THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

UQCCR

ANNUAL REPORT 2009

CONTENTS

1 Message from the Centre Director

2 Highlights for 2009

3 Research Themes
- Molecular and Cellular Pathology
- Clinical Neuroscience
- Tissue Inflammation and Injury Repair
- Clinical Trials and Outcomes
- Imaging
- Stem Cell Research
- Perinatal Medicine

17 UQCCR Research in 2010

18 UQCCR Research Higher Degree Students

19 Community Engagement

20 Appendices for 2009
1. Research Grant Income
2. Publications
3. Research Higher Degree Student Projects
4. Staff List
5. Key Performance Indicators Report

MESSAGE
FROM CENTRE DIRECTOR

Our first full year in the new centre has been one of pleasing growth, as we consolidate around the theme of excellence in clinical research. With over 175 staff now, we are well on the way to our target of 350. Clearly it has been important not to grow too quickly at the expense of quality, and this report attests to the high success rate achieved by our 12 group leaders and 6 associate investigators in the national grant rounds. The collaborative and interdisciplinary culture established along with our clinical focus has resulted in not only more publications, but better impact factors, with CCR researchers increasingly featuring in national and international media. Training tomorrow's researchers is core business, and our nearly 70 research higher degree students include a modest but growing number of clinicians. Thus we were delighted that Queensland Health chose CCR to launch its Health and Medical R&D Strategy, and the country's best funded clinical research fellowship scheme.

As 2009 ends, we will regain additional space when the decant of School of Medicine and Queensland Health staff ends with completion of refurbishment of the Health Sciences Block. Four of CCR's five wet laboratory floors are now fully commissioned, and boast state of the art equipment. Clinical trial numbers are growing but less than predicted pre GFC, and we are in negotiations with both Royal Brisbane and Women's Hospital and the Queensland Institute of Medical Research to accommodate campus-wide imaging and outpatient research activities.

This will be my last report, as I move on to the post of Executive Dean in the Faculty of Health Sciences. I am grateful to all UQCCR staff for their sterling effort in building both the research and administrative platforms, and look forward to maintaining involvement through my own research group. UQCCR's leadership is indeed strengthened, with the appointment of Professor Murray Mitchell as the new Director. Murray will draw on an outstanding international career spanning senior appointments in Oxford, leading US centres, and the Liggins' Institute in Auckland, along with an h index of 60, to bring in new ideas in clinical research and research management. I see exciting times ahead.

Professor Nicholas M Fisk
DIRECTOR

UQCCR 2009

HIGHLIGHTS

UQCCR secured $7.865 million in new competitive grant funding in 2009, the majority of which came from the National Health and Medical Research Council (NHMRC). This represents an overall success rate of 42% in NHMRC rounds, which is twice the national average. In addition, UQCCR researchers are collaborating on a further $4.1million in new competitive grants.

Publications are a key measure of research performance and in 2009 UQCCR researchers published 113 papers including publications in prestigious high impact journals Nature Genetics, Journal of the American Medical Association and the New England Journal of Medicine.

UQCCR researchers were also successful in securing $2.725m in highly competitive Fellowships:

- Queensland Senior Clinical Research Fellowship – Professor David Paterson
- National Breast Cancer Foundation Fellowship – Dr Peter Simpson

In addition, two UQCCR researchers received awards for their research and teaching;

- Queensland Tall Poppy Scientist of the Year – A/Professor David Copland
- UQ Award for Excellence in Research Higher Degree Supervision – Professor Paul Hodges

These awards celebrate achievements in research excellence, communication to engage the community and in fostering the next generation of researchers.

Professor Paul Hodges was also named as one of the Weekend Australian Magazine's next Emerging Leaders.

UQCCR held its first Research Higher Degree Students Open Day in September, attracting over 50 students. This resulted in the recruitment of 6 summer research scholarship and 5 Honours students. UQCCR recruited 16 new RHD students in 2009 and are supporting a further four international RHD students as part of UQCCR's commitment to train tomorrow's generation of translational researchers and further develop international research collaborations.

UQCCR aims to bridge the gap between exponentially-expanding biomedical science and the increasing complexity of modern patient care. Our joint 'bench to bedside' and 'bedside to bench' focus addresses a critical area of unmet need in the early 21st century.

UQCCR RESEARCH

To meet our aim to provide better treatment and results for patients, as well as adding to the body of knowledge about particular diseases or problems, the UQCCR brings together leading medical researchers in state-of-the-art facilities, providing a focus for world-class clinical research. UQCCR research is organised along four focal themes:

MOLECULAR AND CELLULAR PATHOLOGY

Researchers investigating breast, prostate, oral and skin cancer are developing a better understanding of the links between pathological changes at the molecular and cellular level and the clinical expression of the disease seen at the bedside. This research is paving the way for development of novel or improved diagnostic technologies, and better methods of treatment.

CLINICAL NEUROSCIENCE

This program is developing and evaluating new modes of diagnosis and treatment of brain disorders, particularly dementia, stroke, movement disorders, and brain injury in adults and babies. Research includes the areas of neuroimmunology, neuropharmacology, neuroimaging and neuroprotection.

TISSUE INFLAMMATION AND INJURY REPAIR

Inflammation is a fundamental part of many diseases and a prime target for therapeutic interventions. The tissue inflammation and injury repair research program links basic research on inflammation and repair with new approaches to treating inflammation and promoting repair. This includes a focus on a range of injuries such as burns, infection and arthritis, as well as damage caused by genetic and autoimmune diseases.

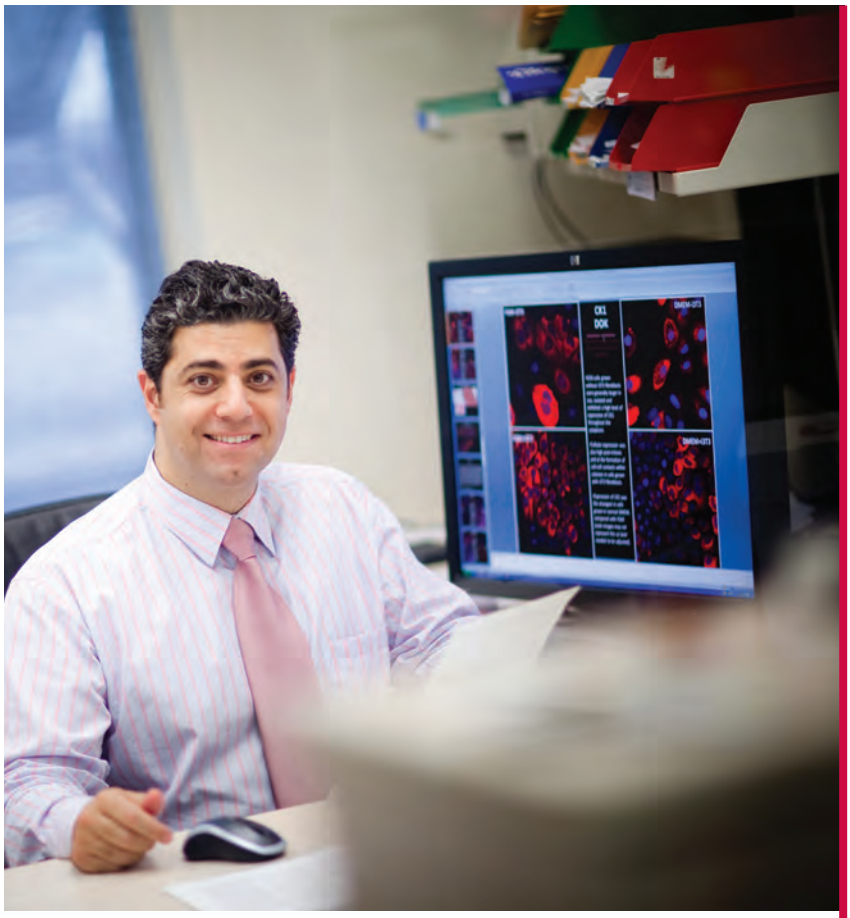
CLINICAL OUTCOMES AND CLINICAL TRIALS

Clinical trials are intrinsic to our mission of delivering the benefits of new medical research to patients. UQCCR's location alongside one of Australia's largest hospitals optimises opportunities to conduct intensive investigation of how patients respond to new treatments and modes of diagnosis. The Centre continues to grow clinical trials research particularly focusing on ambulatory Phase Two - Early Phase Three trials and developing new databases to monitor health outcomes.

These four major research themes are linked by cross cutting themes in stem cell research, imaging and perinatal medicine.

The Centre's Group Leaders are internationally acknowledged for their research excellence and have proven track records in attracting competitive funding and fellowships. The following pages outline the research interests of UQCCR's Group Leaders.

MOLECULAR AND CELLULAR PATHOLOGY



Associate Professor Camile Farah

Improving diagnosis of oral cancer

Associate Professor Camile Farah is a UQCCR Group Leader and program leader of the Oral Cancer Research Group. His research uses a range of novel technologies, including optical fluorescence imaging to diagnose oral cancer at its earliest stages, allowing early forms of treatment to be applied with maximal effect. The program also investigates the role cancer stem cells play in the propagation and recurrence of cancerous and pre-cancerous lesions. The underlying premise of this research is to create a molecular signature for pre-cancerous conditions that can be used as a diagnostic test to either replace or supplement standard histopathological interpretation of oral epithelial dysplasia and oral squamous cell carcinoma. Comparative molecular profiling of adult human epithelial stem cells from histopathologically normal versus dysplastic oral epithelium aims to identify clinically useful molecular biomarkers to improve diagnostic and prognostic practices in the management of oral cancer.

Professor Robert 'Frank' Gardiner

Early detection and prognosis of prostate cancer

UQCCR Group Leader Professor Gardiner is a senior Urologist holding an appointment at the RBWH. Professor Gardiner's research focuses on the early detection and prognosis of prostate cancer and improving psycho-social outcomes for patients. The Gardiner group has pioneered research into non-invasive early detection of prostate cancer by RNA and protein profiling of prostatic fluid. In partnership with Professor Martin Lavin (UQCCR & QIMR), the structure of the most significant molecular marker, PCA3, was redefined and currently the function of the redefined gene and its isoforms is being investigated. This group have reported that the PCA3 gene is embedded in a protein BMCC1, which, together with its isoforms, is also being investigated. It is expected that this research will assist in improving the early diagnosis of prostate cancer and provide targets for novel therapeutic approaches.

The Gardiner group, in close collaboration with Adjunct Professor Chambers and Northern Section colleagues, is undertaking NHMRC-supported prospective studies to investigate the psycho-social aspects of prostate cancer. The research aims to predict and promote long-term psycho-social adjustment of men and their partners following diagnosis and treatment of localised prostate cancer.

Professor Sunil Lakhani

Investigating the mechanisms of breast cancer

Professor Lakhani's group investigates the molecular and cellular pathology of breast disease, in particular in breast carcinogenesis. With joint academic (UQ) and clinical appointments (Pathology Queensland), Professor Sunil Lakhani is an integral part of breast cancer patient management in the Breast Unit of the Royal Brisbane and Women's Hospital (RBWH). Questions arising from clinical practice within the Breast Unit are brought into the laboratory for investigation with the hope of translating the information back to the clinic for practical use in making patient related decisions. Comprised of both scientists and practicing clinicians, the overall objective of the group is to combine cutting edge molecular technologies with traditional pathological assessment to deepen our understanding of the mechanisms involved in the development and progression of breast cancers. This is pursued to develop better prognostic and predictive markers to improve patient management in the clinic and to uncover mechanisms of tumour initiation and spread, with the hope of identifying new molecular pathways suitable for targeted therapy.

