthetic peptide streptococcal vaccines: towards improved cardiovascular health	Woolcock Bequest Day, Prince Charles Hospital Foundation, Brisbane, Oct 2007
Professor Lawrie Powell	
Visiting Professor Lecture	Children's Hospital of Oakland Research Institute, Oakland, California, USA, Dec 2007 – Jan 2008
Modifiers of the clinical expression of haemochromatosis	American Association for the Study of Liver Diseases. Single Topic Conference on Hemochromatosis, Atlanta, Georgia, USA, Sep 2007
Assoc Prof Grant Ramm	
Mechanisms of Iron-Induced Tissue Damage	Single Topic AASLD Conference on "Hemochromatosis: What has Happened after HFE? Atlanta, USA, Sep 2007
Dr Peter Ryan	
Information System and Decision Support System Approaches to Facilitate Control of Vector-Borne Diseases	56th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Philadelphia, USA, Nov 2007
Development of WPRO Regional Strategic Research Plan -Invited discussant and WHO Temporary Advisor	World Health Organization - Western Pacific Regional Office (WPRO), Manila, Philippines, Dec 2007
Dengue Programme Managers Meeting	World Health Organization -Western Pacific Regional Office (WPRO), Singapore, May 2008
Dr Tina Skinner-Adams	
Antiretroviral Inhibitors as antimalarial agents	LaTrobe University, Melbourne, Jun 2008
Dr Kevin Spring	
BRAF mutation and Serrated Neoplasia of the colon	Mater Medical Research Institute, Brisbane, Aug 2007
Dr Amanda Spurdle	
Classification of rare sequence variants in high-risk disease genes (2008 IARC workshop results)	Brisbane Human Genetics Society of Australasia Seminar Series, Brisbane, Jun 2008
Issues pertinent to the clinical classification of unclassified sequence variants of high risk genes	Queensland Clinical Genetics Service Inservice Training Meeting, Brisbane, Oct 2007
Prediction and Evaluation of splicing aberrations associated with rare sequence variants	IARC Unclassified Variants/Clinical Interpretation Workshop, a working symposium on unclassified variants of high-risk cancer genes, Lyon, France, Feb 2008

Assoc Prof Kabada Sriprakash	
SIC is streptococcal inhibitor of defensins	Negative aspects of Gram positive bacteria Conference, Kerala, India, Oct 2007
Dr Amanda Stanley	
A novel role for LIGHT in experimental visceral leishmaniasis caused by *Leishmania donovani*	Brisbane Immunology Group Annual Meeting, Caloundra, Aug 2007
Opposing roles for LIGHT in the immune response to infection	37th Annual Scientific Meeting of the Australasian Society For Immunology, Sydney, Dec 2007
Assoc Prof Nathan Subramaniam	
Transferrin receptor 2 biology: Insights from cellular and animal studies	Fremantle Hospital, University of Western Australia, Perth, Oct 2007
Newly described forms of haemochromatosis	Brisbane Inter-hospital Liver Group, Brisbane, Sep 2007
Assoc Prof Andreas Suhrbier	
An expedition to the subantarctic Macquarie Island.	Atomic Energy Commission, Paris, France, Sep 2007
Ross River virus, an arthrogenic alphavirus of Australia, diagnostic confusion and immune pathology. An expedition to the subantarctic Macquarie Island, discovery of a rich arbovirus diversity	Department Virologie, Institute Pasteur, Paris, France, Sep 2007
Human papilloma virus E7 requires the cysteine protease calpain	DKFZ seminar series, Heidelberg, Germany, Sep 2007
The curious story of SerpinB2 aka plasminogen activator inhibitor type 2. Innate sculpting of adaptive immunity 2008.	Hamilton Island Conference, Apr 2008
Dr Ian Tonks	
The role of Rb1 and Trp53 in melanocyte homeostasis	10th Annual Australian Cell Cycle Workshop, North Stradbroke Island, Nov 2007
Macquarie Island; A rich source of arboviral diversity	The 4th Scientific Meeting of the Australian Virology Group. Fraser Island, Dec 2007
Dr Jacqui Upcroft	
The electron transport pathway in Giardia	4th International Conference on Anaerobic Protists, Chang Gung, Tawian, May 2008
Prof Peter Visscher	
Genome-wide approaches to estimation of genetic variance	3rd World Congress of Quantitative Genetics, Hangzhou, China, Aug 2007
The use of twins in gene mapping studies	Genemapper conference, Brisbane, Aug 2007
Genome-wide association studies in humans	Australasian Animal Breeding and Genetics conference, Armidale, Sep 2007
Dr Graeme Walker	
Induction of melanoma in mice: the role of UVR-induced melanocyte proliferation	UV-radiation induced disease, roles of UVA and UVB Conference, Stockholm, Sweden, Oct 2007
Dr Michael Walsh	
Early-onset endometrial cancer and Lynch Syndrome	COSA, Adelaide, Nov 2007
Dr Penny Webb	
Epidemiology of ovarian cancer in Australia	4th Annual Advances in Gynae Oncology: Royal Prince Alfred Hospital Sydney, Oct 2007
Results from the Australian Ovarian Cancer Study	Australia and New Zealand Gynaecologic Oncology Group, Noosa, Feb 2008
Epidemiology of ovarian cancer in Australia	2007 Genetic Health Queensland, Brisbane, Oct 2007

Invited Lectures and Presentations

Dr Vicki Whitehall	
Bowel Cancer Awareness	Redlands Rotary Bowel Screen Launch, Brisbane, Feb 2008
Bowel Cancer Prevention to Cure	Redlands Probis Club, Brisbane, Mar 2008 and Jindalee Probis Club, Brisbane, Apr 2008
K-ras Mutation Testing in Queensland	South East Queensland Oncology Group Meeting, Brisbane, May 2008
K-ras Mutation Testing in Queensland to Predict Response to Erbitux in Metastatic Colorectal Cancer	Cancer Nurses Society of Australia, Brisbane, May 2008
DNA Methylation in Colorectal Cancer	NGED Epigenetics Focus Group, Brisbane, Jun 2008
Prof Emma Whitelaw	
Epigenetics in the mouse	Jackson Laboratories Bar Harbour, Maine, Aug 2007
Inheritance of epigenetic marks	Queenstown Molecular Biology Meeting, Queenstown, NZ, Aug 2007 / Society of Reproductive Biology, Annual Meeting Christchurch, NZ, Sep 2007 / Centenary Institute, University of Sydney, Sydney, Mar 2008 / NGED Alcohol Summit, Melbourne, Mar 2008
My career path	QIMR student retreat Noosa, Sep 2007
Epigenetics	Griffith University, Brisbane, Sep 2007 / School of Molecular and Biomedical Science, University of Adelaide, Adelaide, Dec 2007 / Dept of Health and Ageing Policy Committee Canberra, May 2008
Transgenerational epigenetic inheritance	World Congress of Psychiatric Genetics New York, USA, Oct 2007 and 3rd Nutrigenomics Asia Pacific Conference, Melbourne, May 2008
A screen for modifiers of epigenetic reprogramming	The Genome Conference, Lorne, Feb 2008 / Genetically modified models of human disease workshop, Melbourne, Feb 2008 / Society for the Study of Reproduction Hawaii, USA, May 2008
Epigenetics in development	James Cook University Townsville, Apr 2008
Epigenetics and obesity	Nestle Nutrition Workshop New Delhi, India, Apr 2008
Dr David Whiteman	
Invited delegate and panel discussant	2nd Esophageal and Cardia Cancer Summit (ECCS-2) Beijing, China, Oct 2007
Opening speaker	3rd NHMRC National Ethics Conference first session. Invited Symposium, Melbourne, Oct 2007
Exploring the causal heterogeneity of melanoma	4th International Congress on Melanoma New York City, USA, Nov 2007
Obesity, smoking and reflux: risk factors for oesophageal adenocarcinoma	Cancer Council Victoria, Melbourne, Dec 2007
Smoking, Obesity, BMI	NCI Barrett's Esophagus Translational Research (BETR) Working Group Gaithersburg, MD, USA, Jan 2008
What's new in Barrett's oesophagus and oesophageal adenonocarcinomas	Moderator 4th BEACON Annual Conference Seattle, USA, May 2008
Evidence-based laboratory medicine	Australian Association of Clinical Biochemists, Brisbane, Hobart, Hamilton, Melbourne, Sydney, Aug 2007
Dr Michelle Wykes	
The Functional Capacity of Dendritic cells during Malaria	University of Chile, Santiago, Chile, Aug, 2007
Developing a blood stage malaria vaccine	Ausbiotech, Brisbane, Oct 2007
Plasmodium strain determines Dendritic cell Function essential for survival from Malaria	Northern Australia Malaria Symposium, Brisbane, Nov 2007 / Australasian Vaccine and Immuno-therapeutics Development Meeting, Gold Coast, May 2008

Dr Li Yuesheng	
Artemether treatment for schistosomiasis	Annual Meeting Howard Hughes International Fellows, Lisbon, Portugal, Jun 2008
Dr Joanne Young	
Genetic aspects of Serrated Neoplasia	Queensland Clinical Genetics Service, Brisbane, Jul 2007 / Boston University School of Medicine, Boston, USA, May 2008
Hyperplastic polyposis in the population	Gastroenterology Grand Rounds, Royal Melbourne Hospital, Melbourne, Oct 2007
A genome-wide association Study of HPS	Colon CFR Steering Committee Meeting, San Diego, USA, Apr 2008
The links between hyperplastic polyposis and serrated pathway colorectal cancer	AACR Special Conference on Epigenetics and Cancer, Boston, USA, May 2008

Trust Report

It was with much sadness the Trust accepted the resignation of its chair, Mr Paul Wright AM, in December 2007 after more than seven years of dedicated service to QIMR and the Trust. In turn, however, it was a great honour for me, after some five years as a member of Trust, when I was invited to assume the role of convenor following Mr Wright's departure.

The past 12 months has seen a number of our long term Trust members elect to stand down due to other commitments. Mr John Garnsey was a member of Trust for 18 years; his expertise in the field of marketing and advertising and passion for the Institute will be sincerely missed. Similarly Ms Margot DeGroot, a Trust member of some five years standing, provided invaluable contributions in the area of law and her role in guiding and shaping many of the decisions the Trust made in that time was profound. Finally, Ms Uschi Schreiber, also resigned from the Trust following her decision to leave her post as the Director-General of Queensland Health to pursue a corporate career interstate.

The remaining members of Trust, Ian Manly, Patricia McCormack, Rod Wylie and David Stirling, continue to play a vital role and their expertise and guidance is highly valued. Although the Trust membership is not as large as we would like, the dedication, knowledge and experience of our members ensures sound decision-making in all areas. Our small number, however, means a greater workload is borne by all members, and I would like to thank all of my fellow Trust members for their increased efforts and support this year.

