

# Centre for Cancer Biology Cancer Research Laboratories

The Centre for Cancer Biology (CCB) is an Australian Medical Research Institute which carries out a world-class program of innovative research, making breakthrough discoveries in the fundamental biology of cancer, and translating these discoveries into new ways to prevent and treat this group of diseases.

The CCB is an alliance between SA Pathology and the University of South Australia and boasts the largest concentration of cancer research in South Australia.

CCB laboratories are led by distinguished full-time group leaders who carry out research across a broad spectrum of solid and blood cancers, focussing on the specialised areas of gene regulation, molecular signalling, tumour microenvironment, translational oncology and cancer genomics. In addition to these laboratories, our ACRF Genomics Facility provides access to state-of-the-art genomics research equipment, computing technology and bioinformatics expertise.

Translation of new discoveries into clinical practice is strengthened by the co-localisation of the laboratories within a single centre, as well as its proximity to the Royal Adelaide Hospital, the University of South Australia and the University of Adelaide, with which it shares key research facilities.

## Studying @ the CCB

The CCB is an internationally recognised Medical Research Institute, aiming to achieve tangible outcomes for patients with cancer, through its strong links with clinical practice.

A key platform within this goal is to foster high quality postgraduate studies to build the next generation of world-leading cancer researchers. We achieve this through a comprehensive program of mentoring and career development, led by our internationally recognised group leaders. Averaging in excess of \$10m in competitive grant funding and publishing more than 150 scientific articles in high impact publications each year, the CCB offers the ideal environment within which the next generation of research leaders can thrive.

## Scholarships

A range of domestic and international scholarships are available for students wishing to undertake Masters or PhD studies at the CCB.

## Higher Degrees by Research

*"Working in cancer research is a unique experience; I can't think of many other jobs which offer the same levels of variety and challenge as research does. It's hard to be bored when you're constantly learning, especially when you're learning things no one else knows yet. Though there are many challenges on the way to these new discoveries, every challenge gives you the opportunity to expand your knowledge and skills, and the thrill when you finally succeed and discover something new is only made sweeter by the challenges you had to overcome to get there. After all, the best things in life are never easy."*

*By completing my PhD, I hope to gain further access to the world of research, and to open up my world along with it. After all, cancer research is conducted right around the globe, and a PhD will give me the opportunity to work at other leading cancer institutes around the world.*

*My current research at the Centre for Cancer Biology is into the incurable blood cancer multiple myeloma. I'm looking at targeting a particular cell pathway called the sphingolipid pathway in order to enhance existing therapies and re-sensitise chemotherapy resistant patients to chemotherapy."*

*Melissa Bennett  
PhD Student - Molecular Signalling Laboratory  
MF & MH Joyner Scholarship in Medicine*



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Cancer Biology



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## Cancer Research Laboratories

Each CCB laboratory offers exciting opportunities for research studies at Honours, Masters and PhD level, as well as undergraduate summer student placements. For full laboratory details visit our website [www.centreforcancerbiology.org.au](http://www.centreforcancerbiology.org.au)

### Acute Leukaemia

Professor Richard D'Andrea and A/Professor Ian Lewis

The group studies the genetic and epigenetic mechanisms involved in normal blood cell development and the changes associated with acute myeloid leukaemia and other haematological malignancies. New therapies for these diseases are investigated, and tested in clinical trial to ultimately improve patient treatment outcomes.

### Alternative Splicing in Human Pathologies

A/Professor Simon Conn

Our laboratory is pioneering how alternative gene products drive human diseases and act as novel targets for therapy.

### Cell Signalling

A/Professor Yeesim Khew-Goodall

The group's focus is to understand what turns a benign cancer cell which remains local and treatable to a metastatic cell capable of spreading to multiple organs.

### Cytokine Receptor

Professor Angel Lopez

The group seeks to understand the mechanism of cytokine receptor activation in health and disease, to support the development of new drugs for unmet clinical needs.

