OLIVIA NEWTON-JOHN
FOUNDING CHAMPION

Wherever I go people stop to tell me how cancer has touched their lives. Cancer isn’t something that only affects some of us. In some way all of us are affected by this terrible disease or know someone who is facing the challenge of cancer.

That’s why I’m so proud to see the wonderful work being done by scientists at the Olivia Newton-John Cancer Research Institute. The Institute isn’t just thinking about the cure for cancer, it is working on it right now.

Each time I visit I am thrilled to meet brilliant young scientists committed to solving one of the major challenges of our times. Their dedication and commitment shines through and the hope their work provides is a real beacon of light for us all.

Please read their stories in these pages and join me in congratulating ONJICRI on a brilliant year of work.

Love and Light,

Olivia

CONTENTS

OVERVIEW
Message from Olivia ......................... 2
Chairman’s report .............................. 4
ONJICRI at a glance ......................... 5
Joint Directors’ report ....................... 6

OUR HIGHLIGHTS
Brain cancer clinical trials ...................... 7
Focusing on our researchers .................. 8
Joining forces to tackle a common foe .............. 10

OUR LABORATORIES
Cancer Immunobiology ....................... 12
Cancer and Inflammation ..................... 14
Tumour Targeting .............................. 16
Oncogenic Transcription ..................... 18
Cell Death and Survival ....................... 20
Translational Genomics and Epigenomics ...... 22
Metastasis Research ......................... 24
Matrix Microenvironment and Metastasis ....... 26

OUR COMMUNITIES
Equipment, facilities and services ............... 26
Our patients: the road to recovery ............... 28
Cancer Clinical Trials .......................... 29
Collaborations and partnerships .................. 32
Students: the next generation .................... 33
Donors and supporters ........................ 34
Vale Lyall Henry Watts ....................... 35

OUR ORGANISATION
Board of Directors ............................ 36
Scientific Advisory Committee ................. 38
Organisational chart .......................... 40
COO’s report .................................. 41
Key financial results .......................... 42

SHARING OUR RESEARCH
Publications .................................. 44
International presentations ..................... 49

A SHOW OF SUPPORT
Olivia Newton-John Wellness Walk & Research Run .......... 51

Front cover image: Medical oncologist Dr Belinda Tse is part of the Institute’s push towards more tailored treatments for cancer patients. In addition to her patient responsibilities, she is a clinician scientist in the Translational Breast Cancer Program (full story page 11).
CHAIRMAN’S REPORT
THE HON JOHN BRUMBY AO
CHAIRMAN OF THE BOARD

One of the rewards of chairing the Olivia Newton-John Cancer Research Institute (ONJCRi) has been the opportunity to see, first hand, the way that clinicians from the hospital and scientists from the Institute are able to integrate their activities and work together to develop better outcomes for patients with cancer. It has been my longstanding belief that medical research can best find its true value through clinical collaboration and translation so I am particularly delighted to see this model working so well at the ONJ Centre.

Although a very new institute, the ONJCRi has been built on the legacy of the respected Ludwig Institute for Cancer Research and is furthering its achievements of producing high-quality scientific publications and taking new therapeutics into clinical trials. This year alone Institute researchers put their names to more than 100 scientific publications.

In the short time since the Institute’s establishment we have seen impressive growth with the recruitment of new laboratory teams and the development of exciting new initiatives such as the establishment of our Translational Breast Cancer research program and the development of the liquid biopsy blood test for cancer diagnosis by the Translational Genomics and Epigenomics laboratory. This blood sample test is already saving the lives of patients.

As Board Chairman I am proud to see the quality and strength of the Institute’s research prosper and grow. The work of the Institute’s laboratory teams is exemplified within this report, alongside that of our clinical scientists, who continue to develop more effective treatments to improve the quality of life through their clinical trials.

I thank the members of the ONJCRi Board, who freely donate their time and expertise to guide ONJCRi. I warmly thank the directors who retired in 2016, namely, Ms Jane Martino, Professor Brendan Murphy and Mr George Rolt for their contributions in establishing a solid foundation for the Institute to build on.

I convey the Board’s gratitude to the Executive Officers who play an important role in overseeing the day-to-day business of the Institute.

We are committed to ensuring that the Institute’s work continues to thrive, and are grateful for the role played by donors and supporters in our quest to defeat cancer.

I trust that you will enjoy reading about this work in this report.

THE HON JOHN BRUMBY AO
JOINT DIRECTORS’ REPORT

PROF JONATHAN CEBON
MEDICAL DIRECTOR

PROF MATTHIAS ERNST
SCIENTIFIC DIRECTOR

“The Tumour Targeting Laboratory reports promising results from international clinical trials it has led into a drug designed to counter aggressive brain cancer.”

The highlight of 2016 for our laboratory was the completion of a multi-centre, multi-national clinical trial, led by Associate Professor Hui Gan, investigating the antibody-drug conjugate ABT-414 in patients with glioblastoma multiforme (GBM). GBM is an aggressive form of brain cancer to which patients typically succumb within 18 months of the diagnosis. GBM tumours often have elevated levels of and/or mutations in the epidermal growth factor receptor (EGFR), which ABT-414 targets.

Previously, Professor Andrew Scott, Head of the Tumour Targeting Laboratory, successfully developed and conducted the first-in-human clinical study of anti-EGFR antibody mAb806 with the mAb806 patient portfolio licensed to pharmaceutical company AbbVie. Professor Scott and Associate Professor Gan, both clinical researchers, have continued their strong collaborative involvement in the development of this novel cancer therapeutic. Over the past three years, Associate Professor Gan has provided leadership in Australian and International multi-centre trials with the humanised antibody construct ABT-806, and the antibody-drug conjugate (ADC) ABT-414. ADCs are a rapidly growing class of anti-cancer agents, sometimes referred to as “magic bullets”.

They combine the tumour-targeting properties of monoclonal antibodies with the anti-tumour effects of potent cytotoxic drugs.

The study into ABT-414 showed impressive clinical responses. On the basis of these results we are continuing to work with AbbVie evaluating ABT-414 in newly diagnosed and recurrent GBM in additional Phase II/III clinical trials. Further research into biomarkers of response is continuing in our laboratory, and we aim to extend this success into clinical trials in patients with other EGFR-expressing cancers with new trials scheduled for 2017.

“Punching consistently above our weight” has been a determined commitment of the founding scientists and clinicians who undertook the bold challenge of creating the Olivia Newton-John Cancer Research Institute in 2014. Only two years on, the Institute has grown significantly and is firmly delivering on this vision to our stakeholders, patients and the community.

2016 has been a highly successful one for ONCRI in terms of scientific discoveries, clinical trial outcomes and success with government and private funding agencies who entrust scarce research dollars to only the best and brightest. However, the key ingredient to ONCRI’s progress remains the skills, passion and diversity of our scientists, clinicians, support staff and students, and their collective imagination to tackle cancer from the bench to the clinic and build the best multi-disciplinary teams to collaboratively face the next big questions. This enables ONCRI as the School of Cancer Medicine to build further synergies with complementary research conducted at our affiliates, La Trobe University.

The Institute’s strong linkages within the comprehensive cancer centre of our host institution, Austin Health, were enhanced during 2016 through new dual roles held by Institute clinician researchers. These include Professor Andrew Scott appointed Director, Department of Molecular Imaging and Therapy, Associate Professor Hui Gan appointed Director of the Cancer Clinical Trials Centre, and Professor Niel Tebbutt appointed Director, Medical Oncology Unit.

With diligent support from the Board of Directors and the Strategic Advisory Committee, the Institute has made critical new appointments and strategic investments, including the formation of our Translational Breast Cancer Program headed by Professor Robin Anderson. With this, as for any of ONCRI’s other research programs, our clinician scientists provide the vital link between the treatment needs of cancer patients and the discoveries made in the laboratory.

It is exciting to see that clinical translation is recognised as one of the priority funding areas for the Medical Research Future Fund, Australia’s world-leading health investment into the future. ONCRI is well positioned and looking forward to our future research pursuits and contributions towards the international efforts to better understand and control cancer.

PROF JONATHAN CEBON / PROF MATTHIAS ERNST
CRACKING THE COLON CANCER CODE

FOR MORE THAN 20 YEARS PROFESSOR JOHN MARRADASON, HEAD of the Oncogenic Transcription Lab, has concentrated his career on studying and attempting to battle colon cancer. John decided on colon cancer as a focus during his time as a predoctoral student, and has never wavered.

"Some people want to branch out and get broader but I didn’t," John said. "There was so much that needed to be addressed in that particular disease alone, I just wanted to stay in that field – I’m glad I did because it’s complex."

It takes years of training and reading to accumulate the knowledge to get on top of such a complicated subject and to be able to make a contribution. "I think I have a good understanding of the disease and the holes in our knowledge," he said. "I certainly have a good sense of where we can make a contribution. I know what has been achieved or failed. So we know what not to revisit."

John believes his team is close to cracking a major part of the colon cancer equation. Following 15 years investigation his lab appears on the brink of conclusively proving that certain types of HDAC (Histone deacetylases) enzymes are "pro-tumourogenic" (i.e. colon cancer causing). This is significant; the work could allow oncologists to use very targeted existing drugs to block these enzymes, rather than "bombing" all patients with non-specific drugs.

Since the human genome was sequenced 13 years ago, scientists such as John have been able to pinpoint the exact genetic changes that mutate a normal colon cell into a cancer cell and are tantalisingly close to perfecting drugs that will only slot into, and counter, those specifically mutated cells.

But there are many cancer cells, and some will mutate more than once or, within a day of drugs being administered, change their shape again to compensate. It’s a constant battle against a tricky foe with many faces.

The Oncogenic Transcription lab, comprising scientists, students and clinicians doing PhDs to better understand the science behind their work with patients, is a perfect example of the Institute’s boutique brand of collaborative science.