Internationally, QIMR continues to work with the University of Hong Kong to progress important research in the treatment of nasopharyngeal carcinoma, a cancer which is the fourth largest killer of Chinese cancer sufferers. In 2007, while in Hong Kong, the then Queensland Premier, Peter Beattie, officially launched human trials in the innovative use of a non-invasive and non-toxic therapy known as immunotherapy. To date nine patients have been recruited into the study with the total target being 50.

Through our collaboration with the Ministry of Health in Vietnam and the Australian Foundation for the Peoples of Asia and the Pacific (an NGO), QIMR's successful dengue control programs have been expanded to include activities in three provinces in the Mekong Delta area of southern Vietnam. Dr Peter Ryan, head of the Mosquito Control Laboratory, has relocated to Ho Chi Minh City, Vietnam, for the next 12 months to assist in the implementation of the next phase of the project, which aims to expand Aedes aegypti control activities into even more communities in the region.

Locally, we are entering into an exciting new phase with the commencement of preparatory work which will proceed the construction of the QIMR Smart State Medical Research Centre. This state of the art new 13 storey building will be located on the site which presently houses the old Queensland Radium Institute. When completed in 2011, this new facility will have the capacity to house some 400 additional scientists.

We continue to enjoy important partnerships with individuals such as Mr Clive Berghofer and companies including Suncorp. In late 2007, QIMR was pleased to welcome Xstrata to its corporate partnership portfolio. In conjunction with the Xstrata Community Partnership Program (Queensland), Xstrata made a three year commitment to skin cancer research via the creation of The Xstrata Fellowship in Skin Cancer and Melanoma Research.

QIMR is, of course, also greatly indebted to our many friends who are listed from page 121 of this annual report. The support received through individual contributions, fundraising events and the estates of friends now departed have assisted our scientists in the daily battle to defeat disease. We are indebted to each of you and offer our sincerest thanks for your support.

Every time I visit QIMR I am filled with a feeling of inspiration and pride for the work undertaken within its walls. The sense that the work occurring on any one day could, at some point in the future, change the lives of many people throughout the world always fills me with sense of wonder.

I hope you will all join with me in continuing to provide the support needed to allow the brilliant minds and passionate hearts at QIMR to continue their vital research in the future.

Jane Seawright
Convenor

Trust Members 2007-2008

Paul Wright AM
Chair to Dec 07

Jane Seawright
Convenor

John Garnsey

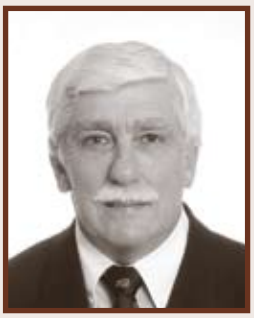
Rodney Wylie

Ian Manly

Margot de Groot

Patricia McCormack

Uschi Schreiber



David Stirling

Mr Paul Wright AM, FAIM, FAICD (To 31 December 2007)

Paul has combined banking, health, hospitality and consulting into a career which has encompassed over 25 years in senior executive management with a breadth and depth in leadership roles. He has been General Manager Queensland and Northern Territory of Medical Benefits Fund of Australia Limited and provided executive services as General Manager to The Brisbane Club.

Paul has also been a company director for more than 20 years and has served as Chairman/ President of The Australian Institute of Management and The Royal Flying Doctor Service (completing his second term as Chairman in November 2007). Paul was the Chairman of The Queensland Institute of Medical Research Trust from 4 May 2000 until 31 December 2007.

Ms Jane Seawright BA LLB(Hons) MBus (Marketing) (Trust Convenor from 13 February 2008)

Jane Seawright is a lawyer with extensive experience in marketing and strategy. She established a freelance marketing consultancy, Seawright Consulting, in 2000, and held the position of Independent Chair of the Queensland Furnishing Industry Superannuation Trust for 13 years. She is presently Special Counsel in the Corporate & Financial Services team at Phillips Fox, and is also a Law Society-accredited mediator and registered adjudicator, pursuant to the Building & Construction Industry Payments Act 2004.

In February 2008 Jane took on the role of Convenor of The Queensland Institute of Medical Research Trust and is a member of the QIMR Marketing Committee.

Mr John Garnsey FAIA (Dip) (to 31 December 2007)

The Trust has benefited immeasurably over the past 18 years from John Garnsey's accomplishments in strategic marketing and his knowledge of national and international advertising campaign development. Formerly Chairman and Managing Director of Garnsey Clemenger Advertising Agency and past Chairman of the Advertising Federation of Australia, Mr Garnsey chaired the QIMR Marketing Committee.

Mr Rodney Wylie OBE B Comm BA FCA FAICD

Rod Wylie is a Brisbane based Chartered Accountant with substantial experience in investment, company management and corporate governance issues across a

wide range of organisations, in many cases with nationwide and international activities. He has been involved through board and council membership in the administration of a number of professional and community non-profit groups. Mr Wylie chairs the QIMR Investment Committee and is a member of the QIMR Finance and Audit Committee and QIMR Personnel Administration Committee.

Mr Ian Manly MBA FAIM

Ian Manly has extensive experience in business management and corporate development. He is Managing Director of First 5 Minutes Group Pty Ltd, a company providing fire safety consulting services, compliance management and emergency procedures and training to the property industry throughout Australia. He chairs the QIMR Marketing Committee.

Mrs Margot de Groot LLB GradDip (Legal Practice)
(to 22 August 2007)

Margot de Groot is the Managing Partner of de Groots Wills and Estate Lawyers, a Notary Public and former Director of Energex Retail Pty Ltd and Queensland Law Foundation Limited. Mrs de Groot was a member of the QIMR Marketing Committee.

Ms Patricia McCormack BA (Psych and IR) FAHRI, MAICD

Patricia McCormack is a highly regarded people management professional with extensive experience in all facets of human resource management. She established People Focus in 2002 with the aim of providing HR services specialising in organisation development and human resources management. Ms McCormack is a member of the QIMR Personal Administration Committee and the QIMR Marketing Committee.

Ms Uschi Schreiber
(to 11 December 2007)

As Director-General of Queensland Health, Uschi Schreiber was responsible for the effective administration of a budget of $7.1 billion per annum and for the strategic and corporate direction of the department.

Prior to her appointment in July 2005, Ms Schreiber was in senior roles in the Queensland Government, including Deputy Director-General and Cabinet Secretary in the Department of the Premier and Cabinet.

Mr David Stirling

David Stirling has had extensive commercial experience over the past 40 years in the areas of banking, merchant banking and investments. Before joining the QIMR Trust, David was Managing Director of a financial services firm and a Partner of an international chartered accounting firm. David is a member of the QIMR Investment Committee.

Donors to the Institute 2007-2008

Visionary (over $50,000)

Berghofer AO, Clive
BT Investment Management Pty Ltd
Drs Richard Charles & Esther Yewpick Lee Charitable Foundation
Estate of Alice Margaret Downham
Estate of Edward George Murrells
Estate of James Edmond Smiley
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Suncorp Metway
Xstrata Queensland Limited
ZeShan Foundation

Platinum Friend Supporter ($20,000-$49,999)

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Witchery

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Binnendijk, Nella
Broad, Ray & Joan
Coles, Mary
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Estate of Iris Ellen Wellham
Estate of Sheila Ellen Markham
Francis, Glenn & Ingrid
Gow, Helen
Happy Face Cent Auction
Jordan, Heather
McLeod, Mary
Mitchell, Ivan
Nelson, Sheila
Parker, Peg
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Reuben Pelerman Benevolent Foundation
Smith & Stanton
Suncoast Social Dancers Association
The Australian Chinese Association of Hong Kong
USM Events
WOW Sight and Sound
Wright, Gordon & Dawn

Gold Friend Supporter ($5,000-$9,999)

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Comino, M
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Cowlishaw, D O
Daniel, H & J
Elsie Squires Charitable Trust
Forrester, T
Foster's Group
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Gibson, MJ
Grand Court of QLD Order of The Amaranth
Holzapfel, D
Hornibrook Bus Lines
John Goss Projects Pty Ltd
Maher, K
Maunsell Australia Pty Ltd
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Mullen, C
Osborne, L
R.W Pascoe Pty Ltd
Redman, J
Reid, T & K
Rotary Club of Robina Inc.
Ryan, S
Ryter, J
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Tattersall's Club
The CM & JA Whitehouse Foundation
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Wylie, R

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Adams, D & B
Aitchison, D &N
Alam, D
Andy Steele and Associates Pty Ltd
Angela's Silver Scissors
Apel, D
Aveo Activities Committee Albany Creek
Baird, D & N
Bale, S
Barnett, LR
Basei, G & N
Bauer, IJ
Beames, R
Betty Hammerton Fund
Biniris Pty Ltd
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Bosher, D & E
Bounce Hair Body Beauty
Bourges Pty Ltd
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Brereton Sports Marketing Pty Ltd
Caboolture Breast Cancer Support Group
Caesar, K
Cameron, I
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Chermside Meals on Wheels Inc
Church Of Christ
Cindy Field Memorial Exhibition of Arts
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Estate of Ivy June Hegarty
Estate of Ronald Baker
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Fitton Charity Stallion Tender
Fletcher, J
Forsyth, A
Gac, M
Galloway, R
GEO Developments
Gold, K & G
Green, R
Grosvenor Australia Asset Management P/L
Gympie Diabetic Support Group
Hale, J
Hallett, K & M
Hancock, A & M
Hayes-St Clair, P
Heinecke, W
Herron, K & J
Hibiscus Chancellor Park Residents Committee
Hill, K
Hogs Breath Café
Holland, J & H
Holmes, D
Horwath