### Gastroenterology Research

A/Professor Andrew Ruszkiewicz

This group is engaged in research activities spanning aspects of gastroenterology pathology including cancer precursor lesions and malignancies of the colorectum, oesophagus and pancreas.

### Gene Regulation Section

Professor Greg Goodall

Research is focused on molecular mechanisms regulating cancer cell metastasis, including mechanisms involving microRNAs, circular RNAs and gene transcription. The Section includes research groups headed by Dr Cameron Bracken, focusing on microRNAs and their targets and Dr Philip Gregory, investigating the regulation of alternative splicing in cancer.

### Inflammation and Human Ailments

Professor Vinay Tergaonkar

The goal of this collaborative effort with Prof Tergaonkar's laboratory at the Institute of Molecular and Cell Biology (IMCB) in Singapore is to understand the molecular mechanisms that regulate human ailments like cancer, inflammatory diseases like allergy and metabolic syndrome and the interplay between these.

### Leukaemia Unit, Molecular and Genetic Pathology

A/Professor Susan Branford

The Leukaemia Unit investigates the molecular response to therapy of patients with chronic myeloid leukaemia and the mechanisms of drug resistance.

### Lung Research

Professor Paul Reynolds

The group has a range of projects involving lung cancer, pulmonary vascular disease and airway inflammation, and includes gene and cell therapy strategies and the use of conditionally replicative viruses as cancer therapies.

### Lymphatic Development

A/Professor Natasha Harvey

The group's focus is to understand how the lymphatic vasculature is "built" during development and how lymphatic vessel growth and development is dysregulated in pathological settings including cancer, lymphoedema and inflammation.

### Molecular Pathology Research

Professor Hamish Scott

The laboratory's research focus is the identification of disease causing genes and mutations in humans and the study of the molecular pathogenesis of diseases, including familial cancer syndromes and rare genetic diseases.

### Molecular Regulation

Professor Sharad Kumar

The broad research focus of the laboratory is the cellular and molecular biology of disease. We study how cell death and ubiquitination control cell homeostasis during development and in disease.

### Molecular Signalling

Professor Stuart Pitson

The laboratory examines sphingolipid-mediated cell signalling pathways and how they contribute to cancer and other diseases.

### Neurovascular Research

Dr Quenten Schwarz

The research focus of the laboratory is to advance understanding of the molecular development of the neuronal and vascular systems.

### Tissue Architecture and Organ Function

Dr Guillermo Gomez

The focus is to understand how cell's capacity to generate physical forces and sense the biomechanical properties of its environment contribute to the architecture and function of organs and how this is affected in different types of cancers

### Translational Oncology

Professor Michael Brown

The laboratory team is focused on the preclinical and clinical development of novel antibody and T-cell-based methods for the diagnosis, monitoring and treatment of cancers, particularly of the skin, lung, and brain.

### Tumour Microenvironment

A/Professor Michael Samuel

The laboratory's major research focus is discovering the molecular toolkit that cancers use to exploit and modify the capabilities of other cells and tissues around them (the microenvironment) to promote their own growth and spread. The laboratory's specific aim is to uncover targets for new classes of therapies against cancers that are difficult to treat.

### Vascular Biology and Cell Trafficking

A/Professor Claudine Bonder

The laboratory's major focus is to investigate the contribution of the blood vasculature to disease. Examination of how the blood vessels form and are activated during disease progression may provide new treatment options for cancers such as melanoma and breast cancer, organ transplantation to cure diabetes and provide valuable information to overcome allergies.

### ACRF Cancer Genomics Facility

This state-of-the-art Facility is headed by Mr Joel Geoghegan and Dr Andreas Schreiber and provides opportunities to pursue studies in genomic medicine and bioinformatics

## Centre for Cancer Biology

An alliance between SA Pathology and the University of South Australia

### General Enquiries

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