As pharmaceutical companies develop new drugs, John’s team conducts pre-clinical work, testing each drug on 80 genetic versions of colon cancer nurtured in the lab. "They’re our babies and our research tools."

By identifying which colon cancer cell lines greatly respond to a proposed drug, John hopes to inform oncologists which drug may provide benefits to an individual patient. After two decades, he is heartened by the successes but pushes on, working methodically and intently, to get colon cancer on the run.

I CERTAINLY HAVE A GOOD SENSE OF WHERE WE CAN MAKE A CONTRIBUTION.

GLOBAL AWARD FOR IMMUNE RESEARCH

WHEN DR KATHERINE WOODS RECEIVED THE EMAIL from the Society for Immunotherapy of Cancer informing her that her article had been chosen as the Best Basic Science Paper in its journal that year, her first thought was that it was spam. Receiving such an award came as a huge surprise.

Katherine is honoured by the endorsement and the international recognition it brings – not only to her research into the effects of inflammation on the immune system’s ability to fight cancer but also to the work conducted across the ONJ Centre.

‘EVERYTHING I DO IS GEARED TOWARDS AN END RESULT WHICH IS HELPING PEOPLE AND TRYING TO IMPROVE CANCER OUTCOMES.’

Katherine is a basic scientist, working to improve our understanding of how cancer works, (as distinct from translational cancer researchers, who use clinical trials to develop and improve treatments). Understanding the mechanisms behind cancer is an important part of research, informing the development of more effective prevention, diagnosis and treatment methods.

Having completed her PhD on African sleeping sickness in Ireland, Katherine turned her attention to cancer because “there is not a lot of African sleeping sickness in Ireland, as the name would suggest. I never saw a patient, or felt like there was any direct relevance to my research.”

In her current position as a postdoctoral research fellow she works alongside clinicians and hears directly about the patients she is trying to help. “Everything I do is geared towards an end result, which is helping people and trying to improve cancer outcomes. I think we do it well here because the oncologists and the researchers work so well together.”

Katherine’s research focuses on inflammation in melanoma and how cancer cells evade the immune system, particularly T cells, the ‘killer’ white blood cells that recognise infections as foreign, rapidly propagate and then clear the infection. Cancer, however, is made up of the body’s own cells so it is harder for the immune system to recognise it as hostile.

In some cases, the immune system is able to identify and then destroy cancer cells, the mechanism Immunotherapy makes use of. Katherine’s research has demonstrated that inflammation in the tumour results in changes to the molecules that the T cells target on cancer cells, blinding the T cell to recognising the cancer cell as hostile and killing it. Currently, about 20% of melanoma patients are cured using immunotherapies. The knowledge that inflammation can impact anti-cancer immune responses, and the increased understanding Katherine has provided of why and how this happens, will contribute to the ongoing increase in the success of immunotherapy.
Joining forces to tackle a common foe

Oncologist Dr Belinda Yeo is passionate about her work with patients and also about being part of a laboratory team seeking better, more personalised, treatments for them.

DR BELINDA YEO, CLINICIAN SCIENTIST, has a foe too small to be seen, even by the most up-to-date and sophisticated scanning technology. Belinda treats cancer patients but she is also part of a team of research scientists in the Translational Breast Cancer Program investigating infinitesimally small tumours.

Program Head Professor Robin Anderson said, “Belinda brings a clinical perspective to us. We bring the pre-clinical perspective of game-changing laboratory science to her.”

Belinda’s foe can be dormant in a patient’s body after treatment — often for 10 or more years — before coming to life again as secondary recurrence. Many of her patients are suffering from breast cancer, led by female hormones, in particular oestrogen. If their cancer is caught early, the vast majority of women will survive and not endure the cancer again. The “cures” that allow this are often achieved with drug therapies that prevent the mysterious micro-tumours from re-emerging.

“Most women I see are fit and well, and don’t have any other medical problems, apart from their breast cancer, which is the biggest threat to their life,” Belinda said. “But, shocked by this glance at mortality, many patients push for ongoing post-surgery treatment to definitely beat the disease, no matter the consequences.”

Belinda, like many oncologists, wonders whether the fairly low risk of secondary recurrence of breast cancer in some patients justifies the potential harmful side effects of “insurance” chemotherapy toxicity.

“I don’t want to deny women treatment. But I’d like to be in an era where we target our treatments more precisely to those women who have the most to gain from them, and spare women who have little to gain,” she said.

“Five or even 10 years of anti-oestrogen therapy can ruin sleep, wither a woman’s libido, bring on early menopause, affect fertility, and make bones brittle.”

Her quest is to find better tests to “personalise” treatments, to predict who needs what drugs, and to work out if a specific treatment is going to make a difference. More technically, this means investigating better ways to estimate recurrence risk in patients diagnosed with oestrogen receptor positive early breast cancer. “Ultimately, we want to maximise survival and minimise toxicity,” Belinda said. “Of course we want to cure our patients but we don’t want to cause them harm for the rest of their lives, and remember, many of these women have many years to live.”

Robin Anderson, who recently joined the ONCRI from the Peter MacCallum Cancer Centre, is enthusiastic about Belinda’s role in her group and the institute’s longstanding tradition of embedding researchers and clinicians in teams. “When I built my breast cancer research team 20 years ago, I started from a very basic biochemical molecular background, and conducted research with much ignorance about the potential clinical ramifications of my discoveries,” Robin said.

“The current model of multidisciplinary teams provides a wonderful two-way dialogue to inform us about the clinical relevance and significance of our laboratory work,” she said. “And it also exposes clinicians to the breadth of tools and technologies available in the laboratory for our quest to find new and better drugs for the treatments of our cancer patients.”

Belinda likes to also include her patients too in the process of translating laboratory findings into clinical practice. Raised in Sydney in a family of doctors, she originally planned to become a journalist before finding her way into medicine and then oncology, including over four years at the renowned Royal Marsden Hospital in London. The urge to be a communicator proved a strength as Belinda became a go-between for the scientists in her lab and patients, actively involving them in exploring their cancer and potential treatments.
Drugs that boost immunity are having unprecedented impact as new anti-cancer treatments. We seek to understand the intricate interactions and crosstalk between cancer cells and immune cells to improve responses to anti-cancer treatments. We are developing blood tests to obtain clinically relevant information about tumours.

NEW PROTEIN ARRAY MEASURES CANCER-SPECIFIC ANTIBODIES
Highly effective immunotherapies such as antibodies that target Programmed Death-1 (anti-PDL-1) have put immunology into the spotlight of translational cancer research, and highlighted the importance of being able to identify and measure the immune system’s interaction with cancer cells. To do this, and to relate it to patient outcomes, we have developed a protein array designed to measure more than 100 antibodies against cancer-specific proteins in a single drop of patient’s blood. This easy-to-use and cost-effective assay has been created through a collaboration with the Victorian Cancer Agency funded Melbourne Melanoma Project and collaborators in South Africa (Int J Cancer. 2014; 135(8):1842-51).

ANALYSING TUMOUR CELLS AS THEY CIRCULATE
In collaboration with colleagues from the University of Queensland, we developed a method to enumerate and analyse circulating tumour cells in the blood of melanoma patients. Blood samples contain numerous other non-target cells and molecules, most of which have a tendency to adhere to solid surfaces via nonspecific interactions. Our approach utilises a recently discovered alternating current electrohydrodynamic (AC-EHD) induced surface shear force, referred to as nanoshearing. A key feature of nanoshearing is the unique ability to agitate fluid to encourage contact with surface-bound melanoma-specific antibody for cell capture whilst removing non-specific cells from the surface. This platform achieved an average recovery of 84.7% from biological samples (Sci Rep. 2016; 6:19709).

COMPUTING TOOL IDENTIFIES MICRONORA/GENE INTERACTION
Very short pieces of RNA, called microRNA or miRNAs, are key regulators of cancer cell behaviour through their interaction with messenger RNA (mRNA). However, until recently there were no accurate tools to predict which genes they interact with and the biological consequences of these interactions. To address this problem, we developed a computing method to identify novel potential interactions between these molecules and to then assess the functional significance. (Mol Cancer. 2016 Nov 16;15(1):72; script workflow: https://github.com/ uqmiometrics/miMEL-miRminer). We showed that miRNA identified by this method plays a key role in regulating the spreading or outgrowth of cancer cells from an artificial tumour mass.

RESEARCH HIGHLIGHT
The proteasome complex inside each cell breaks proteins down into short peptide “epitopes” which are then displayed to the immune system. This allows diseased cells to be distinguished from normal cells and targeted for destruction. During infection or inflammation, an alternative form known as the Immunoproteasome is formed and this assists the control of infections. Dr Katherine Woods has studied the impact on cancer immunity when the proteasome complex switches between these two main forms. This dramatically changes cancer recognition by the immune system and so can have profound effects on the immune destruction of the cancer. The paper describing this work was awarded best basic science paper of 2016 from the Journal for Immunotherapy of Cancer (Woods et al, Mismatch in epitope specificities between IFN-gamma inflamed and uninflamed conditions leads to escape from T lymphocytes killing in melanoma. J Immunother Cancer. 2016;4:10). (See page 9 for more.)
CANCER & INFLAMMATION LABORATORY

PROF MATTHIAS ERNST
Scientific Director and Laboratory Head
Head of School of Cancer Medicine, La Trobe University

Cancer cells live and thrive in an environment of a large array of normal cells with tumours often corrupting these normal cells for their own advantage. The laboratory is striving to better understand how these interactions can be exploited to enhance anti-cancer treatments.

