Centenary Institute
life saving research

Cancer. Inflammation. Cardiovascular.

2014 ANNUAL REPORT

CONTENTS

2014 IN REVIEW

EXECUTIVE DIRECTOR MATHEW VADAS AO FAHMS | CHAIRMAN THE HON MICHAEL EGAN AO

There has never been a more exciting time in biomedical science.

After decades of hard work, increasing understanding of the cellular and molecular basis of diseases, and what must have often seemed somewhat optimistic claims that these discoveries will translate into better clinical outcomes, the payday has arrived. The major breakthrough this year, and one that has culminated thirty years of effort, has been the discovery of two exciting ways of harnessing our body's immune system to destroy previously untreatable cancers of all sorts, including melanoma.

The other truly exciting horizon is finally a way of treating diseases caused by inborn genetic changes. A new technique of gene-editing (one that we adopted for humans from plants) combined with cell-therapy will revolutionise the lives of patients suffering from these diseases, giving them hope for a healthier life. In this somewhat heady atmosphere, we look back on 2014 as a hugely successful year for Centenary in terms of the number and quality of discoveries made that will ultimately fuel the biomedical revolution and improve future therapeutics and diagnostics for patients. These discoveries span across our chief interests of cancer, inflammation and cardiovascular disease and the mechanisms that drive these illnesses.

Our publications, appearing in some of the most prestigious international journals, such as Nature, Nature Immunology, Nature Reviews Immunology, Nature Communications, Immunity, Cell, Developmental Cell, Ageing Cell, Journal of Investigative Dermatology, PNAS and Current Biology, have put us proudly amongst the very best in biomedical science. We are honoured to be, surrounded by such talented and hard working colleagues that are no doubt shaping the future of medical research, protecting our children and next generations from some of the most chronic diseases affecting today's society.

In spite of our successes, 2014 has also been a challenging year. The funding climate for medical research has changed, and until the $20 billion Medical Research Future Fund becomes fully operational, we need to become less reliant on sources of funding from the Federal and State Governments. In 2014, the rate of funding of projects by NHMRC dropped to about 15% (from approximately 23% a few years before) placing great stress on many scientists, including ones at Centenary.

To face these challenges efficiently and productively, we will diversify our methods to source funding from other national and international bodies. Our team has responded to these challenges admirably, and has been successful in raising a record amount of $5.9 million from non-NHMRC granting bodies last year. In addition Serena Stewart, the new head of our Marketing and Fundraising team, has systematically put into place a strategy and developed a team to significantly improve our fundraising capabilities and engagement with our donors (individual donors, families, corporate organisations, trusts and foundations, community groups and many more) and the general public, ensuring sustainable sources of income to support our scientists in making their next major breakthrough.

In the past, Centenary's brand (though distinctive) has not reflected the focus of our work, nor the enormous contributions we make to saving lives. Thus, with the great assistance of Suanne Colley of BrandPlus Asia we have embarked on refining of our brand with a stronger and more concise message that communicates better with our stakeholders and donors. You will see the major changes in this report and we shall be revealing some further details in 2015, the 30th anniversary of our incorporation as a medical research institute.

Centenary continues to maintain a truly outward looking stance. Australia-wide, we are now known for initiating the Centenary Institute Lawrence Creative Prize (CILCP), which recognises the most talented young scientists in Australia and promotes their careers.

More locally, we are enthusiastic members of Sydney Research, Sydney Partners and Sydney Catalyst, the important arm of the NSW Cancer Institute supporting all stages of cancer research. We work with Sydney Research and with our long-term partners Sydney University and RPA Hospital in mounting and developing plans for a campus-wide organisation of research efforts for optimal efficiency and impact.

This year we were most fortunate to have had Professor Axel Ullrich, Director of the Max Planck Institute for Biochemistry, Germany and a Member of our Scientific Advisory Board as Guest-of-Honour at our Annual General Meeting. He has our sincere thanks for making the long trip to be with us.

We farewelled Professor Susan Pond AM from our Board of Governors and thank her for her valuable contribution over the past five and a half years. We take this opportunity to welcome Dr Chris Roberts, CEO of Cochlear, who will join our Board of Governors in early 2015.

Many thanks to Professor Barbara Fazekas for her assistance and guidance during her term as Assistant Director. We also thank Professor Wolfgang Weninger for his ongoing efforts as the new Assistant Director.

Congratulations also go to Dr Xiangjian Zheng and Dr Mainthan Palendira on their appointment to Associate Faculty.

As mentioned, we welcome Serena Stewart, our new Head of Fundraising and Marketing – already we see an invigoration of fundraising and marketing activities. At the same time, we farewell Jill Atherton who previously held this position and thank her for her contributions in the past year.

Finally, we would like to thank our Governors, Faculty, Foundation, staff, our Scientific Support Team, headed by COO Dr Nick Pearce, and our Marketing and Fundraising team, for their tireless efforts in supporting and promoting the Institute. Importantly, a very special thanks to our donors for their wonderful support of our research efforts.

Board of Governors

The Hon Michael Egan AO (Chairman)
Appointed Chair in 2005

Mr Egan, a former Treasurer of NSW (1995-2005), is Chancellor of Macquarie University, Chairman of the Newcastle Coal Infrastructure Group Pty Ltd and a member of the Council of NHMRC. During his 25-year parliamentary career Mr Egan held several ministerial positions.

Mr Alastair Davidson
Appointed Governor in 2004

Mr Davidson has held executive positions in the banking and financial services industry for over 30 years in the UK, US and Australia and is a member of the Institute of Chartered Accountants in Scotland. He is an Executive of Australasian Wealth Limited, a listed asset manager, in Sydney, and a non-executive Director of Biotech Capital.

Mr John Samaha (Deputy Chairman)
Appointed Governor in 2003

Mr Samaha leads the Australian litigation and contentious regulatory practice of global law firm Allen & Overy. He has represented many leading financial institutions and corporations, as well as executives, from a wide range of sectors, especially banking, wealth management, financial markets, resources, real estate, IT and telecommunications.

Ms Elizabeth Dibbs
Appointed Governor in 2013

Ms Dibbs held senior legal positions throughout her career, including General Counsel of PricewaterhouseCoopers prior to her retirement. Ms Dibbs now focuses her energy on the not-for-profit sector. She is Pro-Chancellor of the University of Western Sydney, a Director of United Way Australia and an active member of Chief Executive Women.

Dr Teresa Anderson
Appointed Governor in 2007

Dr Anderson is Chief Executive of the Sydney Local Health District with over 30 years experience in the public health system as a clinician and manager. Dr Anderson is a Board member for eight organisations including the ANZAC Research Institute, Ingham Institute, Inner West Sydney Medicare Local and Heart Research Institute.

Professor John Horvath AO
Appointed Governor in 2007

Professor Horvath was the Commonwealth Chief Medical Officer from 2003 to 2009 and is a Fellow of the Royal Australasian College of Physicians. Professor Horvath recently oversaw the Australian Government's review of Medicare Locals. He sits on the board of Crown Limited.

Mr Joseph Carrozzi
Appointed Governor in 2008

Mr Carrozzi is a Managing Partner at PricewaterhouseCoopers (PwC). He is admitted as a Barrister at Law in NSW, a Fellow of the Institute of Chartered Accountants in Australia and a Fellow of the Tax Institute of Australia. Joseph is also Chairman of Australia's Italian Chamber of Commerce and Industry, and Vice Chairman of the GWS Giants.

Mr Graham Kelly
Appointed Governor in 2006

Mr Kelly is non-executive Chairman of listed GDI Property Group and a Director of Harness Racing NSW. He has been non-executive Chairman of various other listed companies, including TAB Limited. He was formally a Partner of law firm Freehills and was an Inspector of ICAC, and a Director of the Medical Research and Compensation Foundation.

Dr Susan Pond AM, FTSE
Appointed Governor in 2009

Dr Pond AM, FTSE is Adjunct Professor at the University of Sydney, Vice President of the Academy of Technological Sciences and Engineering, and Board Member of ANSTO, Innovation Australia and Biotron Ltd. Susan's term expired in August 2014.

Professor Bruce Robinson AM
Appointed Governor in 2007

Professor Robinson is Dean of the Faculty of Medicine, University of Sydney, and Head of the Cancer Genetic Laboratory at the Kolling Institute. In 2003, he was awarded the Daiichi Prize by the Asia and Oceania Thyroid Association. Professor Robinson is the Founding Chairman of the Hoc Mai Australia Vietnam Medical Foundation.

Ms Josephine Sukkar
Appointed Governor in 2011

Ms Sukkar is co-owner and Principal of construction company Buildcorp. She is a Director of YWCA NSW, Opera Australia and the Sydney University Football Club Foundation. She served as a Director of The Trust Company from 2010-2013, and is also involved with the Museum of Contemporary Art, Sir John Monash Foundation and Australian Rugby Union.

Professor Mathew Vadas AO FAHMS
Appointed Governor in 2007

Professor Vadas followed his medical training with a PhD at the Walter and Eliza Hall Institute in Melbourne, and postdoctoral work at Harvard. He was the Inaugural Director of the Hanson Centre for Cancer Research (now Hanson Institute) in Adelaide and has been the Executive Director of the Centenary Institute since 2007.

Ms Deborah Willcox
Appointed Governor in 2013

Ms Willcox is the Director of Operations at Sydney Local Health District and General Manager of Royal Prince Alfred Hospital. She has held senior positions in NSW Health and NSW Government, both as an advisor to the Deputy Premier and Minister for Health and later as Chief of Staff in the portfolios of Planning, Housing and Aboriginal Affairs.

Scientific ADVISORY BOARD

Professor Sir Marc Feldman AC FAA FRS FRCP FRCPath FMedSci (CHAIR)
Head, Kennedy Institute of Rheumatology,
Nuffield Department of Orthopaedics,
Rheumatology and Musculoskeletal Sciences,
University of Oxford

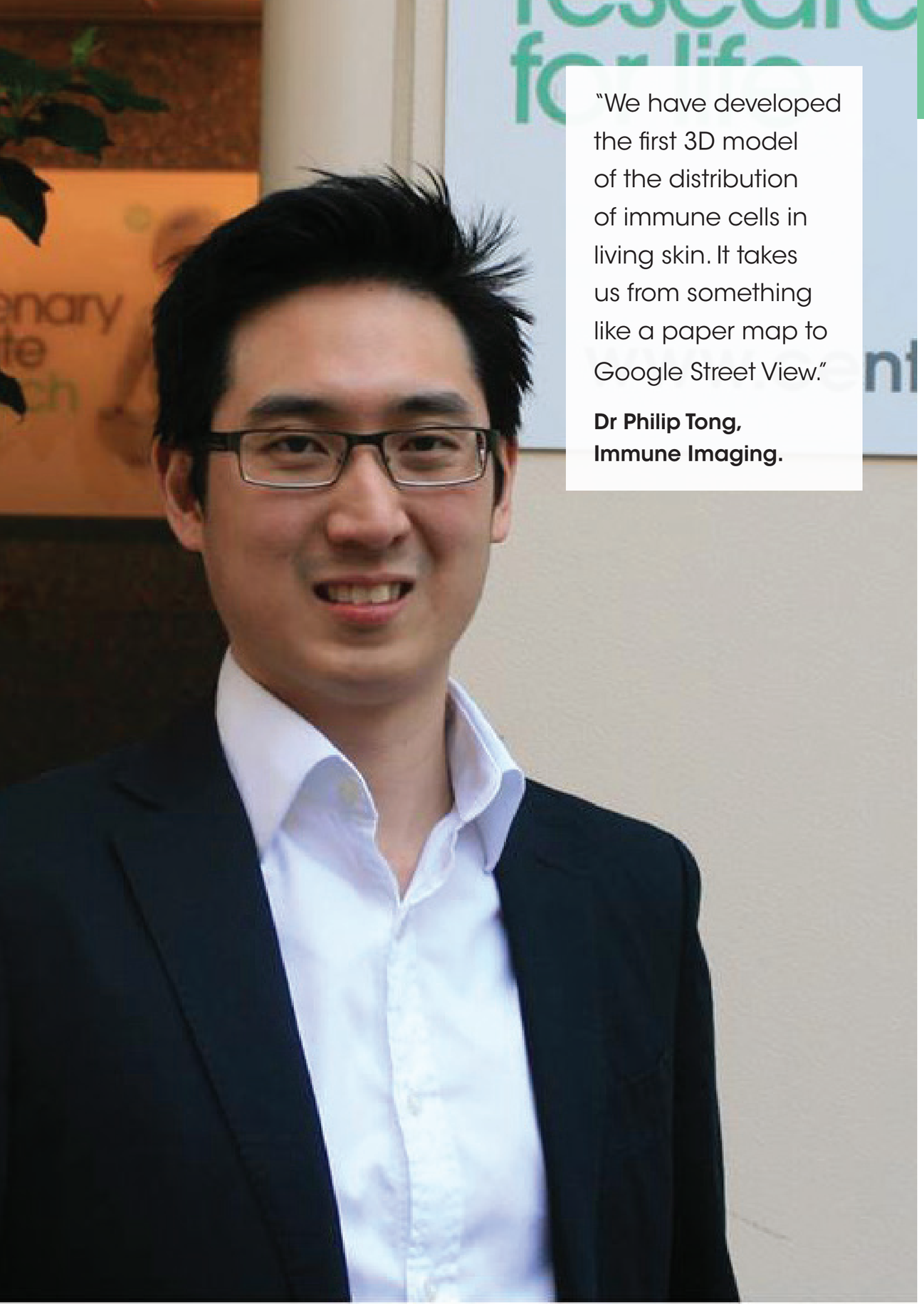
Professor Richard Flavelle CBE FRS
Department of Immunobiology
Yale School of Medicine
Connecticut, USA