Breast cancer is a very heterogenous disease making both morphological and molecular classification of disease and management of patient treatment a significant challenge. The group's research focus includes understanding the multistep progression from normal breast tissue and stem cells, pathology and metastatic mechanisms of lobular carcinomas, mechanisms of metastases related to basal-like breast cancers and application of pathology to assess risk in familial breast cancers. The Lakhani group is also part of the international cancer genome consortium (ICGC) involved in generating a comprehensive catalogue of somatic mutations in breast cancer. Collectively, these projects aim to accelerate research into the pathogenesis of breast cancer and the translation into clinical practice.

Professor Martin Lavin

Understanding DNA damage response in cancer

Professor Martin Lavin is a Group Leader at UQCCR, an NHMRC Senior Principal Research Fellow and also holds an appointment as Assistant Director of the Queensland Institute of Medical Research.

His major areas of research are centred on the genetics and biology of the human genetic disorder ataxia-telangiectasia, and related autosomal recessive ataxias, isolation of novel compounds from snake venoms important in haemostasis and in collaboration with Professor Gardiner, the early detection of prostate cancer.

The major focus of Professor Lavin's research has been on the importance of DNA damage response in minimising genetic instability, cancer, and other pathologies.

CLINICAL NEUROSCIENCE

Dr Judith Greer

Investigating the neuroimmunological basis of diseases affecting the nervous system

Dr Greer's research focuses on diseases affecting the nervous system, particularly those in which the immune response plays (or may play) a role. The major focus of the laboratory is multiple sclerosis (MS). In particular, the aims are to identify brain components that are targeted by the immune system in people with MS, to determine how immune responses within the nervous system relate to the symptoms experienced, and to develop specific new ways to turn off the damaging immune responses in the brain.

The work on MS is done in collaboration with the MS clinic at the RBWH, which is directed by Professor Micheal Pender, and with the laboratory of peptide chemist Dr Elisabeth Trifillieff in Strasbourg, France.

Collaborating with Associate Professor Pamela McCombe, the Greer group investigates immune activation after a person has had a stroke and whether this activation of the immune system is beneficial or harmful to the patient. In addition, the Greer research team is working with Professor Bryan Mowry to investigate whether some people with schizophrenia make an autoimmune response directed against components of the neurotransmitter receptors in the brain.

Associate Professor Pamela McCombe

Immunological basis of human neurological disease

Associate Professor Pamela McCombe's research interest is in the field of neuroimmunology, both in how the immune system causes disease of the nervous system, and more recently, in how the immune system might contribute to recovery from damage. At a fundamental level, there are common pathological processes in all diseases of the brain, and understanding the role of inflammation is one theme of this research.

Much of A/Professor McCombe's research in neuroimmunology has been done in the fields of MS and in neuromuscular disorders. In MS research, the group has a focus in the regulation of inflammation. In stroke the group is trying to understand whether inflammation is harmful or beneficial. Interest in neuromuscular diseases has led to studies of motor neuron disease (MND), both in neurophysiology and in immunology. A/Professor

McCombe currently collaborates with Dr Rob Henderson and staff of the Department of Mathematics, QUT, in a study of motor unit number estimation. This novel method of assessing loss of motor neurones in MND will be correlated with studies of other biomarkers in MND.

Another theme of the research is the influence of gender and pregnancy on neurological disease. Gender influences the prevalence and the clinical course of many neurological diseases, but a particular interest is in multiple sclerosis, which is more common in women, and MND, which is more common in men. Pregnancy also influences diseases of the nervous system, and the group is studying how pregnancy impacts the clinical course of disease and the effects of pregnancy on gene expression in the nervous system.

Associate Professor Stephen Rose

Detection and monitoring disease processes of the brain

Associate Professor Rose's research interests are focussed towards the development and application of advanced MRI techniques to aid the detection and monitoring of disease processes of the brain, along with developing methods of measuring the efficacy of new therapies.

Motor Neuron Disease (MND) is a progressive disease of the upper and lower motor neurons, leading to paralysis and death within 3-5 years. The cause of MND is unknown although many theories of pathogenesis have been proposed, and some patients with familial MND have mutations in known genes. There is one drug therapy, which has a modest effect, and further therapies are urgently required. However, a fundamental problem hindering discovery of an effective treatment is the lack sensitive biomarkers available for probing the pathogenesis of MND and providing robust measures for early diagnosis and monitoring disease progression. In collaboration with Dr Robert Henderson, A/Professor Pamela McCombe, Department of Neurology (RBWH), the Rose Group are developing novel non-invasive biomarkers for MND based on MRI diffusion tractography and structural connectivity analysis techniques.

Professor David Pow

Understanding the cellular and molecular basis of brain injury

Professor David Pow and his group are interested in the area of neurotransmitter homeostasis in the normal and pathological brain. Their research is focussed on the roles of glial and neuronal glutamate transporters in determining outcomes at the cellular and whole-brain level after hypoxic insults to the brain. The team has been active in cloning new glutamate transporter splice variants and determining how expression of such variants changes in disease including Alzheimer's disease and age-related macular degeneration.

Recently the Pow group have found that a protein in the glial cells, glutamine synthetase, may be one of the earliest proteins to be perturbed in the brain after an insult. This finding is significant as glutamine synthetase is a key regulator of "excitotoxic" or damaging events in the brain. A second facet of their work has been in showing molecules that regulate glutamate levels in the brain, including transporters, glutamine synthetase and the sodium potassium ATPase (which drives glutamate transport), are bound together in a larger macromolecular complex. This new finding of a regulated complex, which can become dys-regulated after hypoxic insult (with disastrous consequences), presents new opportunities for pharmacological targeting.

Professor Pow's research projects additionally focus on the effects of microhaemorrhages on the organisation and function of the brain and retina, and investigating the pathobiology of glaucoma.

Associate Professor David Copland

Understanding the brain mechanisms underlying language processing and disorders

Associate Professor David Copland is a Senior Research Fellow at UQCCR. His research group work focuses on the neural substrates of language processing, adult neurogenic language disorders and language recovery.

A/Professor Copland's Language Neuroscience Laboratory (LNL) conducts research into the brain mechanisms underlying healthy language processing, language disorders, and language treatment, and of particular interest, in recovery. Language processing is investigated in the following populations: stroke, Parkinson's disease, dementia, schizophrenia, Huntington's disease, and children with developmental language and literacy disorders. The group's research themes centre on the neurocognition of language and include cortical versus subcortical language mechanisms, neuroplasticity, pharmacological modulation of language, interactions between cognition and language, and hemispheric contributions to language. Techniques employed include psycholinguistic behavioural tasks (including semantic priming and lexical decision), functional MRI, event-related potentials (EEG), pharmacological challenge, and divided visual paradigms.

Professor Paul Colditz

Achieving the best possible health outcomes for mother and baby

Research by the Colditz group aims to achieve the best possible health outcomes for mother and baby. Research areas include brain development and injury in the neonate. A lack of oxygen (hypoxia) and poor blood supply (ischemia) at the time of birth is a significant cause of neonatal death and long-term neurodevelopmental disability. Babies who survive a hypoxic/ischemic (HI) insult are at increased risk of seizures and cerebral palsy leading to lifelong neurological deficits effecting cognitive, learning and motor abilities. Present strategies for detection and treatment of HI and seizures in the neonate are extremely inadequate. Research aims to minimise hypoxic-ischemic brain damage and reduce long-term disability. Additional research focuses on characterisation of neuroinflammation after neonatal hypoxia-ischemia and the impact of neonatal hypoxia-ischemia on the transmission of nerve impulse by the serontonergic system in the brain.

Prediction of outcome following hypoxic brain injury can be difficult. The electroencephalogram (EEG), a passive measurement of electrical activity on the scalp, can be used to assess the newborn's cerebral dysfunction. Often, the EEG is the only clinical tool available for analysing cerebral function in high risk newborns. Newborn EEG is a complex signal and requires advanced signal processing methods to extract the required information. Researchers in the Colditz group aim to apply and develop new signal processing methods to automatically extract clinically usefully information from the EEG, which will aid the clinician's prognosis for the newborn.

TISSUE INFLAMMATION AND INJURY REPAIR

Professor David Paterson

Study of epidemiology of infections with antibiotic resistant organisms

Professor Paterson is a Brisbane trained Infectious Disease Physician whose clinical work, research and teaching has been honoured and recognised internationally. His research interests includes study of the molecular and clinical epidemiology of infections with antibiotic resistant organisms. The focus of this work is the translation of knowledge into optimal prevention and treatment of these infections.

In 2009 Professor David Paterson, received a QH Senior Clinical Research Fellowship to stem the invasion of organisms, which are resistant to all antibiotics and current treatments.

Professor Kiarash Khosrotehrani

Understanding physiological and disease processes in skin biology

Professor Khosrotehrani's research focuses on understanding important physiological and disease processes in skin biology with a special interest in translating this knowledge into prognostic, diagnostic or therapeutic tools for patients.

Melanoma is a life threatening skin cancer that affects young, as well as adult individuals. The occurrence of metastases severely reduces survival and to date there is no treatment for this stage of the disease. Current intense therapeutic approaches are hampered by severe toxicity with reduced efficiency possibly because they are not sufficiently targeted on patients at risk of metastases. The research objective of the Khosrotehrani group is to determine early molecular markers of metastatic evolution of melanoma.

Professor Khosrotehrani also investigates auto-immune disorders. Auto-immune disorders account for some of the most debilitating diseases affecting both elderly and pediatric populations. Despite significant advances in patient care, treatment options are hampered by significant morbidity. Recently, several studies have shown the association between microchimerism acquired during gestation and auto-immune disorders that may resemble graft versus host disease suggesting that donor-recipient allogeneic responses may be at the basis of the disruption of tolerance in these individuals resulting in an auto-immune disorder.

Professor Nicholas Fisk

The role of fetal mesenchymal stem cells in tissue repair

Nick Fisk is the inaugural Director of UQCCR. He is also a maternal-fetal medicine specialist / high risk obstetrician at the Royal Brisbane and Women's Hospital.

Professor Fisk's laboratory and clinical research programmes have achieved an international reputation in fetal diagnosis and treatment. His main research interests lie in human fetal mesenchymal stem cell biology and monochorionic multiple pregnancy. His laboratory group investigates novel properties of human fetal stem cells with properties 'betwixt and between' those of embryonic and adult stem cells, and how they repair tissues in the mother and the fetus. In particular, they are working up intrauterine stem cell therapy to treat babies with disabling congenital conditions like brittle bone disease inside the womb.