INVESTIGATING THE INTERLEUKIN-11/GP130/JAK/STATS PATHWAY
We have previously shown that this pathway facilitates the growth of gastrointestinal tumours that are driven by various bona fide oncogenic mutations (i.e., Apc, PKK etc.). We are genetically delineating the source and mechanism that results in excessive production of IL-11 and related cytokines as well as the exact nature of the Jaks involved in signaling. These insights will help us devise therapeutic strategies, including exploiting already approved clinical compounds that cause minimal side effects on non-tumour tissues.

KINASE IDENTIFIED IN MYELOID CELL REGULATION
We have identified Hck as a Src-family tyrosine kinase that plays an important role in regulating the phenotype of macrophages and myeloid immune cells. As depicted in the diagram when aberrantly activated, Hck not only causes spontaneous consolidation of the lungs with inflammatory cells, but also promotes the growth of colonic tumours. This observation amounts to the first example of a Src-family kinase expressed in normal cells affecting the growth of a solid malignancy.

CYTOKINE ROLE PROBED IN INFLAMMATORY BREAST CANCER
This relatively uncommon form of disease amounts to the most aggressive form of breast cancer with limited treatment options. We are exploring the role of inflammatory cytokines as local mediators, possibly between genetically distinct, individual tumour subclones that collectively amount to the cancer cell heterogeneity observed in any one human malignancy.

PURSUING DCLK1 IN STEM CELL RESEARCH
Cancer stem cells contribute to cancer growth and promotion, including metastatic spread and acquisition of resistance to therapy, through their capacity to self-renew and to differentiate. Recently it has become clear that inflammatory processes promote the transition of a Dclk1 protein-expressing subset of terminally differentiated cells of the intestinal epithelium can acquire cancer stem cell potential. Accordingly, we are investigating the molecular contribution of serine/threonine Dclk1 to this process and are pursuing the suitability of Dclk1 as a therapeutic target.

RESEARCH HIGHLIGHT
Preclinical in vivo models provide an opportunity to understand and replicate the complex interactions between cancer cells and their normal counterparts. We have established new models that carry molecular switches allowing us to turn on and off the gastrointestinal epithelium the faulty genes (either as oncogenes or tumour suppressor genes), or the genes or genes that encode protein(s) that we can ultimately therapeutically target with new drugs. These models will help us gain better insights to understand how current therapies work for gastrointestinal cancers and how we can design better treatment for the future. (Thiem et al., 2016 Cancer Research 76:2777, Thiem et al., 2016 Genesis 54:526)

RESEARCH TEAM
Shakkat Arbaa, Sharad Abhbra, David Bajbays, Jindela Brunsberg, Michael Boveret, Giulia Buchmann, Andrew Carey, Annalisa Canto, Ashwani Chema, Caroline Dijkstra, Brenda Dogan, Mitza Elvanis, Matthias Ernst, Nina Elsayad, Jennifer Hayek, Cameron Johnstone, Ruwana Ladd, Federic Masson, Ruary Morrow, Megan O’Connor, Robert O’Donoghue, Alex Owen, Ashleigh Fox, Natalie Zilkauskis
Our laboratory aims to develop improved ways to diagnose and treat cancer through imaging technologies and targeted therapies. We develop novel antibodies that inhibit tumour growth and translate these discoveries into clinical trials for cancer patients, striving to improve patient survival and quality of life.

**TARGETED THERAPY TO EPIDERMAL GROWTH FACTOR RECEPTOR**

Our laboratory has developed an antibody (mAb806) which binds to a tumour-specific form of the Epidermal Growth Factor Receptor (EGFR) expressed on cancer cells. Over the last few years, we have taken this laboratory research into human trials, as detailed in the highlight section of this annual report. We are also exploring in our laboratory how, despite the clinical successes, tumour sensitivity and resistance to the patent 806 antibody-drug conjugate ABT-414 occurs, aiming to identify predictive biomarkers for patient selection, and optimal treatment approach. In addition to the ongoing clinical trials in glioblastoma, we are investigating in preclinical models this treatment approach to target other EGFR expressing cancers, including cancer of the colon, breast and mesotheloma with new trials planned to commence in 2017. We are also pivotaly involved in designing trials of a next generation version of these antibody-drug conjugates for Phase I testing in 2017.

**TREATMENT PREVENTS AND REVERSES CACHEXIA**

Cachexia is a syndrome of weight loss which is seen in more than 50% of patients with advanced cancer, as well as other significant medical conditions (e.g. heart disease, diabetes, HIV). Over the past 12 months, in collaboration with Professor Nick Hoogenraad and Dr Amelia Johnston at La Trobe University, we have developed a humanised antibody which, in the laboratory, prevents and reverses cachexia. This research also involves identifying blood and imaging biomarkers of cachexia, which we will use for optimising treatment with our humanised antibody. We aim to develop this antibody for clinical trials which we expect to commence within three years.

**MOLECULAR IMAGING OF CANCER**

Using sophisticated chemistry techniques, we have been working on developing imaging probes that can identify patients suited to treatment with hormone therapies against ER-positive and AR-positive breast cancer cells, certain key oncogenic signalling pathways, and Immunotherapy. Projects underway include: a novel PET (positron emission tomography) probe that can identify lipid signatures in prostate cancer predictive of anti-androgen therapy response; evaluation of hypoxia in tumours; identification of a cell surface molecule responsible for breast cancer response to therapy; clinical trials of FDG labelled antibodies aimed at validating targets and identifying optimal dose and patient selection for therapy; and drugs to Image sensitivity and response to drugs targeting the PI3K/Akt and Ras/Raf/Mek pathway.

**RESEARCH HIGHLIGHT**

See page 7 for more.

**RESEARCH TEAM**

Lisa Sadi, Laura Elias, Ingrid Barnsley, Gillian Cane, Penny Ling Cho, Peter Cottle, Kuldeep Roy, Benjamin Ciarlo, Nancy Guo, Eliza Blanken, Dylan King, Nathan Leemans, Pink Phoebe Lee, Sue Ting Lee, Sheryl Lin Ivan, Zhang Liu, Carmel Mannes, Sagar Panseik, Adam Pansie, Angela Mygros, Andrew Scott
Our laboratory is seeking to identify new drug treatments for colorectal, gastric and biliary tract (bile duct) cancers, and is aiming to develop strategies to use existing drugs more effectively. We have a longstanding interest in the role certain proteins play in the progression of colorectal cancer.

EPIGENETIC THERAPY: PROGRESS IN UNDERSTANDING COLON CANCER DRUGS
We are interested in epigenetic therapy, the non-genetic influences on gene expression and how they can be used therapeutically. We have shown that two families of proteins—histone deacetylases (HDACs) and bromodomain-containing proteins—are required for colon cancer growth, and demonstrated that drugs targeting these proteins block the growth and cause death of colon cancer cells. We advanced understanding into why these drugs work more effectively in some cancers, using this to develop drug combinations that can enhance their activity.

KEY TRANSCRIPTION FACTORS IDENTIFIED IN COLON CANCER CELL DIFFERENTIATION
Our laboratory investigates the molecular basis for why cellular and tissue differentiation is perturbed during colorectal tumourigenesis. Loss of cellular and tissue differentiation is a hallmark of colorectal tumourigenesis and is associated with increased propensity for cancers to metastasise and be resistant to conventional chemotherapy. We have identified a number of key transcription factors that are deregulated during this process, using this information to investigate mechanisms by which differentiation can be reprogrammed in tumour cells. We have developed mouse models in which these genes are inactivated specifically in the colon to study the impact on differentiation of both the normal gut and colon cancers.

RESEARCH HIGHLIGHT
We made a key discovery about the basis for why different tumours respond differently to HDAC inhibitor drugs. Based on this discovery we designed and successfully tested a novel drug combination that can overcome resistance to these drugs in preclinical models.

The laboratory also identified two molecular determinants of the response of biliary tract cancers to the drug Everolimus. Clinical trials have previously shown that a subset of patients with biliary tract cancer respond to treatment with this drug and our discovery will enable subsequent clinical testing of it to be undertaken only in patients likely to gain benefit.

DISCOVERY OF BIOMARKERS TO TARGETED THERAPIES
Through access to clinical trial samples provided by our long term collaborator Associate Professor Niall Tebbutt, our laboratory has an active translational research program aimed at discovering “biomarkers” that can predict a patient’s likelihood of responding to a specific therapy. The treatments we are currently investigating include: angiogenic therapies (avastin), multi-kinase inhibitors (regorafenib), BRF inhibitors and miRNA inhibitors, in colorectal cancer, gastric cancer and cholangiocarcinoma. Recent findings have also shown that colorectal cancers can be divided into specific “molecular subgroups”. We are applying the classification criteria to clinical trial samples we have collected to assess whether these distinct molecular subgroups respond differentially to therapy.

RESEARCH TEAM
CELL DEATH AND SURVIVAL LABORATORY

Our laboratory studies the mechanisms by which cells either kill themselves (a process called apoptosis) or which help them survive in response to various stresses. It is important to understand how these processes are regulated to learn more about how cancer develops, and ultimately develop better treatments.

NOVEL REAGENTS DEVELOPED TO ACT ON BCL-2 PROTEINS IN MELANOMA
Proteins of the Bcl-2 family are essential for determining the survival of all cells. However, when their expression is deregulated they can also contribute to the development of cancer. Work in the Cell Death and Survival Laboratory is examining the role of Bcl-2 proteins in melanoma. Using several approaches, we have developed novel reagents that can specifically target certain family members and neutralise their pro-survival activity in cells. We have now shown that inactivation of two Bcl-2 family members is most critical for effective melanoma cell killing in vitro and in animal models. Future work will focus on developing drugs against these proteins for potential clinical applications.