Professor Ian Frazer AC, FRS, FAA, MB ChB(Edin), MD(Melb)
CEO & Director of Research
Translational Research Institute Pty Ltd
Queensland

Professor Michael Good AO BSc MBBS PhD MD DSc
Institute of Glycomics
Griffith University,
Gold Coast Campus

Professor Matthias W. Hentze, MD
Director
European Molecular Biology Laboratory
Germany

Professor Dr Axel Ullrich
Max Planck Institute for Biochemistry
Department of Molecular Biology
Germany



"We have developed the first 3D model of the distribution of immune cells in living skin. It takes us from something like a paper map to Google Street View."

Dr Philip Tong, Immune Imaging.

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Scientific SUPPORT

Dr Nick Pearce
Chief Operating Officer

Grants are the cornerstone of our income. This source of income grew by 11% in 2014, a commendable outcome given the flat funding levels at Australian premier grantor, the National Health and Medical Research Council and the increasingly competitive climate for medical research.

Whilst expenditure on research activities grew by 11%, due to hard work by the Science Support Team, administrative costs remain similar to that in 2013. Building expenditure increased due to depreciation on the building and plant - a reflection on our aging home, commissioned in 1994.

Centenary's strength continues to be demonstrated by the medical research it generates, as measured by publications. Our researchers published 103 articles in medical journals - a 39% increase over the productivity in 2013.

Sadly, late in the year, our Building Assistant, Bob Thorburn, left Centenary due to ill health. Centenary's Executive has named our annual Outstanding Service Award after him.

On behalf of all the researchers and support staff, many thanks to our supporters and key stakeholders, including the Australian Government (Department of Health, ARC), State Government (OHMR, Cancer Institute NSW), non-government granting bodies, Sydney Local Health District and the general community for their ongoing support of our research.

Finally, my thanks to all the researchers and science support staff for ongoing hard work.

STAFF

Adam Adelpour
Building Services Assistant

Steven Allen
Senior Technical Support

Jill Atherton
Fundraising & Marketing Manager (until June)

Rona Barugahare
Animal Facility Officer (from March)

Gary Black
Facility Assistant

Treena Carter
Animal Technician

Dan Condon
Administration Assistant

Jeff Crosbie
WHS and Operations Manager

Stephanie Crosbie
Donor Services Assistant (Fundraising Volunteer)

Felix Daniel
Fundraising & Digital Marketing Coordinator (until October)

Suat Dervish
Cytometry and Imaging Support

Willie Entona
Finance Officer

Michael Greensmith
Receptionist

Nanette Herlihen
HR Manager

David Herne
Animal Technician

Gary Ho
IT Help Desk & Support

Owen Hoogvliet
Senior IT Support

Daryl Hunt
IT Ops Manager

Kristina Jahn
Imaging Support Specialist

Carol Juaton
Animal Technician

Frank Kao
Cytometry Support

Nicholas Keilar
Grants Manager

Sarah Leonhard
Veterinary Manager

Natalie Littlejohn
Animal Technician

Karen McBrien
Manager, Special Projects

Leah Miller
Animal Technician

Marisa Mourelle
Animal Facility Officer

Danielle Moyes
Animal Technician

Matthew Murarotto
Animal Attendant

Tim Neal
Finance Manager (until April)

Peter O'Donnell
Finance Manager (from May)

Emma O'Flaherty
Animal Attendant

Carmel Safranko
Animal Attendant

Anna Slowiaczek
HR Advisor

Adrian Smith
Manager - Cytometry, Imaging & IT

Emma Squire
Animal Facility Officer (until April)

Serena Stewart
Fundraising & Marketing Manager (from October)

Bob Thorburn
Building Services Assistant

Victor Truong
Animal Facility Assistant

Heather Turner
Animal Attendant

Keri Turuwhenua
Donor Services Coordinator

Chelsea Wang
Assistant Accountant

Helen Warwick
Director's PA & Office Support Manager

Lauren Wilson
Animal Attendant

Rachel Wolfenden
Receptionist

Christine Wu
Animal Attendant

Vince Zappala
Animal Attendant

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Centenary Institute MEDICAL RESEARCH FOUNDATION

The Centenary Institute Medical Research Foundation's fundraising efforts have seen another great year, and that is thanks to our most valued generous donors, supporters, advocates and stakeholders.

Joseph Carrozzi, Centenary's Patrons, Professor the Hon Dame Marie Bashir AD CVO and Sir Nicholas Shehadie, AC OBE, and The Hon Michael Egan AO

Ongoing support from our regular donors, members, individual donors, trusts, foundations, bequestors, and corporate partners, has enabled a collective and positive impact on the vital research our scientists undertake everyday. This has allowed them to advance technologies and research with a specific focus on cancer, inflammation and cardiovascular disease. Our researchers are focused on patient outcomes and finding cures to protect future generations from the some of the most chronic diseases affecting Australia's population today.

Next year, the Centenary Institute will be celebrating a milestone – its 30th year anniversary. We have much to celebrate as we reflect back on how Centenary's scientists have made major contributions to improving diagnostics and treatments for patients and finding cures for some of the most chronic diseases affecting today's society.

GIVING BRINGS A SENSE OF FULFILLMENT

Throughout the year, the income generated through our donor appeals and acquisition campaigns has greatly assisted Centenary's scientists to continue their vital research into understanding the complexities and underlying mechanisms of chronic diseases like cancer (prostate, breast, liver, lung, and melanoma), genetic heart conditions, liver disease, skin allergies, tuberculosis, skin disease and ageing – an increasingly important focus area as the average life expectancy is only set to increase over the next decade.

We sincerely thank our generous donors for their ongoing commitment to our vision of improving human health through excellence in medical research.

COMMUNITY FUNDRAISING HAS NEVER BEEN EASIER

Efforts were taken to ensure our 2014 community fundraisers were kept regularly up-to-date on the impact their contributions (either financial or in-kind) had made on the work of Centenary's scientists, especially those in the early stages of their career. It's an unfortunate reality in research that many researchers aren't able to follow through on their creative ideas, passions or curiosity because of a lack of funding; therefore, support from our active community members is vital. It is those `seemingly crazy' ideas that need funding as often they have unexpectedly important results. This year, we would like to express great thanks to the members of the community who helped raise over $20,000 to encourage innovation and creativity in medical research.

The introduction of additional fundraising avenues in 2015 will allow people to give regular donations or utilise the system to promote and fundraise for their community events simply and easily. By simplifying the giving process and encouraging regular donations, Centenary can count on a more reliable source of income, helping us to plan ahead with less administration costs and increasing the amount available to support our scientists' vital work.

BEQUESTS

Our dedicated and long-term supporters shared our vision of believing that medical research is one of the key components in our health system, ensuring future generations live healthier, longer lives. Bequest gifts are vital to the on-going work of our researchers and represent a generous and lasting legacy of an individual's pledge to make a difference. This continued investment in the Centenary Institute enables discoveries and life changing advances, which will improve the long-term health of every one of us, and for this, we are most grateful.

TRUSTS & FOUNDATIONS

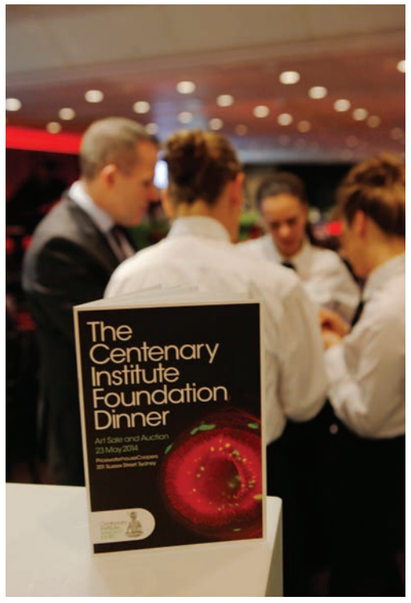
This year has seen a great continuation of new and existing support from various trusts and foundations. Through this funding stream, Centenary has been able to build its portfolio of specific projects in the areas of cancer, inflammatory and cardiovascular diseases. We would like to sincerely thank all of those who have generously supported our fight against these increasingly prevalent conditions.

As Winston Churchill said, "Healthy citizens are the greatest asset any country can have". Support from the community is a hugely powerful tool; it is what enables Centenary's researchers to continue their vital research around chronic diseases that affect so many Australian families – now, and in the future. As the Centenary Institute continues to grow, as does our relationships with our donors and stakeholders. It is these individuals and groups that achieve a collective impact, providing a lifeline for the Institute and driving awareness of why medical research is the best hope we have to improve human health through scientific excellence. As a member of the Board and Chairman of the Foundation Committee, thank you for sharing our vision of improving human health through excellence in medical research and joining us in our mission to discover and bring to use innovative therapeutics and diagnostics. Your commitment and your loyalty are greatly valued by not only the Centenary Institute, but by the Australian population.

JOSEPH CARROZZI | FOUNDATION CHAIR

Fundraising COMMITTEE

Mr Joseph Carrozzi (Chair)
Justice Margaret Beazley AO
Ms Suanne Colley
Ms Elizabeth Dibbs
Mr Simon Dulhunty
Mrs Julie Ford
Mr Simon Ford
Mrs Tanya Jones
Mr John Samaha
Mr Andrew White



John and Jennifer Clarke and Kristina and Andrew White

Centenary's Foundation Committee, has been extremely active in its fundraising efforts, raising over $145,000 this year.

Centenary's Foundation Committee, made up of a number of highly committed volunteers, is a great support to the Fundraising and Marketing Team, helping to increase the level of income generated which is needed now more than ever due to the current funding climate. They have devoted their time and resources to help continue to grow income through two major events; the Foundation's Annual Gala Dinner and the Soirée with Scientists.

THE GALA DINNER

The dinner, generously hosted by PricewaterhouseCoopers for its 6th year, saw 140 guests come together to enjoy quality wine, music, conversation and an auction full of fantastic prizes.

THE SOIRÉE WITH SCIENTISTS

The evening was generously hosted by Foundation Committee Members, Julie and Simon Ford. The Ford's have very kindly hosted this annual event since 2011, providing a wonderful opportunity for the general pubic to meet Centenary scientists in person and hear more on how they are trying to save lives and improve patient outcomes - a rare experience for many.

Many Thanks
TO OUR LOYAL SUPPORTERS

We acknowledge the generous support of all those individuals and corporations who have contributed to our fundraising efforts throughout 2014. We thank you. In particular...