Hughes, M
Hume, D
Hunter, A
Hurst, G
Huybers, E
Inner Wheel Club of Brisbane South Inc
Interlease Co. Pty Ltd
J J Richards & Sons Pty Ltd
Jackson, P & W
Jaseco Pty Ltd
Jazmah
JC Grigg & Company Pty Ltd
Jocumsen Property Group
John Woulfe Solicitor
Johnston Rorke
Jones Lang Lasalle
Jurd, JW
Kedron Wavell Ladies Auxiliary
Lam, S & Yau, Y
Lauder, J & P
Lendal Pty Ltd
Lendich, V & A
Leung, Ms B
Logan, D
Loughnan, A & J
Lovell, WT & NB
Low, H
Lutheran Bargain Centre
M.T. Sullivan & Co Pty Ltd
Marshall, RW
Mathers, R
McDonald, K
MCHA Pty Ltd
McIntosh, J
MGM Solicitors
Minter Ellison
Money Mentors
Moses, P
Mt Coolum Golf Club
Mulholland, M G
Murphy, K
Nambour Golf Club Inc.
National Seniors Association - Nambour
National Seniors Association - Redcliffe
Noel Whittaker Holdings Pty Ltd
O'Boyle, D
Ohye, J & B
Outdoor Furniture Specialist
Paradise Point Bowls Club Inc
Peacock, R L
Perel, ID
Phillips, S
Pollock, H
Pollock, J
Potter, P
Potts, J & P
Purcell, P
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Quota International of Beenleigh Inc
Remacue Pty Ltd
Richard Flanagan RF & Co
Ron Jelich Professional Planning
Rotary Club of Blackwater
Rowland, P R
Rutherford, L
Sanderson, PW
Saxon, R
Schramm, M
Schwarz, N
Sciacca AO, The Hon. Con
Seton College
Smith, B H & J M
Smith, L
Smith, S
Special FX Hair Studio
Springfield Land Corporation Pty Limited
St Lukes Chapter No 100 Order Of The Eastern Star
Stapleton, J
Stendrup, S & K
Stewart, J
Stoney, H M
Stormonth, M
Stower, A
Swanwick, D
Sylvester Pastoral Company Pty Ltd
Synergy Executive Sourcing Pty Ltd
Syphers, P
Tarrant, G & J
Tescher, T
The Aircrew Association - Brisbane Branch
The Bachmann Group
The Brodie Group
The Cedar Creek Estate Vineyard & Winery & Cedar Creek Cellars Pty Ltd
The Domain Residents Association
The Maleny Contract Bridge Club
The Sheik Holdings Pty Ltd ATF A Barakat No2 Trust
The White Foundation Pty Ltd
Thomas, J
Thompson, K & D
Thorsen, J
Throp, E
Tom Dooley Holdings Pty Ltd
Towers, K
Turner, Y
Van Klinken, A
Victoria Park Golf Complex
Wallace, D A
Wassman, R C
Watter, M
Webb, P G
Wheatley, B
Wheeler, E
Whitney, A I
Whittaker, P
Whybird, D
Wightman, K
Wildman, A & G
Wilgarning Trust
Williamson, B
Wong, M
Wynn, R G
Zaccari, F
Zinns, A

Bronze Friend Supporter ($500-$999)

A'Bear, E
Abgal Pty Ltd
ABN AMRO Morgans
Acker & Polanski, F & G
Andrew Lok (Medical) Pty Ltd
Andrews, P
Archbold, D J
Armstrong, Y C
Atlantis Consulting Pty Ltd
Austereo Pty Ltd
Back, R
Badham, M
Badke, A
Baylis, A
Bidgood, L
Blair M Wilson & Associates Pty Ltd
Bourke, K
Brown, W
Budworth, A & D
Burness, B
Burns, P
CAF Community Fund
Callide Valley Tuesday Ladies Tennis Club
Carr, P
Carseldine, M
Carter, R & L
Catalano, L & A
Channel Nine
Choong, Y
Christiansen, J
Christie, H S
Clarkson, T
Clisse, R
Colorado Group Ltd
Commonwealth Bank Officers Wives Club
Compton Garden Indoor Bowls
Comserv (No 1643) Pty Ltd
Cowled, L
Crawford, S
Curnow, R
Daisy Chain Hair Design Kedron
Dalley, H
Darrouzet, P
Data#3 Limited
Day, G
Day, N
de Bie, V
Deldelta Pty Ltd
Deloitte
Earl, B
Easton, N
English, K
English, L
ESS Engineering Services

Estate of Eve Jillett
Evans, C
Favelle, A
Fawcett, W
Flynn, R
Foo, P
Fookes, A J
Foote, GM
Formans Business Services Pty Ltd
Formula Interiors
Foster, R
Freeman, IB
Fry, J
Galluzzo, S
Garnsey, J
Gerry Mussen Family Trust
Gibbs Holdings Pty Ltd
Gregor, DJ & JL
Grimmer, KJ & A
Guest, F
Haas, J
Haddon, M
Harvey, L
Harwood, R
Hayman, K & J
Heck, P
Hengstberger, H
Heraghty, P
Hines, M
Hoey, M
Hogan, V
Holland, M
Hooper, K
Horton Park Golf Club Maroochydore Inc
Hurd, S
Ilett, G & M
Inner Wheel Club of Wishart Inc
Itching To Stitch
James, M
Jameson, E
Jobling, W
Johnsson, DK
K M M Investments (QLD) Pty Ltd
Kay, M
Kedron-Wavell Ex-Service Women's Assoc
Kennedy, B & J
Koplick, A
Lab Distributors Pty Ltd
Lancaster, V
Lejeune, D
L'estrange, D
Living Choice Kawana Island Residents Fund
Lockwood, B
Lomas, G
Macqueen, P
Madders, M
Malcolm, P & B
Mann, J & B
Marsh Pty Ltd
Maughan, P
McConaghy Properties Ltd
McEvoy, J
McGuigan, M
McIvor, R
Mckay, R
McLachlan, J
McLaren, D & L
McTaggart, S & N
Money Resources Group Pty Ltd
Murray, J
Murray, M
National Seniors - The Grange
National Seniors Association - Carindale
National Servicemen's Assoc. and S.W.O.N.S Caboolture and Districts Branch
Naval Association of Australia Sunshine Coast Sub Section
Newman, M
O'Brien, P
O'Donoghue, M
Oliver, N & K
Ongley, N
Order of the Eastern Star Dinmore Chapter No. 57
Paine, M
Paterson, P
Peterson, M
Phillips, R
Porter, D
Power, P
Prendergast, C & K
Price, J B
Primus, S
Prowse, J
Pukall, D & K
QCWA - Glamorgan Vale Branch
QCWA Newtown Branch
Queensland Country Women's Association
Queensland Vintage Vehicle Association
Quinn, A
Quota International of Brisbane South Inc
Rainbow Beach Hotel
Redcliffe Dolphins Football Club
Reid, M
Rickard, N
Roberts, H
Robinson, W & A
Ross, G M
Rotary Club of Acacia Ridge
Rotary Club of Emerald Sunrise Inc
Rural Press Limited
Schulte, M
Scissor Magik
Secure Parking
Selwood, R
Shaw, E
Shepherd, A
Shianda Pty Ltd
Shields, R & J
Short, R
Shortt, J
Sim, L & S
Slater, A
Slaughter, J
Smith, B & B
Smith, V
Southport Branch Australian Pensioners & Superannuants League QLD Inc
Staunton-Smith, G & ME
Stephenson, D
Stuart, M
Team Rock Anchors Pty Ltd
Thespian Lodge No 268
Thomas, A & S
Tobler, R
Toowoomba Golf Club Limited
Torres Industries Pty Ltd
Townsend, I & I
Turner, GF & JE
Unwin, M
Venzke, N
Visser, C
Wallace, WJ & RL
Ward, BJ & MJ
Watson, W & K
Wavell Slimmers Club Inc
Weatherstone, J
Webb, K
Wesling, C & D
White, C
Wilkin, F & P
Williams, P

Friends ($200-$499)
Abel, K
Ackland, G & H
Adermann, J
Aird, N T
Alan McLennan Strategic Services P/L
Alberts, V
Alcorn, N
Aldersgate Residents Association
Allens Arthur Robinson
Allpass, J
Amaze Me Now Cleaning Services P/L
Anstey, J
Apel, J
Apostolidis, N
Arana Leagues Club Ltd
Armistead, S
Arnold, M
Arthur, G & J
Austin, C
Australian Aluminium Finishing
B.J Millar Constructions
Babcock & Brown Australia Pty Ltd
Ball, T & P
Barnes, G
Baronio, E
Bartlett, D

Baxter, M
Bechly, C
Beesley, J S
Belman Medical Pty Ltd
Benjamin, P
Benny, MP
Berry, K
Bertoldi Investments Pty Ltd
Betts, K & B
Biggs, B
Bird, V
Bitcon, R
Bjorklund, D
Boult, L
Bourke, G
Bowes, L
Bowmaker, A
Bowman, P
Box, B
Boyce, W
Brain, E
Brandt, D
Brewster, J
Brian Bartley & Associates
Brice, B
Brodribb, TR
Brooks, E
Broom, J
Bruderlin, Ms K
Bruggy, W
Brumac Motors
Brunswick Valley Cancer Action Group
Bryant, G
Buckley, D
Burgess, R
Burke, L
Business Backup
Byrne, M J
Cameron, A
Cameron, M
Campbell, A
Campbell, B & G
Cardell, R
Carlyon, C
Carter, JL & MM
Catholic Womens League - Banyo
Cazna Club
Centenary Hire
Centenary State High School
Chalk, B & J
Chand, D
Charlton, K
Chen, LY
Cheng, S
Chomley, S
Christopher, B
Clark, WB
Clarke, A
Clarke, E
Clarke, IWN
Clarke, J
Clarke, L
Clarke, V
Clendinnen, F
Cloherty, L
CMC Markets
Cock, W J
Coleman, L
Colenso, A & G
Colhoun, M & E
Colour Works Hair Design
Colvin, M
Comans, L
Comerford, J
Comino, C
Compton Gardens Retirement Village
Craft Group
Cooke, R & J
Cooper, J
Costplan Services Pty Ltd
Cottell, P
Cotter, AC
Courtice, A
Cousens, I & K
Cowan, D
Cowley, H
CQ Prostate Support & Awareness Group
Crombie, M
Custance, R
Cutajar, J
Cutmore, M
D & C Webb Engineering Pty Ltd
D.W.E Consulting Pty Ltd
Darke, M
Degnan, J
Deloitte
Delor Consultants
Dennis, N
Deshon, J
Deslandes, I
Devereaux, L
Dickson, K
Dimmock, L
Dingo Mini Diggers Pty Ltd
Diprose, R
Disher, D & S
Doak, E
Donkin, P
Donnan, D
Dowling, R
Dredge, D
Drewe, J
Duff, J
Duke, P & B
Dunlop, W
Dunn, J
Dupont, P
Dwyer, M
Dyer, K & G
Eaton, D
Edbrooke, M
Edmeades, A
Edwards, J
Edwinsmith, T & JO
Eeles, G
Ellis, M
Emmanuel Uniting Church Evening Fellowship
Euroa Fellowship - Sandgate Uniting Church
Ex-Servicemen & Women Welfare Association Inc
Fadden, J
Falco, V
Fardon, R & B
Farley, E
Faulkner, B
Fedrick, P
Fenwick, D
Ferguson, DJ & GJ
Ferguson, S
Fermann, T
Finn, P
Fischle, J
Fitzgerald, NG
Fitzpatrick, E
Florence, JM
Foote, EM
Ford Russ, M
Fortescue, D
Foster, R
Foxton, HAB & AM
Francis, B
Fraser, E
Freeman, B & L
Freer, A & T
Fursman, N
G.U Motors Pty Ltd
Gadsby, J
Gallagher, M
Gallois, C
Gardner, D
Gardner, P
Gardner, RJ & BM
Garland, W
Garson, C
Gerrard, MJ & G
Gibson, M
Gilbert, E
Gill, J & M
Gilmour, M
Glancy, J
Godwin, J
Goldings Contractors Pty Ltd
Gollschewski, T
Gouldsmith, E
Grace Lutheran College
Gradl, E
Granville, P
Gray, R
Greenup, RB & MC
Guilford, P
Guy, AJ
Gynther, BH & HB
Gynther, M