TARGETING MYC IN CANCER
Myc is another gene that is often deregulated in cancer leading to uncontrolled cell growth. Therefore it also represents an attractive drug target. However, this has proven challenging and no effective drugs directly targeting Myc have yet to emerge. We are collaborating with a leading Australian biotechnology company, Phyllogics, to characterise novel peptide-based reagents they have developed that potently inhibit Myc. Our studies have shown that these are highly effective in some blood cancers, especially when combined with Bcl-2 protein inhibitors. Ongoing work will focus on understanding the precise mechanism of action of these unique reagents and examine strategies by which we can make them more potent.

UNDERSTANDING CROSSTALK BETWEEN CELL DEATH AND CELL SURVIVAL
Autophagy is a process used by cells to recycle contents that are damaged or defective in order to generate energy. Like apoptosis, deregulated autophagy is implicated in cancer development and progression. There is also evidence that this cell survival process is interconnected with the apoptosis pathway controlled by the Bcl-2 family of proteins, though this has been controversial. We are using a variety of techniques including biochemical, cellular and structural studies, combined with novel mouse models we have developed, to better understand how the apoptotic and autophagy pathways talk to each other. We will also examine how induction or suppression of autophagy can influence the effectiveness of drugs used in cancer treatment.

RESEARCH HIGHLIGHT
All cells possess the ability to kill themselves by a genetically programmed form of cell death called apoptosis. This process is deregulated in most cancers, allowing damaged cells that should otherwise be removed to grow uncontrollably. Collaborating with Professor Ben Klei’s laboratory (Walter and Eliza Hall Institute), we characterised a novel mouse model to provide critical new insights into how apoptosis regulation occurs in an animal. These studies showed that an interaction between two key proteins (Bcl-2, and Bcl) is essential for the survival of certain cells of the immune system. It also dictates the effectiveness of some chemotherapies, representing a target for new drugs. (Lee et al., 2016; Genes and Development 30:1240-50)

RESEARCH TEAM
Maria Evangelista, Doug Fairlie, Christos Gatenby, Tiffany Harris, Irene Lee, Cultse Hamvas, Geoffrey Versas, Thompson, Sharin Tran
The Translational Genomics and Epigenomics (TGEN) Laboratory undertakes gene-based and genomics-based research into cancer diagnostics with a focus on collaborative research, aiming for the optimum treatment of cancer patients. Our laboratory operates at the interface of translational investigations, being active in both research and diagnostics.

**LIQUID BIOPSY OPTIMISES PATIENT MANAGEMENT**
Circulating tumour DNA is a direct measure of the amount of tumour in the patient. Assays to detect circulating tumour DNA would meet a real clinical need in the management of cancers as an efficient way of monitoring success of the therapy and the detection of relapse. Monitoring circulating tumour DNA is dependent on the identification of cancer specific mutations. We are developing these assays so that they can be applied to each cancer patient.

**PURSUING METHYLATION AS A MECHANISM OF CANCER PREDISPOSITION**
Up to now, the emphasis has been on identifying individuals with a family history of breast cancer. Our new approach to understanding non-familial breast cancer risk is based on epigenetics, which is the study of how our genetic machinery is programmed. Mutations in the BRCA1 gene, which is involved in the repair of DNA damage, underlie much familial breast cancer. Our previous studies indicate that an epigenetic modification called DNA methylation, which can inactivate the BRCA1 gene, might be a novel mechanism of breast cancer predisposition. We are examining normal tissues for evidence of DNA methylation of the BRCA1 gene to identify individuals who may be at increased risk of developing breast cancer—a novel approach. Studies of methylation as a mechanism of cancer predisposition represent a frontier area in cancer research. Once it is understood how such methylation arises, it may be possible for dietary or other interventions to reduce it, and decrease the risk of developing cancer.

**MINIMISING SEQUENCE ARTIFACTS IN DNA FROM FORMALIN-FIXED TISSUES**
Cancer patients are increasingly treated with molecularly targeted therapies that require molecular diagnostic testing. Formalin-fixed tissue is the primary material used for diagnosis of molecular targets, but it is challenging to test. A serious problem in using this tissue for molecular testing is the presence of sequence artifacts, which are not readily distinguished from true mutations and increase the risk of false positive results. This project aims to solve the problems of formalin-fixed tissues to improve the current molecular diagnostics for accurate delivery of precision medicine in cancer.

**RESEARCH HIGHLIGHT**
In 2016, our laboratory became accredited by the National Association of Testing Authorities (NATA) for compliance with ISO/IEC 17025 and ISO 15189 (Medical Laboratories—Requirements for Quality and Competence) through the NATA’s research and development program. All research including that undertaken by students and trainees is carried out according to the standard ISO/IEC 17025. In addition, we gained specific accreditation to perform droplet digital PCR testing of liquid biopsies from cancer patients and DNA methylation analysis of tumours. As a result, we were engaged by AstaZeneca to perform EGF R testing for the T790M mutation in lung cancer patients to help identify the most suitable therapy options for these patients.

**RESEARCH TEAM**
Hongbo Du, Alexander Dobrovic, Ramesh Elderd, Su Ka Goh, Ishi Li, Thomas Mikeka, Raniay Molania, Ashan Munufier, Thomas Witkowski, Giada Zappariti
METASTASIS RESEARCH LABORATORY

PROF ROBIN ANDERSON
Head of Translational Breast Cancer Program and Laboratory Head

The Translational Breast Cancer Program is composed of the Metastasis Research Laboratory and the Matrix Microenvironment & Metastasis Laboratory. The program seeks to identify the genes that control the spread of breast cancer, a process called metastasis.

METASTASIS RESEARCH LABORATORY

Our research is focused on developing improved therapies for patients with recurrent or progressive breast cancer. Whilst therapies for early breast cancer are very effective, treating patients in whom the cancer recurs is more challenging as the secondary cancer is often resistant to the therapies that initially were effective.

BMP4 IDENTIFIED AS A POTENT SUPPRESSOR OF BREAST CANCER METASTASIS

Using preclinical models, where the primary tumours have varying capacity to spread to other organs (typically bone, lung and lymph nodes), we discovered that BMP4 is a protein that is expressed only in tumours that are non-metastatic or poorly metastatic. This was confirmed in breast cancer in patients, where patients with high levels of BMP4 have a better overall survival than those with low levels of BMP4. In those models, therapy with recombinant BMP4 protein can prolong the survival of the mice by preventing the development of secondary tumours.

We have demonstrated that BMP4 can reduce metastasis by blocking the production of a protein called G-CSF (granulocyte colony stimulating factor). By reducing the production of G-CSF and the consequential reduction in the number of neutrophils in the bloodstream, BMP4 can reduce the spread of the tumour cells.

Our current research focuses on how BMP4 alters G-CSF levels and determining which human cancers would benefit from a treatment that mimics its actions.

THERAPY TARGETING MACROPHAGES INCREASES CANCER SPREAD

More than 20 clinical trials are underway globally assessing whether the inhibition of macrophages by blocking a receptor on their cell surface called CSF-1R will block tumour growth. We investigated whether a similar treatment would block the metastasis of breast cancer using our preclinical models. To our surprise, we found that inhibiting CSF-1R actually increased the spread of the cancer to the lung and bone, but had no effect on the growth of the primary tumours. To understand why metastasis is increased, we measured the numbers of macrophages and neutrophils in the tumours and discovered that the neutrophils were increased in number. We then looked in the blood for proteins that had changed after the macrophage-inhibiting treatment and found high levels of G-CSF, the factor that increases the blood levels of neutrophils. By using another treatment that blocks the activity of G-CSF, we were able to reverse the induction of metastasis caused by inhibiting macrophages. We concluded that patients receiving a therapy that inhibits macrophages should be monitored carefully for increases in G-CSF and tumour-promoting neutrophils. We are now analysing G-CSF use in the clinic and looking for any possible detrimental effects of this.

RESEARCH HIGHLIGHT

Using our preclinical models of metastatic disease, we have discovered that some tumours can release G-CSF that promotes metastasis by recruiting tumour-promoting neutrophils. We have shown that neutrophils, normally thought to be protective against cancer, can actually promote cancer spread. By using an antibody therapy that blocks the activity of G-CSF and hence the recruitment of neutrophils from the bone marrow, we can prevent the development of metastasis.

RESEARCH TEAM

Robin Anderson, Stefan Boden, Allan Burness, Katrina Boucheron, Nick Redners, Bill Tang, Kathryn Visser, Belinda Yeo
DR NORMAND POULIOT
Laboratory Head

TARGETING TUMOUR-VASCULAR ADHESIVE INTERACTIONS TO COUNTER BRAIN-METASTATIC BREAST CANCER
Breast cancer patients are increasingly being diagnosed with recurrence of the cancer in the brain (metastases). This typically occurs in the disease’s progression and is incurable. The mechanisms by which circulating breast cancer cells reach the brain, and overcome the protective function of the blood-brain barrier to colonise the brain remain poorly understood. We have identified multiple cell adhesion receptors involved and aim to understand how these receptors cooperate to facilitate attachment and transmigration of breast cancer cells through the blood-brain barrier. Specific inhibitors of adhesion receptors are being evaluated or developed as novel therapeutics to prevent or delay the progression of brain metastases.

NEW THERAPIES FOR BRAIN-METASTATIC HER2-POSITIVE BREAST CANCER
Patients diagnosed with the “HER2” subtype of breast cancer are at higher risk of developing incurable brain metastases. However, the patients who develop brain metastases cannot be identified beforehand. This project makes use of unique animal models that mimic the spread of HER2 breast cancer to the brain to define a predictive HER2 brain metastasis gene signature that can be used to identify high-risk patients. Using these models of breast cancer brain metastasis, we are testing the efficacy of novel therapies targeting adhesion receptors in combination with HER2 inhibitors to block HER2 breast cancer spread and prevent resistance to HER2 inhibitors.