2014 ANNUAL FOUNDATION DINNER SUPPORTERS

- Accolade Wines
- Albert Jangtong (HeyAlbert.com.au)
- Alex Ford
- ANZ Stadium
- Bangarra Dance Theatre
- Burberry
- Burch Family Wines
- Caroline Lawrence
- Clarendon Hills
- Clonakilla Wines
- David Hall OAM
- Ella Baché
- Ensemble Theatre Company
- Fiona Campbell of She Rocks
- First Aid For You
- Flutter Lyon
- Free Radical Enterprises
- Garfish
- Golden Door Health Retreat Elysia
- Greater Western Sydney Giants
- Henschke Wines
- Hunt Leather
- India Ford
- Janet Laurence
- Julie and Simon Ford
- John and Lynette Cunnington
- J H Cutler Bespoke Tailor
- Lawrence Creative Strategy
- Lindt Chocolate
- Live and Cookin Lizotte's
- Macquarie Telecom
- Magdalena Photography
- Maui Jim
- Mount Mary Vineyard, Yarra Valley
- Mr Black
- Neil Lawrence
- Nick Mount
- Oobie Baby
- Penfolds
- Posh Boutique
- PricewaterhouseCoopers
- Qantas
- Racing NSW
- Rockford Wines
- Rockpool Bar and Grill & Neil Perry
- Sony Music
- Susan Lancaster
- Tanya and Bruce Jones
- Taronga Zoo
- Tennis Australia
- Theme & Variations Piano Services
- Tintilla Estate, Pokolbin
- Torbreck Barossa Valley
- Treasury Wine Estate
- Waterford
- Wendy Collins
- Young Centenary Foundation

IN CELEBRATION

- Joseph Carrozzi
  50th Birthday
- Prue Struik
  40th Birthday

BEQUESTS

- Waybrett James Avery
- Leslie Allan Maurer
- Kevin Gregory Moston
- Alan Ramsay
- Geoffrey Ernest Stolz

CORPORATE

- BHP Billiton

TRUSTS & FOUNDATIONS

- Andrew Cameron Family Foundation
- Gray Family Trust
- K H Cheung Foundation Pty Ltd
- Litterbach Family Trust
- Lowe Lippmann Charitable Fund
- T & J Weeks Family Trust
- The Alexandra and Lloyd Martin Family Foundation
- The Corella Fund
- The R A Gale Foundation
- The Rix Foundation

GENEROUS INDIVIDUALS

- Dr Teresa Anderson
- Mr Graeme & Mrs Carolyn Aplin
- Mrs Kathy Booth
- Professor Michael Boyer
- Mr Norman Brunsdon AM
- Mr Joseph Carrozzi
- Ms Liz Dibbs & Mr David Tudehope
- The Hon Michael Egan AO
- Mr Jonathan Emery
- Mr David Farley
- Mr Richard Fisher
- Estate of the Late Warwick Jeffrey Flecknoe
- Mr Simon & Mrs Julie Ford
- Mr Tarun Gupta
- Dr Jill Hawker
- Mr William Hayward
- Mr Matthew Henderson
- Dr Francis Hooper & Mrs Marie Therese Hooper
- Mrs Jessica Hore
- Dr Susan Howlett
- Mr Robert Ingham
- Mr Bruce & Mrs Tanya Jones
- Mr Bradley Keding
- Mr Graham & Mrs Christine Kelly
- Mr Neil Lawrence
- Mrs Christine McComb
- Mr James McGregor
- Mr Rowan Mitchell
- Mr Oliver Morgan & Ms Sheridan Lee
- Mrs Patricia New
- Mr Jon North
- Mr Ian Norman
- Mr Peter & Mrs Nora Rowe
- Mrs Elizabeth Salkeld
- Mr Norman Seckold
- Mr James Smail
- Mr Douglas Snedden
- Mr Harry Tamvakeras
- Professor Mathew Vadas AO
- Mr Andrew White
- Mr Kim Williams AM

COMMUNITY FUNDRAISERS

- Peter 'Wally' Bamford Memorial Concert
- Sarah Bellingham
- Jessica Boyd
- Carina Cutmore
- Felix Daniel
- Adrian Digiacomo
- Luke Foundation
- Amy Marshall
- Erin Moy
- Erin Parkinson
- Victoria Payne and Olive
- Jeremy Perrott
- Shirley & Teddy
- Samantha Stewart
- Lauren Sullivan
- Joanna Sweeting
- Megan Taylor

YCF
YOUNG CENTENARY FOUNDATION
FUNDRAISING FOR MEDICAL RESEARCH

YOUNG CENTENARY FOUNDATION MEMBERS

CHAIR: ERIN MOY

KATE ADAMS
SARAH BELLINGHAM
CHRISTINA BOUZIOUS
FELIX DANIEL
CAROLINE FANNING
JEFF HOLST
ANNA LAWRENCE
AMY MARSHALL
JEREMY PERROT
GEORGIE SKIPPER
LAUREN SULLIVAN
THOMAS TU

LUAU | FEBRUARY 2014

Summer of 2014 was marked by a sunny and sold-out YCF Hawaiian fundraiser on a spectacular Darlinghurst rooftop.

DJs *Harry Hunter*, *Desperate Sluts*, *ROOF* and *Mike Who* got the tropical crowd dancing. Food and drinks flowed care of Tsingtao, Kopparberg, Vodka O, Tequila Blu, Splitrock & Tiro, Bulleit, Brasserie Bread and Havericks Meats.

The event raised a total of $4,103 and gained the YCF press mentions with Pedestrian, Out In Sydney, Concrete Playground, Broadsheet, The Beast, Pagesdigital and Time Out Sydney.

CO-LAB | JULY 2014

In July, YCF got arty and produced CO-LAB, a group show curated by Georgie Pope and Jess Holburn from CHASM Gallery in response to the scientific imaging being created by Centenary scientists.

Exhibiting artists included Beastman, Anna Langdon, Rafaella McDonald, Oliver Tanner, Dreamcatcher, Will Cooke and Yiwon Park.

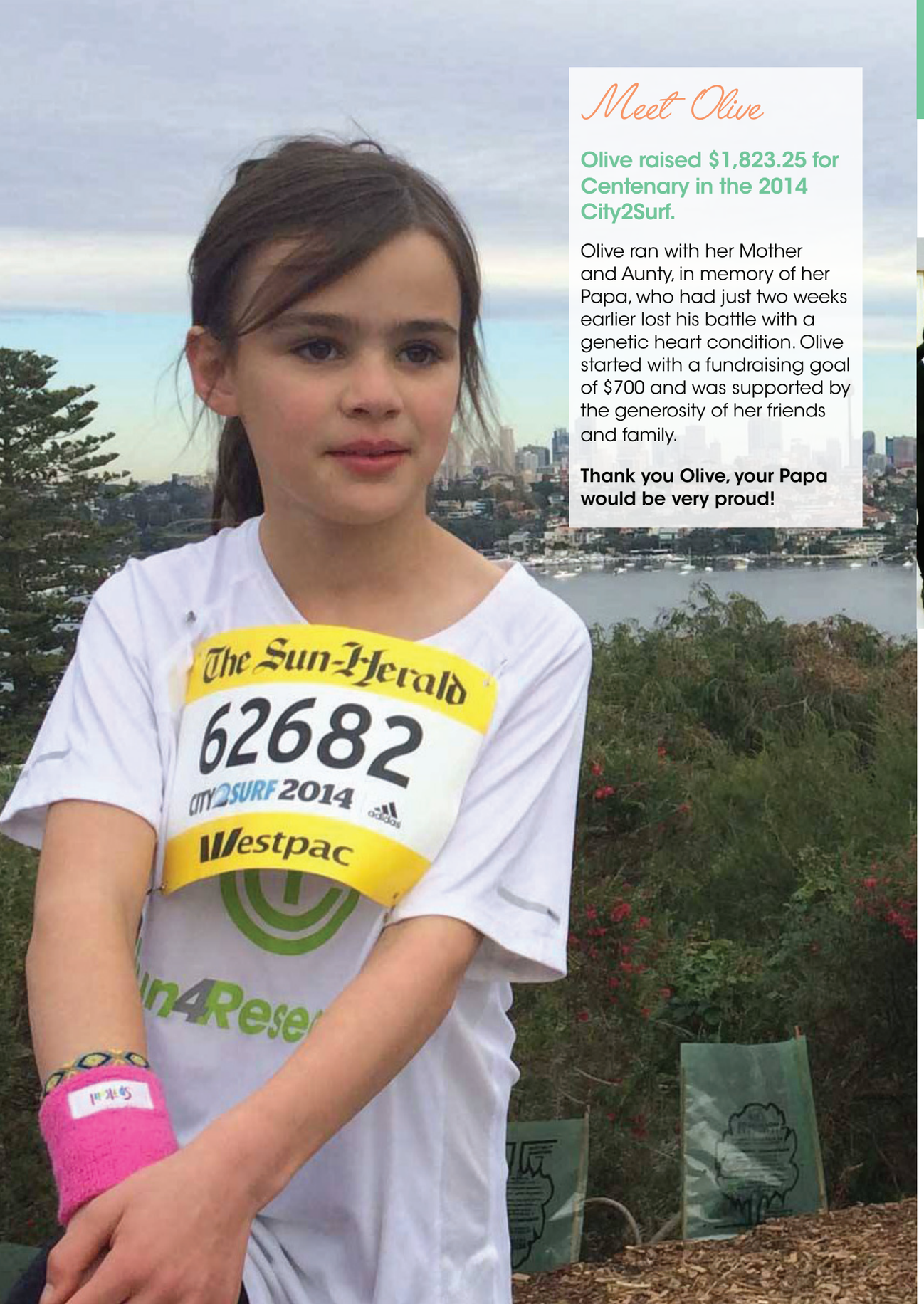
The pop-up exhibition was open for one night only and proceeds from the sale of all works were split evenly between the artists and the Young Centenary Foundation to fund grants for life saving research across cardiovascular, cancer and inflammatory diseases.

YCF raised $5,650 and received a huge amount of press coverage from the likes of the Sydney Morning Herald, Time Out Sydney, Broadsheet, The Beast, Pagesdigital, Backyard Opera, Eastside Radio and Concrete Playground.

CITY2SURF | AUGUST 2014

10 YCF runners took on the 14km dash from city to surf in August as part of the Centenary Institute's Run For Research team, and collectively, the YCF raised $5,260.

Members of the Young Centenary Foundation at the 2014 Centenary Foundation Dinner
Kate Adams, Lauren Sullivan and Erin Moy (YCF Chair)



Meet Olive

Olive raised $1,823.25 for Centenary in the 2014 City2Surf.

Olive ran with her Mother and Aunty, in memory of her Papa, who had just two weeks earlier lost his battle with a genetic heart condition. Olive started with a fundraising goal of $700 and was supported by the generosity of her friends and family.

Thank you Olive, your Papa would be very proud!

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Community FUNDRAISING

Coming together to save lives.

We have an amazing community of people who do wonderful things which contribute significantly to raising funds and advocating for medical research.

During the past year dedicated individuals, families, groups and organisations have committed their time and resources to supporting Centenary. Running marathons, walking the City2Surf, hosting open air movie nights and organising concerts are just some of the ways our community fundraisers have publicly shown their belief in the contribution medical research has to our health and well-being.

Families like the Bamford's who lost their son and brother Peter in 2004 to Sudden Arrhythmia Death Syndrome (SADS), a genetic heart condition most common in young people.

Since 2008, the Peter 'Wally' Bamford Memorial Concert has been held at Peter's 'favourite drinking hole' the Old Canberra Inn on the weekend closest to his birthday. Organised by family and friends and with amazing support from the local community, the memorial concert has now raised over $30,000 for the Centenary Institute Medical Research Foundation.

2014 is the 10th anniversary of Peter's passing. His family and friends have not only raised invaluable money but also enormous community awareness for Centenary's Molecular Cardiology Program (headed by Professor Chris Semsarian) and their research in the area of genetic heart conditions. Every dollar raised contributes directly to our research.

We extend our heartfelt thanks and appreciation to all our community fundraisers, their families, friends and colleagues.

3 *Programs*

GENE AND STEM CELL THERAPY

Our Gene and Stem Cell Therapy Program is focused on better understanding regenerative medicines to develop effective treatments for cancer, heart disease and genetic diseases. Regenerative medicine is the process of replacing or regenerating human cells, tissues or organs to restore or establish normal function.