Haald Engineering
Hacker, J & J
Hannaford Rose & Geranium Club
Harding, W & H
Harkin, S
Harrington, J
Harris, K
Harrison, B
Harrison, D
Hartkopf, LV & JM
Harvey, H
Hasker, W
Hawken, B
Hawthorne, P
Hay, V
Hayes, GM
Hays Personnel Services (Australia) Pty Ltd
Henzell Street Quilters Inc
Hickey, P
Hill, D & M
Hillier Carter Properties
Hobbins, D
Holdway, R
Holmes, C
Honeywell Limited
Hope, H
Horsnell, N
Hot Tomato 102.9FM
Hughes, RE
Huth, D
Hyde, R E
Hyne Timber
IMC Mining Solutions
Indooroopilly Garden Club Inc
Inglis, R
Innes, J
Instyle Creations
Ipswich Hospital Nurses Assoc Inc
ISS Facility Services
ITC Group (QLD) Pty Ltd
J & M Site Servies
J M Schultz Pty Ltd
J W lock Pty Ltd
James, B
James, Major General W
Jane, M
Jenkinson, NA & PE
John Collins & Sons
Johnson, J
Johnston, A
Johnston, CW & GH
Johnston, R
Jones, F
Jones, L & L
Jones, PB & MG
Jordan, K
Julie's Place
Karpaty - Moorooka Legacy Care Group
Kawana Waters Catholic Womens League
Keamy, C
Kelly, W
Kemp, D
Kendall, GW & CJ
Kenmore Garden Club Inc
Kennedy, T
Killoran, P
Kimpton, T
Kinder, D
King, P
King, T & R
Kirby, A
Kirkegard, A
Klinge & Co Pty Ltd
Koah Automotive
Kone Elevators Pty Ltd
Kravchenko, M
Kristiansen, M
Kumeta, J V & M
Lardercon Pty Ltd
Lavender, D
Lavery, MA
Lawrence, A & JM
Lazdins, B
Lee, J
Leemeijer, T
Leslie, R
Lewis, M & G
Lewis, R
Lindsay Allen Surgical Pty Ltd
Lines, R
Lioness Club - Innisfail
Lipman, M
Lister, H
Lithgow, D
Little, J
Livesy, H
Lock Call Services & Ace Locksmiths
Lockwood, J & R
Logan & Co Pty Ltd Funeral Services
Long, A & M
Lorch, T & A
Love, AJ
Lowien, A
Lowood Senior Citizens Inc
Macdonald, J
MacIntosh, L
Mackay, D
Major League Corporate Marketing
Makin, C
Marshall, J
Martin, J
Mason, M
Mathieson, ND
Maurer, D
MBF Australia Limited
McComiskie, RJ & CM
McCulloch, R & J
McDaniel, D
McGavin, M
McHenry, T
McIndoe, K
McKay, RJ & MJ
McMillan, L
McPhee, K
Medlen, L
Menary, L & P
Messer, RL & LA
Metering Data Agency
Meulman, G
Mickan, R
Miller, G & N
Miller, M & R
Milner, CJA
Molenaar, T
Moltoni, C
Mondotecture Pty Ltd
Moore, G
Morawitz, G
Mott, P & H
Moulton, D
Muddle, J & M
Munro, D & M
Murray, L
Musgrave, K I & E W
Nanette Lilley Property Centre
National Homes Pty Ltd
Nichols, MJ & PM
NSA Gympie Branch
NSA Tewantin-Noosa Branch
NSA Toowong Branch
NSA Tweed Border Branch
Nundah Industries Pty Ltd
O'Connor, P
Ongley, M
Order of the Eastern Star - Coolangatta Chapter
Order of the Eastern Star - Dayboro Chapter No 147
O'Rourke, J
Palm Beach Currumbin Lions Club Inc
Pascoe, R
Passier, G
Paull, G
Paynter, B
Pearce, F
Pearson, A
Pearson, E
Peggram, L
Percy, P
Perina, AG
Pescud, J
Pickford, J
Pini, R
Platts, J
Pollard, S
Poole, D
Portelli, M
Porter, C
Potent, J
Potter, B
Poulsen, D
Powell, JG
Pratt, D
Prendergast, K

Price, HD & A
Probus Club Of Redlands Ladies Incorporated
Probus Club Of Toowoomba West
Pulsford, J
Pyle, J
Qld Steel & Sheet Pty Ltd
Quaid, D
Queensland Fresh Pty Ltd
Rabshawl Pty Ltd
Rains, C & MJ
Rech, P
Red Mountain Pty Ltd
Redlands Reconditioning Supplies Pty Ltd
Reilly, E
Rice, E
Richardson, G
Richardson, K
Riverside News
Robertson, H
Rock (QLD) Pty Ltd
Rollason, BM & DR
Rosanoff, M
Rosenthal, M
Ross, D & J
Rowland Pty Ltd
Rubegg 4 Hair Pty Ltd
Rudder, M
Russell, I & A
Ryan, R
S & F Marino Pty Ltd
Sales FX Pty Ltd
Sandgate Golf Club Associates
Sandgate Uniting Church Ladies Fellowship
Sargeant, E
Sawtell, Ms G
Say, A & J
Scheele, J & J
Schonfeld, D
Schrimpf, G
Schulter, C
Schuster, R
Scott MP, D
Seccombe, JB & VE
Sedlar, G
Seeleither, D
Sharp, M
Shaw, A
Shinners, R
Skerman, E
Smallegange, B
Smith, C
Smith, C
Smith, G
Smith, K
Smith-Pomeroy, K
Sneddon, B
Solager, M
Solley, E
Somerville, J
Spencer, M & B
Spring, A
St Paul's Ladies Guild Anglican Church Cleveland
St Peters Parish Deception Bay
St. George Jockey Club
Stark, P
Statham, H
Stevens, M & M
Stonadge, A
Story Bridge Adventure Climb
Story, JD
Stretton Services Pty Ltd
Stuart, M
Sturdee, N
Suncorp (Commercial Customer Sales and Service)
Sutton, J & M
Talty, E
Templo, A & C
The Naval Association of Australia Brisbane Sub Section
The Vandeleur Family Trust
Thomson, I & D
Thomson, J & E
Thomson, S & L
Timothy, K
Toohey, AB & JW
Translease Pty Ltd
Tress Cox Lawyers
Treston, T
Trinder, J
Turk, D
U3A Brisbane Inc. Social Committee
Vallis, I
Van Breugel, CM
Verity, N & M
Vietnam Veterans Assoc of Aust Gympie Sub Branch
Volvo Commercial Vehicles Australia Pty Ltd
Waddington, R
Walken Pty Ltd
Walker, N
Wall, J
Walls, P
Wan, M
Wanless
Wanless, S
Watson, A
Watson, A
Watson, K & D
Watson, P
Webber, BR & JC
Webster, C
Webster, J L
Wenck, W
Westdorp, L
Whitbread, R
White, N & P
White, R & J
Whitson, H
Wieland, M
Williams & Partners SCI Pty Ltd
Williams, E
Williams, I
Wilson, BM
Wilson, C & K
Wilson, DS & JP
Wilson, G
Wimberley, J
Winters, J
Wishart, BH & JD
Women's Interaction Group
Woods, B & T
Woollam, PA
Woolley, A
Wyborn, G
Wynnum Manly Probus Club
Young, DG
Zeniou, J
Zimmermann, D
Zubevich, J

QIMR Staff 2007-2008

Director

M F Good	AO BSc(Med) MBBS(Hons) PhD MD DSc FASM FAFPHM FRACP(Hon) FAIM

Deputy Director

A C Green	MBBS MSc PhD AC

General Manager / Secretary

J Tarr	BA JD LLM PhD

Secretary and Chief Operating Officer

S Clark	DipTeaching BAPsych GradDip Counselling (to Dec 07)

Assistant Directors

A W Boyd	BMedSc(Hons) MBBS PhD FRACP
University of Queensland	
M F Lavin	BSc(Hons) PhD
University of Queensland	
M Lagana	BBus(PR) AssocDipSocSc (to Sep 07)

Executive Secretary to Director

J Black

Administrative Support

T Checkley

Executive Support Officer

M Quince	DipBus

Executive Officer

N Karger	BSc MBusAdmin
M Sheumack	BSc MSc DipLegalStudies PhD (to Jan 08)

Communications Officer

J O'Keefe	BAppSc DipBusComm

Genetics and Population Health Division

Division Chair: E Whitelaw

Cancer and Population Studies

A Green	MBBS MSc PhD AC
T Ahmed	MPH
B Alexander	RN BNurs
J Bain	(to Dec 07)
C Baxter	BA
V Beesley	BHlthSc (Hons) PhD
L Braatvedt	BSc MSpeechPath
S Brown	RN BA
R Cicero	BA
T Corish	RN (to Dec 07)
H Croy	BSc BNurs PostGradDipNursing (to Dec 07)
M Davis	MPH MD
J Doecke	BSc(Hons) PhD
L Gordon	BEcon MPhil PhD
L Green	RN
J Griffith	
K Harrap	BInfoTech
E Herron	RN DipOccHlthNurs (to Dec 07)
C Hill	BN
N Hirst	BCommerce/ Economics (to Dec 07)
M Hughes	BS MMedSc
K Ibiebele	BScClinDiet MPHSocSc PhD
F Kolahdooz	BSc MSc GradDipPubHlth
L Jackman	BSc(BusAdmin)
J Jetann	Bnurs
D Johnstone	BSc (to Nov 07)
S Jordan	GradDipClinEpi MBBS(Hons) PhD (to Dec 07)
T Lawton	
V Logan	
T Luong	AssocDipArts/ Photography
K Mallitt	BSc(Hons)
M Malt	BBus EN
K Martin	RN BHlthAdmin
J Mayhew	RN
P McBride	BMedSc MBBS (to Dec 07)
A McMurtrie	RN BNurs
F Millar	Bnurs
E Minehan	RN (to Feb 08)
S Moore	RN BHlthSc MPH (to Dec 07)
C Nagle	BAppSc PhD
R Neale	BVSc PhD
S O'Brien	BNurs MPH
S O'Keeffe	BAppSc RN (to Dec 07)
C Olsen	BSc(Hons) PhD
P O'Rourke	BSc(Hons) BA(Hons) PhD GCEd
N Pandeya	BSc MMedSc GradDipAppSc
S Perry	DipAppScNurs BAppScNurs MEnivirCommHlth BEnvirHlthSc
B Ranieri	
N Richmond	BSc(Hons) (to Dec 07)
D Roffe	RN (to Dec 07)
S Sadeghi	MD GDPH (to Dec 07)
J Scott	DipSc MSc (to Jun 08)
H Shirley	DipNurs BSc (to Dec 07)
V Siskind	BSc PhD
M Steele	RN (to Oct 07)
A Taylor	BHlthSc (to May 08)
P Valery	BMed MPH
J Van Der Pols	BSc MSc PhD
A Ward	RN (to Mar 08)
B Waters	MPhil
P Webb	MA PhD
S Webb	Bnurs
J White	RN
D Whiteman	BMedSc MBBS(Hons) PhD
C Williams	BMechanicalSpace Eng(Hons) (to Mar 08)
H Wyeth	BA BAppSc (to Mar 08)