CONVERTING TRIPLE NEGATIVE INTO ANTI-OESTROGEN-RESPONSIVE BREAST CANCER
The triple-negative breast cancer (TNBC) subtype rapidly progresses to metastasis and does not respond to endocrine therapy due to the absence of oestrogen receptors. Moreover, which TNBC patients will develop metastases cannot be predicted. The overall goals of this project is to validate new biomarkers to identify TNBC patients at high risk of metastases and to test a novel approach to make metastatic TNBC amenable to endocrine therapy.

We have found that specific matrix proteins and their receptors contribute directly to TNBC metastasis and resistance to anti-oestrogens. Accordingly, we are investigating whether co-expression of matrix proteins and cognate receptors in tumour biopsies can be used as early predictors of patients with a higher risk of metastatic recurrence and poorer clinical outcome. We are also testing novel inhibitors targeting the function of matrix proteins to convert metastatic TNBC into anti-oestrogens responsive tumours.

Our hope is that this research project will lead to improved clinical management of TNBC patients by enabling the use of anti-oestrogens already used successfully in the clinic but normally ineffective against this tumour subtype. Co-expression of matrix receptors in TNBC tumour biopsies could identify high-risk patients most likely to respond to endocrine therapies.
Our research and development drive is underpinned, enhanced and advanced by outstanding platform technologies, facilities, technical expertise and support services that operate within 5,500 square-metre state-of-the-art laboratories.

Our facilities include multi-modality imaging, flow cytometry and protein production facilities (detailed below), bioservices, radiation and instrumentation, radiochemistry, histology as well as centralised cell bank and maintenance services.

ACRF CENTRE FOR TRANSLATIONAL CANCER THERAPEUTICS AND IMAGING

The ACRF Centre was established for medical research and preclinical investigations through a $2 million grant from the Australian Cancer Research Foundation. The Centre specialises in: PET-MRI Imaging, SPECT CT Imaging and WS Spectrum Blurnmescent and Fluorescence Imaging. Supported by radiochemistry and medical physics expertise, these sophisticated molecular imaging capabilities facilitate our research into novel cancer therapies and mechanisms of cancer, including exploring the immune response and processes of metastasis.

VECTRA MULTI-SPECTRAL IMAGING PLATFORM

The first of its kind in Australia, the Vectra Imaging platform was established in 2016 through a grant from the Ian Porter Foundation. This automated, high-throughput quantitative pathology imaging system allows researchers to gain a deeper level of understanding of cancer mechanisms through insight into the role of immune cells within solid tumours and the tumour microenvironment. It utilises seven-colour multiplexing and visualisation capabilities enabling the accurate detection and measurement of weakly expressing and overlapping biomarkers within a single tissue section.

MAMMALIAN PROTEIN EXPRESSION, PRODUCTION AND PURIFICATION FACILITY (MPFP)

The MPFP is a dedicated facility that can produce small to large amounts of high-quality recombinant proteins and antibodies for use in medical research. The MPFP specialises in cell line development, biologics production, protein purification, protein analysis and protein characterisation. These products include novel cancer targeting monoclonal antibodies that our researchers have generated and are characterising through preclinical cancer models for clinical translation.

MOLECULAR DIAGNOSTICS

The Translational Genomics and Epigenomics Laboratory is the first lab in Australia to have an NATA accredited test using tumour DNA to detect tumour growth. This innovative blood test makes it possible to diagnose and monitor a patient’s cancer treatment progress without invasive tests and worryingly lengthy waiting times to get results. The testing services include:

- Plasma BRAF V600E/K mutation melanoma testing using droplet digital PCR (melanoma)
- Plasma EGFR L858R mutation testing using droplet digital PCR (lung and colorectal cancer)
- MGMT methylation testing (brain cancers)
- MLH1 methylation testing (colorectal and endometrial cancers) and.
- BRCA1 methylation testing (breast and ovarian cancers).

FLOW CYTOMETRY CORE FACILITY

Flow cytometry is a powerful laser-based technology used to rapidly analyse the properties of single cells. This facility provides analytical cytometry and high-speed cell sorting services to the research community of ONCIR, affiliates and external users. Flow cytometry can also be applied to prepared cellular components in basic cancer cell biology, preclinical, or translational analyses such as examining patient blood cell populations and immune cell changes with therapy.

Opposite: Image created by Vectra Imaging Platform. A snapshot of the tumour microenvironment shows an intricate and complex interaction between the tumour cells (blue) and the cells in the tumour stroma (intermediate green, yellow, and white).
In 2016, NATASHA STORCH, 34 YEARS OLD AND WHO HAD given birth to a baby daughter only months before, came to the ONJRC laboratory complaining of pain in her abdomen. A CT scan revealed a number of cancerous tumours throughout her body. Natasha’s doctors needed to find out what type of cancer they were dealing with and fast. In such cases, a tissue sample is usually collected during surgery or a similar invasive procedure, and laboratory tests conducted over two to three weeks before any clear answers emerge. Natasha was not able to wait several weeks.

‘WHEN I WAS 34, I GAVE BIRTH TO MY DAUGHTER MARLEY, AND MONTHS LATER I WAS DIAGNOSED WITH STAGE 4 MELANOMA. IT WAS A YEAR OF ENORMOUS HIGHS AND CRUSHING LOWS.’

Fortunately, Tom Wiktorowski, a research scientist at the ONJRC laboratory, could enlist a new blood test to fast-track the process and circumvent the need for more invasive surgery. Called a liquid biopsy, the test helps researchers identify whether a cancer patient will respond to a specific treatment, and to learn when a treatment stops working and new options are needed.

Tom took a blood sample and used the tumour DNA blood test to identify the type of tumour growing in Natasha’s body. Within six hours of taking her blood sample, doctors knew Natasha had Stage 4 metastatic melanoma, a serious and life-threatening diagnosis.

Natasha was put onto a specific treatment for such tumour DNA mutations, which stopped the tumour cells multiplying; any existing tumour cells soon died off naturally. Another blood test six weeks later detected no tumour DNA in Natasha’s blood.

Natasha comes in for regular tests, safe in the knowledge that should such harmful cells reappear her doctor can act immediately.

PATIENT STORIES

In 2016, the ONJRC was accredited by the National Association of Testing by the National Association of Testing Authorities (NATA) for a breakthrough technology to perform blood tests for melanoma and lung cancer patients to detect and analyse cancer genes. This new approach is already helping to save lives . . .
GLOBAL NETWORK
Our network of international collaborative organisations, clinicians and researchers enables us to deliver high impact translational research.

THE NEXT GENERATION
The talent and enthusiasm of our young scientists is boosting the work of the Institute’s laboratories and benefiting cancer research globally.

JANSON TSE
PATIENTS’ WELLBEING THE FOCUS
Janson has been at the ONJRCI for six years and is currently completing his doctorate in the field of HDAC inhibitors in Professor John Markisdsson’s laboratory. Specifically, he’s investigating the mechanisms of HDAC inhibitor induced anti-tumour activity and then the identification of novel therapeutic combinations involving these inhibitors.

The lab is identifying specific HDAC inhibitor drugs to target a range of cancers: Janson is excited by the possible ramifications of its findings.

“Chemotherapy and other therapies can come with a lot of side effects,” he said. “With precision drugs, we can limit that and let patients have a healthier treatment option, with less side effects, while knowing that they will respond better to these exact drugs. The overall wellbeing of the patient means a lot.”

Janson loves working with clinicians so he can witness his lab’s scientific research pushing all the way through to patients, making the ONJRCI the perfect home for his research.

“I hope in my time we will see a cure for cancer but we are part of the wellbeing centre, so if we can find an extra six or 12 months for a patient, the things they could do with that time is immense.”

DR MILES ANDREWS
AIMING FOR GREAT SCIENCE
Having finished a fellowship in 2012 at the Olivia Newton John Cancer Research Institute as a clinician and researcher, Dr Miles Andrews spent five years at the Olivia Newton John Cancer Research Institute as a clinician and researcher.

Miles’ plan is to do some great science, achieve some notable publications and forge important contacts with such resident “rock star” cancer researchers as immunologist Professor James Allison, whose discoveries have led to new treatments for cancers, including the first drug to extend survival in patients with advanced melanoma.

International ‘street cred’ established, Miles then plans to return to Australia, hopefully to run his own research laboratory while continuing research work. Miles’ research focus is on cancer immunotherapy, developing and perfecting drugs that block T-cell inhibitory molecules or, put more simply, stop cancers from blocking the body’s immune system. Miles admits that while being in such a big facility as the M.D. Anderson has its advantages, he miss the easy collaboration and ability to have “both sides of the fence” conversations with clinicians and researchers at the ONJRCI.

THE POWER OF PARTNERSHIPS
Working with others strengthens our ability to deliver our mission through education, research and patient care.

The Institute is affiliated with La Trobe University, sharing knowledge, skills, research, training of medical researchers and translating research into clinical practice to ultimately improve health outcomes. We established the School of Cancer Medicine, headed by Scientific Director Professor Matthias Ernst, as an academic department of the University to conduct collaborative research and research training.

Operating as an independent research Institute, the Institute is embedded within the Olivia Newton-John Cancer Wellness and Research Centre operated by Austin Health, the largest metropolitan health service in Victoria. Occupying three floors of dedicated research space within the purpose built comprehensive cancer centre, the Institute is actively engaged in integrating clinical medicine with clinical and laboratory research.

As a reflection of the Institute’s relationships with Austin Health and La Trobe University, each entity has a representative member on the Institute’s Board of Directors.

As successor to the Australian operations of the Ludwig Institute for Cancer Research (LICR), our founding laboratory heads have continued appointments and collaborative links with the global LICR research community.

The Austin Health research precinct, Austin LifeSciences, comprises eight research institutes and Melbourne University Departments of Medicine and Surgery on campus. This corpus of over 800 researchers in a clinical setting provides a stimulating research and training environment.

The depth and impact of our research is enhanced through these partnerships as well as the many national and international collaborations with researchers, clinicians and industry.