CLINICAL TRIALS AND OUTCOMES

Professor Paul Colditz

Achieving the best possible health outcomes for mother and baby

The Colditz group is actively involved in improving health care, by engaging hospital clinicians in 31 major international collaborator clinical trials. The group maintains a sophisticated, efficient and internationally recognised co-ordination service for a wide range of multi-centre trials aimed at improving outcomes for mothers and babies. Research interests also focus on child health surveillance and development of strategies to sustain outcome improvements in children born at high-risk of developmental disability. The Colditz research team have been instrumental in the design of the Developmental Assessment Programme for high risk infants and are currently developing and validating tools to monitor neonatal and environmental risks and emerging pathologies from preterm birth through childhood.

Professor Robert 'Frank' Gardiner

Early detection and prognosis of prostate cancer

With colleagues of the Northern Section of the Urological Society of Australia and New Zealand, the Gardiner group is undertaking the first randomised study of robotic and open prostatectomy in a large collaborative study. The research aims to examine standard clinical and oncological parameters in both groups and evaluate quality of life, economic costs and life expectancy profiles for patients.

Professor Gardiner's clinical studies at UQCCR focus on improving outcomes for prostate patients and enhancing the quality of life for patients.

Associate Professor David Copland

New treatments of neurogenic communication disorders

Pharmacotherapy for neurogenic cognitive and communication disorders holds significant potential but is virtually untapped and its neurobiological basis is unknown. The Copland team has identified some of the neural mechanisms engaged during dopaminergic modulation of language and have obtained preliminary evidence that certain drugs paired with behavioural treatment can significantly boost gains made above those seen when language treatment is given alone. New behavioural treatments for communication disorders are also being developed.

New treatments and management approaches are being developed for communication disorders utilising (1) hemispheric manipulations of attention and language in aphasia, and (2) new memory and communication training procedures for individuals with dementia and their carers.

Dr Andreas Zankl

Bridging the gap between clinical and molecular research in bone dysplasias

Dr Zankl is a clinical geneticist whose research studies bone dysplasias to improve diagnosis and management of these rare disorders. Bone dysplasias are genetic disorders of the skeleton. More than 300 different bone dysplasias are currently known. Bone dysplasias can cause dwarfism, brittle bones, leg and spine deformities and many other complications. Achondroplasia and Osteogenesis imperfecta are two well-known examples, but there are many others.

Bone dysplasias offer a rare opportunity to study the impact of single genes on human bone and cartilage development. By studying patients with rare bone dysplasias, insight is gained into the mechanisms that lead to common skeletal disorders such as arthritis and osteoporosis. Clinicians have delineated over 370 different bone dysplasias and biologists have identified over 200 associated genes. The Skeletome project has enabled the capture of this knowledge and bridges the gap between clinical and molecular research by storing and cross-referencing clinical and molecular information on bone dysplasias in a web-accessible database. Dr Zankl spearheaded the establishment of The Queensland Bone Dysplasia Registry. The registry is the only one of its kind worldwide and collects detailed medical information on patients with bone dysplasias to establish the natural history and best medical management for each bone dysplasia.

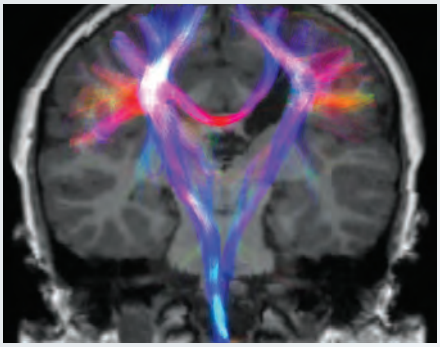
IMAGING

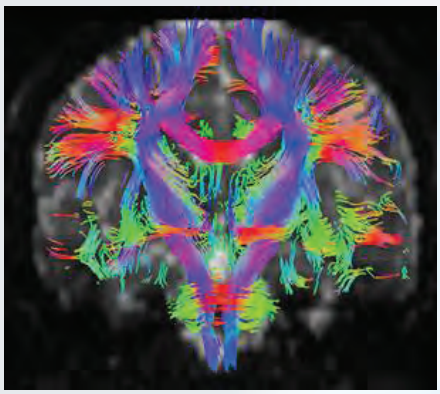
Associate Professor Stephen Rose

Detection and monitoring disease processes of the brain

The early detection of a positive therapeutic response is critical for successful cancer treatment for brain tumours. In collaboration with MedTeQ, The Australian e-Health Research Centre, the Department of Medical Imaging, Department Oncology and the Queensland PET Service (RBWH), a new research program aimed at the development and translation of novel MRI-PET fusion technology using FDOPA to improve the detection of tumour recurrence and assist in the optimisation of radiation treatment planning has recently commenced. The group is taking a novel approach in integrating FDOPA PET imaging with dynamic contrast enhanced MRI and diffusion based structural connectivity measures to improve delineation of tumour margins. This project has received funding from the Queensland Government Smart State Innovation Fund and the NHMRC.

A second project targeting the development of integrated fMRI and MRI diffusion tractography technology for improved neurosurgical planning for patients with brain tumours is also underway.





A MRI diffusion tractography map showing many of the major white matter pathways in the brain. Such technology can be used to measure the integrity of specific WM pathways and the anatomical connectivity between different cortical regions.

Associate Professor David Copland

Understanding the brain mechanisms underlying language processing

By using functional and structural neuroimaging to understand the brain mechanisms underlying language disorders and their recovery and treatment, diagnostic markers for recovery and response to treatment can be identified and more targeted and effective rehabilitation can be delivered. The effects of deep-brain stimulation treatment in Parkinson's disease are also being investigated by the Copland group.

The facilities include a 128 channel Geodesics EEG system, dedicated psycholinguistic testing facilities (for groups and individuals), and access to a 4 Tesla Bruker MRI scanner through collaborations with Katie McMahon and Greig de Zubicaray at the Centre for Magnetic Resonance, UQ. Collaborating with Professor Linda Worrall the group work on aphasia as part of the NHMRC CCRE in Aphasia Rehabilitation.

STEM CELLS

Professor Kiarash Khosrotehrani

Understanding physiological and disease processes in skin biology

The epidermis is the first barrier against infections and helps our body maintain its water and heat. This is performed throughout life by the activity of epidermal stem cells that enter terminal differentiation. The group's research intends to find new technologies to track the activation and progeny of epidermal stem cells and the way their surrounding environment such as a wound, fibroblast populations or their location might influence them with potential translation in models of skin wound healing.

Professor Nicholas Fisk

The role of fetal mesenchymal stem cells in tissue repair

Professor Fisk's experimental fetal medicine group works on the role of fetal mesenchymal stem cells (fMSC) in tissue repair. MSC hold promise to treat a range of unmet medical need in hereditary, acquired and degenerative disease. fMSC cells have therapeutic potential, being more primitive than adult MSC with greater differentiability, but lack the oncogenicity of embryonic cells. They are readily isolated from placenta, amniotic fluid, fetal blood, liver and bone marrow. fMSC express adhesion molecules favouring engraftment, and their transplacental passage is implicated in fetomaternal microchimerism (FMC), whereby fMSC persist lifelong in women to participate in post-reproductive tissue repair. Intrauterine transplantation holds promise to treat disabling early-onset genetic disease, and the Fisk group recently showed experimentally that a single MSC transplant in mid gestation prevents 2/3 of fractures in osteogenesis imperfecta.

By characterising novel properties of fMSC the group aims to compare fMSC to later developmental and adult stem cells, to explore stability, transcriptional regulation, immunology and drivers to differentiation of fMSC under varying conditions though to senescence. Before translation into clinical trials, the group is testing the ability of fMSC to repair bone in early and adult life, and how to manipulate the homing and engraftment machinery to maximise the effect of transplantation. The research aims to develop stem cell transplantation to repair debilitating early onset genetic disease, and has wider application to childhood and adult diseases.

PERINATAL MEDICINE

Professor Paul Colditz

Achieving the best possible health outcomes for mother and baby

UQCCR Group Leader Professor Paul Colditz is the Foundation Professor of Perinatal Medicine at the University of Queensland and Director of the Perinatal Research Centre (PRC). Professor Colditz's multidisciplinary research group focuses on clinically important perinatal health problems. Research staff and students are from diverse backgrounds including medical, science, nursing, psychology, physiotherapy, other allied health, signal processing and biomedical engineering.

The Colditz group is pursuing a number of research directions aimed at improving outcomes for mothers and babies. Poor cardiovascular function in babies born prematurely is associated with increased risk of brain injury. Studies aimed at understanding the reasons for poor cardiovascular function will contribute to improved treatments for preterm babies. State-of-the-art equipment for assessing body composition in babies is being used to study the maternal factors which influence fetal growth and may help to address the current obesity epidemic. Methods for assessing fetal activity may help to reduce the incidence of stillbirth.

Professor Nicholas Fisk

Fetofetal transfusion

This clinical program investigates the fetoplacental circulatory pathophysiology and treatment of twin-twin transfusion syndrome. This is a debilitating fetal condition, which arises from unbalanced transfusion along placental vascular anastomoses in monochorionic or single placenta twins where a net recipient develops volume overload and polyuria and a net donor growth restriction, oliguria and fetal compromise. Despite advances in treatment TTTS still results in a high rate of fetal death or long-term brain injury. Although considered rare, TTTS affects nearly as many babies as Down syndrome. The aim is to refine and develop better treatments.

Associate Professor Stephen Rose

Detection and monitoring disease processes of the brain

Perinatal asphyxia occurs in about 4 in 1000 births and carries with it a high risk of death or neurological disability throughout life. In a joint collaborative project with the Professor Paul Colditz (Perinatal Research Unit, UQCCR), the group is developing diffusion based structural connectivity techniques to improve the detection of neonatal ischemic brain injury and monitoring mechanisms of brain recovery. Similar technology is also being applied to measure new rehabilitation strategies in children with cerebral palsy. This is a collaborative project with Associate Professor Ros Boyd (Rehabilitation and Cerebral Palsy Research Centre).

UQCCR

RESEARCH IN 2010

UQCCR aims to consolidate its success in obtaining new grant income, with 23 new grants starting in 2010 (Appendix 1). Of particular note are the NHMRC grants to the Fisk and Rose groups, which will considerably strengthen the developing themes in Stem Cell Therapy and Imaging research. These crosscutting themes underpin and link our core themes of Neuroscience and Tissue Inflammation and Injury Repair.

The Fisk Group will be researching Osteogenesis imperfecta, which is a genetic disorder causing brittle bones and fractures. Currently, there is no treatment available, however, transplanting stem cells before birth could allow the development of healthy bones early in life. Despite promising effects in animals, stem cell uptake is currently too low to prevent fractures and ameliorate pain and deformity. The Group is therefore studying how to improve the uptake of stem cells given to the fetus and neonate, with a view to develop a treatment suitable for eventual use in humans.

There is also a high demand for effective treatments to rebuild and replace lost bone in fracture repair and osteoporosis in adults. The Fisk Group has previously described a discrete population of macrophages (classically immune defence cells) within the specialized tissues that line bones and have shown that these cells have a novel role in promoting the formation of new bone. Their second new NHMRC project in 2010 will extend these observations and identify the clinical potential of bone tissue macrophages to treat bone disease.