Indigenous Health Research Program

G Garvey	BEd MEd
V Clements	BAppSc
V Harrhy	BSc
R Mobbs	BA(Hons)
K Peterson	MPH

Epigenetics

E Whitelaw	BSc(Hons) PhD
A Ahola	MSc
A Apedaile	BSc(Hons) MSc PhD
A Ashe	BSc(Hons) PhD
S Chong	BAppSc(Hons) Phd
T Epp	BSc(Hons) MSc PhD
E Lambley	BSc(Hons)
N Youngson	BSc(Hons) PhD

Genetic Epidemiology

N Martin	BSc(Hons) PhD FASSA FAA
J Atherton	
P Barton	(to Aug 07)
H Beeby	BSc(Hons)
J Brodie	
K Bucholz	GradDipHlthSc (to Feb 08)
M Caffrey	
S Clark	CertChildServ (to Mar 08)
H Clarke	(to Jul 07)
J Cochrane	BBus
L Connelly	BA (to Nov 07)
B Cornes	BSc(Hons) (to May 08)
M De Nooyer	BPsych(Hons)
A Dormer	AssDipArts
D Duffy	MBBS PhD
T Dumenil	BAppSc
G Dwyer	BHlthSc
A Eldridge	RN
M Ferguson	BA(Psych)(Hons) (to Apr 08)
M Ferreira	PhD
J Gale	BBioMedSc (to Dec 07)
N Garden	BSc(Psych)
N Gillespie	BA(Hons) PhD
S Gordon	BEng(Hons) PhD
M Grace	RN
K Gray	BScPubHlth
L Grey	BSc
M Grimmer	BSc(Psych)(Hons) MSc(OccPsych)

T Gunasekera	BSc(Biotech)(Hons)
H Handoko	BSc MSc PhD
N Hansell	BSc(Hons) PhD
D Hickey	AssocDipArts
J Higgins	BHlthSc (to Dec 07)
N Huang	BAgSc DipHortSc MAppSc MAppSc
F Husband	
T Hyam	CertHlthCareAss
M James	BSc(Hons) MSc PhD
S Jamali	BHlthSc
C Laizans	
M Luciano	BPsych(Hons) PhD (to Oct 07)
E Mallon	
Nico Martin	MSc (to Mar 08)
K McAloney	BCommerce
S McCoombe	
J McPhee	AssocDipComm Recreation (to Feb 08)
J Medhurst	DipHort
S Medland	BA(Psych)(Hons) PhD
J Moir	BSc BA
L Nunn	DipTeaching
D Nyholt	BSc PhD
W O'Connell	(to May 08)
D Park	
H Park	GradDipRehab
R Parker	BA(Psych)(Hons)
C Pink	
C Pretsel	
L Rasmussen	
C Redfern	BA(Psych)(Hons)
S Rodda	MArts
L Ryan	BSc(Hons)
S Shekar	BSc(Hons)
P Shertock	
L Simms	BSc(Hons)
D Smyth	BSc BEngineer
A Somerville	BA
K Sorensen	
J Sorley	(to Jul 07)
D Statham	BA(Psych)(Hons) MClinPsych
L Sullivan	BA
H Taylor	
A Toivanen	BPsych(Hons)
S Treloar	BSocSc MSc MSocWk PhD (to Jul 07)
A Ward	BPsych (Hons) (to May 08)
K Watson	
K White	AdvCertArts
N Whiteman	BA (to Dec 07)
J Whitfield	BSc(Hons) MSc PhD FRC Path FRACB
L Winkler	
J Wood	
N Wray	BSc(Hons) MSc PhD
M Wright	BSc(Hons) PhD
O Zheng	DipInfoTech
G Zhu	MPH BSc

Molecular Epidemiology

G Montgomery	BAgrSc(Hons) PhD
A Ali	BAppSc (to Feb 08)
L Bardsley	BAppSc
M Campbell	BAppSc
A Caracella	BSc
S Crooks	BSc GradDipClinMicrobiol
A Henders	BSc(Hons)
L Le	BSc(Hons) MSc
P Lind	BSc(Hons) PhD
J Painter	BSc(Hons) PhD
K Patel	GradCertImmunology
M Richter	BAppSc
S Smith	BBioSc(Hons)
S Thomas	BSc
L Wallace	BBiomedSc GradDipGeneticCouns
Z Zhao	MDentSc PhD

Molecular Psychiatry

C Lendon	BSc(Hons) PhD
A Pritchard	BMedSc(Hons) PhD

Cancer Genetics

G Trench	BSc(Hons) PhD
J Arnold	BSc(Hons) PhD
J Beesley	BSc(Hons) PhD
L Braaf	BAppSc (to Apr 08)
X Chen	BMed
S Healey	BSc DipEd BAppSc
H Holland	BHlthSc(Hons) BA
J Jayanthan	BSc(Hons)
S Johnatty	MSc PhD
P Keith	MPhil
S Manu	BSc MMicroBio
A Marsh	BSc(Hons)
L Reid	BSc MSc
P Simpson	PhD
N Waddell	BSc(Hons) PhD

Familial Cancer

J Young	GradDipBiotech MAppSc PhD
S Arnold	BSc(Hons)
D Buchanan	BSc(Hons)
M Clendenning	BSc(Hons) PhD
L Jaskowski	ADCLT (to Mar 08)
D McKeone	AssDip LabTechniques
M McKeone	DipBiotech
E Pavluk	BSc DipEd GradDipZool
S Pearson	AssDipBioLabTech
A Roberts	BSc(Hons)
R Stewart	BBSc (to Mar 08)
M Walsh	BAppSc
R Walters	BAppSc
L Young	

Molecular Cancer Epidemiology

A B Spurdle	BSc MSc PhD
K Ferguson	
M O'Brien	
K Patel	GradCertImmunology (to Nov 07)
P Schultz	
L Walker	BSc MSc PhD
P Whiley	(to Feb 08)

Oncogenomics

N K Hayward	BSc MScQual PhD
M Auret	BSc(Hons) PhD
V Bonazzi	PhD
E Hacker	BSc(Hons) PhD
D Nancarrow	BSc MScQual PhD
L Packer	BSc(Hons) PhD
J Palmer	RN
E Planas Rigol	BSc
M Stark	BAppSc(Hons)
J Symmons	BBus RN
G Walker	BSc GradDipClinBiochem MScQual PhD

Queensland Statistical Genetics

P Visscher	BSc MSc PhD
B Benyamin	BAgSc(Hons) Magriculture PhD
S MacGregor	BSc MSc PhD
B McEvoy	BA (Hons) PhD
A McRae	BSc(Hons) PhD

Immunology Division

Division Chair: G Hill

Bone Marrow Transplantation

G Hill	BHB MBChB FRCPA FRACP MD
T Banovic	MD MMedSc
P Bunn	
A Don	BSc(Hons)
E Kreijveld	BSc(Hons) PhD (to Mar 08)
R Kuns	BSc(Hons)
K MacDonald	BSc(Hons) MSc PhD
S Olver	BSc(Hons)
N Raffelt	BSc(Hons)
V Rowe	TechCertAnimalLabSc AdvCertAppSc (to Apr 08)
A Varelias	BAppSc PhD
Y Wilson	BAppSc

Cellular Immunology

S R Burrows	BSc PhD
M Bell	BSc(Hons)
R Brennan	BSc(Hons)
J Burrows	BSc GradDipTeach
J Miles	BSc(Hons) PhD
S Silins	BSc(Hons) PhD

Clinical Immunohaematology

M Gandhi	MBChB FRCP FRCPath FRACP PhD
U Dua	BSc MBiotech (to Jan 08)
K Jones	BSc
J Nourse	DipSc BSc MSc PhD
S Singh	MSc(Qual)

EBV Biology

D J Moss	BSc PhD
M Corban	BBiol MBiol (to Apr 08)
P Crooks	BSc(Hons)
S Cross	BSc(Hons) MSc DipEd
V Lutzky	MSS PhD
M Martinez	DipAssSc
L Morrison	CBLT
N Stevens	BScBiotech

Immunology and Infection

C R Engwerda	BAgrSc PhD
F Amante	BSc(Hons) PhD
F De Labastida Rivera	BSc GradDipBiotech MBiotech
M Dixon	BSc(Hons) (to Jun 08)
K Evans	BMedChem PhD
A Haque	BSc(Hons) PhD
L Randall	BSc(Hons)
A Stanley	BSc(Hons) PhD
Y Zhou	BMed DipAppSc

Immunovirology

A Suhrbier	BA(Hons) PhD
H Ahmad	BSc (to Dec 07)
I Anraku	BSc(Hons) PhD
S Cozzi	BAppSc(Hons) PhD
G Darnell	BAppSc GradDipBiotech MAppSc PhD
B Ferguson	BSc
J Gardner	BAppSc
T Le	BAppSc GradDipBiotech
M Linn	MBBS PhD (to Nov 07)
L Major	BAppSc(Hons)
W Schroder	BSc(Hons) PhD

Molecular Immunology

M F Good	AO BSc(Med) MBBS(Hons) PhD MD DSc FASM FAFPHM FRACP(Hon) FAIM
R Anderson	
V Anderson	BSc(Hons)
A Caudron	BSc Mphil
S Cavaignac	MSc PhD
S Khan	BSc MSc MPhil PhD DipEd (to Sep 07)
X Liu	BMed MMedSc
V McPhun	BSc MSc
D Mitchell	BSc(Hons)
C Olive	BSc(Hons) PhD
A Pinzon-Charry	MD PhD
K Trenholme	BSc MSc PhD
M Wykes	BSc(Hons) PhD
H Xu	BMed MMed PhD (to Dec 07)
M Yong	BBiotech(Hons)

Tumour Immunology

R Khanna	BSc MSc PhD
L Beagley	BSc
J Connolly	BSc (to Jan 08)
T Crough	BSc(Hons) PhD
D Elhassen	BSc MSc PhD
D Hoang-Le	BSc(Hons)
L Jones	
J Peet	BAppSc(Hons)
M Rist	BSc(Hons) PhD
C Smith	BSc(Hons) PhD
F Soldevila-Casals	BBiotech/BBiochem
J Tellam	BSc MSc PhD
S Walker	BAppSc
J Zhong	BSc PhD

Cancer Immunotherapy

C W Schmidt	BSc(Hons) PhD
K Ellem	BSc(Med) MBBS PhD AO
X Huang	BMed PhD
C Lanagan	BBiomedSc(Hons) (to Oct 07)
M Lin	BSc
L O'Connor	AssocDegAppSc
K Patel	BSc(Hons) (to Aug 07)

Dendritic Cells and Cancer

J A Lopez	MD

Molecular Vaccinology

D Doolan	BSc(Hons) MPhil PhD
S Apte	BSc(Hons)
A Baz	BChem PhD (to Jan 08)
K Buttigieg	BBioTech
P Day	
P Groves	BAppSc
A Trieu	BBiotech(Hons)