STUDENTS

PHD STUDENTS
Adams, Mariah
Andrews, Miles
Bader, Stefan
Blaise, Marissa
Chen, Peter
Chilton, Fresh
Jeans, Laura
King, Hynek
Liu, David
Liu, Jen
Moloney, Rowan
Owens, Alex
Parish, Jagan
Perry, Matthew
Robertson, Graham
Thompson, William
Tiu, Jason

DMED SC STUDENTS
Liu, Min Sen
Mooi, Jennifer
Kua, Yee
Manwell, bla
Yang, Yatseen

MSC STUDENTS
Gakatya, Chistiana

BSC(HONS) STUDENTS
Brey, Daniel
Lowe, Jason
Ranao, Cianese
Thomson, Pattna

32
33
DONORS AND SUPPORTERS
The Olivia Newton-John Cancer Research Institute is grateful to the individuals and organisations who supported our research in 2016.

INDIVIDUALS AND ORGANISATIONS
The Hon John Brumby AO
Cancer Research Advocates Blekars
The Circle
Eltham Town Club Inc
Gordon City Lions Club
Gary John Kenny
Eva Kerwood and Friends
Kinglake Pub
Laneway Espresso Dernama
Loyal Orange Institution of Victoria
Macarthur Senior Citizens Group
HPFU Association Inc
Yvonne Moon (OMI OAM VC)
Linda Bando Nicholls AO
Vicki Rippon
Anastasia Savas
Jeremy Tsin and Paul Caron
Nikolas Vastsull
Peter and Heather Wood
Katherine Woodthorpe
Anonymous (3)

TRUSTS, FOUNDATIONS, INDUSTRY GRANTS AND GOVERNMENT FUNDING
ANZLUP Cancer Trials Group
Austin Medical Research Foundation
Australian Government—Department of Industry, Innovation and Science
Australian Gastro-Intestinal Trials Group (AGItG)
Bell Charitable Fund
Bendigo Family Charitable Endowment
Harold and Cora Brennen Benevolent Trust (Equity Trustees)
Brian Smith Endowment (Equity Trustees)
Brisbane Myer Squibb Cancer Australia Priority Driven Cancer Research Scheme
Cancer Council Victoria
Calvary Charitable Foundation
CanTeen Charitable Foundation
Cura Brain Cancer Foundation
Eddy Dunn Endowment
Fireside Foundation Limited
Glaxo Smith Kline Biologicals S.A.
Harold Mitchell Foundation
Ian Potter Foundation
International Association for the Study of Lung Cancer (IASLC)

OUR SPECIAL THANKS TO FAMILY AND FRIENDS WHO MADE GENEROUS GIFTS IN MEMORY OF
Zoe Baglioni
Peter Billings
Leonie Patricia Borg
Thommo Cora
Rotary Heather Hoy
Steven Kirkaopoulos
Christopher Nikolov
Mary Bradford New Myers
Graham Whale
Margaret Young

GIFTS IN WILLS
Estates of the late Ron Storey
Estates of the late Teresa Mary Wardell

Vale Lyall Henry Watts
15.1.1951 – 15.11.2014

IN 2004, LYALL HENRY WATTS NOTICED A SWELLING IN HIS ABDOMEN. After four years and many visits to doctors and specialists, Lyall was diagnosed with incurable peritoneal mesothelioma, a cancer of the tissue that lines the lungs, stomach, heart and other organs. This invisible disease takes many years to develop and is caused by exposure to asbestos.

Lyall was most likely exposed to asbestos when young, visiting building sites where members of his family worked. By unknowingly breathing or ingesting asbestos particles which lodged in his organs, peritoneal mesothelioma developed slowly until he was diagnosed more than 30 years later. Australia has one of the highest rates of mesothelioma in the world with 726 Australians diagnosed each year. It remains one of the deadliest cancers, with a 5-year survival rate of just 7%.

Upon diagnosis, Lyall was determined to do whatever he could to help find better treatments and a cure for the disease. In addition to actively promoting education and awareness aimed at reducing future exposure to asbestos dust, Lyall was passionately involved in furthering research into the disease and donated money to ONCIR’s research efforts and wished that more funds were available to help scientists find a cure.

Lyall died on 15th November 2014 of asbestosis and pleural mesothelioma, at the age of 63. Yet even in death he helped the cause, donating his body to research on his body was completed. When someone from the University of Melbourne called to confirm this, Gary asked, “Did Lyall know this?”

They said he was well aware. It was a lovely surprise.

In honour of Lyall, his partner Gary Kenny and Lyall’s mother Marjorie Watts and sister Sandra Houston established The Lyall Watts Mesothelioma Research Grant with Cancer Council Victoria who awarded $700,000 for two new research projects in 2016. Our clinician researchers, Associate Professor Tom John and Professor Andrew Scott, have received funding to continue their work into targeted antibody therapies for malignant mesothelioma. Our thanks to Gary, Sandra and Marjorie for honouring Lyall’s memory in this special way.

Patient’s urge to find answers leads to ultimate donation

HELP FIND A CURE FOR CANCER
With your support our researchers and clinicians can continue to work together to help people live better with cancer and defeat it.

For further information or to make your gift today, please call +61 3 9496 5726 or contact philanthropy@onjri.org.au

From left: Marjorie Watts, Stella and Sandra Houston, Lyall Watt.
BOARD OF DIRECTORS

ONCRI is an independent medical research institute governed by a Board of Directors including representatives from stakeholders Austin Health and La Trobe University.

SALLY CAPP
Sally Capp has extensive experience in executive leadership roles including at the Victorian Chamber of Commerce, KPMG and ANZ Bank, and represented the Victorian Government as Agent General across Europe and Israel. She has acted on a number of boards including for private and public companies, and for not-for-profit organisations, was the first female director of the Collingwood Football Club and is currently ex-officio Executive Director for the Property Council of Australia.

PROF JOHN DEWAR
Prof Dewar is the Vice-Chancellor and President of La Trobe University. An internationally known family law specialist and researcher, he has held senior leadership positions at Griffith University and the University of Melbourne as Provost, and has served on a number of higher education and legal bodies, groups and committees, including for the State and Federal Governments. He is a director of Universities Australia and Adjunct Professor in both the Melbourne and La Trobe Law Schools.

RICHARD BALDERSTONE
Richard Balderstone has worked in the financial and investments markets for more than 35 years. He was a founding partner of JCP Investment Partners, a specialist investment management organisation with more than $5 billion in funds under management, and remains a non-executive director. A director of ABN AMRO (now ANZ) and the Australian Rail Track Corporation, he is also a Trustee Director of the Commonwealth Public Service Superannuation Schemes (CSS/PSS) and several charitable organisations.

LINDA BARDO
Linda Bardo Nichols AO
Linda Bardo Nichols AO is a corporate advisor and director of a number of leading Australian companies and organisations, including Fairfax Media, Ingham, and Medibank Private, and is Japano Healthcare's Chairman. Previously, she was a director of Pacific Brands and Sigma Pharmaceuticals, and of the Walter and Eliza Hall Institute of Medical Research, Chairman of Healthscape, and a trustee and Vice President of the Harvard Business School Alumni Board. Her executive career was in banking and financial services.

MARY SCHWARTZ
Morry Schwartz is publisher and property developer. He is the Chairman and major shareholder of the property development company Par Urbis, which has a portfolio including the refurbishment of Melbourne’s GPO. Morry Schwartz is the owner of publishing company Black Inc, which is responsible for publishing the Influential Quarterly Essay, The Saturday Paper and The Monthly. He was appointed Adjunct Professor of Journalism at RMIT in 2014.

PROF BRENDAN MURPHY
Prof Brendan Murphy was CEO of Austin Health from 2005 to 2016. He held previous posts as Chief Medical Officer, Director of Nephrology at St Vincent’s Health. He is a Professorial Fellow with the title of Professor at Melbourne University, a Fellow of the Royal Australian College of Physicians and a Fellow of the Australian Institute of Company Directors. He is currently a board member of the Florey Institute of Neuroscience.

THE HON JOHN
BRUMBY AO, CHAIRMAN
The former Premier of Victoria, Mr Brumby served for more than 10 years as State Treasurer, six years as Leader of the Victorian Opposition and seven as Federal MH for Bendigo. Since retiring from politics, he has accepted a number of board positions, a joint appointment as a Professorial Fellow at the University of Melbourne and Monash University, and is active in a range of community and not-for-profit organisations.

JANE MARTINO
Jane Martin is co-founder and CEO of the fundraising platform Shout for Good. She founded Undertow Media in 2002 and has gained a reputation as an entrepreneur with an ability to build dynamic organisations in both the commercial and not-for-profit space. Her entrepreneurial spirit was recognised in a nomination for 2004 Telstra Young Business Woman of the Year. She was a co-founder of Smiling Mind and is a board member of launchVic.

DR GEORGE RAIT
A consultant at the national law firm Piper Alderman, Dr George Rait has more than 20 years’ experience practising in most areas of corporate and commercial law as a partner in national law firm, with a particular focus on the science and technology sector and medical research institutes. This focus has included the Burnet and Murdoch Institutes and the Walter and Eliza Hall Institute of Medical Research. He was a founding director of the ONCRI.

From left: Sally Capp, Prof Brendan Murphy (until September), Dr George Rait (until May), The Hon John Brumby, Odile Newton Johns, Jane Martino (until March), Morry Schwartz, Prof John Dewar, Richard Balderstone.
SCIENTIFIC ADVISORY COMMITTEE

The ONICRI Scientific Advisory Committee provides guidance and expertise to the Executive about the strategic directions for the Institute.