UNDERSTANDING DISEASE

We are focused on understanding how cancer cells work.

Cancer is caused by the accumulation of mutations (errors) in our DNA. Cancer causing mutations activate oncogenes or inactivate tumour suppressor genes. Multiple DNA mutations lead to the development of cancer.

One tumour suppressor gene called CTCF is a DNA binding protein that is important for normal organisation of the chromatin, found in our chromosomes. Mutations and deletions of the CTCF gene occur in many cancer types including blood cancer. We are working to understand how CTCF functions in normal cells, and how changes in the CTCF gene lead to cancer development.

FINDING A CURE

In the laboratory, we are focused on identifying the triggers that switch genes on and off in cancer cells with the long-term goal of developing new cancer therapies.

By integrating the Centenary Institute's Bioinformatics expertise into all of our research areas, we have significantly increased the outcomes of our research in the lab.

Our research has discovered new ways to target blood cancer. It has also identified key nutrient pumps which are vital to the growth of prostate cancer cells.

Using these discoveries and our knowledge of how cancer cells work, we are striving towards better therapeutics for the treatment of cancer.

PROFESSOR JOHN RASKO AO

HEAD OF PROGRAM

Saving Lives

Our research is aimed at finding new therapies for cancer, degenerative and genetic diseases.

STAFF

Amy Au
Research Officer

Chuck Bailey
Senior Research Officer

Yue (Julie) Feng
Research Assistant

Dadi Gao
PhD Student

Jane Gordon
PhD Student

Rae-Anne Hardie
Research Officer

Jeff Holst
Associate Faculty

Fiona Guan
PhD Student

Karieshma Kabani
PhD Student

Liane Khoo
PhD Student

Amy Marshall
Research Officer

Cynthia Metierre
Research Assistant

Lyn Moir
Visiting Researcher

Rajini Nagarajah
Research Assistant

Trung Viet Nguyen
Research Assistant

Hugh Nursey
Honours Student

Nick Otte
Masters Student

Natalia Pinello
Research Assistant

Carl Power
Editorial Research Officer

Michelle Simmons
PhD Student

Annora Thoeng
Research Assistant

Kevin Wang
Research Officer

Keren Weiss
PhD Student

Justin Wong
Research Officer

PROFESSOR WOLFGANG WENINGER

HEAD OF PROGRAM

Saving Lives

Our research can save lives by helping us understand how the immune system fights disease and infection.

STAFF

Rona Barugahare
Research Assistant

Kim Beaumont
Research Officer

Maté Biro
Research Officer

Radjesh Bisoendial
Visiting Researcher

Vania Caldas
Summer Research Scholar

Lois Cavanagh
Senior Research Officer

Hsien Chan
Visiting Researcher

Adam Cook
Postdoctoral Fellow

Anne Cooray
Research Assistant

Gyohei Egawa
Visiting Researcher

Pamela Graney
Visiting Researcher

Nikolas Haass
Associate Faculty

Rohit Kumar Jain
Research Officer

Rain Kwan
Research Assistant

Jun Liang
Visiting Researcher

Zufu Lu
Visiting Researcher

Jorge Luis Galeano Nino
Masters Student

Andrew Mitchell
Research Officer

Mary Mouawad
Research Assistant

Marcia Munoz
Research Officer

Peter Newman
Visiting Researcher

Hannah O'Riley
Visiting Researcher

Ben Roediger
Research Officer

Danae Sharp
Research Assistant

Lisa Shaw
Research Assistant

Sioh-Yang Tan
Research Officer

Szun Tay
Research Officer

Shweta Tikoo
Research Officer

Philip Tong
PhD Student

IMMUNE IMAGING

The Immune Imaging Program investigates how the immune system in the skin fights infections and tumours, and how our body's immune responses lead to skin allergies. Eczema and atopic dermatitis are two common allergic conditions. Up to 30% of children in Australia suffer from atopic dermatitis, and 2-3% of the general population suffer from psoriasis, a common skin disease.

UNDERSTANDING DISEASE

We are using high-end imaging technologies, such as multi-photon microscopy, to dissect in real-time the working of the immune system in the skin. Centenary houses one of Australia's leading imaging facilities to enable this research.

We study the pathogenesis of several inflammatory skin diseases such as psoriasis and atopic dermatitis. We are also investigating how we can manipulate the immune system for more infective strategies against melanoma and common skin infections, for example those caused by 'golden staph'.

Golden staph infections are a leading cause of infections in the hospital setting and account for more deaths in the developed world than HIV or tuberculosis infections.

FINDING A CURE

Our research spans from bench to bedside. We have recently discovered a novel immune cell type in the skin – the dermal group 2 innate lymphoid cell (ILC2). We have found that these cells can cause inflammation in the skin of animals. We are now studying how these ILC2 cells are involved in eczema and atopic dermatitis formation in humans.

We have discovered using animal models that 'golden staph' selectively destroys a specific immune cell type in the skin, the perivascular macrophage (PVM). This results in the dampening of the immune response against this dangerous pathogen. We are now investigating the function of PVM in human skin, and how we can improve their response in bacterial skin infections.

3

LIVER IMMUNOLOGY

The Liver Immunology Program is studying the unique relationship between the liver and the immune system. Livers dampen down immunity to such an extent that they can be transplanted without rejection in some cases. Livers may not only be tolerated, but may also prevent the rejection of other organ grafts from the same donor, a process known as immune tolerance.

UNDERSTANDING DISEASE

Our research is helping to improve our understanding of the liver and its impact on immune responses, both wanted and unwanted.

Although the liver's tolerance effect leads to better outcomes in transplantation, it can be detrimental during infections such as hepatitis B, hepatitis C and malaria. These diseases can use the liver as a means of persisting, which can often lead to chronic infection.

Our Liver Immunology Team is also providing some important clues to improve the success of human gene therapy.

Having already shown that the liver, like the lymph nodes, can activate T cells (a key cell of the immune system) we are now investigating how the liver induces immune tolerance and how immunity can be enhanced in this organ.

FINDING A CURE

The ultimate goal of our research is to improve treatments in organ transplantation, as well as deliver effective prevention and treatment of chronic liver disease.

Liver diseases caused by viral hepatitis represent an increasing health burden to the community. Hepatitis C (HCV) infection leads to cirrhosis and liver cancer, the third-leading cause of cancer-related death worldwide.

200,000 Australians are currently infected with HCV, with around 20,000 being diagnosed each year.

Our Liver Immunology Program, which encompasses 20 years of original study, has discovered key new principles governing liver immune function. These discoveries are helping to develop new and improved treatments for liver disease.

DR PATRICK BERTOLINO
HEAD OF PROGRAM

DR DAVID BOWEN
ASSOCIATE FACULTY

Saving Lives

Our research will help improve outcomes for people undergoing organ transplantation, as well as improving treatments for people with liver disease.

STAFF

Kate Bremner
Research Assistant

Zoe Liu
Honours

Claire McGuffog
Technical Officer

Bharvi Maneck
Research Assistant

Frederic Sierro
Senior Research Officer

Michelle Vo
PhD Student

Yik Chun (Michael) Wong
Research Officer

Nicole Wood
Research Assistant

PROFESSOR GEOFF McCAUGHAN
HEAD OF PROGRAM

Saving Lives

Liver cancer is a huge killer in Australia. We are working to change that by developing new therapies and treatments.

STAFF

Magdalena Budzinska
Research Assistant

Jinbiao Chen
Research Officer

Yiqian Chen
Research Assistant

Robert Cheng
PhD Student

Sumaiya Chowdhury
Research Assistant

William D'Avigdor
PhD Student

Alastair Duly
Research Assistant

Margaret Gall
PhD Student

Mark Gorrell
Associate Faculty

Candice Grzelak
Research Officer

Elizabeth Hamson
PhD Student

James Henderson
PhD Student

Emily Huang
Research Assistant

Jessica Hyman
Research Assistant

Fiona Keane
Research Officer

Aimei Lee
PhD Student

Amelia Lin
Summer Research Scholar

Adriano Luongo
Masters Student

Annette Maczurek
Research Officer

Bramilla Patkunanathan
Research Assistant

Emilia Prakoso
PhD Student

Devanshi Seth
Affiliate Member of Faculty

Nick Shackel
Associate Faculty

Nicholas Sigglekow
Research Officer

Thomas Tu
Research Officer

Helen Vidot
PhD Student

Pok Fai Wong
Honours Student

Grace Yan
Summer Research Scholar

Christine Yee
Research Assistant

Emma Zhang
PhD Student

LIVER INJURY AND CANCER

The Liver Injury and Cancer Program aims to discover new liver cancer pathways that could be targeted for improvements in treatment and outcomes of patients with progressive liver disease. We also work to discover new biomarkers that could improve diagnosis of liver injury and cancer.

UNDERSTANDING DISEASE

Liver diseases are caused by chronic inflammatory processes. They are driven by many factors including viruses, autoimmune processes, genetic diseases and toxins such as alcohol.

Our work is devoted to understanding pathways at the cellular and molecular levels that drive liver injury and cancer. These pathways may then be identified as therapeutic targets or be used to diagnose and stage liver disease and cancer.

We initially used human liver samples to screen for molecules that we up regulated. Since then we have taken some of these molecules and manipulated them in experimental models. This has allowed us to test whether these molecules actually play a role in causing liver injury.

FINDING A CURE

According to The Australian Liver Association, liver disease now affects over six million Australians and has an annual cost burden of $50.7 billion.

Liver disease is responsible for one quarter of all – organ transplants and if left untreated, results in liver cancer - the fastest growing form of cancer in Australia.

The increasing prevalence of all forms of liver disease, but in particular fatty liver disease with concurrent diabetes, is a huge burden.

Our research spans from test tubes, to animal models, human models and clinical trials.

Throughout 2014 our research identified key new pathways and biomarkers which are helping to develop new liver cancer therapies.

3

MOLECULAR CARDIOLOGY

Molecular Cardiology is the study of genetic heart disorders. Our major goal is to reduce human disease through the integration of basic science research and clinical cardiology.

UNDERSTANDING DISEASE

Our research is focused on understanding the clinical and genetic basis of inherited heart disease. We use a range of approaches including human gene discovery studies, basic cellular systems, animal models of human disease, and population-based psychosocial and public health studies.

Our research involves state-of-the-art approaches including whole exome sequencing, mRNA and microRNA profiling, and RNASeq. Most importantly, we have the key clinical resources, including well phenotyped individual patients and families, which form the basis of all our genetic studies.

To get to this point, we have developed cohorts and national registries of patients and families with inherited heart diseases. We also utilise the latest in genetic technology in order to form the basis of our novel gene discovery studies.

FINDING A CURE

Around 30,000 Australians die every year from sudden cardiac death. Around four young Australians, under the age of 35, die every week from sudden cardiac death.

We know that there are around 40 cardiovascular conditions caused by underlying genetic faults. We all have around 22,000 genes, but a fault in just one can result in a life threatening heart condition.

We can already see our research directly reducing sudden cardiac death in our communities. Our new gene discoveries are being used as improved diagnostic tools, we are rolling out implantable cardioverter defibrillator therapy and we are actively involved in improving public health measures.

Our research is about saving lives, sudden death prevention, and improved diagnosis and management of patients and families with genetic heart diseases.

PROFESSOR
CHRIS SEMSARIAN
HEAD OF PROGRAM

Saving Lives

We are working to initiate treatment strategies to prevent serious complications, including heart failure and sudden death.

STAFF

Richard Bagnall
Senior Research Officer

Charlotte Burns
Research Assistant

Maria Constantinou
Masters Student

Carina Cutmore
Research Assistant

Jipin Das Kizhakkepatt
PhD Student

Belinda Gray
PhD Student

Jodie Ingles
Research Officer

Renee Johnson
Masters Student

Lien Lam
Research Officer

Sophie McLeod
Honours Student

Caroline Medi
Research Officer

Laura Molloy
Clinical Research Co-ordinator

Ratnasari Padang
PhD Student

Tanya Sarina
Registry Coordinator

Catherine Spinks
Clinical Research Co-ordinator

Joanna Sweeting
PhD Student

Tatiana Tsoutsman
Research Officer

Laura Yeates
Genetics Counsellor

ASSOCIATE PROFESSOR
MIKA JORMAKKA
HEAD OF PROGRAM

Saving Lives

Our research provides 'blueprints' of drug targets involved in anemia and cancer - a critical platform for drug development.