The Rose group will be researching ways to overcome the limitations of existing imaging technology and so improve the treatment of brain tumours. Despite recent advances, the mortality rate remains around 80% and the ability to define tumour margins accurately and delineate recurrent tumour from treatment-induced effects associated with chemoradiation therapy has significant therapeutic implications. The results derived from this PET-MRI fusion study will improve patient monitoring, help in the optimisation of treatment strategies leading to improved outcome, and assist in the development and evaluation of new brain tumour therapies.

UQCCR researchers are also part of a further 9 new collaborative grant teams working particularly with QIMR, the UQ Institutes (IMB and AIBN) and the School of Medicine and thus strengthening our Cellular and Molecular Pathology theme. The Collaborative grant sections of Appendix 1 outline the grants secured with collaborating partners.

In addition, UQCCR hosted 10 visiting academics from other national and international organisations, as well as welcoming four new international Research Higher Degree Students in 2009. This collaborative grant work and hosting of visiting staff is of considerable importance in developing links with colleagues in similar research areas, identifying new sources of funding, learning new techniques and accessing new pools of potential research students.

Early in 2010, UQCCR will welcome three new group leaders; Professor Murray Mitchell, Professor Greg Rice and Professor Wayne Hall. These appointments will considerably expand our perinatal research theme (Professors Mitchell and Rice) and further drive the mission to improve health outcomes (Professor Hall).

UQCCR continues to attract Clinical Trial studies, with two new trials already identified for 2010. These include a potential new drug to be used in the treatment of late-onset Alzheimer's Disease (led by Professor Gerard Byrne) and a pilot trial to compare the outcomes of robotic versus open prostatectomy (led by Professors Frank Gardiner and Geoff Coughlin).

A further new venture for 2010 will be to host two new national multi-disciplinary clinics for Fredrich's Ataxia and Ataxia Telangiectasia patients. These are both debilitating genetic disorders that cause progressive damage to the nervous and immune systems and are very rare. This means that clinicians managing the cases may never have encountered the condition before and the new clinics aim to bring together key medical disciplines with researchers to identify the research questions that need to be answered and to fast-track research results into treatment options.

UQCCR

RESEARCH HIGHER DEGREE

UQCCR very much appreciates the important contributions research students make to the success of the organisation. UQCCR is home to over 40 full-time Research Higher Degree (RHD) students, as well as Honours level students and summer scholars, working in all our research theme areas.

UQCCR is committed to providing students with the highest quality training in research and a comprehensive skills set to tackle the scientific challenges of the 21st century and offer students competitive top-ups, access to travel funds for attendance at national and international conferences and exposure to both national and international speakers through the seminar series program.

UQCCR also offers UQ students a range of opportunities to undertake Honours projects. Participation allows students to experience the rich intellectual resources and facilities of the UQCCR. Employers regard an Honours degree as a significant indicator of achievement and potential, and it is the most effective way of qualifying for higher degree admission at MPhil and PhD level.

UQCCR participates in the UQ Summer Scholarships programme, which gives UQ undergraduates a chance to sample research for a short 8-10 week period – giving them experience and a chance to make a input into a real research programme.

COMMUNITY ENGAGEMENT

SEMINAR SERIES

The UQCCR fortnightly Seminar Series is widely publicised around the Herston campus and aims to showcase a monthly external speaker. Speakers in 2009 included:

> Professor Fulvio Porta, Head of BMT and Oncohaematology Unit Spedali Civili, Brescia
Prenatal gene and cell therapy in genetic diseases

> Professor Dan Markovich, Professor of Physiology, School of Biomedical Sciences, University of Queensland
The Pathophysiology of perturbed Sulphate Homeostasis

> Associate Professor Ernst Wolvetang, Stem Cell Engineering Group Leader, Australian Institute for Bioengineering and Nanotechnology, UQ
Unraveling the biology of Embryonic and Induced Pluripotent Stem Cells

> Professor Timothy Walsh, Professor of Medical Microbiology and Antimicrobial Resistance School of Medicine Dept, Medical Microbiology Cardiff University
How big is the pink problem? The worldwide pandemic of antibiotic resistance in Gram negative bacilli

UQCCR also hosted a series of meetings in 2009 in collaboration with our colleagues at the Queensland Government and Queensland Health including:

> The Office of Health and Medical Research's launch of the QH Senior Clinical Research Fellowships Initiative

> Pathology QLD Grand Rounds Series

> National Health Workforce Taskforce Presenatation

> Clinical Practice Improvement Centre Meeting

> Coordination & Statewide Services Research Forum

The UQCCR meeting spaces have also become a focal point for seminars, meetings and conferences at the Herston Campus. In 2009 we were pleased to host:

> MMRI Stem Cell Symposium and Poster Session

> Australian Healthcare & Hospitals Association (AHHA) and Australian College of Health Service Executives (ACHSE) meeting

> Jennifer MacNevin Public Lecture

> Tourette Syndrome Association of Australia Meeting.

APPENDIX 1:

RESEARCH GRANTS

The following tables show new grants awarded to UQCCR researchers as principle investigators in 2009, and a list of continuing grants, awarded in previous years. UQCCR researchers are shown in bold text.

GRANTS AWARDED IN 2009

FUNDING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	INCOME
Australian Research Council	**Hodges PW,** Ashton-Miller JA, Christantinou CE, **Gardiner RA, Coughlin GD,** Sapsford R	Urinary continence & incontinence in men: New insights through New technologies	2010-2013	$285,000
Australian Research Council	**Lavin MF**	Characterisation of the novel mitochondrial protein (CABC1/ADCK3) and its role in protecting against oxidative stress	2010-2012	$300,000
Australian Research Council	**Lavin MF,** Roberts T	To investigate the role of the protein kinase SMG-1 in the stress response	2010-2012	$285,000
Australian Research Council	**Mesbah M, Colditz PB,** East C, Smeathers SJ, **Boashash B**	Detection and Quantification of General Fetal Movements from Accelerometer Measurements using Nonstationary Signal Processing Techniques	2010-2012	$150,000
Australian Research Council	**Copland DA**	How does dopamine modulate adult new word learning?	2010-2012	$210,000
Australian Stem Cell Centre	**Fisk NM, Raggatt LR**	Collaborative Stream 2 - Programming and Induction of Pluripotency: Module 7 - Primitive iPS-derived MSC for Bone Repair	2009-2011	$291,533
Mayne Bequest Fund	**Colditz PB**	Mayne Bequest Fund Research Support Award: Investigations into the causes underlying preterm and neonatal brain injury	2009-2012	$86,607
Multiple Sclerosis Research Australia	**Greer JM**	Molecular interactions underpinning lesion localisation in multiple sclerosis	2010-2012	$427,750
National Breast Cancer Foundation	**Simpson PT**	Early Career Fellowship	2010-2013	$600,000
National Breast Cancer Foundation	**Smart CE, Lakhani SR,** Trench G, Khanna K	Investigating luminal and basal cell differences: molecular and functional characterization of the normal breast epithelia.	2010–2011	$185,045
National Health and Medical Research Council	**Fisk NM, Pettitt AR, Khosrotehrani K, Raggatt LJ,** Steck R, **Zankl A**	Preclinical optimisation of intrauterine transplantation of fetal mesenchymal stem cells for osteogenesis imperfecta	2010-2012	$579,500
National Health and Medical Research Council	**Hodges P**	Why do people keep hurting their back: A longitudinal study of biological, psychological and social predictors	2010-2012	$709,521
National Health and Medical Research Council	**Lavin MF**	Role of Senataxin in protecting against neurodegeneration	2010-2012	$520,500
National Health and Medical Research Council	**Lavin MF**	Rad50 protects the integrity of the genome to minimise disease risk	2010-2012	$505,500

FUNDING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	INCOME
National Health and Medical Research Council	**Paterson DL**	NHMRC Practitioner Fellowship: Clinical implications of newer beta-lactamases	2010-2014	$300,625
Queensland Government	**Paterson DL**	Senior Clinical Research Fellowship	2010-2014	$2,125,000
National Health and Medical Research Council	**Rose SE,** Crozier S, Salvado O, Coulthard A, Thomas P, Fay M, Winter C, Bourgeat P	Improving the Assessment of Brain Tumour Treatment Outcome using 18F-FDOPA PET-MRI	2010-2012	$637,125
National Health and Medical Research Council	**Bjorkman T, Colditz PB, Dodd PR, Pow DV**	GABA excitotoxicity, neuroprotection and the perinatal brain	2009-2011	$526,500
National Health and Medical Research Council	**Pettit AR, Raggatt LJ**	Regulation of bone dynamics by osteal tissue macrophages (asteomacs).	2010-2012	$714,372
National Health and Medical Research Council	**Pow D, Barnett NL, Lingwood B, Bjorkman S, Buller KB, Colditz, PB**	Astrocyte Regulation of Ammonia and Glutamate in Neontal Hypoxia/Ischaemia	2010-2012	$505,125
Queensland Cancer Council	**Simpson PT,** Reis Filho J, Ellis E, Viale G, Waddell N	Improving the outcome of patients with invasive lobular carcinoma of the breast cancer.	2010-2011	$180,000
Queensland Nursing Council Experience Researcher Grant	**Pritchard MA,** Wiggins T, Beller E, Johnston L, Bogossian F, Callan S	Developmental surveillance in high-risk children: a nursing response to a growing heath and service dilemma	2009	$30,000
Ramaciotti Foundation	**Fisk NM**	A Multi-user Cell Sorting Facility	2010-2011	$50,000
Royal Brisbane & Women's Hospital Research Foundation	**Colditz PB**	The BRAIN Project	2010	$205,000
Royal Brisbane & Women's Hospital Research Foundation	**Sullivan S, Colditz PB**	Understanding the role of novel GFAP isoforms in neuroprotection of the brain after hypoxia-ischemia	2010	$20,900
Royal Brisbane & Women's Hospital Research Foundation	**Moxon-Lester, L**	Does S-adenosylmethionine ameliorate retinal ischemic injury by restoring creatine synthesis and transport in the retina	2010	$20,000
Royal Brisbane & Women's Hospital Foundation	**Pritchard MA,** Cartwright D, de Dassel T, Beller E, Johnston L, Bogossian F, Callan S	Developmental & Autism surveillance in high-risk children	2009	$20,000
The University of Queensland	**Heath S**	Graduate School Research Travel Grant	2009	$5,000
The University of Queensland	**Saunus J**	Early Career Research Scheme	2010	$30,000