Cancer and Cell Biology Division

Division Chair: G Anderson

Leukaemia Foundation

A W Boyd	BMedSc(Hons) MBBS PhD FRACP

University of Queensland

K Chen	BSc(Med)
C De Bock	BSc MSc PhD
S Duffy	BSc(Hons) PhD
N Herath	BSc(Hons) PhD
E Lau	BSc P/G DipSc
J Lickliter	MBBS PhD (to Sep 07)
K Miller	BSc
E Neijman	DipMedBiol
F Smith	BAppSc
M Spanevello	BAppSc(Hons) PhD
B Stringer	BMedSc MBBS PhD
M Ting	BSc(Hons) (to Jan 08)
T Yeadon	BSc(Hons) PhD

Membrane Transport

N Subramaniam	BSc MSc PhD
E Crampton	BSc(Hons)
L Summerville	BSc GradDipClinBiochem
D Wallace	BSc(Hons) PhD

QCF Transgenics

G F Kay	BSc(Hons) PhD
D Carrie	BSc
A Mould	BSc(Hons) PhD
J Pang	BBiotech MBiotech
I Tonks	BSc(Hons) PhD

Radiation Biology and Oncology

M F Lavin	BSc(Hons) PhD

University of Queensland

O Becherel	BSc MSc PhD
G Birrell	CBT MMedSc PhD
M Buck	DipMedTech
P Chen	BSc MSc PhD
J Cullen	BSc(Hons) PhD
S Earl	BBiotech(Hons) PhD
A Farrell	NCEA CertAppBiol
M Gatei	BSc PhD
N Guven	BSc MSc PhD (to May 08)
A Kijas	BBiotech PhD
S Kozlov	MSc PhD
J Luff	CVetNurs/AnCare
E Millers	BSc (to May 08)
T Roberts	BSc(Hons) PhD
R Stirling	BSc(Hons) PhD
A Suraweera	BSc(Hons) PhD
M Tanudji	BSc(Hons) PhD (to Aug 07)
M Trabi	BSc(Hons) PhD
R Woods	BSc(Hons) PhD (to Apr 08)
Z Yameen	BSc PhD (to Dec 07)

RBWH Gastroenterology

B A Leggett	MBBS(Hons) MD FRACP

Royal Brisbane and Women's Hospital

S Greco	BSc
I Ramsnes	BBusInfoSys BSc
J Robinson	BSc(Hons) PhD
K Spring	BSc PhD
A Umpathay	BSc(Hons) MBiotech (to Mar 08)
V Whitehall	BSc(Hons) PhD

Signal Transduction

K K Khanna	BSc MSc PhD
A Bain	BSc(Hons)
E Bolderson	BSc(Hons) PhD

K Hobson	BSc(Hons)
J Kelly	BSc(Hons) PhD
J Pagan	BSc(Hons) PhD
L Papp	BSc(Hons) PhD
D Richard	BSc(Hons) PhD
M Shariff	BSc (Hons) Mphil
S Tsvetanov	MSc PhD (to Dec 07)
A Urquhart	BSc(Hons) PhD

Drug Discovery

P Parsons	BSc(Hons) PhD
L Aoude	BA Bengineer
G Boyle	BSc(Hons) PhD
B Ferguson	BSc
J Johns	BSc(Hons)
A Martyn	BSc(Hons)
L Maslovskaya	PhD
J Pedley	BSc
C Pierce	BBiomedSc(Hons)
J Shan	BSc MEngineer PhD
S Stegeman	BApSc(Hons) (to Dec 07)

Hepatic Fibrosis

G Ramm	BSc(Hons) PhD
M Bertrand-Philippe	MSc PhD
D Hoang-Le	BSc(Hons)
T Pereira	BSc(Hons) PhD
L Ramm	BSc
D Rowsell	BSc(Hons)
R Ruddell	BSc(Hons) PhD
M Walsh	BSc(Hons)

Iron Metabolism

G Anderson	BSc(Hons) MSc PhD
J Cornock	BAppSc (to Feb 08)
D Darshan	MBBS MAppSc PhD
J Dixon	RN BA(Hons) MPH
D Frazer	BAppSc(Hons) PhD
J Ghazali	BNursing
C McDonald	BBiomedSc(Hons)
L Powell	AC FTSE MBBS MD PhD D Univ(Griff) FRCP FRACP
D Raffelt	(to Mar 08)
V Shaw	
T Steele	BSc(Hons)
S Wilkins	BSc(Hons)
A Sue Tin	

Infectious Diseases Division

Division Chair : J McCarthy

Bacterial Pathogenesis

K S Sriprakash	BPharm MPharm PhD
M Georgousakis	BSc(Hons)
D McMillan	BSc(Hons) PhD
N Rosenzweig	BBioSc
J Shera	BSc(Hons)
T Vu	BAppSc(Hons)

Clinical Tropical Medicine

J S McCarthy	MBBS FRACP MD
University of Queensland	
K Andrews	BSc(Hons) PhD
M F Ho	BSc(Hons)
D Jones	BAppSc(Nursing)
L Melville	BSc BA
C Pasay	BS MSc PhD
R Sarai	BSc(Hons) (to Apr 08)
E Siu	BSc BA
L Tran	BSc(Hons)

EBV Molecular Biology

T B Sculley	BSc(Hons) PhD
I S Misko	BSc(Hons) PhD (to Oct 07)

Helminth Biology

A C Loukas	BSc(Hons) PhD
L Cooper	BAppSc
S Gaze	BSc MSc PhD
P Giacomantonio	BSc
H McSorley	BSc MSc
J Mulvenna	BComm BSc(Hons) PhD
M Pearson	BSc MSc PhD
D Pickering	BAppSc(Hons)
N Ranjit	BBiotech(Hons)
D Smyth	BSc(Hons) PhD
M Tran	BSc GradDipClinBioChem PhD
L Tribolet	BAppSc PostGradDipBiotech
C Willis	BSc MSc PhD (to Dec 07)

HIV Molecular Virology

D A Harrich	BSc PhD
A Apolloni	BSc PhD
C Harrich	RN BSc(Nurs) (to Dec 07)
D Warrilow	BSc(Hons) PhD

Scabies

D J Kemp	BSc(Hons) PhD FAA
K Fischer	PhD
M Johnstone	BSc(Hons) PhD
S Reynolds	BSc(Hons)

Malaria Biology

D L Gardiner	BAppSc PhD
K Anderson	CBLT
T Skinner-Adams	BSc(Hons) PhD

Molecular Genetics

P Upcroft	BSc(Hons) PhD
A Burgess	BSc MSc(Hons) PhD
L Dunn	BSc(Hons) PhD
K Krauer	BSc PhD
J Upcroft	BSc(Hons) PhD

Molecular Parasitology

D P McManus	BSc(Hons) PhD DSc
M Duke	AssocDipFarmMngmt
M Ellis	BSc(Hons) MSc PhD
G Gobert	BSc(Hons) PhD
D Gray	BSc MSc GradCertPublicHlth PhD
M Jones	BSc(Hons) PhD
J Li	BPharm PhD
Y Li	MD PhD
L Moertel	BBioMedSc(Hons) PhD
S Nawaratna	MBBS MPhil
W Zhang	BSc PhD

Mosquito Control

P Ryan	BSc(Hons) PhD
C Cheah	DipBiotech BBiotech(Hons)
J Darbro	BA MS PhD
P Fraley	
L Hugo	BSc(Hons) PhD
T Hurst	BSc(Hons) PhD
J Jeffery	BSc (Hons) BA PhD
B H Kay	BSc(Hons) PhD AM FAA
L Maddock	BSc MEntomology
K Marshall	
J Monkman	BSc(Hons)

Protein Discovery

J Gorman	BSc PhD
J Chicher	BSc MSc
K Dave	MSc
A Diseberg	BSc(Hons)
H Goswami	BSc(Hons)
B Hamilton	BSc(Hons) PhD
H Jiang	BSc MSc PhD
C Lane	BSc(Hons)
M Headlam	BSc PhD
N Patel	BPharm
E Redhead	BSc(Hons)
T Wallis	BSc(Hons) PhD (to Jan 08)

AMI Malaria Drug Resistance and Chemotherapy

Q Cheng	BMed MMed PhD
A Codd	BE(Hons) MSc(Hons) PhD
M Gatton	BSc(Hons) PhD
K Gresty	BSc(Hons)
D Krause	BSc(Hons) PhD (to Oct 07)
S McLeod-Robertson	ADCLT (to Dec 07)
A Pelecanos	BBioinform BSc(Hons)
J Peters	BAppSc (to Dec 07)
W Sharrock	BSc(Hons)
F Teuscher	BPharm PhD
N Walpole	Cert BusAdmin Cert Animal Services

Bacterial Vaccines

M Batzloff	BSc(Hons) PhD
J Cox	BSc MAppSc PostGradDipBiotech
J Hartas	BAppSc
G Magor	BSc(Hons)
J Malcolm	BSc(Hons)
M Pandey	BSc MSc PhD

Therapeutic Development (Q-GEN)

A Boyd	BMedSc(Hons) MBBS PhD FRACP
University of Queensland	
M Gerometta	BAppSc(Hons) PhD
A McLean	BAppSc(Biotech)(Hons) GAICD
K Aliabadi Zadeh	DVM PhD
J Andrews	BSc (to Jun 08)
M Bleasdale	BSc(Hons)
N Bleasdale	BTechMngmt MBA (to Sep 07)
K Bouyer	BAppSc GradCertGMP
B Butcher	DipElectronics CertBioMedEngTech CertAvionics
G Butterworth	BSc(Hons)
W Chung	BSc(Hons) PhD
S Collett	BAppSc(Hons)
J Condren	BSc GradDipFoodDrug Analysis (to Dec 07)
J Crowley	RN
T Dex	BBiotech(Hons)
A Evans	BSc(Hons)
K Galan	LabTech (to Aug 07)
E Han	BMed
V Huynh	BScBiotech (to Aug 07)
S Johnson	RN
A Jordan	BAppSc
P Kearns	BAppSc(Hons) PhD
F Khan	BA BSc MSc
M Leaf	
M Lin	BMed MSc
A Linville	BBiotech(Hons) (to Apr 08)
N Martinez	BSc(Hons) GradDipDrugDev PhD
M McIntyre	AssocDipAppSc
S Miles	AssDipAppBiol (to Jan 08)
E Milne	BAppSc (to Jun 08)
M Muroa	
M O'Hara	
N Quirk	
J Ridgewell	
S Sekuloski	BSc(Hons) PhD
M Sheridan	BSc
R Sinha	MAppSc
I Steinhardt	AssocDipCLT BAppSc GradDipMktMng (to May 08)
H Taylor	BEd (to Apr 08)
P Toh	BSc CertStoresMgtAcc
A Tolstoff	BAppSc
J Uksanovic-Barnjak	DipVetFoodSc DipLabTech
J Williamson	
L Wilson	
K Windle	BBiotech(Hons)