STAFF

Chandrika Deshpande
Research Officer

Amy Guilfoyle
PhD Student

Aaron McGrath
Research Officer

STRUCTURAL BIOLOGY

The Structural Biology Program looks at a detailed 3D structural and functional understanding of the proteins involved in human iron distribution. By determining the structures of proteins involved in these processes, we aim to be able to provide a scaffold for the development of drugs that can effectively 'tune' their function and thus provide new treatments for patients, in particular patients with Anemia of Chronic Disease (ACD).

UNDERSTANDING DISEASE

Iron is an essential element, which is acquired from our diet and distributed in our body by a set of specific membrane proteins. In humans the acquisition and distribution of iron is required for a range of vital cellular processes, such as generation of red blood cells.

Errors in the proteins involved in iron distribution can cause a range of disease states, such as cancer and anemia (reduced levels of red blood cells). In long-term hospitalised patients, such as cancer patients or patients with chronic inflammation or infection, there is commonly an imbalance in the iron distribution, leading to Anemia of Chronic Disease.

By understanding membrane protein anatomy, structure and function, we hope to facilitate a structure-based drug discovery.

FINDING A CURE

Studies have shown that 30-80% of cancer patients, 25-50% of chronic kidney disease patients, and between 20-90% of acute and chronic infections are associated with anemia. In these patients, ACD is correlated with heart failure, poor prognosis and lower quality of life.

Perioperative anemia has also been correlated with increased morbidity, mortality, and length of hospital stay.

A systematic review of 60 studies found the relative risk of death in patients with cancer increased by 65% in the presence of anemia.

Every day our research comes one step closer to finding a cure.

We are progressing our aim for the 'perfect' drug to treat ACD, with the development of pharmaceutical compounds.

3

T CELL BIOLOGY

We are studying the diseases of the western lifestyle, with our main focus on allergy (asthma, eczema), autoimmune disease (rheumatoid arthritis, psoriasis, systemic lupus erythematosis) and inflammatory bowel disease (Crohn's disease, ulcerative colitis). All these conditions share a common factor – subtle abnormalities in the regulatory T cells that are the controllers of the immune system.

UNDERSTANDING DISEASE

We have been studying the basic interactions that control immune responses.

Our research has defined new ways in which the immune system learns to tolerate allergens and to control autoimmune disease.

The T Cell Biology Program has developed sophisticated new methods for analysing the immune cells in blood.

We use these new methods to define 'immune signatures' that predict the chance of developing allergy, autoimmunity, or responding to cancer therapies that involve the immune system.

T Cell Biology studies are carried out using our world-first 10-laser flow cytometers. Our CyTOF machine, commissioned in late 2014, is the first in Australia, and will dramatically increase the speed and accuracy of our clinical research.

FINDING A CURE

The impact of our research is far reaching, from cancer to inflammatory diseases.

Immune dysregulation and inflammation is the driving factor behind 60% of deaths worldwide.

More specifically, autoimmune diseases affect 15-20% of Australians at some stage in their lives, allergies up to 50% and other inflammatory diseases close to 100%.

In cancer, we are currently profiling the immune system in cancer patients in order to predict who will respond best to therapy. We are also studying the immune response to cancer in animal models.

In inflammation, we are studying how the immune system is controlled at the fundamental level of pro-inflammatory and anti-inflammatory interactions between dendritic cells and CD4 T cells.

PROFESSOR BARBARA FAZEKAS DE ST GROTH

HEAD OF PROGRAM

Saving Lives

We study inflammation - the key driving force behind most chronic diseases and cancer.

STAFF

Suzanne Asad
PhD Student

Luke Beebe
Research Assistant

Holly Bolton
Research Officer

Michelle Brownlee
Microinjectionist

Thomas Guy
PhD Student

Alex Hodkinson
Visiting Researcher

Michael Kuligowski
Research Officer

Loretta Lee
PhD Student

Yik Wen Loh
PhD Student

Lauren McKnight
PhD Student

Elena Shklovskaya
Senior Research Officer

Alexandra Terry
PhD Student

Cindy Zhu
Research Assistant

PROFESSOR WARWICK BRITTON

HEAD OF PROGRAM

Saving Lives

We are developing new ways to fight TB and stop it from spreading.

STAFF

Ellis Armitage
Talented Student Program

Lalita Narayan
Administration Officer

Simone Barry
PhD Student

Tomoki Ohashi
Honours Student

Nayan Bhattacharya
Honours Student

Mainthan Palendira
Research Officer

Claudio Counoupas
PhD Student

Angel Pang
Research Assistant

Jarem Edwards
Summer Research Scholar

Thaigarajan Parumasivum
PhD Student

Magda Ellis
Research Officer

Roman Pillay
Research Assistant

Samantha Ellis
PhD Student

Rachel Pinto
Research Officer

Carl Feng
Visiting Researcher

Kelly Prendergast
Research Officer

Manuela Florido
Research Officer

Bernadette Saunders
Associate Faculty

Nathan Hare
Research Officer

Gabriella Scandurra
Executive Officer

Leon Lin
Research Officer

Sebastian Stifter
Research Officer

Elena Martinez
Research Officer

Jamie Triccas
Affiliate Faculty

Thomas Mather
Honours Student

Anneliese Tyne
PhD Student

Heni Muflihah
PhD Student

Kelly Veale
PhD Student

Gayathri Nagalingam
Research Assistant

Emma Watson
Honours Student

Beatrice Nagaria
Masters Student

Heng Giap Woon
Research Assistant

TUBERCULOSIS

Our approach to tackling Tuberculosis (TB) is through a range of measures – developing new vaccines and drugs, improving our understanding of TB immunology, discovering new biomarkers and contributing to public policy and practice. As a part of the Centre of Research Excellence in Tuberculosis Control we have the platform to translate new discoveries into more effective tools to control TB.

UNDERSTANDING DISEASE

TB is the major cause of death from a bacterial pathogen in adults; in 2013 alone there were 1.5 million deaths from TB and nine million new TB cases worldwide. In addition it remains an important cause of childhood illness and mortality in high burden countries, with 80,000 deaths in HIV-negative children in 2013.

Of importance to Australia, TB is an enormous and rapidly growing problem in our region, which contains 58% of global TB cases and 56% of multi-drug resistant TB.

As a result, our STOP-TB strategy calls for intensified research into more effective tools to control TB, including completely new approaches to TB vaccines, TB drugs and tools for the diagnosis of active TB and biomarkers to monitor the response to therapy.

FINDING A CURE

We are developing vaccines for delivery to the lung to boost immunity against TB. We are also developing subunit vaccines that contain proteins to stimulate protective immunity against different stages of the TB infection.

Around two million people have latent TB infection, with around 5% risk of developing active TB during their lifetime. As such, we are working to discover new biomarkers to distinguish those with active TB. We are also conducting a genome wide association study to identify genetic variants that contribute to increased susceptibility to TB.

The major threat to TB control is the emergence of drug resistant strains of the infection. For the past five years we have also been working towards the development of new drugs that are effective against these increasingly prevalent drug resistant strains.

3

VASCULAR BIOLOGY

Blood vessels supply every organ in our body with blood and nutrients. They are also central to most diseases, especially the chronic inflammatory diseases. Our Vascular Biology Program investigates the two main cells that form blood vessels – endothelial cells and smooth muscle cells.

UNDERSTANDING DISEASE

Our vascular biology research focuses largely on diseases of the aorta and diseases involving leaky blood vessels, including age-related macular degeneration, peripheral vascular disease, stroke and solid tumour growth.

Vascular leak is a hallmark of chronic inflammatory diseases, as well as the new blood vessels formed in cancer. Thus, an understanding of how vessels become leaky crosses all aspects of cancer, inflammation and cardiovascular disease. It is through this understanding that we are able to develop drugs that may inhibit or limit blood vessel leakiness.

Through our research, we have identified a molecule that is a 'guardian of our arteries' and protects us from the hardening of arteries, or atherosclerosis, the basis of heart attacks and strokes. We have also identified factors that can induce vascular leak, as well as factors that can inhibit vascular leak.

FINDING A CURE

Using our understanding of how the vessel controls endothelial cell integrity, we have recently identified microRNAs (small junk-like DNA) that also play a critical role in changing cell junctions. These microRNAs are altered in disease and are good targets for the development of therapeutic drugs.

We have developed a first-in-class drug that is able to inhibit vascular leak and improve the outcomes of disease, as tested in pre-clinical models of peripheral ischaemia, tumour growth and eye disease.

There is an urgent need for drugs that specifically target vascular leak, as there are none on the market against this aspect of disease. The development of an effective drug against vascular leak will have major impact on human health for a broad spectrum of diseases, including stroke, cancer, cardiovascular disease and eye disease.

PROFESSOR JENNIFER GAMBLE

HEAD OF PROGRAM

Saving Lives

We have developed a world-first drug which is able to stop vascular leak and improve the outcomes of disease.

STAFF

Garry Chang
PhD Student

Paul Coleman
Research Assistant

Ann Formaz-Preston
Research Assistant

Alex Huang
PhD Student

Julie Hunter
Research Assistant

Lutfun Khan
Technical Officer

Angelina Lay
Senior Research Officer

Jia Li
PhD Student

Renjing Liu
Research Officer

Michael Lovelace
Research Officer

Natalie Patterson
Research Assistant

Elizabeth Powter
Research Assistant

Ka Ka Ting
Research Officer

Jason Wright
Masters Student

Yang Zhao
PhD Student

Peter Zhou
Visiting Researcher

Meet our Scientists

James Henderson

PhD Student – Liver Injury & Cancer

"Centenary has state-of-the-art flow cytometry and imaging equipment, as well as an impressive animal facility. Along with skilled technicians who go out of their way to train and provide as much assistance as possible. Centenary provides its students with access to a variety of cutting edge techniques and equipment."

4 Labs & Groups

AGEING

Is ageing a disease? It is clear that chronological, time-dependent ageing is unstoppable. However, it is also the fact that the rate of ageing is partly controlled under genetic mechanisms, and can be manipulated and delayed. The most ambitious goal of our work is to develop a cure for ageing similar to the treatment for diseases. Our focus is finding a means of ensuring healthy ageing.

We are working to uncover novel genetic factors and pathways that have a crucial role in lifespan determination in order to answer the key question of "what allows for longevity?"

DR MASA KATO
GROUP HEAD

DR XIANGJIAN ZHENG
ASSOCIATE FACULTY

AGNES GINGES LAB FOR DISEASES OF THE AORTA

The main goal of the Aorta Lab is to identify novel pathways and regulators involved in cardiovascular disease, with a specific focus on epigenetic regulation in cellular plasticity.

Cardiovascular disease is a major cause of morbidity and mortality worldwide. The Aorta Lab is focused on identifying key biomarkers, cellular pathways and understanding the complexity of human disease using cellular reprogramming.

DR RENJING LIU
GROUP HEAD

DR MATÉ BIRO
GROUP HEAD

BIOINFORMATICS

Cancer, dementia and cardiovascular disease are all serious health problems that are heavily reliant on supercomputers and complex equations to discover better treatment and diagnostic solutions. At Centenary, Bioinformatics gives us the ability to gather data in greater volumes and process it at a much faster rate.

In the next decade, we believe that patient diagnosis for diseases, such as cancer or dementia, will be performed by computer-assisted genomics tests. This type of diagnosis is already undertaken overseas and Australia is not far behind.

DR WILLIAM RITCHIE
ASSOCIATE FACULTY

DR CHRIS JOLLY
ASSOCIATE FACULTY

CARDIOVASCULAR SIGNALLING

Cardiovascular Signaling studies how blood vessels and the heart form and maintain their function at a molecular and cellular level. The development and function of the heart and blood vessels is a precisely regulated process. This process is essential for the normal function of every organ system.