NEW GRANTS AWARDED 2009 WITH UQCCR COLLABORATORS

FUNDING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	INCOME
Australian Research Council	McColl S, Hoffmann P, Bernard CC, Carroll W, **Greer JM,** Smith I	Proteomic analysis of central nervous system inflammation in multiple sclerosis Collaborating University: University of Adelaide	2009-2012	$675,000
Australian and New Zealand Intensive Care Foundation	Lipman J, Dulhunty J, **Paterson DL**	Pilot RCT of continuous beta-lactam infusion compared with intermittent dosing in critically ill patients Collaborating School: UQ School of Medicine	2010-2011	$20,000
Australian Research Council	Cooper-White JJ, **Fisk NM,** Grondahl L, Wolvetang E	Scalable, high throughput microfluidic platforms for tissue specific biomaterials development and tissue genesis Collaborating Institute: Aust Inst for Bioengineering & Nanotechnology	2010-2012	$400,000
National Health and Medical Research Council	Clements J, Sutherland R, Tilley W, Risbridger G, Marshall V, Roder D, Stahl J, **Gardiner RA**	Australian Prostate Cancer Collaboration (APCC) Bio-Resource Collaborating Consortium: Australian Prostate Cancer Collaboration (APCC)	2010-2014	$2,000,000
National Health and Medical Research Council	Cooper M, **Paterson DL**	Vancomycin derivatives active against resistant bacterial nosocomial infections Collaborating Institute: Institute for Molecular Bioscience	2010-2014	$763,975
National Health and Medical Research Council	Worrall L, **Copland DA**	CCRE in Aphasia Rehabilitation Collaborating School: UQ School of Health & Rehabilitation Science	2009-2014	$2,500,000
National Breast Cancer Foundation	Trench G, Khanna K, **Lakhani SR**	Towards targeted treatment for advanced basal breast cancers Collaborating Institute: Queensland Institute of Medical Research	2010 – 2011	$199,996
Australian Research Council	Hunter JL, **Zankl A**	Skeletome – A Curated Online Knowledge Base Integrating Clinical and Biological Information on Skeletal Dysplasias and Related Conditions Collaborating School: UQ School of Information Technology and Electrical Engineering	2010-2012	$273,000
National Health and Medical Research Council	Stowasser M, Leo PJ, Duffy D, Gordon RD, Brown MA, Whitehead JP, **Lakhani SR**	Elucidating genetic mechanisms responsible for familial hyperaldosteronism type II Collaborating School: UQ School of Medicine.	2010-2012	$409,125

ONGOING UQCCR GRANTS

FUNDING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	INCOME
ANZ Trustees Limited	**Zankl A**	Development of an integrated knowledge base for skeletal dysplasias.	2007-2010	$50,000
Australian Research Council	**Colditz PB, Boashash B, Mesbah M**	Multi-channel time-frequency analysis for EEG neonatal seizure characterisation	2006-2009	$240,000
Australian Research Council	**Lavin MF,** Birrell GW	A novel role for SMG-1 protein kinase in stress granule formation and the stress response	2009	$110,000
Australian Research Council	**Copland DA,** Nickels L, McMahon KL, Angwin A	Neurocognitive substrates of naming facilitation in aphasia	2008-2010	$323,000
Australian Research Council and Royal Brisbane & Women's Hospital Foundation	**Colditz PB, Boashash B**	Design of neonatal seizure diagnosis methods using time-frequency signal processing	2006- 2009	$456,000
Australian Research Council and Venomics Pty Limited	**Lavin MF,** De Jersey J, Guddat LW, Trabi M, Baker A	Pre-clinical evaluation of snake venom proteins with therapeutic potential	2008-2011	$3,154,751
Australian Urological Foundation	**Gardiner RA**	Prostate Cancer detection employing novel PCA3 isoforms – Bruce Pearson Fellowship	2009	$110,000
Cancer Bequest Fund	**Lakhani SR**	Molecular Pathology	2005-2010	$1,000,000
Cancer Council Queensland	**Gardiner RA,** Clarke R, **Lavin MF,** Doecke M, Samaratunga H, Yaxley J	Molecular strategies for staging prostate cancer	2009-2010	$180,400
Cancer Council Queensland	**Gardiner RA,** Dunglison N, Yaxley J, Stegingu S, Occhipinti S, Carter R, Williams S, **Lavin MF**	A Randomised Trial of Robotic and Open Prostatectomy: Integrates Multidisciplinary Studies to Guide Patient Management - a Partnership of Cancer Council Queensland and The University of Queensland	2009-2013	$1,250,000
Cancer Council Queensland	**Lavin MF,** Gatei M, Dork T, Gueven N	ATM-dependent phosphorylation of Rad50 mediates the DNA damage response	2008-2009	$176,000
Ludwig Institute for Cancer Research	**Lakhani SR**	Ludwig Institute for Cancer Research Fellowship	2009-2011	$834,000
Mayne Bequest Fund	**Colditz PB**	Neuroexcitatory receptor ontogeny and distribution in the piglet brain	2003-2010	$160,000
Mayne Bequest Fund	**Colditz PB**	Towards improved neonatal intensive care practices for optimal neurodevelopmental outcomes: neuroscience to the rescue	2003-2009	$510,000
Mayne Bequest Fund	**Paterson DL**	Clinical and molecular epidemiology of antibiotic resistant bacteria	2007-2010	$300,000
Multiple Sclerosis Research Australia	**Greer JM,** Pender MP	Development of specific immunomodulatory agents for Multiple Sclerosis affecting the brainstem and cerebellum	2009-2011	$330,000
Multiple Sclerosis Research Australia	**McCombe PA, Greer JM,** Wallace RH	The effects of pregnancy and the post-partum period on T cells, antibodies, and gene expression in EAE	2009	$93,500
Multiple Sclerosis Research Australia	**Yan J, Greer JM,** Pender MP	Mechanisms leading to constitutive activation of the transcription factor NF-kB in progressive multiple sclerosis	2007-2009	$165,000
National Health and Medical Research Council	**Buller K, Colditz PB,** Gobe GC	Mechanisms contributing to long-term neuronal loss after hypoxia-ischemia in the premature neonate brain	2008-2010	$413,375

FUNDING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	INCOME
National Health and Medical Research Council	**Farah CS**	The assessment of clinical and molecular adjunctive tools for the early detection of oral mucosal neoplasia	2008-2010	$436,000
National Health and Medical Research Council	**Fisk NM,** Bou-Gharios G, **Khosrotehrani K, Raggatt LJ**	Functional contribution of fetal microchimeric cells in transgenic models of maternal tissue repair in & after pregnancy	2009-2011	$521,250
National Health and Medical Research Council	**Lavin MF**	NHMRC Senior Principal Research Fellowship	2007-2011	$736,250
National Health and Medical Research Council	**Lavin MF,** Gueven N, Chessa L	Senataxin, a novel protein involved in the DNA damage response	2007-2009	$481,500
National Health and Medical Research Council	**Lavin MF,** Kozlov S, Graham M, Robinson P	ATM Activation and its functional Importance in DNA damage response	2009-2011	$533,750
National Health and Medical Research Council	**Bjorkman ST, Colditz PB,** Dodd PR, **Pow DV,** Burke C	GABA excitotoxicity, neuroprotection and the perinatal brain	2009-2011	$526,500
National Heart Foundation of Australia	**McCombe PA, Greer JM,** Read S, Chalk JB, Henderson R	Immune responses in stroke	2009-2010	$136,400
National SIDS Council of Australia	**Colditz PB**	Ambulatory fetal activity monitoring predicts clinical outcome	2009-2010	$98,697
NHMRC Career Development Award	**Copland DA**	Neurorehabilitation of aphasia	2008-2012	$429,000
NHMRC Career Development Award	**Pettit AR**	Osteal macrophages: novel regulators of osteoblast function and the endosteal stem cell niche	2008-11	$97,500
National Health and Medical Research Council	**Lakhani S R,** Stratton M, Clarke C, **Simpson PT**	Molecular profiling of breast tumour stem/ progenitor cells	2007-2010	$296,750
National Health and Medical Research Council	**Greer JM,** Pender MP	Mechanisms of lesion localization in multiple sclerosis	2007-2010	$230,250
National Health and Medical Research Council	**Lingwood BE, Colditz PB,** Lumbers ER, Evans N, Osborn DA	Improving Outcomes for Premature Infants Through Effective Maintenance of Systemic Blood Flow	2009-2011	$758,750
National Health and Medical Research Council	**Pow DV,** Poronnik P, **Colditz PB, Bjorkman ST**	A novel marker of distressed neurons in the hypoxic brain: Regulation, function and potential clinical utility	2009-2011	$506,250
National Health and Medical Research Council	**Pow DV,** Provis J, Taylor S, **Barnett NL,** Woodruff TM, Kwan A	Characterizing novel therapeutic interventions in a new model of focal retinopathy	2009-2011	$516,250
National Health and Medical Research Council	**Colditz PB,** Brennecke S, East C, Sullivan C, Crozier S, Wilson SJ, Portman C, Hyett JA, **Mesbah M,** Flenady V, Yee Chan F, Jones IS	Ambulatory fetal activity monitoring predicts clinical outcome	2009-2012	$406,775
NHMRC Research Fellowship	**Pow DV**	NHMRC Research Fellowship (SRFB)	2008-2010	$321,062
Paul Mackay Bolton Fellowship	**Gardiner RA**	Antigen recognition by T-cells for prostate cancer	2009	$60,000
Prostate Cancer Foundation of Australia	**Gardiner RA,** Clarke R, **Lavin MF**	The Relationship between PCA3 and BMCC1 in prostate cancer development and detection	2009-2011	$394,390
Ramaciotti Foundation	**Khosrotehrani K**	Influence of dermal fibroblasts on epidermal stem cell homeostasis in a model of ageing	2009-2010	$30,000
RBWH Private Practice Trust Fund	**Paterson DL**	Hospital outbreaks of anitbiotic resistant bacteria	2009-2010	$55,000
Royal Brisbane & Women's Hospital Auxilliary	**Colditz PB**	Physiological Monitoring Systems	2009-2010	$54,000

FUNDING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	INCOME
Royal Brisbane & Women's Hospital Research Foundation	**Colditz PB**	Infant body composition: a primary neonatal outcome in a randomized controlled trial of an exercise intervention in obese pregnant women to reduce gestational diabetes	2007-2009	$10,084
Royal Brisbane & Women's Hospital Research Foundation	**Colditz PB**	Automated seizure detection in the newborn	2006-2009	$9,900
Royal Brisbane & Women's Hospital Research Foundation	**Colditz PB**	Estimation of drugs, peptides and metabolites using HPLC - Mass-spectrometry-microdialysis	2006-2009	$25,300
Royal Brisbane & Women's Hospital Research Foundation	**Colditz PB**	Brain Research Advances in Newborns (The BRAIN Project)	2009-2014	$205,000
Royal Brisbane & Women's Hospital Research Foundation	**Colditz PB**	Seizure detection in the newborn	2006-2009	$33,689
Royal Brisbane & Women's Hospital Research Foundation	**Colditz PB**	Ambulatory fetal activity monitoring predicts clinical outcome.	2007-2010	$12,230
Royal Brisbane & Women's Hospital Research Foundation	**Fisk NM**	Establishment of Ambulatory Outpatient Research Floor within Centre for Clinical Research	2009	$16,500
Royal Brisbane & Women's Hospital Research Foundation	**Gardiner RA**	Molecular profiling for prostate cancer prognosis	2008-2009	$44,000
Royal Brisbane & Women's Hospital Research Foundation	**Paterson DL**	Acinetobacter baumanii at Astralia's doorstep	2009	$22,000
Royal Brisbane and Women's Hospital	**Lakhani SR**	Clinical and molecular analysis of multifocal/ multicentric in-situ and invasive breast cancers	2009-2011	$55,000
Royal Children's Hospital	**Zankl A**	A registry and clinical surveillance service for patients with genetic bone disorders	2008-2010	$82,500
The JO and JR Wicking Trust	**Pow DV, Barnett NL**	Micro-haemorrhage as an initiating factor for Alzheimer's disease and Age related Macular degeneration: examining a novel rat model	2009-2010	$45,000
The Wesley Research Institute	**Rose SE,** Coulthard A, Schlect D	Development of novel MRI biomarkers for the early detection of tumour recurrence from radiation induced brain injury	2006-2009	$212,000
The Wiseman Trust	**Fisk NM**	Client Research Fellowship	2009-2010	$210,000
The University of Queensland	**Colditz PB**	Genetic and environmental influences on body composition and growth trajectories in twins in the first year of life	2009-2009	$30,000
The University of Queensland	**Copland DA**	Mapping the Brain Mechanisms of Language Treatment Post-Stroke	2008-2009	$80,000
The University of Queensland Early Career Researcher Scheme	**Simpson PT**	Investigating the metastatic spread of lobular breast cancer	2009-2010	$25,000
The University of Queensland Postdoctoral Research Fellowship	**Sullivan S, Colditz PB**	Are astrocytes key regulators of brain damage in neonatal hypoxia-ischemia	2009-2011	$20,000
The University of Queensland School/Centre Co-Funding Scheme and Queensland Health	**Colditz PB**	Nurturing neonatal neurones - research consortium for an MRI compatible incubator	2009	$585,255
The University of Queensland School/Centre Co-Funding	**Fisk NM**	High-end optical in vivo molecular imaging system for stem cells, tumours, tissue repair and pathogens	2009	$690,750
Wesley Research Institute Limited	**McCombe PA,** Read S, **Greer JM**	Immune Response to stroke	2008-2011	$330,000