PROF DAVID BOWTELL
An NHMRC Senior Principal Research Fellow, Prof Bowtell heads the Cancer Genomics and Genetics Program at the Peter MacCallum Cancer Centre, where he was Director of Research for a decade. He holds a joint appointment as Group Leader at the Garvan Institute and is Visiting Prof at Dana Farber Cancer Institute, Boston. Professor Bowtell is an internationally regarded expert in ovarian cancer and leads the Australian Ovarian Cancer Study, one of the largest of its type in the world. He has made significant contributions to furthering knowledge in this field.

PROF NICK HOOGENRAAD AO
Prof Hoogenraad was appointed Head of the School of Molecular Sciences at La Trobe University in 1996. He helped establish the La Trobe Institute for Molecular Science and became its Executive Director. In 2010 he was awarded a Charles La Trobe Distinguished chair in Biochemistry. He is internationally known for his work on mitochondrial biogenesis, discovering a new mitochondrial stress response, and has won many major awards for research. He has been active in translational research in the Cooperative Research Centres for Diagnostic Technologies, the CRC for Diagnosis and the CRC for Biomarker Translation.

PROF MICHELLE HABER
Prof Haber is Executive Director of the Children’s Cancer Institute, and Head of the Institute’s Experimental Therapeutics Program. She is internationally recognised for her research into the treatment of neuroblastoma and acute lymphoblastic leukaemia in children, receiving numerous awards for this, particularly for translating her research findings into the clinic. In 2015, she was appointed an inaugural Fellow of the Australian Academy of Science and served as Associate Director of the Ludwig Institute until 2004. He is a Professorial Fellow of the Department of Surgery, University of Melbourne, and a science consultant on a number of scientific advisory boards.

PROF ASHLEY DUNN, CHAIRMAN
Prof Ashley Dunn became Head of the Molecular Biology Program at the Ludwig Institute for Cancer Research (Melbourne) in 1992. Two years later he and colleagues molecularly cloned GM-CSF, a cytokine used to aid recovery of bone marrow in cancer patients following chemotherapy treatment. He is a Fellow of the Australian Academy of Science and served as Associate Director of the Ludwig Institute until 2004. He is a Professorial Fellow of the Department of Surgery, University of Melbourne, and a science consultant on a number of scientific advisory boards.

DR EUGENE MARASKOVSKY
Dr Maraskovsky was Senior Scientist and Project Leader working on cytokine discovery and translational research at the Immunex Corporation in Seattle. He joined the Ludwig Institute for Cancer Research in 1998 as Joint Head of the Cancer Vaccine Laboratory. In 2002 he became a Principal Scientist and Group Leader at CSL Limited establishing a key capacity to measure immune responses in patients receiving SINGMATRIX® vaccines. He is currently Department Head of Cell Biology and Physiology within CSL Research at the B21 Institute, and Associate Prof at the University of Melbourne. He co-invented 29 patents.

DR GEORGE MORSTYN
Dr Morstyn has extensive experience in drug development and biotechnology and managing change. He headed the clinical program at the Ludwig Institute and was Principal Investigator on the earliest clinical studies of hematopoietic growth factors. From 1991 to 2002, Dr Morstyn worked for Amgen, becoming Senior Vice President of Development and Chief Medical Officer in 1999. He is a member of OBS Bioremedies’ investment advisory committee, Board Member and Chair of the Scientific Advisory Board of Symbio, Chairman of BioMedIC, a member of the Commercialisation Committee at the Walter and Eliza Hall Institute and on the ANZBICTG board.

PROF ROBERT PIKE
Biochemist Prof Pike headed the Department of Biochemistry & Molecular Biology, Faculty of Medicine, Nursing and Health Sciences at Monash University from 2006 to 2011, then the School of Biological Sciences in the Faculty of Science. He was Deputy Dean (Academic Planning) in the Faculty of Medicine, Nursing and Health Sciences at Monash from 2013 to 2014. In 2015, he became both Director of the La Trobe Institute of Molecular Science and Head of the School of Molecular Science. He is now Pro Vice-Chancellor of the College of Science, Health and Engineering at La Trobe University.

From left: Prof David Bowtell, Prof Nick Hoogenraad AO, Dr Eugene Maraskovsky, Prof Michelle Haber, Prof Ashley Dunn, Dr George Morstyn, Prof Robert Pike.
ORGANISATIONAL CHART

BOARD OF DIRECTORS
- MEDICAL DIRECTOR
  Prof Jonathan Cebon

SCIENTIFIC ADVISORY COMMITTEE
- SCIENTIFIC DIRECTOR
  Prof Matthias Ernst

CHIEF FINANCIAL/OPERATING OFFICER
Kim Tsai

- Finance
- Human Resources
- Information Technology & Bioinformatics
- Laboratory & Facilities Management
- Marketing & Communications
- Philanthropy
- Research Management & Governance

ACRF Centre for Translational Cancer Therapeutics & Imaging
Prof Andrew Scott

Department of Molecular Imaging & Therapy
Prof Andrew Scott

Cancer & Inflammation Laboratory
Prof Matthias Ernst

Cancer Immunobiology Laboratory
Prof Jonathan Cebon

Cell Death and Survival Laboratory
Dr Doug Fairlie

Oncogenic Transcription Laboratory
Prof John Marais

Tumour Targeting Laboratory
Prof Andrew Scott

Translational Genomics & Epigenomics Group
A/Prof Alex Dobrovic

Metastasis Research Laboratory
Prof Robin Anderson

Matrix Microenvironment & Metastasis Laboratory
Dr Normand Poutouc

This funding is testimony to both the goodwill of our supporters and to the high quality of work being carried out by the Institute’s scientists and clinicians. Across our many laboratories, researchers have continued to receive highly sought-after peer-reviewed grants, resulting in $20.6m secured grant funding over the next four years. At the end of 2016, the Institute had $35.5 million in cash, and trade, and other receivables of $1.6 million. Deferred income, representing funding received for projects in advance was $11.7 million, an increase of 17% from the previous year. Overall, the Institute finished in a financially sound position at the close of 2016 with retained earnings of $3.1 million.

On behalf of all the researchers and support staff, my heartfelt thanks to our supporters and key stakeholders including the Australian Government (Department of Health), Victorian Government (Department of Health and Human Services), Ludwig Cancer Research, La Trobe University and Austin Health.

I would like to acknowledge the efforts of our small team of highly skilled and dedicated administration and research support staff whose main goal every day is to ensure that the researchers spend more time at the bench instead of in administration.

KIM TSAI
CHIEF OPERATING AND FINANCIAL OFFICER

As we celebrate our achievements over the past year, we are also firmly focused on the future and on ensuring that the Institute is in the best financial position possible to allow the work of our cancer researchers to thrive. We are ever vigilant that the government, institutional and philanthropic funding we source, and are accorded, is used to maximum effect.

KIM TSAI
FINANCIAL HIGHLIGHTS
Statement of financial position as at 31 December 2016

Profit and Loss Statement

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<thead>
<tr>
<th>Research Activities</th>
<th>2016 ($'000)</th>
<th>2015 ($'000)</th>
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<td>Non-government grants</td>
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<td>Donations and bequests</td>
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<tr>
<td>Other revenue</td>
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<td><strong>TOTAL REVENUE</strong></td>
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<td><strong>13,782</strong></td>
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</tbody>
</table>

EXPENDITURE

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<th>2016 ($'000)</th>
<th>2015 ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary and employee benefits</td>
<td>6,997</td>
<td>5,745</td>
</tr>
<tr>
<td>Consumable supplies</td>
<td>2,660</td>
<td>1,912</td>
</tr>
<tr>
<td>Other expenses</td>
<td>856</td>
<td>696</td>
</tr>
<tr>
<td><strong>Total research laboratories</strong></td>
<td><strong>10,513</strong></td>
<td><strong>8,553</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support laboratories and administration</th>
<th>2016 ($'000)</th>
<th>2015 ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary and employee benefits</td>
<td>1,535</td>
<td>1,431</td>
</tr>
<tr>
<td>Consumable supplies</td>
<td>365</td>
<td>493</td>
</tr>
<tr>
<td>Other expenses</td>
<td>707</td>
<td>517</td>
</tr>
<tr>
<td><strong>Total support laboratories and administration</strong></td>
<td><strong>2,607</strong></td>
<td><strong>2,441</strong></td>
</tr>
</tbody>
</table>

**TOTAL EXPENDITURE** | **13,120** | **10,794** |

| Operating surplus from research activities | 445 | 2,988 |
| Depreciation and amortisation expense      | 335 | 261  |

**TOTAL COMPREHENSIVE INCOME** | **110** | **2,727** |

Balance Sheet

ASSETS

<table>
<thead>
<tr>
<th>2016 ($'000)</th>
<th>2015 ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>13,542</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>1,591</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td><strong>15,133</strong></td>
</tr>
<tr>
<td>Non-current assets</td>
<td></td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>1,592</td>
</tr>
<tr>
<td><strong>Total non-current assets</strong></td>
<td><strong>1,592</strong></td>
</tr>
<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td><strong>16,725</strong></td>
</tr>
</tbody>
</table>

LIABILITIES

<table>
<thead>
<tr>
<th>Current liabilities</th>
<th>2016 ($'000)</th>
<th>2015 ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade and other payables</td>
<td>1,147</td>
<td>834</td>
</tr>
<tr>
<td>Employee entitlements</td>
<td>672</td>
<td>459</td>
</tr>
<tr>
<td><strong>Total current liabilities</strong></td>
<td><strong>1,819</strong></td>
<td><strong>1,293</strong></td>
</tr>
<tr>
<td>Non-current liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee entitlements</td>
<td>94</td>
<td>76</td>
</tr>
<tr>
<td><strong>Total non-current liabilities</strong></td>
<td><strong>94</strong></td>
<td><strong>76</strong></td>
</tr>
<tr>
<td><strong>TOTAL LIABILITIES</strong></td>
<td><strong>13,602</strong></td>
<td><strong>11,309</strong></td>
</tr>
</tbody>
</table>

**NET ASSETS** | **3,123** | **3,013** |

EQUITY

<table>
<thead>
<tr>
<th>Accumulated surplus</th>
<th>2016 ($'000)</th>
<th>2015 ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accumulated surplus</strong></td>
<td><strong>3,123</strong></td>
<td><strong>3,013</strong></td>
</tr>
</tbody>
</table>

**TOTAL EQUITY** | **3,123** | **3,013** |

The Financial Statements provided above have been extracted from the audited general purpose financial statements of Olivia Newton-John Cancer Research Institute (ACN 167 192 752). The summary financial information does not include all the information and notes normally included in a statutory financial report. The audited general purpose financial report is available upon request to the Chief Financial Officer. The statutory financial report is prepared in accordance with the requirements of the Corporation Act 2001, Australian Charities and Not-for-profits Commission Act 2012 and Regulations 2013, Australian Accounting Standards and other authoritative pronouncements of the Australian Accounting Standards Board.