Understanding how blood vessels form and maintain has important implications in many human disease states, such as congenital vascular diseases, stroke, cancer, wound healing, diabetic complications, coronary artery diseases and vascular dementia.

CELLULAR MECHANOBIOLOGY

Cellular Mechanobiology is spearheading the use of complex in vitro and in vivo models for studying the cell-intrinsic cytoskeletal cues and dynamics that govern the invasive migration of tumour cells, the tissue scanning of T Cells and their cytotoxic interaction with tumour cells.

We are also developing image analysis platforms capable of automatically detecting and analysing the kinetics of actomyosin, cell movement and protrusions.

DNA REPAIR

The DNA Repair Laboratory studies antibody mutation in activated B cells, which is initiated by the DNA editing enzyme "AID". B cells mutate their antibody genes at extremely high rates during infections, to rapidly optimise the ability of the antibodies they make to neutralise the infecting pathogen. "Off-target" mutation of oncogenes by AID underlies most adult B cell cancers.

We seek to understand why AID-induced DNA damage leads to mutation, when similar DNA damage is generally repaired faithfully.

4 Labs & Groups

HOST RESPONSES TO TB

The Host Responses to TB Group is focused on understanding the development and expression of protective immunity to Tuberculosis (TB). This includes the dissecting macrophage-mediated immunity to TB infection, in particular the role of microRNA, microparticles and TNF family members in modulating immunity and inflammation.

We have been working to examine miRNA expression during TB infection and the biomarker potential of miRNA to aid diagnosis of active TB and monitor response to therapy.

DR BERNADETTE SAUNDERS
ASSOCIATE FACULTY

DR KIM BEAUMONT
GROUP HEAD

MELANOMA CELL BIOLOGY

Melanoma is the deadliest form of skin cancer, and Australia has the highest incidence in the world, with 11,569 people diagnosed in 2011. Roughly 1,500 people in Australia will die from melanoma each year.

The Melanoma Cell Biology group is focused on investigating the molecular mechanisms regulating melanoma progression, particularly the role of protein trafficking in melanoma growth and metastasis. We specialise in 3D cell culture models, live imaging, confocal and multi-photon microscopy.

HUMAN VIRAL & CANCER IMMUNOLOGY

Epstein Barr virus (EBV) is a ubiquitous herpes virus that is linked to a range of non-malignant and malignant diseases. EBV infects more than 90% of the population worldwide, the great majority of whom recover with no long-term clinical side effects, but in some cases it can cause glandular fever. Our laboratory is interested in understanding how the human immune system normally controls EBV, and to what extent aberrant controls contribute to disease pathogenesis.

DR MAINTHAN PALENDIRA
ASSOCIATE FACULTY

ASSOCIATE PROFESSOR MARK GORRELL
ASSOCIATE FACULTY

MOLECULAR HEPATOLOGY

The Molecular Hepatology team is focused on understanding the roles played by a key enzyme family in chronic liver diseases. We have clear indications from following successful targeting for type 2 diabetes therapy that related approaches may also combat fatty liver diseases.

We are working to understanding what makes chronic liver diseases wax and wane. Chronic liver disease often causes inflammation, high blood pressure and cancer.

LIVER CELL BIOLOGY

The Liver Cell Biology group focuses on understanding the development of progressive liver fibrosis and liver cancer. Our research has discovered unique markers of both liver cancer risk and prognosis. We are working to develop a novel technique, "liquid biopsies", that will avoid the need for invasive tissue sampling. We have found that this technique can be used on patients at the time of surgery to predict outcomes from a range operations, including liver transplantation. This group is led by Associate Professor Nick Shackel, a liver transplant clinician at RPA Hospital who ensures that the research is focused on translating key findings into clinical practice.

ASSOCIATE PROFESSOR NICK SHACKEL
ASSOCIATE FACULTY

ASSOCIATE PROFESSOR JEFF HOLST
ASSOCIATE FACULTY

ORIGINS OF CANCER

The Origins of Cancer Laboratory seeks to understand how cancer cells obtain their nutrients, and thereby uncover new mechanisms that can be used to stop cancer cells from growing (in essence "starving" the cancer cells).

Our research has shown that there are a number of key nutrient pumps (LAT1, LAT3 and ASCT2) that are increased in melanoma, prostate and breast cancer. These pumps facilitate the increased supply of nutrients required for cancer cells to grow. Our research has made significant strides towards understanding the relationship between cancer and nutrition in breast cancer, prostate cancer and melanoma.

5

FINANCIAL HIGHLIGHTS

INCOME	2014	2013
RESEARCH INCOME	**in '000**	**in '000**
FEDERAL - NHMRC + ARC	7094	7 386
NSW GOVERNMENT	2543	1 140
OTHER RESEARCH GRANTS	5621	5 169
TOTAL RESEARCH INCOME	15 258	13 695
FUNDRAISING		
DONATIONS, EVENTS + OTHER	814	896
BEQUESTS	52	25
TOTAL FUNDRAISING	866	921
COMMERCIAL	0	0
OTHER	3544	4 623
TOTAL INCOME	**19 668**	**19 239**

EXPENDITURE		
RESEARCH ACTIVITIES	17133	15 376
FUNDRAISING	310	875
ADMINISTRATION	2431	2 495
BUILDING OPERATIONS	2465	1 613
TOTAL EXPENDITURE	**22 339**	**20 359**

2014 AWARDS

MATÉ BIRO

1st Prize presentation award,
Cure Cancer Australia Research Symposium,
Melanoma Institute Australia, March 2014

WARWICK BRITTON

Officer of the Order of Australia for distinguished service to medical research as an academic and immunologist, to humanitarian and public health improvements for the people of Nepal and to the community.

MAGDELENA BUDZINSKA

Sydney Medical School ECR PhD Scholarships, 2015

MAGDELENA BUDZINSKA

First Author on top-scoring abstract,
International Liver Cancer Association 8th Annual Conference,
Kyoto, Japan, September 2014

CHARLOTTE BURNS

The Human Genetics Society of Australasia (HGSA) NSW branch 2014 Student Prize

CHARLOTTE BURNS

The Australian Society of Genetic Counsellors (ASGC)
Scientific Meeting Student Prize 2014

BARBARA FAZEKAS DE ST GROTH

Nomination as the Burnet Orator -
Highest honour of the Australasian Society for Immunology

NICK KEILAR

Academy Global Scholarship for Emerging Leaders Program

HENI MUFLIHAH

eBioscience Poster Prize -
44th Australasia Society of Immunology (ASI) Annual Scientific Meeting,
Wollongong, December 2014

CARLO PULITANO

Distinguished Talent Visa for Research/Academia -
Australian Government

CARLO PULITANO

Presidents Prize - Transplantation Society Australia and New Zealand (TSANZ)

CARLO PULITANO

Young Investigators Award - International Liver Transplantation Society (ILTS)

BEN ROEDIGER

Associate Investigator, F&E Bauer Foundation Scholarship,
Australasian College of Dermatologist

ANNA SLOWIACZEK

Academy Global Scholarship for Emerging Leaders Program

PHILIP TONG

President's Medal for the Highest mark in the 2014 Pharmacology Examinations for the Australasian College of Dermatologists

THOMAS TU

Senior author on top-scoring abstract - International Liver Cancer Association 8th Annual Conference 2014

HUI (EMMA) ZHANG

ASBMB COMBIO Awards for Best Poster

YANG ZHAO

Poster Award Winner,
Inaugural EMBL Australia PhD Symposium, December, 2014

YANG ZHAO

Runner-up Student Poster Prize,
"State of the Heart" Australia Vascular Biology Society, November 2014

Centenary Institute LAWRENCE CREATIVE PRIZE

Neil Lawrence awarding the 2014 Winner A/Prof Geoff Faulkner

The Centenary Institute Lawrence Creative Prize (CILCP) is an exciting initiative that promotes medical research in Australia. It is committed to encouraging a domestic culture of scientific excellence by supporting our most promising young scientists.

The CILCP recognises bold young researchers who are taking the risks to ask the big questions of today – those questions that have most people saying "but that's impossible".

2014 WINNER
ASSOCIATE PROFESSOR GEOFF FAULKNER

Mater Research Institute

A/Prof Geoff Faulkner is one of Australia's most creative young medical researchers with his research focusing on how a common, short piece of DNA affects the operation of the brain.

Geoff thinks the differences in the way each human brain functions could be determined by a segment of mobile DNA, which has the capacity to insert itself into the genome of individual brain cells.

His work may have consequences for how memories form, for brain disorders such as schizophrenia, and even spills over into diseases such as haemophilia, muscular dystrophy and some forms of cancer.

Geoff's work has been noted internationally and groups worldwide are beginning to use his techniques to check the mobile DNA's impact on diseases elsewhere in the body. In addition the US National Institutes of Health has established a special fund to finance research into DNA mosaicism in neurons.

Meet the CILCP FINALISTS

2014 FINALIST | DR LUCY PALMER

Florey Institute of Neuroscience and Mental Health in Melbourne

Dr Lucy Palmer wants to know how brain cells in mammals process and integrate the signals they receive from the sensory environment and how this information impacts behaviour.

Lucy obtained two degrees, a Bachelor of Science and Bachelor of Arts, from the University of Melbourne in 2001 during which time she also studied abroad at the University of California, Santa Barbara (2000). She then obtained her Master of Science at the University of Minnesota, USA before returning to Australia to pursue a PhD, which she obtained in 2008 from the ANU.

The results of Lucy's investigations are far reaching and demonstrate the sort of adaptive changes that might occur in diseases that lead to disruptions in sensory perception such as stroke, traumatic brain injury, epilepsy, schizophrenia and alcoholism.

2014 FINALIST | DR NICOLAS PLACHTA

Australian Regenerative Medicine Institute and EMBL Australia at Monash University

Dr Nicolas Plachta wants to develop better and simpler ways of determining the health of the embryos to be implanted in IVF. He does so by learning more about the very early stages of embryonic life.

Nicolas was born in Argentina, and studied biology at the universities of Buenos Aires and Tel Aviv in Israel. During this time he published his first lead author paper.

He then completed a PhD in stem cell research and neuroscience at the University of Basel and the Friedrich Miescher Institute in Switzerland, working under former Max Planck Institute Director Yves-Alain Barde.

Nicolas is convinced there is plenty more to discover about what happens at the early embryo stage, and what makes a healthy embryo.

6 Scientific Excellence

2014 PUBLICATIONS

Abtin A*, Jain R*, Mitchell A*, Roediger B, Brzoska A, Tikoo S, Cheng Q, Ng LG, Cavanagh LL, von Andrian UH, Hickey MJ, Firth N, Weninger W. Perivascular macrophages mediate neutophil recruitment during bacterial skin infection. Nature Immunology, 2014 Jan; 15(1):45-53
*equal contribution
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*equal first authors
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Chan JGY, Duke CC, Ong HX, Chan JCY, Tyne AS, Chan HK, Britton WJ, Young PM, Traini D. A Novel Inhalable Form of Rifapentine. Journal of Pharmaceutical Sciences, 2014; 103(5): 1411-1421
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6

Scientific Excellence

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Ly D, Taylor JM, Tsatsaronis JA, Monteleone MM, Skora AS, Donald CA, Maddocks T, Nizet V, West NP, Ranson M, Walker MJ, McArthur JD, Sanderson-Smith ML. Plasmin(ogen) Acquisition by Group A Streptococcus Protects against C3b-Mediated Neutrophil Killing. Journal of Innate Immunity, 2014;6(2):240-250
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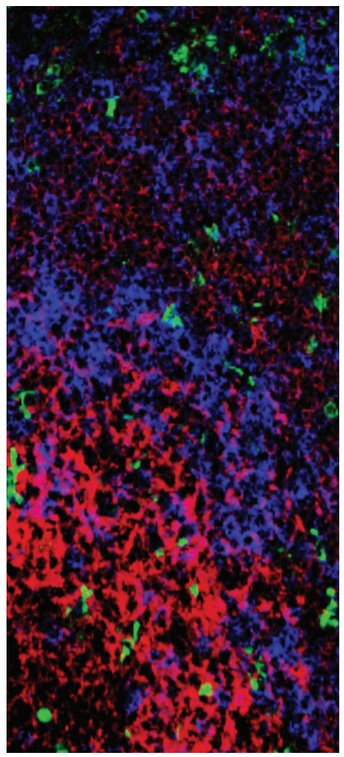