ONGOING UQCCR GRANT COLLABORATIONS

FUNDING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	INCOME
Australian Research Council	Mattingley JB, Cunnington R, Hester RL, Bellgrove M, Lipp OV, Wallis G, Brereton IM, Galloway GJ, De Zubicaray GI, Crozier S, **Colditz PB,** Jull GA, **Hodges P,** Coltheart M, Crain S, Williams M	A 3.0 Tesla MRI system for human cognitive neuroscience research Collaborating Institute: Queensland Brain Institute	2008-2009	$2,590,000
Cancer Bequest Fund	Walker D, **Lavin MF**	Targeting glioma stem cells as a potential therapy for glioblastoma multiforme Collaborating Institute: Queensland Institute of Medical Research	2008-2009	$43,050
Cancer Council Queensland	Gonda T, Ramsay R, Anderson R, Brown M, **Lakhani SR**	The role of the MYB oncogene in mammary carcinogenesis Collaborating Institute: UQ Diamantina Institute for Cancer, Immunology & Metabolic Medicine	2008-2009	$176,000
National Breast Cancer Foundation	Chopin L, **Simpson PT, Lakhani SR,** Bennet I, Hill M	Understanding the heterogeneity of invasive ductal breast cancers – a proteomic approach for the discovery of biomarkers and novel therapeutic targets Collaborating University: Queensland University of Technology	2009-2010	$199,967
National Health and Medical Research Council	Johnson DW, Gobe GC, Goligorsky M, **Colditz PB,** Burke C, Vesey D, Wang Z	Cytoprotection by erythropoietin in hypoxia-ischaemia of the kidney and brain Collaborating School: UQ School of Medicine.	2006-2009	$467,750
National Health and Medical Research Council	Mowry B, Holliday E, Visscher P, Brown MA, **Rose SE,** Pantelis C	Identifying eQTLs and endophenotyping known CNSv in a large Australian schizophrenia sample Collaborating School: UQ School of Medicine.	2010-2012	$885,750
National Health and Medical Research Council	Stacey KJ, Roberts TL, Hume DA, Degli-Esposti M, **Lavin MF**	Cellular Activation and Apoptosis in Response to Foreign Cytoplasmic DNA Collaborating Institute: Institute for Molecular Bioscience	2007-2009	$477,000
National Health and Medical Research Council	Taylor SM, Woodruff TM, Callaway LK, Finnell R, **Colditz PB**	Complement C5a Receptors , Placental Inflammation and Reproductive Impairment Collaborating School: UQ School of Biomedical Sciences	2009-2013	$774,200
National Health and Medical Research Council	**Lakhani SR,** Chevenix-Trench G, Khanna K	Beyond BRCA1 and BRCA2: pathways to breast cancer Collaborating Institute: Queensland Institute of Medical Research	2007-2011	$1,806,420
National Health and Medical Research Council	Montieth G, Roberts-Thompson S, Parat M, **Simpson PT**	Calcium influx pathways and breast cancer Collaborating School: UQ School of Pharmacy	2009-2011	$382,000
National Health and Medical Research Council	Steginga SK, **Gardiner RA,** Nicol DL, Aitken J, Occhipiniti S	Predicting and promoting Long-term adjustment for men with localised prostate cancer: Proscan Collaborating University: Griffith University	2007-2011	$289,563
National Health and Medical Research Council	Steginga SK, Shover L, Halford K, Occhipinti S, **Gardiner RA,** Dunn J	Randomised controlled trial of early intervention to improve sexual and couple functioning after prostate cancer Collaborating University: Griffith University	2008-2010	$577,438
National Health and Medical Research Council Dementia	Chenery HJ, Humphreys, Hegney, Byrne, Gallois, **Copland D.A.,** Angwin A.J	An efficacy study of cognitive-communicative intervention to improve transition to residential care in dementia Collaborating School: UQ School of Health and Rehabilitation Sciences	2008-2010	$639,000

FUNDING BODY	INVESTIGATORS	PROJECT TITLE	DURATION	INCOME
National Health and Medical Research Council	Mathias J, Bigler E, Bowden S, Rosenfeld J, Taylor D, Vink B, **Rose SE**	Diagnostic and prognostic evaluation of diffusion tensor imaging and cognitive function after traumatic brain injury Collaborating University: University of Adelaide	2008-2010	$837,000
National Health and Medical Research Council	Piguet J, Hodges J, **Rose SE,** Miller L	Clinical and biological markers of disease presentation and progression in early frontotemporal dementia. Collaborating Institute: Prince of Wales Medical Research Institute	2008-2010	$647,000
National Health and Medical Research Council	Lipman J, Roberts MS, **Paterson DL,** Kirkpatrick CMJ, Kruger PS, Roberts J, Rudd M, Weiss M, Jones MA	Antibiotic dosing in the at risk critically ill patient. Collaborating School: UQ School of Medicine	2008-2010	$589,000
Queensland Emergency Medicine Research Foundation	Williams J, Greenslade J, Lipman J, **Paterson DL,** Brown AF, Paratz JD, Dulhunty J, Chu K	The Sepsis Registry: A prospective database to characterise and facilitate improved outcome for admitted patients with community-acquired infection Collaborating School: UQ School of Medicine	2009-2011	$220,000
Queensland Government Smart State National and International Research Alliances Program	Smith MT, Coulson E, Kindy M, **Rose SE,** Brereton IM, Chalk JB, Whittaker AK	Alzheimer's disease: Novel MRI Biomarkers for Clinical Diagnosis and Translational Studies Collaborating Centre: UQ's Centre for Integrated Preclinical Drug Development	2009-2012	$740,820
Queensland Government Smart State National and International Research Alliances Program and University of Queensland	Whittaker AK, Rasoul F, Symons AL, Hawker C, Wooley K, Campbell JH, Chirila TV, Haddleton D, **Rose SE,** Howdle S	International Biomaterials Research Alliance Collaborating Institute: Australian Institute for Bioengineering and Nanotechnology	2007-2011	$1,493,430
Royal Brisbane & Women's Hospital Foundation	Callaway LC, **Colditz PB, Lingwood BE,** Mortimer R	Body composition in infants born to women with gestational diabetes Collaborating School: UQ School of Medicine	2009	$22,000
Royal Brisbane & Women's Hospital Foundation	Boots R, Holley AD, O'Donoghue SD, Bellaport-Rubio J, Paratz JD, Dulhunty J, Lipman J, Roberts J, Jarrett P, **Paterson DL**	Inhaled Prophylactic-Heparin In Ventilator Associated Pneumonia Prevention Trial (IPHAPP) Collaborating School: UQ School of Medicine	2009	$19,555
Royal Brisbane & Women's Hospital Research Foundation	Coulthard A, **Rose SE,** Winter C, McMahon KL	A pilot feasibility study for improved neurosurgical planning and postoperative assessment in patients with cerebral tumours using clinical functional MRI and diffusion tensor tractography. Collaborating School: UQ School of Medicine	2009-2010	$49,500
University of Sydney	Lipman J, Sorrell T, Playford G, Jones M, Iredell J, Craig J, Chen S, Joyce C, Cook P, McBryde E, Ellis D, **Paterson DL**	Predicting the risk of invasive candidiasis in critically ill patients Collaborating School: UQ School of Medicine	2008-2011	$254,000
Wesley Research Institute	Porter A, **Lakhani SR Simpson PT,** Evans E	Understanding the heterogeneity of invasive lobular carcinomas of the breast: a combined approach using radiological, morphological and molecular analyses Collaborating School: UQ School of Medicine Collaborating Institute: Queensland Institute of Medical Research	2007-2009	$207,103
Wicking Trust	Chenery H.J., Humphreys, Hegney, Bryne, **Copland DA,** Angwin AJ	Communication training for enhanced nursing home transition in dementia Collaborating School: UQ School of Health and Rehabilitation Sciences	2008-2009	$336,000

APPENDIX 2:

UQCCR PUBLICATIONS 2009

1. Adams-Haduch JM, Potoski BA, **Sidjabat HE**, **Paterson DL**, and Doi Y. Activity of Temocillin against KPC-Producing Klebsiella pneumoniae and Escherichia coli, Antimicrobial Agents and Chemotherapy 2009 June. 53(6): 2700–2701. Epub 2009 Mar 30.

2. **Al Sayyari A**, Buckley R, McHenery C, **Pannek K**, Coulthard A and **Rose SE**. Delineating recurrent primary brain tumour from radiation injury: A preliminary study using susceptibility-weighted MRI guided ADC analysis strategy. AJNR 2009 (accepted for publication).

3. Angwin AJ, Arnott WL, **Copland DA**, Haire MP, Murdoch BE, **Silburn PA**, Chenery HJ. Semantic activation in Parkinson's disease patients on and off levodopa. Cortex. 2009. 45, 950-9. Epub 2009 Mar 11.

4. **Australia and New Zealand Multiple Sclerosis Genetics Consortium (ANZgene) (Greer JM).** Genome-wide association study identifies new multiple sclerosis susceptibility loci on chromosomes 12 and 20. Nat Genet. 2009. 41, 824-8.

5. Baba H, Iinuma Y, Imaizumi K, Hasegawa Y, Hasegawa T, Ohta M, and **Paterson DL**. Transmission of bacterial infections to healthcare workers during intubation and respiratory care of patients with severe pneumonia. Infection Control and Hospital Epidemiology. 2009 Oct;30(10):1019-21.

6. Baba H, Nada T, Ohkusu K, Ezaki T, Hasegawa Y, and **Paterson DL**. First case of bloodstream infection caused by Rhodococcus erythropolis. Journal of Clinical Microbiology. 2009 Aug;47(8):2667-9. Epub 2009 Jun 3.