Translation Research

S Stein	BAppSc

ACITH (Joint with the University of Queensland)

B H Kay	BSc(Hons) PhD AM FAA
P Fraley	

Mental Health Division

Michael Breakspear	BSc(Hons) BA(Hons) MBBS(Hons) PhD

Corporate Division

General Manager / Secretary

J Tarr	BA JD LLM PhD

Secretary and COO

S Clark	DipTeaching BAPsych GradDipCounselling Med PhD (to Dec 07)

Assistant Secretary

N Fox

Executive Secretary to GM/Secretary

B Wanrooy

Administrative Support

P Coyle	(to Dec 07)
C Green	CertBus
D Gunn	(to Jun 08)
T Laing	BA
D Meaclem	
R Meaclem	CertBus
I Pritchard	(to Jul 07)
M Randle	CertAdminFinance DipBasicOperations DipBasicManagement
G Sriprakash	
V Torres	CertBus

Records and Information Services (RIS)

Records and Information Manager

N Kremko

Records and Information Coordinator

O Griffiths	BA

Records and Information Officer

L O'Mahoney

J Ho	(to Oct 07)

Finance

Chief Financial Officer

M Cornell	BBus

Accountant

C Cunningham	Becon (to Sep 07)
G Cunningham	BBus(Acc)

Grants Officers

L Casey	BSc GDTh
B Dunphy	BBus(Acc)
D Evans	
F Khaya	BA MAPublicPolicy (to Oct 07)

Accounts

C McNally
K Moran
M Stromberg
A Valentine

R Rafter	(to Mar 08)

Y Marcinkus

Payroll Officer

M Weaver	AdvDipBus(Acct)

Assistant Payroll Officer

P Buratowski

Human Resources

HR Executive

N Green	BBus(HRM) MBA

HR Officer

L Lane

HR Assistant

M Anderson	CertBus

Business Development

Head Business Development

G Haaima	BSc(Hons) PhD MBA

Business Development Associate

U Dua	BSc MBiotech(to May 08)
J Fox	BSc PhD

Regulatory Affairs

Executive

A Mitchell	BSc(Hons) PhD

Officers

J Chow	BA BSc MPH
R Lacey	
G Lawrence	MBBS FRACP MD FAFPHM (to Jun 08)
D O'Brien	RN (to Jan 08)
B Rosser	BAppSc BA MHlthSc

Scientific Services

Manager

J A Cooper	BSc MSc PhD GCertMgt

Sequencing and Synthesis

P Collins	BSc(Hons)
M Edmundson	BSc MSc

Flow Cytometry

G Chojnowski	BAppSc
G Chapman	BSc MSc PhD
P Hall	BSc

Histotechnology

S H Park	DipClinPath
R Collins	CertBioLabTech
G Rees	CertDiagnostic Cytology AssDipClin LabTechniques DipOccHlthSfty
K Rothery	BScAppBiol (to Jan 08)
C Winterford	AssDipAppBiol

Animal Services

S Cassidy	CLabAnCare CertTrainAsses
J Canning	CertLabAnCare
A Cross	CertAnimalServ
C Cross	
C Dickfos	CertLabCare AssDipAppSc
N Felder	
C Groennou	CertAnimalTech
A Hale	
S James	Cert Companion Animal Services Cert Childrens Services
R Lee	BBus CertAnimalTech (to May 08)
M McInnes	CertAnimalCare
K Nurse	(to Aug 07)
A O'Regan	Cert Companion Animal Services
H Platt	CertCompanion AnimalServices
I Shiels	BVSc MACSVSc PhD
A Smith	BAppScNur
J Sutton	CertCompanion AnimalServices
M Vandeleur	(to Sep 07)

Media

S Gregg	CertAnimalTech

Glassware

G Cuthbert	BNurs CertTrainAsses
V Matthews	
L Thompson	
S Watkins	

Store

S Wood	CertTransport WarhouseDistrib
M Eaton	CertTransport WarhouseDistrib
A Girle	CertTransport WarhouseDistrib
T Kent	
M McDade	CertTransport WarhouseDistrib

Building and Security

Manager

A Stockman	HND (Elec Eng) HTC (Plant)

Workshop

M Bugden	TradeCert(Refrig)
J P Fahrner	CKennel/CatPrac
G Madders	ElectricMechanic/Fitter
A McKee	AssocDipElectEngineer
D Patrick	AssocDipElecEngineer
R Tyrrell	EngFitter

Safety

Safety Manager

H Leonard	BSc MSc PhD WHSO RSO

Safety Officer

M Down	BSc GradDipSc WHSO RSO

Information Technology

Chief Information Techology Officer

C Ward	ADAB GradDipCommComp MACS

Computing Services

M Feodoroff	BInf MCSE HP AIS
D James	
S Jaremczuk	BBiolSc MBA MInfSys
P Kaim	BAppSc
X Lin	GradDipIT BEng MEng PhD
V Mar	COBC CCSA CSA HP-UX
A Nutley-Govaerts	BAppSc MCP
A Orreal	CertBusAdmin DipITNetworking
L Ward	BInfoTech

Graphic Support

H Matthews	BA CertPhotography
M Kersting	BFA Medical Illustration

Development and Marketing

Senior Manager External Relations

V Johnson	GradCertMktg MBus BA

Director

M Lagana	BBus(PR) AssocDipSocSc (to Sep 07)

Deputy Director/Business Manager

A Van Der Beek	BBusComm

Fundraising Manager

G D'Adam	GradCertBus

Development and Marketing Officers

H Astbury	GradCertBus
A Dignan	
M Elliott	(to Aug 07)
J Gill	BComm
K Laurenson	BACa MMktMgt (to May 08)
Events Officers	
S Millman	DipMktg BBusAdvMktg (to Aug 07)
S Givney	DipEventMngmt (to Oct 07)

Bequest Officers

A McGaw	
J Stockman	

Media Liaison

F Beltran	BBusMktPR

Administration

E Carroll	CertTextilesClothing
K Plumbley	CertBusAdmin

VISITING SCIENTISTS

Immunology Division

Anstey	MBBS(Hons) MSc DTM&H FRACP PhD
Kelso	BSc(Hons) PhD AO
Khromykh	BSc PhD
Kienzle	BSc MA PhD
Lenarczyk	BSc(Hons) PhD
Misko	BSc(Hons) PhD
Mynott	BAgrSc PhD
Pender	MBBS FRACP PhD MD
Rickinson	BA MA PhD
Wakisaka	BMed PhD
Woodberry	BAppSc(Hons) PhD
Xu	BMed MMed PhD

Infectious Diseases Division

Anders	BAgrSc PhD
Bartley	BMedSc MBBS
Caldas Cardoso	BSc MSc PhD
Chang	BSc(Hons)
Chavchich	MSc
Chen	BSc MSc PhD
Clements	
Croese	MBBS MD
Hastie	BAppSc(Hons) PhD
Hugo	BSc(Hons) PhD
Ketheesan	GradCertEduc MSc PhD MD
Lee	BA BMultimedia
Mounsey	BSc(Hons) PhD
Nordstrom	MSc PhD
Raju	BSc MSc PhD
Raso	MSc PhD
Shanks	BSc MD MPH
Shinkfield	MAppSc BEng(Hons)
Skinner-Adams	BSc(Hons) PhD
Spann	AssDipMusic BSc(Hons) PhD
Stemberger	
Ulett	DipSc BSc(Hons)
Waters	BSc PhD
Williams	BSc(Hons) MSc PhD
Willis	BSc MSc PhD
Yang	BMed MMed
Zhang	

Cancer and Cell Biology Division

Aizawa	BSc(Hons) PhD
Aylward	BSc MSc PhD
Boucher	DipHlthEng MRadiationBiol PhD
Buttenshaw	CertChem
Clark	BSc(Hons) PhD
Clarke	BA(Hons) PhD
Coulthard	MBBS PhD FRACP FJFICM
Da Silva	MD
Fabbro	BSc(Hons) PhD
Fletcher	BSc(Hons) PhD
Gardiner	MBBS FRCS FRACS MD
Heritage	BBiomedSc(Hons) PhD
Ishii	MBBS PhD
Jaskowski	ADCLT
Jayanthan	BSc(Hons)
Keith	BSc MPhil
Kuphal	DipBiol PhD
Lakhani	BSc(Hons) MBBS MRCP MD FRCP
Lane	MBBS(Hons)
Lewindon	MBBS MRCP FRACP
Li	BSc
MacDonald	MBBS FRACP
Masci	BSc MBiochem
Murphey	MSc
Murray	BBioSc MAppSc
Ogbourne	BSc(Hons) PhD
Pakkiri	MMedPath MBChB(Hons)
Rajandram	BSc(Hons)
Reid	BSc MSc
Simpson	BSc PhD
Smart	BSc(Hons) PhD
Smith	BSc PhD
St Pierre	BAppSc(Hons) PhD
Teng	BSc(Hons) DipBiotech
Thach	
Umapathy	BSc(Hons)
Van Der Horst	PhD
Vuckovic	BSc MSc PhD
Walker	BMedSc MBBS(Hons) PhD
White	
Whitehall	BSc(Hons) PhD
Wood	MBBS(Hons)

Genetics and Population Health

Alati	GradDip BD(Hons) MAppSc PhD
Bain	BSc MBBS MPH MS
Bloethner	BEng PhD
Chen	BSc MAppSc
Chen	BMed MDermatology
Chin	MBBCh FRCSI PhD
Clavarino	BA(Hons) PhD
Coventry	BAgSc GradDipSocSc BA(Hons) PhD
Filippich	BAppSc
Fleming	PhD
Goldgar	BA MD PhD
Griffin	GradDipStat BSc BComEng(Hons) PhD
Hatemi	BSBA MA PhD
Heath	BA PhD
Hewitt	DipSc BSc(Hons)
Holliday	BSc(Hons)
Jordan	
Kaminen-Ahola	MSc PhD
Keith	BMath(Hons) PhD
Lynskey	BSc(Hons) MSc PhD
Mackey	MBBS MD FRACS FRANZCO
Madden	BS MS PhD
Matigan	BSc(Hons)
Mowry	MBBS BA(Hons) FRANZP MD
Nelson	BA MD
O'Mara	BAppSc(Hons)
Pereira Da Veves Leite	BBiol MBiolSc PhD
Radford-Smith	BAMedSc MBBCh PhD
Relan	BSc MSc PhD
Sadeghi	MD GDPH
Smith	BSc
Stirling	MPrimHlthCare
Sturm	BSc(Hons) PhD
Todd	BA PhD
Treloar	BSosStud MSc MSocWk Phd
Van der Pols	BSc MSc DipScComm PhD
Verweij	MPsych
Wood	BSc BE(Hons) Phd