60. Parikh, P., Parikh, S. and Lawrentschuk, N. Five predictive factors for metastatic melanoma cell line resistance to PLX4032 by downregulating the pro-apoptotic BH3-only protein PUMA and BIM. Cell Death Dis 7(12): 2054-2064. (2016)

61. Parikh, P., Parikh, S., Murphy, D. and Lawrentschuk, N. FcR-mediated autophagy 4 or more: Active Surveillance no more. BJU Int. (2016)

62. Parikh, P., Parikh, S., Murphy, D., McGrath, S. and Lawrentschuk, N. NF-κB activation 4 or more: Active Surveillance no more. BJU Int. (2016)


69. Parikh, P., Parikh, S., Murphy, D., McGrath, S. and Lawrentschuk, N. NF-κB activation 4 or more: Active Surveillance no more. BJU Int. (2016)


115. A/Prof Uwe Ackermann Tumor Targeting Laboratory Gordon Conference on Tissue Transplantation in Human Disease Processes, Girona, Spain Imaging of JO2 activity in breast cancer using redox-enabled Hifimpeptide. A/Prof Jonathan Cabon Cancer Immunology Laboratory CITO Meeting, Seoul, South Korea South Korean advances in immunology: a clinical perspective.

52nd Annual Meeting of American Society of Clinical Oncology (ASCO), Chicago, USA 7-cell stimulation: step it up.

A/Prof Alexander Dobrovec Translational Genomics and Epigenomics Group 1st Asia Pacific Droplet Digital PCR Symposium, Bangkok, Thailand Droplet digital PCR in clinical diagnostics Japanese Cancer Association, Yokohama, Japan Getting digital with liquid biopsy from solid tumours.

Department of Epidemiology, Nagoya City University, Nagoya, Japan Digital PCR of liquid biopsies. 14th meeting of the Asia-Pacific Federation for Clinical Biochemistry, Taiwan, Taiwan Clinical applications of droplet digital PCR.

Prof Matthias Ernst Cancer and Immunotherapy Laboratory ISREC-SCCL Symposium, Singapore, Singapore Development of a novel antibody to EGFR as a cancer therapy.

Prof Normand Pouliot Translational Breast Cancer Program – Belgium Translational Breast Cancer Program – France Translational Breast Cancer Program – Canada

Dr Belinda Yeo Translational Breast Cancer Program – Australia Asian Nuclear Medicine Academic Scientists Conference, Denver, USA In-vivo PET imaging for imaging accessibility.

European Association of Nuclear Medicine Annual Meeting, Barcelona, Spain Assessing the potential and clinical management intent utilising 68Ga-PSMA PET scans in patients with prostate cancer.

Dr Normand Pouliot Translational Breast Cancer Program – Monaco Metastasis Research Laboratory Metastasis Research Society Young Investigator Meeting, Chengdu, China Neutrophil–tumor cell interactions in metastatic breast biopsy. Dr Ashleigh Poh Cancer and Immunotherapy Laboratory Trinity College, Dublin, Ireland Neutrophil–tumor cell interactions in metastatic breast biopsy.

Dr Belinda Yeo Translational Breast Cancer Program – Australia Asian Nuclear Medicine Academic Scientists Conference, Denver, USA In-vivo PET imaging for imaging accessibility.

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Dr Belinda Yeo Translational Breast Cancer Program – Australia Asian Nuclear Medicine Academic Scientists Conference, Denver, USA In-vivo PET imaging for imaging accessibility.
ONJCRI SEMINARS

Dr Jeff Bobin
Walter and Eliza Hall Institute of Medical Research
Physiological inhibition of inflammatory JAK/STAT signalling.

Dr Nikola Boschkov
La Trobe Institute for Molecular Science
The characters of bone metastatic prostate cancer – getting to know the enemy.

A/Prof Stuart Berzin
Flora Davy Cancer Research Institute
The involvement of unconventional T cells in human cancers.

Dr Marta Biro
University of New South Wales
The actin cytoskeleton at the interface of cancer and immunity: assembly, migration and synthetic interactions.

Dr Michael Chopin
Walter and Eliza Hall Institute of Medical Research
Building the “Immune Wall”: molecular insights and costs...

Dr Suzi Curtis
La Trobe Institute for Molecular Science
Anticytolytic and related anticancer drugs: more than just topoisomerase II poisons.

A/Prof Phil Darcy
Peter MacCallum Cancer Centre
Cancer immunotherapy utilising gene-modified T cells: from the bench to the clinic.

Dr Sarah-Jane Dawson
Peter MacCallum Cancer Centre
Liquid biopsies: monitoring the cancer genome in blood.

A/Prof Ross Dickins
Armadale Centre for Blood Dawsels / Monash University
Releasing the differentiation block in acute leukaemia.

A/Prof Eva Dimitriadis
Hudson Institute of Medical Research
Targeting IL-11 receptor a as a treatment for endometrial cancer that preserves fertility.

Dr Sergei Grivinovskii
Fox Chase Cancer Center, Philadelphia, USA
Tumour elicited inflammation: microbes and cytokine drivers of colorectal cancer.

Dr Christine J Hawkins
La Trobe Institute for Molecular Science
Direct apoptosis inducers as anti-cancer drugs: safer and more effective than chemotherapy?

Prof Phil Hodgkin
Walter and Eliza Hall Institute of Medical Research
How T and B cells calculate their response has lessons for immunotherapy.

Dr Gerrone Kelly
Walter and Eliza Hall Institute of Medical Research
Targeting pre-survival BCL-2 proteins for cancer therapy.

Prof Benjamin Kille
Walter and Eliza Hall Institute of Medical Research
Death without a kiss: apoptotic crosstalk and the suppression of DAMP signaling.

Dr Kyren Lazcano
University of Cambridge, UK
Understanding the role of BCL1A in triple-negative breast cancer.

Dr Willem Joost Lesteherus
University of Western Australia
Something old, something new: marrying cancer immunotherapy with other drugs.

Prof Charles Manning
Vanderbilt University Institute of Imaging Science, USA
Precision imaging diagnostics of cancer.

Dr Theo Mantzoros
University of Melbourne
Decoding clinically relevant signalling and transcription networks in brain cancer.

Dr Suresh Mehrotra
La Trobe Institute for Molecular Science
Functional roles of axesomes in cancer and its therapeutic applications.

Prof Stephen Nott
Walter and Eliza Hall Institute of Medical Research
Programming the immune system.

A/Prof Tony Papavasiliou
Peter MacCallum Cancer Centre
Dissecting the evolution of cancer.

Prof Fiona Palley
School of Medicine and Pharmacology, University of Western Australia
Targeting macrophage medullary to prevent breast cancer invasion.

Dr Ivan Poon
La Trobe Institute for Molecular Science
Discovery of the dying: mechanisms and functions.

Prof Rob Ramsay
Peter MacCallum Cancer Centre
Identifying actionable areas of research translation for patients with GI cancer: from surgery to immunotherapy.

Prof John Rossko AO
Centenary Institute of Cancer Medicine & Cell Biology, University of Sydney
Intrinsic nanopores from gene expression to cancer.

A/Prof Helena Richardson
La Trobe Institute for Molecular Science
Modeling cancer using the vinegar fly, Drosophila – cell polarity regulation of tissue growth and tumourigenesis.

Dr Michael Samuel
Centre for Cancer Biology, South Australia
Mechanos-geneticity in tissue homeostasis – from cancer to wound healing and kidney.

A/Prof Claire Scott
Walter and Eliza Hall Institute of Medical Research
Trucks and bronches: targeting epithelial ovarian cancer.

Dr Richard Torthill
Peter MacCallum Cancer Centre
Life in theophylline rare neuroendocrine tumours.

Prof Jane Visvader
Walter and Eliza Hall Institute of Medical Research
Getting ahead of the mammary hierarchy and cancer.

Dr Vicki Whitehead
QIMR Berghofer Medical Research Institute, Queensland
Sensitized neoplasia of the colorectum – from models to medicine.

Prof Alpha Yap
University of Queensland
Adhesions junctions, force-sensing, and epithelial homeostasis.

THE WELLNESS WALK AND RESEARCH RUN

The Wellness Walk has attracted more than 6,000 participants and raised more than $400,000 since its inception three years ago. 2016 marked an exciting year for growth of the Wellness Walk with the introduction of the Research Run and the event moving to the new location of La Trobe University. About 3,000 participants joined Olivia and Blind Irwin in the Wellness Walk and Steve Monaghetti led more than 200 runners in the 5-kilometre and 10-kilometre runs in the beautiful grounds of the University. Each laboratory within the Institute participated in the event with the Cell Death and Survival Laboratory topping the Institute’s fundraising efforts by raising more than $5,500.

The 2017 Wellness Walk & Research Run will again be held at La Trobe University on 17th September.