2 B Cell Follicles - scientific image taken by Summer School Student, **Jarem Edwards, Human Viral & Cancer Immunology Laboratory**

6 INVITED PRESENTATIONS

INTERNATIONAL

Biro M, Cellular actin cortex composition and homeostasis resolved by integrating quantitative imaging and proteomics, Institute of Molecular and Cell Biology Invited Speaker Seminar Series, Singapore, Malaysia

Biro M, Organiser/ Chair, 5th Tissue Engineering Symposium, ADATE, Sydney, NSW

Fazekas de St Groth B, A bioinformatic approach to flow cytometric data, International Conference on Systems Biology, Melbourne, VIC

Gorrell M, DPP9 in cell growth adhesion and migration., Tufts University Medical School., Boston, MA, USA

Gorrell M, The protease fibroblast activation protein as a biomarker and therapeutic target in cancer and chronic liver injury., 2nd International Conference on Predictive, Preventive and Personalized Medicine., Las Vegas, USA

Gorrell M, Fibroblast activation protein is a potential biomarker and therapeutic target in diabetes and fatty liver disease., 5th World Congress on Diabetes & Metabolism., Las Vegas, USA

Gray B, Challenges of Sport Participation in Genetic Heart Disease, International Clinical Cardiovascular Genetics Conference, Brisbane, QLD

Holst J, Regulation of nutrient uptake coordinates metabolic adaptations in cancer, 9th International Conference of Anticancer Research, Sithonia, Greece

Ingles J, The role of the cardiac genetic counselor, Heart Rhythm Society's Annual Scientific Sessions, Boston, Boston, MA, USA

Ingles J, Managing the sudden cardiac death family, International Clinical Cardiovascular Genetics Conference, Brisbane, QLD

Ingles J, Genetic counselling prior to testing, and when not to test, International Clinical Cardiovascular Genetics Conference, Brisbane, QLD

Ingles J, Clinical genetic screening of family members, Scientific Sessions of the American Heart Association, Chicago, IL, USA

Ingles J, Conveying a probabilistic gene result to the family, Asia-Pacific Heart Rhythm Society Scientific Sessions, New Delhi, India

Ingles J, Psychological wellbeing of the surviving family, Asia-Pacific Heart Rhythm Society Scientific Sessions, New Delhi, India

Jormakka M, When microscopes are not enough: structural biology and insights into metal transport, The 7th Cell Biology, Developmental Biology, and Systems Biology meeting, Kyoto, Japan

Jormakka M, Structure and function of a bacterial iron transporter, Department of Cell Biology; Department Seminar, Kyoto, Japan

Jormakka M, Structural insights into divalent iron transport, Department of Physiology, UCLA; Department Seminar, Los Angeles, USA

McCaughan G, The End of Interferon treatment for HCV: a debate, APASL, Brisbane, QLD

McCaughan G, Is there such a thing as protocol immunosuppression in Liver Transplantation, APASL, Brisbane, QLD

McCaughan G, Immunosuppression for AIH, APASL, Brisbane, QLD

McCaughan G, Prevention of HBV post Liver Transplant, Japanese Hepatology Association Single Topic Conference on HBV Infection. , Hiroshima, Japan

McCaughan G, New Therapies for HCV, IHPBA meeting, Seol, South Korea

McCaughan G, Selection of patients for combined liver and kidney transplantation in Hepatorenal Syndrome., IHPBA meeting, Seol, South Korea

McCaughan G, Viral Hepatitis and safe kidney transplantation. , Vietnamese Transplant Meeting, Vietnam

McCaughan G, Immunosuppression and infection prophylaxis, Vietnamese Transplant Meeting, Vietnam

McCaughan G, Viral hepatitis and safe liver transplantation, Vietnamese Transplant Meeting, Vietnam

McCaughan G, Equitable allocation of deceased donor liver: The Liver Transplant Recipient: Criteria for listing and allocation of organs. Vietnamese Transplant Meeting, Vietnam

Palendira U, An occupying force of memory T cells against Epstein Barr Virus, 16th International Symposium on EBV and associated diseases , Brisbane, QLD

Palendira U, Selective retention of effector memory CD8+ T cells within human spleen, World Immune Regulation Meeting – VIII, Davos, Switzerland

Rasko J, Intron retention provides a hidden layer of gene expression control, Institute of Stem Cell Biology & Regenerative Medicine, Stanford University, California, USA

Rasko J, Intronic Nonsense: hidden layers of gene expression control uncovered by studying granulopoiesis, HUGO, Geneva, Switzerland

Rasko J, Intronic Nonsense: a widespread yet hidden layer of gene expression control, HUGO Geneva, Geneva, Switzerland

Rasko J, Cell and gene therapy; coming to terms with it all, 5th MTERMS, Malaysia

Rasko J, Serendipity and Science; from Gene Therapy to Cancer via the Genetics of Aminoaciduria, 5th MTERMS, Malaysia
Rasko J, , CHORI, Oakland, USA

Rasko J, Gene therapy clinical trials: the Australian path to the end of suffering, 20th Annual ISCT Meeting, Paris, France

Rasko J, Orchestrated intron retention regulates normal granulocyte differentiation, EMBO, Poland

Rasko J, Orchestrated intron retention regulates normal granulocyte differentiation, EMBO, Polonia Castle Pultusk, Pultusk, Poland

Rasko J, Cell and gene therapy; coming to terms with it all, 5th MTERMS, Hotel Bangi-Putrajaya, Selangor, Malaysia

Rasko J, Serendipity and Science; from Gene Therapy to Cancer via the Genetics of Aminoaciduria, 5th MTERMS, Hotel Bangi-Putrajaya, Selangor, Malaysia

Rasko J, Intron retention provides a hidden layer of gene expression control, Institute of Stem Cell Biology & Regenerative Medicine, Stanford, CA, USA

Semsarian C, Role of social media in cardiovascular education, Amsterdam Medical Centre, Amsterdam, The Netherlands

Semsarian C, The cardiomyopathies, International Clinical Cardiovascular Genetics Meeting, Brisbane, QLD

Semsarian C, The molecular autopsy: from single genes to exomes, International Clinical Cardiovascular Genetics Meeting, Brisbane, QLD

Semsarian C, The ideal model of care, International Clinical Cardiovascular Genetics Meeting, Brisbane, QLD

Semsarian C, The stimulating truth about energy drinks. , 1st International Energy Drinks Conference, Geelong, VIC

Semsarian C, The molecular autopsy. , 7th Asia Pacific Heart Rhythm Society Scientific Meeting, New Delhi, India.

Semsarian C, Determining which variants are disease-causing., 7th Asia Pacific Heart Rhythm Society Scientific Meeting, New Delhi, India.

Semsarian C, Update in genetics of hypertrophic cardiomyopathy, 7th Asia Pacific Heart Rhythm Society Scientific Meeting, New Delhi, India.

Semsarian C, Sudden cardiac death risk assessment in hypertrophic cardiomyopathy, 7th Asia Pacific Heart Rhythm Society Scientific Meeting, New Delhi, India.

Semsarian C, Genetic basis of SUDEP: the Australian study, Oxford, United Kingdom

Semsarian C, False negative genetic tests, Heart Rhythm Society Meeting, San Francisco, USA

Semsarian C, Advances in the genetics of hypertrophic cardiomyopathy. , The Victor Change Cardiac Research Institute 15th International Symposium, Sydney, NSW

Semsarian C, The Australian Heart Registry, International Symposium on ARVC, Zurich, Switzerland

Seth D, Genetics of alcoholic liver disease, 37th Annual RSA Scientific Meeting and 17th Congress of ISBRA Joint Meeting, Bellevue, Washington, USA

Seth D, Huang E, Duly A, McLennan S, Osteopontin plays a key role in alcohol and high fat diet induced liver injury, 50th International Liver Congress 2015 for the European Association for the Study of the Liver (EASL), Vienna, Austria

Seth D, Meikle P Lipidomics in Alcoholic Liver Disease, 37th Annual RSA Scientific Meeting and 17th Congress of ISBRA Joint Meeting, Bellevue, Washington, USA

Seth D. T. Morgan, C. Day and GenomALC Consortium GenomALC Consortium study to identify genetic risk factors for alcoholic liver cirrhosis, 37th Annual RSA Scientific Meeting and 17th Congress of ISBRA Joint Meeting, Bellevue, Washington, USA

Smith A, Best Practices in SLR, CYTO 2014, Fort Lauderdale, USA

Smith A, Online and New Media Tools for the Well Connected Cytrometry Lab, CYTO 2014, Fort Lauderdale, USA

Tong P, Cutting edge microscopy to study the immunological and structural composition of skin, College of Life Sciences, University of Dundee, Dundee, UK

Weninger W, Regulation of lung inflammation by ILC2, Innate Lymphoid Cells 2014, Paris, France

Weninger W, Perivascular macrophages regulate the response to S. aureus infection, 14th Hunter Cellular Biology Meeting, Pokolbin, NSW, Australia

Weninger W, Role of perivascular macrophages in neutrophil recruitment to the skin, Keystone Conference on Molecular Cell Biology of Macrophages in Human Diseases, Santa Fe, NM, USA

Weninger W, Lymphotyes in the skin: The family is growing, Inflammatory Skin Disease Summit: , Vienna, Austria

Weninger W, Perivascular macrophages as regulators of skin snd CNS inflammation, Chemotactic Cytokine Gordon Research Conference, West Dover, VT, USA

Wong J, Intronic nonsense: A widespread layer of gene expression control, Stanford Medical School Departmental Seminar, California, USA

Wong J, Diverse mechanisms of gene expression control: All roads lead to Rome, Faculty Colloquium, Faculty of Research Science and Technology, University of Malaysia Sarawak, Kota Samarahan, Malaysia

NATIONAL

Beaumont K, Sharp D, Weninger W and Haass NK, Targeting Rab27a to suppress melanoma proliferation and invasion, 2nd National Melanoma Conference, Perth, Australia

Bertolino P, Parameters that determine intrahepatic Immunity after primary T cell activation., APASL 2014 Meeting: Australia, Brisbane, QLD

Bertolino P, An antigen expression level threshold tunes the fate of CD8 T cells during primary hepatic immune responses, Future of Experimental Medicine Conference - Inflammation in Disease and Ageing -, Sydney, NSW

Biro M, Investigating the early stages of solid tumour metastasis, Sail for Cancer Research, Empire Marina, Bobbin Head, NSW

Biro M, The actin cortex and cellular protrusions: from assembly to invasive tumour cell migration, Children's Cancer Reserch Unit Seminar Series, Kids Research Institute, Westmead, NSW

Biro M, Investigating the early stages of solid tumour metastasis, Fight on the Beaches, Miramare Gardens, Terrey Hills, NSW

Fazekas de St Groth B, Identification and Study of Human Tregs, TSANZ satellite workshop, Sydney, NSW

Fazekas de St Groth B, Immunological Disease - The Western Epidemic, Postgraduate workshop, Australasian Society for Immunology Annual Scientific Meeting, Wollongong, NSW

Fazekas de St Groth B, Human Tregs, TSANZ workshop, Australasian Society for Immunology Annual Scientific Meeting, Wollongong, NSW

Fazekas de St Groth B, Burnet Oration: Roads less travelled: unforseen directions in immunological research, Australasian Society for Immunology Annual Scientific Meeting, Wollongong, NSW

Gamble J, New concepts for senescence in the vascular System, Australian Vascular Biology Scentific Metting, Adelaide, SA

Gamble J, New concepts for senescence in the vascular System, Inaugural Futures of Experimental Medicine, Sydney, NSW

Hare N.J, Microparticles from M. tuberculosis infected human macrophages contain elevated type I interferon inducible proteins including ISG15 and IFITs, 44th Australasian Society of Immunology Annual Scientific Meeting 2014, Wollongong, NSW

Hare N.J, Microparticles from M. tuberculosis infected human macrophages contain elevated type I interferon inducible proteins including ISG15 and IFITs, Centre of Research Excellence for Tuberculosis Control (TB-CRE) Annual Symposium 2014, Sydney, NSW