7. Baquero F, Hsueh PR, **Paterson DL**, Rossi F, Bochicchio GV, Gallagher G, Lantz K, Villasenor JB, McCarroll K, Abramson MA, and Chow JW. In vitro susceptibilities of aerobic and facultatively anaerobic gram-negative bacilli isolated from patients with intra-abdominal infections worldwide: 2005 results from Study for Monitoring Antimicrobial Resistance Trends (SMART). Surg Infect (Larchmt). 2009 Apr;10(2):99-104.

8. Bassler D, Stoll BJ, Schmidt B, Asztalos EV, Roberts RS, Robertson CM, Sauve RS; **Trial of Indomethacin Prophylaxis in Preterms Investigators**. Using a count of neonatal morbidities to predict poor outcome in extremely low birth weight infants: added role of neonatal infection. Pediatrics. 2009. 123, 313-8.

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APPENDIX 3:

UQCCR RESEARCH HIGHER DEGREE STUDENTS AND THEIR PROJECTS

COMPLETIONS IN 2009

STUDENT	DEGREE	PROJECT	SUPERVISORS	DATE AWARDED
Thomas Harris	PhD	The identification of hypoxic tolerance factors in the newborn piglet and their role in neural injury following global hypoxic insult	**Dr B Lingwood, Dr K Buller**	19/03/2009
Xanthy Hatzigeorgiou	PhD	Nutrition and Neurodevelopment of the Preterm and Term Infant	Prof P Davies, **Prof P Colditz**	16/10/2009
John O'Toole	PhD	Discrete Quadratic Time-Frequency Distributions: Definition, Computation, and a Newborn Electroencephalogram Application	**Prof P Colditz, Dr M Mesbah, Prof B Boashash**	10/11/2009
Quang Anh Tran	MPhil	Septicaemia in the newborn: a comparison of neonatal infection rates at Royal Brisbane & Womens Hospital, Australia and Danang, Vietnam and suggested strategies for reducing the risk of sepsis	**Prof P Colditz,** Dr D Cartwright	12/11/2009
Christine Percy	PhD	Role and modulation of oxidative stress in age-associated chronic renal pathologies	A/Prof G Gobe, Prof P Poronnik, Prof WE Hoy, Prof D Power	01/12/2009

ENROLMENTS

STUDENT	DEGREE	PROJECT	SUPERVISORS	COMMENCED
Neelam Malik	PhD	Characterising the biologies of different compartments of the human breast epithelia: Implications for our understanding of different breast	**Prof S Lakhani, Dr C Smart**	01/11/2009
Kate McCarthy	PhD	Pseudomonas aeruginosa bloodstream infections: Clinical and molecular epidemiology, antibiotic resistance mechanisms, treatment and outcome	**Prof D Paterson**	01/09/2009
Craig Winter	PhD	Investigation of blood-brain barrier function in acquired brain injury using MRI, SPECT and CNS-specific proteins	**A/Prof S Rose,** Prof A Coulthard	01/09/2009
Shiying Dong	MPhil	Heart rate variability for assessment of autonomic nervous system function in neonates	**Dr M Mesbah, Dr B Lingwood, Dr J O'Toole**	31/08/2009
Linda Robertus	PhD	The epidemiology of tuberculosis in Queensland as it relates to strategies to prevent transmission, particularly in indigenous Australians	**Prof D Paterson**	31/08/2009
Anthony Crombie	MPhil	Primary chemoradiotherapy for oral & oropharyngeal squamous cell carcinoma	**A/Prof C Farah,** Dr M Batstone	01/08/2009
Adele Wallace	MPhil	An investigation of functional language outcomes for adults diagnosed with ADHD, after treatment with combined stimulant and anticonvulsion medication	Dr W Arnott, **A/Prof D Copland**	01/07/2009
Penelope Ireland	PhD	A population-based analysis of development in young Australian children with Achondroplasia	Dr L Johnson, **Dr A Zankl,** Dr J Mcgill	30/06/2009
Hanna Reinbrand	PhD	The central serotonergic system in the preterm neonate following hypoxic-ischemic brain injury	**Dr K Buller, Prof P Colditz**	01/06/2009
Bhavik Patel	MPhil	Infections in hospitalized burns patients	**Prof D Paterson,** Prof J Lipman, Dr J Paratz, Dr J Roberts	31/03/2009

STUDENT	DEGREE	PROJECT	SUPERVISORS	COMMENCED
Keely Harper-Hill	PhD	Does language processing in individuals with ASD vary as a function of modality under conditions of increased stress?	**A/Prof D Copland,** Dr W Arnott, Dr G Woodyatt	30/03/2009
Nor Abdul Murad	PhD	Nature of the genetic defect in Ataxia Oculomotor Apraxia Type 3 (AOA3)	**Prof M Lavin,** Dr O Becherel	12/03/2009
Min Kim	PhD	Myocardial development in the preterm piglet	**Dr B Lingwood,** Dr A Boyce, Dr K Gibson	24/02/2009
Sophia Van Hees	PhD	Brain mechanisms of language treatment post-stroke	**A/Prof D Copland,** Dr A Angwin	09/02/2009
Mohd Shazrul Sa Ariwijawa	PhD	Substance abuse: A correlation between DNA damage to ageing	**Prof M Lavin,** Dr M Gatei	01/02/2009
Phan Nguyen	PhD	Optical biopsy in lung medicine broncoscopy	Dr D Fielding, **A/Prof C Farah,** Dr I Masters	12/01/2009
Nancy Moxey	PhD	The role of PLP in multiple sclerosis	**Dr J Greer,** Prof M Pender	05/01/2009
Fusan Bauman	PhD	Detection of objective markers of disease progression in patients with Motor Neuron Disease	**A/Prof P McCombe Dr R Henderson**	01/01/2009
Julie Wixey	PhD	The role of the serotonin transporter (SERT) after hypoxic-ischemic brain injury in the preterm neonate	**Dr K Buller, Dr S T Bjorkman**	01/01/2009
Julian Williams	PhD	The sepsis registry: a prospective database to characterise and facilitate improved outcome for admitted patients with community	**Prof D Paterson**	01/11/2008
Ahmed Abdul Majeed	MPhil	Alterations in Gene Expression during the Early Stages of Oral Carcinogenesis	**A/Prof C Farah, Dr J Saunus**	04/08/2008
Susan Morpeth	PhD	Salmonella infection in developing countries	**Prof D Paterson**	21/07/2008
Ana Vargas Calderon	PhD	Mechanisms of metastases in lobular carcinomas of breast	**Prof S Lakhani, Dr P Simpson**	21/07/2008
Stephanie Miller	PhD	Examining the maturation of the GABA system in the neonatal brain and its role in hypoxic-ischaemic brain injury	**Dr S T Bjorkman, Prof D Pow**	14/04/2008
Yi Chieh (Ernie) Lim	PhD	Targetting gliomas'ES cells as a potential therapy for this tumor	**Prof M Lavin,** Dr R Woods	31/03/2008
Fiona Yin Mei Kong	PhD	Novel approaches to the surveillance of healthcare acquired infections	Dr A Clements, **Prof D Paterson,** A/Prof M Coory, A/Prof M Whitby	01/03/2008
Celina Heazlewood	PhD	Neuronal differentiation potential of mesenchymal stem cells and their use in animal models of neurological disease	Prof M Atkinson, Dr G Brooke, **Prof N Fisk**	25/02/2008
Elizabeth Gray	PhD	Cardiovascular function in the pre-term neonate	**Dr B Lingwood**	18/02/2008
Kieran Flanagan	PhD	The role of perceptual symbols in the representation of semantic concepts in dementia	Dr A Angwin, **A/Prof D Copland**	11/02/2008
Carole-Ann Greig	PhD	The impact of intention and attention on the naming ability of adults with fluent and non-fluent aphasia	**A/Prof D Copland,** Dr E Cardell	05/02/2008
Shiree Heath	PhD	Neurocognitive substrates of naming facilitation in aphasia	**A/Prof D Copland,** Dr A Angwin, Dr K McMahon	04/02/2008
Kee Meng Tan	PhD	Neuronal voltage-gated potassium channel and voltage-gated sodium channel autoimmunity	**Dr J Greer**	31/08/2007
Sandra Stein	PhD	The utilization of molecular biomarkers to predict trastuzumab resistance in epithelial breast cancer patients	**A/Prof C Farah,** Dr G Beadle	01/07/2007
Glenn Francis	PhD	Protein expression and molecular profiling using tissue microarrays to predict lymph node status in breast cancer	**A/Prof C Farah,** Dr G Beadle	01/07/2007
Kerina Constantini	PhD	The role of C5a in Pathophysiology	Prof S Taylor, **Prof P Colditz, Dr L Moxon-Lester,** Dr L Calloway, Dr P Noakes	31/01/2007
Abdulrahman Al Sayyari	PhD	Development of Novel MRI Biomarkers for early detection of tumour recurrence	**A/Prof S Rose,** Prof A Coulthard, Prof G Galloway	01/12/2006