Therapeutic Development

Beadle	MBBS
Wang	

Research Students at QIMR as at June 2008

PhD Scholars		QIMR Supervisor
A Abdel-Aal	BSc MSc	M Good
N Abdul Murad	BSc MMSc	M Lavin
B Andrew	BSocSc(Hons)	N Martin
B Appleyard	BSc(Hons) MPH	J McCarthy
S Apte	BSc(Hons)	A Kelso
S Arabshahi	BSc GradDipPubHlth MSPh	A Green
J Balen	BSc(Hons)	D McManus
T Barnes	VET MB BA(Hons)	D McManus
G Blokland	MSc	N Martin
C Bond	GradDipBiol MSc	B Leggett
R Brennan	BBiomolecularSc BSc(Hons)	S Burrows
J Brown	BAppSc(Hons)	M Lavin
T Bruxner	BSc (Hons)	E Whitelaw
A Burgess	BSc MSc(Hons)	T Sculley
M Burke	BBiomedSc	McManus
E Byrne	BA(Hons)	P Visscher
T Chuah	BMedSc MBBS	M Lavin
B Cornes	BA BSc(Hons)	N Martin
M Coulthard	MBBS FRACP FJFICM	A Boyd
T Crough	BSc(Hons)	R Khanna
K Dave	BSc MSc	J Gorman
B Day	BSc(Hons)	A Boyd
M Dixon	BSc(Hons)	D Gardiner
P Driguez	BSc(Hons)	D McManus
S Earl	BBiotech(Hons)	M Lavin
M Ellis	BSc(Hons) MSc	D McManus
L Fernandez	BAppSc(Hons)	J McCarthy
M Georgousakis	BSc(Hons)	K Sriprakash
A Glanfield	BSc(Hons)	D McManus
D Hall	BSc(Hons) MBBS	P Parsons
J Hancock	BAppSc(Hons)	M Lavin
J Hansen	BSc/BBusMgt BSc(Hons)	N Martin
C Jekimovs	BAppSc(Hons)	K Khanna
J Johnson	BSc(Hons) BBusMan	G Trench
M Jones	BSc(Hons)	K Khanna
J Jonnalagadda	BSc MSc	K Khanna
S Jordan	MBBS(Hons) GradDip Epidem	A Green
J Kelly	BSc(Hons)	K Khanna
M Kvaskoff	MPH	A Green

PhD Scholars		QIMR Supervisor
T Knox	BSc(Hons)	P Ryan
F Kolahdooz	BSc MSc GradDipPubHlth	A Green
S Kopp	BVetSc	J McCarthy
M Lai	BSc(Hons)	C Schmidt
K Landers	BAppSc(Hons)	M Lavin
E Leddy	BAppSc(Hons)	N Subramaniam
N Lee	BBiotech(Hons)	J McCarthy
K Lee	BSc(Hons)	P Ryan
K Lim	MBBS BDS	S Lakhani
K Loh	BAppSc MBiotech	B Leggett
L Major	BAppSc(Hons)	A Suhrbier
K Markey	BEng(Chem) (Hons)	G Hill
Nico Martin	BSc MSc	N Martin
P McBride	BMedSc MBBS	A Green
J McCarron	BAppSc(Hons)	A Boyd
N McDougall	BAppSc(Hons)	P Parsons
L Meredith	BSc(Hons)	D Harrich
R Middleberg	BSc(Hons)	N Martin
S Moore	RN BHlthSc MPH	A Green
D Morgan	BSc(Hons)	E Whitelaw
K Morley	BSc(Hons)	N Martin
B Morrison	MSc BABiology	J A Lopez
M Mosing	Mpsych	N Martin
D Muslim	BSc(Hons) BBioSc	N Subramaniam
M Neller	BAppSc(Hons)	C Schmidt
P Nguyen	BMed MPH	P Ryan
N Pandeya	BSc MMedSc GradDipAppSc	A Green
Y Panpisutchai	BSc MSc	M Good
C Peatey	BSc(Hons)	D Gardiner
L Randall	BSc(Hons)	C Engwerda
N Ranjit	BBiotech(Hons)	A Loukas
P Rattanasena	MSc	A Suhrbier
A Redmond	MBBS	D Doolan
M Reiter	BSc(Hons)	C Schmidt
N Richmond	BAppSc(Hons)	A Green
R Robb	BMedLabSc (Hons)	G Hill
D Roberts	BSc(Hons)	N Hayward
M Sheel	BSc(Biotech)	M Good
S Shekar	BSc(Hons)	N Martin
D Sivakumaran	BSc(Hons)	D Harrich
K Smith	MBBS MBChB	A Green
M Smout	BSc(Hons)	A Loukas

PhD Scholars		QIMR Supervisor
A Suraweera	BSc(Hons)	M Lavin
S Tey	MBBS(Hons) FRACP FRCPA	R Khanna
M Ting	BSc(Hons)	A Boyd
T Tran	BSc(Hons)	J McCarthy
P Tran	MPH BMed	P Ryan
A Twist	DipTeach MCommNut	A Green
C Verweij	MPsych	N Martin
K Warren	BMedSc(Hons)	D Harrich
N Wayte	BSc(Hons)	G Trench
N Whitelaw	BSc(Hons)	E Whitelaw
E Williams	BSc(Hons)	M Lavin
C Willis	BSc MSc	D Kemp
M Wood	MBBS FRACP	G Ramm
D Worthley	MBBS(Hons)	B Leggett
K Wynn	BAppSc(Hons)	R Khanna
B Zietsch	BPsychSc(Hons)	N Martin

MAppEpiSc Scholar		
V Clements	BAppSc	A Green

MBiotech Scholars		
D Menon	BSc P/ GDipMicrobiall Biotech	K khanna
H Goswami	BSc(Hons)	J Gorman
N Patel	Bpharm Mbiotech	J Gorman
S Ravishankar	BSc(Hons)	N Hayward
A Umapathy	BSc(Hons)	B Leggett

MMolecBiol Scholar		
S Yekollu	MBBS	M Gandhi

MPH Scholar		
N Arovah	MD	A Green
H Nguyen	BIntStudies BEng	P Ryan

MSc Scholar		
W Fernando	BSc	B Leggett
M Lin	BSc	D Harrich
M Muthuvel	BTech	K Khanna
Y Tiwari	BSc	P Parsons
M Vinod	BSc	K Khanna

MPhil Scholar		QIMR Supervisor
R Barr	MBBS	P Parsons
B Kendall	MBBS	A Green

Coursework Masters Scholars		
F Bokhari	BMedSc	A Boyd
S Naik	BEngBio	C Schmidt

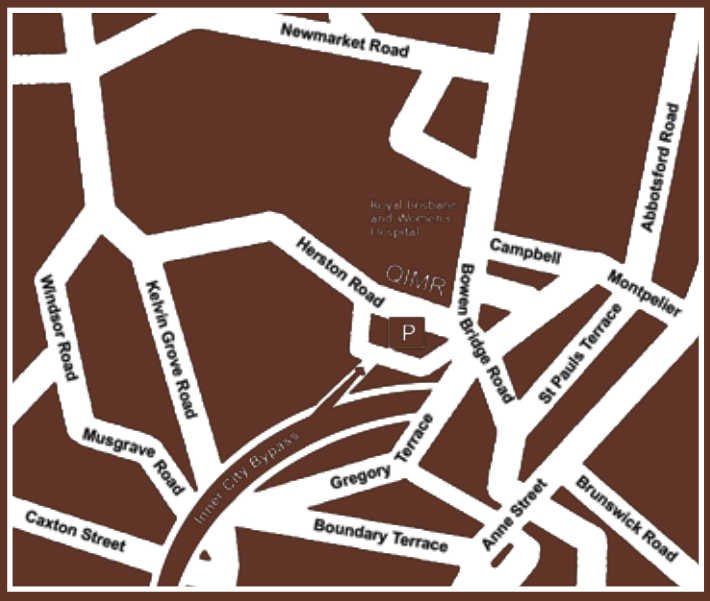
Honours Scholars		
N Barker	BAppSc	N Subramaniam
J Cornock	BAppSc	G Anderson
Z Dost	BBiotech	J McCarthy
K Dutton-Regester	BAppSc	B Leggett
I Fang	BSc	A Loukas
C Fraser	BSc	N Martin
I Gillions	BSc	J A Lopez
P Giacomantonio	BSc	A Loukas
Y Lim	BSc	M Lavin
J Lim	BSc	D Gardiner
S Nayler	BSc	M Lavin
B Polkinghorne	BSc	A Loukas
D Raffelt	BAppSc	G Anderson
A Roberts	BSc	E Whitelaw
D Rowsell	BBiotech	B Leggett
E Watt	BCommerce	G Anderson
P Whiley	BSc	A Spurdle
Y Wilson	BAppSc	C Engwerda
S Young	BSc	E Whitelaw

BAppSc Scholars		
L Whop	-	A Green

Acronyms

ACITH	Australian Centre for International and Tropical Health
ACVD	Australian Centre for Vaccine Development
AHMAC	Australian Health Minister's Advisory Council
ANU	Australian National University
APC	Antigen presenting cells
AQIS	Australian Quarantine and Inspection Service
ARC	Australian Research Council
ASMR	Australian Society for Medical Research
BCAC	Breast Cancer Association Consortium
BMT	Bone marrow transplantation
CCQ	Cancer Council Queensland (formerly Queensland Cancer Fund)
CQR	Chloroquine resistance
CQU	Central Queensland University
CRCAH	Cooperative Research Centre for Aboriginal Health
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CTL	Cytotoxic T lymphocyte or cytolytic T lymphocyte
DASL	Datapoint's advanced system language
DC	Dendritic cells
DEST	Department of Education, Science and Training
EBV	Epstein-Barr virus
EDRM	Electronic document and records management system
FDA	Food and Drug Adminstration
GMP	Good manufacturing practice
GU	Griffith University
GVHD	Graft versus host disease
GWAS	Genome wide association scans
HCMV	Human Cytomegalovirus
HIV	Human Immunodeficiency virus
HL	Hodgkin's Lymphoma
HLA	Histocompatibility antigen
HPLC	High performance liquid chromatography
LEAP	Life Science Education Advancement Partnership
MGE	mobile genetic elements
MHC	Major histocompatibility complex
MSI	Microsatellite instability
NCRIS	National Collaborative Research Infrastructure Strategy
NHMRC	National Health and Medical Research Council
NPC	Nasopharyngeal carcinoma
OGTR	Office of the Gene Technology Regulator
PDA	Personal digital assistant
PWC	Pricewaterhouse Coopers
QAP	Quarantine Approved Premises
QBEN	Queensland Biotechnology Education Network
QUT	Queensland University of Technology
QWAG	Queensland Washington Advancement Group
RBWH	Royal Brisbane and Women's Hospital
RDT	Rapid diagnostic test
SMIPP	Scabies mite inactivated protease paralogue
TMA	Tissue microarray
TNF	Tumour necrosis factor
UCLA	University of California Los Angeles
UCSD	University of California San Diego
UE	University of Edinburgh
ULP	Université Louis Pasteur
UQ	The University of Queensland
WHO	World Health Organisation

Our Location



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