STUDENT	DEGREE	PROJECT	SUPERVISORS	COMMENCED
Anton Peleg	PhD	The Perils and Pearls of Acinetobacter - an emerging gram-negative pathogen	**Prof D Paterson,** A/ Prof E Mylonakis, A/Prof J McCormack	01/09/2006
Troy Gianduzzo	MPhil	Laser Robotic-Assisted Laparoscopic Radical Prostatectomy	Prof I Singh-Gill, Prof R Gardiner	01/09/2006
Viskasari Kalanjati	PhD	Brain development, hypoxia and nutrient deprivation	**Prof P Colditz, Dr S T Bjorkman**	15/06/2006
Luke Jardine	PhD	Development of early predictors of long-term outcome in premature infants	**Prof P Colditz,** Dr M Davies	17/04/2006
Michel Hoenig	PhD	The use of cholestAnol to cholesterol ration to guide therapy: LDL lowering. The target LDL study	**A/Prof P Walker,** Dr J Bingley	27/02/2006
Michelle Carty	PhD	Neuroanatomical changes under-pinning functional deficits after hypxic-ischaemic injury in the pre-term brain	**Dr K Buller, Dr S T Bjorkman**	06/02/2006
Nicci Wayte	PhD	A search for novel cancer susceptibility genes	Dr G Chenevix-Trench, **Dr P Simpson,** Dr D Duffy, A/Prof M Brown, **Prof S Lakhani**	17/01/2006
Gayle Hemsley	PhD	Multi-channel time-frequency analysis for EEG neonatal seizure characterization	**Prof B Dodd, Dr A Holm**	16/01/2006
Sally Kedge	PhD	The language profiles of children with severe and challenging behaviour and emotional difficulties	**Prof B Dodd**	16/01/2006
Mohamed Khlif	PhD	Multi-channel time-frequency analysis for EEG neonatal seizure characterization	**Prof P Colditz, Dr M Mesbah, Prof B Boashash**	12/01/2006
Miko Yamada	PhD	Mechanisms of cytoprotection by erythropoietin (EPO) in hypoxia/ischaemia-injured neonatal brain	A/Prof G Gobe, Prof D Johnson, **Prof P Colditz**	31/08/2005
Kwai (Cecilia) Mok	PhD	Evaluation of a problem-based learning curriculum in speech and hearing sciences: Student perceptions and critical thinking	**Prof B Dodd,** Prof T Whitehall	01/08/2005
Justin Oughton	PhD	The Relationship of Vascular Compliance to Cerebral White Matter Hyperintensities in a Community Based Sample of Aging Australian Women	Dr J Chalk, Prof A Coulthard, **A/Prof S Rose,** Prof G Galloway	01/07/2005
Peter Campbell	MPhil	Clinical disagreement: its influence on the practice of urology	Dr P McTaggart, **Prof R Gardiner**	01/06/2005
Jennifer Ryan	PhD	Communication and dual diagnosis (Mental health and intellectual impairment)	Dr G Woodyatt, **A/Prof David Copland**	20/08/2004
Indra Nordstrand	PhD	Assessment of cardiac myxoma tumour markers and identification of a cellular basis for the use of antithrombotic agents in management	**A/Prof P Walker,** Dr B Clarke, Dr E Stafford	01/12/2003
John Birt	PhD	Learning and memory in the cerebellum	Dr M Bellingham, Dr J Power, **Prof M Lavin**	14/08/2003
Amanda Jones	PhD	Autoimmunity in schizophrenia	**Dr J Greer,** Prof M Pender, A/ Prof B Mowry	22/04/2003
Melanie Reiter	PhD	T-cell Immunocompetence after Immunotherapy Vaccination for the Treatment of Prostate Cancer	Dr C Schmidt, **Prof R Gardiner**	24/03/2003
Samatha Siyambala Pitiya	PhD	Language recovery and lexical semantic processing in bilingual aphasia	**A/Prof D Copland,** Prof H Chenery	03/03/2003
Shannon Beasley	PhD	Role and mechanism of action of myelin-specific antibodies from multiple sclerosis patients	**Dr J Greer, Prof D Pow,** Prof M Pender	03/02/2003
Rebecca Jack	MPhil	NATAVUS (Necessity and Technical Adequacy of Vascular Ultrasound Scans)	**A/Prof P Walker,** Dr D Cavage	13/01/2003
Doreen Awabdy	PhD	Neuroprotection and Neuroreceptor Ontogeny in the Developing Brain	**Prof P Colditz,** Dr P Dodd, **Dr K Buller**	11/03/2002
Evan Sauer	PhD	Study of Potential Therapeutic Agents in Multiple Sclerosis	**Dr J Greer**	18/02/2002
Teong Chauh	PhD	Gene Therapy For Glioblastoma Multforme: A Novel Treatment For a Fatal Disease.	**Prof M Lavin**	29/01/2001
Mark Davies	PhD	Partial Liquid Ventilation (PLV) Optimisation for use in Pre term Infants	**Prof P Colditz,** Prof C Morley	02/1/1999
Diane Muller	PhD	Neuropathological and Neurophysiological Studies of the Central Nervous System of mice with Atypical Experimental Autoimmune Encephalomyelitis	**Dr J Greer**	01/01/1998
Emma Bendall	PhD	Magnetic Resonance Imaging Studies in Nervous Tissue Trauma	Dr J Chalk, **A/Prof S Rose,** Em/Prof G Geffen	01/06/1997

APPENDIX 4:

STAFF LIST

CENTRE DIRECTOR

Professor Nicholas Fisk

GROUP LEADERS

Professor Paul Colditz
Associate Professor David Copland
Associate Professor Camile Farah
Professor Frank Gardiner
Dr Judith Greer
Associate Professor Kiarash Khosrotehrani
Professor Sunil Lakhani
Professor Martin Lavin
Associate Professor Pam McCombe
Professor David Paterson
Professor David Pow
Associate Professor Stephen Rose

ASSOCIATE INVESTIGATORS

Professor Gerard Byrne
Professor Paul Hodges
Professor Graeme Nimmo
Professor Peter Silburn
Professor Andreas Zankl
Professor Philip Walker

VISITING ACADEMICS

Dr Abdullah Fatimah Haslina
(Hospital Sultanah Nur Zahirab, Malaysia)
Dr Yoshiro Hayashi
(University of Nagoya)
Dr Hasashi Baba
(University of Nagoya)
Dr Ahmad Rahman
(Hospital Sultanah Nur Zahirab, Malaysia)
Dr Giulia D'Acunto
(University of Pisa)
Dr Damon Eisen
(Royal Melbourne Hospital)
Dr Andrea Guzzetta
(University of Pisa)
Dr Janet Hammil
(Curtin University)
Professor Anne-Marie McNicol
(University of Glasgow)

CENTRE FOR THE ADVANCEMENT OF CLINICAL RESEARCH

Prof Lawrie Powell
Jenny Lonton

POST-DOCTORAL RESEARCHERS

Dr Zohreh Aminzadeh
Dr Nigel Barnett
Dr Anne-Sophie Bergot
Dr Tracey Bjorkman
Dr Kathryn Buller
Associate Professor Margaret Cummings
Dr Leonard Da Silva
Dr Andrew Dalley
Dr Yvonne Eiby
Dr Janelle Hancock
Dr Alison Holm
Dr Anna Holmes
Dr Zoe Ireland
Dr Misook Kim
Dr Aven Lee
Dr Eddy Lee
Dr Barbara Lingwood
Dr Terry Maybury
Dr Mostefa Mesbah
Dr Leith Moxon-Lester
Dr John O'Toole
Dr Pria Pakkiri
Dr Rebecca Pelekanos
Dr Christine Percy
Dr Allison Pettit
Dr Margo Pritchard
Dr Liza Jane Raggatt
Dr Mathieu Rodero
Dr Christophe Rosty
Dr Jennifer Ryan
Dr Jodie Saunus
Dr Hanna Sidjabat
Dr Peter Simpson
Dr Chanel Smart
Dr Renee Stirling
Dr Susan Sullivan
Dr Michael Ting
Dr Jun Yan
Dr Kong Nan Zhao

RESEARCH ASSISTANTS/ TECHNICIANS

Minyon Avent
Marion Buck
Sue Callan
Anthony Chan
Caroline Crothers
Peter Csurhes
Sonia Dann
Marjolein Deege
Brooke Dougan
Lucy Gebbett
Samantha Hodgson
Kaye Hooper
Hayley Inglis
Janani Jayanthan
Andrea Kazoullis
Lisha Keane
Patricia Keith
Annette Lane
Erin Maylin
Kerstin Pannek
Casey Pfluger
Andrew Reed
Lynne Reid
Betty Scells
Hanna Sidjabat
Borjana Simanovic
Linda Teng
Grace Tso
Fangfei (Joyce) Xu

ADMINISTRATION

Amanda Barnett
Emma Lee
Brenda Mason
Elizabeth Slowey

CORE STAFF

Zoe Ackerman
Vicki Allen
Carmen Buttery
Nick Emery
Anthony Fowler
Tracey Henshaw
Linda McVann
Ian Sawyer
Alix Vann
Greg Young

PROPERTIES & FACILITIES

Ray Deller
Alf Roset

During 2009, UQCCR also hosted the Australian e-Health Research Centre, the Schools of Medicine and Nursing & Midwifery teaching groups and the Queensland Health Ward Reception & Training and Gastroenterology Clinical Trial teams.

APPENDIX 5:

KEY PERFORMANCE INDICATORS FOR UQCCR

The following are the Key Performance Indicators that will be used to review the ongoing performance of the UQCCR, during the term of the Agreement with the Queensland Government:

1. FUNDING PERFORMANCE

UQCCR researchers secured $7.865 million grants in 2009, compared to a target of $3 million. (Appendix 1)

2. HUMAN CAPITAL DEVELOPMENT

UQCCR hosted 175 research, technical and business development staff in 2009, with a target of 350 staff by 2013. (Appendix 4)

3. EDUCATION AND SKILLS DEVELOPMENT

UQCCR had 5 PhD completions in 2009, and enrolled 16 new PhD students. This is compared to a target of 10 new enrolments per year. (Appendix 3)

4. RESEARCH AND DEVELOPMENT EXCELLENCE

UQCCR had 119 journal and conference publications in 2009, compared to a target of 80. (Appendix 2)

5. COLLABORATION

UQCCR received 8 new collaborative grants in 2009, totalling $4.1m and has hosted 10 visiting academics in 2009, which meets the target. (Appendices 1 and 4)

6. COMMERCIALISATION

UQCCR has not produced any patents, trademarks or licensing deals in 2009 and therefore has no income to report against our KPI target this year.

UQCCR has secured 3 commercial contracts, which exceeds our target of 2 contracts. These contracts relate to the following clinical trial studies:

> A Phase 2 study to evaluate the safety and effectiveness of using the Litx TM BPH System in patients with lower urinary tract symptoms (LUTS) due to Benign Prostatic Hyperplasia (BPH) who are Candidates for interventional therapy. Lead by Professor Frank Gardiner and funded by Quintiles Pty Ltd.

> A multicentre, long-term follow-up study of the safety and efficacy of two dose levels of Botox purified neurotoxin complex in patients with urinary incontinence due to neurogenic detrusor overactivity. Lead by Professor Frank Gardiner and funded by Allergan Pty Ltd.

> A double-blind, placebo-controlled study to evaluate new or worsening lens opacifications in subjects with non-metastatic prostate cancer receiving denosumab for bone loss due to androgen- deprivation therapy. Lead by Professor Frank Gardiner and funded by Amgen Pty Ltd

7. TECHNOLOGY TRANSFER

UQCCR was chosen to host the Office of Health and Medical Research launch of the Senior Clinical Research Fellowships Programme. The Fellowships are to provide funding of up to $850,000 pa for five years to attract and retain researchers to Queensland who are at the forefront of research, development and innovation, and will be expected to bring new clinical and intellectual resources that will further stimulate Queensland's research potential.

UQCCR researcher Professor Paul Colditz secured funding for a new $1m MRI-compatible incubator to be based at RBWH. The incubator allows newborns to lie undisturbed while images are taken, enabling much earlier diagnosis of conditions such as cerebral palsy, which are often not discovered until children are 1-2 years old. The handover of the incubator attracted national news coverage for the UQCCR and RBWH consortium.

These events meet our target to host 2 media events and 5 conferences/ workshops per year. (See Community Engagement)

8. COMMUNITY ENGAGEMENT

UQCCR Core Team gave a science demonstration to the staff and students of McDowall State School in August as part of national Science week 'Adopt a scientist' programme. The team were then invited back to present again at the Science Festival in November.

UQCCR also hosts the Tourette Syndrome Association of Australia public meetings.

This meets our target of 2 open days, school visits, presentations or promotional exercises.

UQCCR gratefully acknowledges the Queensland Government Smart State Initiative, Atlantic Philanthropies and the University of Queensland for generous funding enabling the build and start up of UQCCR.

UQCCR

CONTACT DETAILS

Building 71/918
Royal Brisbane & Women's Hospital Campus
Herston QLD 4029

Tel: +61 7 3346 5555
Fax: +61 7 3346 5509

information@uqccr.uq.edu.au

www.uqccr.uq.edu.au

The University Of Queensland
AUSTRALIA