Hare N.J, Microparticles from M. tuberculosis infected human macrophages contain elevated type I interferon inducible proteins including ISG15 and IFITs, 2nd Proteomics and Beyond Symposium, Sydney, NSW
Hersey P, " Efficacy and safety of the anti PD1 MAb MK-3475 in 411 patients with melanoma", MOGA , Sydney, NSW

Holst J, Regulation of nutrient uptake coordinates metabolic adaptations in cancer, Garvan Institute, Cancer Research Division Seminar Series, Sydney, NSW

Holst J, Linking nutrition, cancer and diabetes – one branched chain amino acid at a time, University of New South Wales, Department of Pharmacology Seminar Series, Sydney, NSW

Ingles J, Psychological impact of sudden cardiac death, Athel Hockey Symposium, WA branch of the Human Genetics Society of Australasia, Perth WA, Australia

McCaughan G, Non Alcoholic Fatty Liver Disease - Detection and Severity Assessment, Australian Association of Clinical Biochemists 52nd Annual Scientific Meeting, Adelaide, SA

McCaughan G, AIH – how to treat and natural history, GESA Gut School, Sydney, NSW

Mundra PA, Wong G, Huynh K, Barlow CK, Duly AMP, Haber PS, Whitfield JB, Meikle PJ, Seth D, Plasma lipids: association with alcoholic liver disease and potential biomarker, Australian Lipid Meeting, Wollongong, NSW

Palendira U, Understanding human cellular immunology through common viral infections, Peter Doherty Institute Seminar, Melbourne, VIC

Palendira U, An occupying force of memory T cells against an oncogenic virus - Resident memory T cells in humans, ANZAC institute seminar, Sydney, NSW

Palendira U, An occupying force for an oncogenic virus - Resident memory T cells in humans, Inflammation and infection Research Centre Seminar, UNSW, Sydney

6 INVITED PRESENTATIONS

Rasko J, Stem cell research, 10th Annual Symposium, Medivision Menzies Research Institute, University of Tasmania, , Hobart, TAS

Rasko J, Stem cell research, 10th Annual symposium,Medivision, Hobart, TAS
Rasko J, Intronic nonsense: hidden layers of gene control uncovered by studying granulopoiesis, 26th Lorne Cancer Conference, Lorne, VIC

Rasko J, Getting something for nothing? Intron retention commonly regulates gene expression, 35th Lorne Conference on the Organisation and Expression of the Genome, Lorne, VIC

Rasko J, Getting something for nothing? Intron retention commonly regulates gene expression, 35th Lorne Conference on the Organisation and Expression of the Genome, Lorne, VIC

Rasko J, Intronic Nonsense: hidden layers of gene expression control uncovered by studying granulopoiesis, 26th Lorne Cancer Conference , Lorne, VIC

Rasko J, Innovations-Advances in cellular therapies relating to haematological conditions, RCPA, Pathology Update 2014, Melbourne, VIC

Rasko J, Updating global therapies, 7th World Congress on Tissue Banking, Melbourne, VIC

Rasko J, Gene and cell therapy update, Pathology Update, Melbourne, VIC

Rasko J, Update in global therapies, WCTB7, Melbourne, VIC

Rasko J, Heterogeneity in the microRNA-ome at CML diagnosis, NDLR 2014 Conference, Outrigger Little Hastings, Noosa, QLD

Rasko J, Heterogeneity in the microRNA-ome at CML dignosis, NDLR, Noosa, QLD

Rasko J, Intron retention provides a hidden layer of gene expression control, Harry Perkins Institute of Medical Research, Perth

Rasko J, Intron retention provides a hidden layer of gene expression control, Harry Perkins Institute of Medical Research, Perth, WA

Rasko J, Getting something for nothing?, Intron retention downregulates gene expression, Lowy Cancer Research Centre, UNSW, Kensington Campus, Randwick, NSW

Rasko J, Getting something for nothing? Intron retention commonly regulates gene expression, Lowy Cancer Research Centre, UNSW, Sydney NSW

Rasko J, Intron retention provides a hidden layer of gene expression control, Illawarra Health and Medical Research Institute, Wollongong, NSW

Rasko J, Intron retention provides a hidden layer of gene expression contro, Illawarra Health and Medical Research Institute, Wollongong, NSW

Roediger B, In vivo analysis of mast cell homeostasis in the skin, 44th Australasian Society for Immunology Annual Scientific Meeting, Wollongong, NSW

Semsarian C, Update on the ANZSCD Study, ASMR Meeting, Melbourne, VIC

Semsarian C, Progress on the ANZSCD Study, Pathology Update, Melbourne, VIC

Semsarian C, Cardiac genetic testing in 2014, UWA Symposium, Perth, WA

Semsarian C, Getting to the heart of sudden death, Athel Hockey Symposium, Perth, WA

Semsarian C, My patient with inherited cardiac arrhythmia syndromes – the role of genetic testing., UCAD, Sydney, NSW

Semsarian C, Genetic basis and medical assessment of HCM patients, Baird Conference, Sydney, NSW

Semsarian C, Social media and health care. , Expert Viewpoints Meeting, Sydney, NSW

Semsarian C, Sudden death in 2014, FRACP RPA BPT Revision Course, Sydney, NSW

Semsarian C, Update on genetic heart diseases, Sydney Cardiology Group Educational Seminar, Sydney, NSW

Semsarian C, Getting to the heart of sudden death, ASMR Meeting, Sydney, NSW

Semsarian C, Caffeine, drugs and the heart., Australian Cardiovascular Health and Rehabilitation Association Meeting, Sydney, NSW

Semsarian C, What can we do about HCM? , CV Forum, Sydney, NSW

Semsarian C, Preventing sudden cardiac death in the young. , Sydney Innovation and Research Symposium, Sydney, NSW

Semsarian C, Getting to the Heart of Sudden Cardiac Death, 21st Century Public Lecture Series, University of Sydney, Sydney NSW

Semsarian C, Genetic basis of hypertrophic cardiomyopathy: translation to clinical practice, Bosch Institute Annual Scientific Meeting, University of Sydney, Sydney NSW

Semsarian C, Are there individuals for whom strenuous exercise is too risky? , Exercise is Medicine Meeting, , University of Sydney, Sydney NSW

Semsarian C, Genomics in cardiac clinical practice: shaping the future of cardiology. , Cardiovascular Symposium, Westmead Hospital Week, Westmead Hospital Week, Sydney NSW

Semsarian C, Genetic advances in cardiology, Medical Genetics Symposium, Westmead Hospital Week, Sydney NSW

Semsarian C, The clinician researcher: how to make it happen, University of Sydney Early Career Researcher Seminar, Woolcock Institute, Sydney NSW

Semsarian C, SUDEP – Future Strategies, Epilepsy Research Meeting, Yarra Valley, VIC

Tu T, Microvesicles: a window into the liver, Australian Centre for HIV and Hepatitis Virology Workshop 2014, Lorne, VIC

Tu T, Non-driver Mutations in Hepatocellular Carcinoma Genomes, Sydney Catalyst Post-Graduate and Early Career Research Symposium, Sydney, NSW

Wong J, Intron retention and its regulation by DNA methylation, Joint Australia Japan RNA Meeting, Sydney, NSW

Meet our Scientists

Ellie Powter
Research Assistant

Centenary is the whole package: a world class research facility with state-of-the-art equipment, weekly seminars from brilliant national and international researchers and staff who are leaders of their field. To top it off, Centenary is nestled between RPA Hospital and the University of Sydney, so there is always a mix of clinicians, scientists and students to collaborate with and learn from."

Meet our Scientists

Dr Chandrika Deshpande

Structural Biology – Breast Cancer

"I work with a protein called Breast Cancer Resistance Protein (BCRP), one of the most important proteins known to play a critical role in causing resistance to anti-cancer drugs in patients, thus impeding treatment.

My project, through a basic science approach, addresses the need for improved health care for cancer patients by facilitating the design and development of more effective drugs."

6

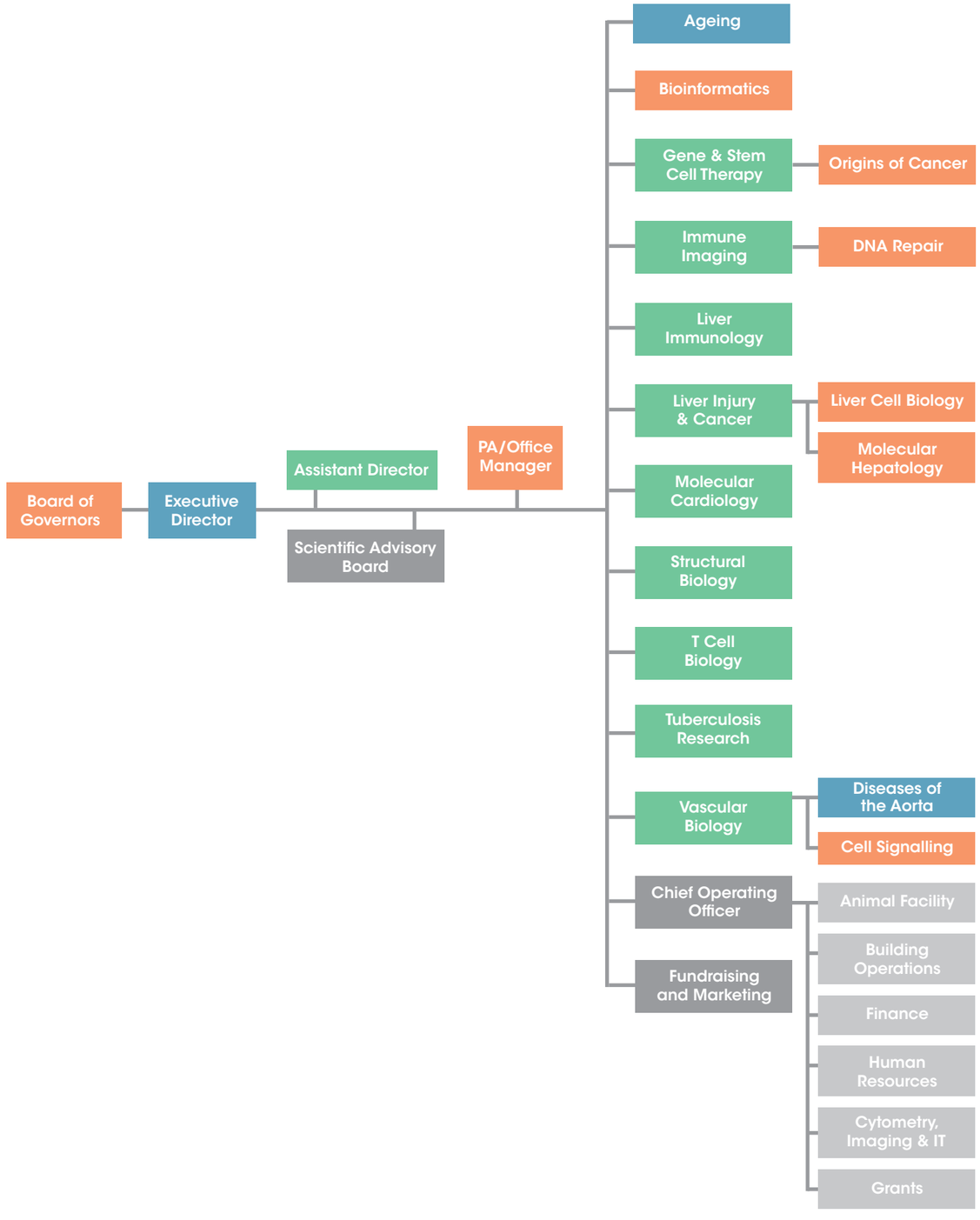
2014 GRANT RECIPIENTS

Nicholas King, Ian Campbell, Barbara Fazekas De St Groth, Stuart Cordwell, Louis Rendina, Peter Gunning, Merlin Crossley, Miles Davenport, Philip Hogg, John Pimanda, Ewa Goldys, Dayong Jin, Mark Molley	**Australian Research Council**	Equipment
Jodie Ingles	**Australian Rotary Health research Fund**	Scholarship
Maté Biro, Nikolas Haass, Wolfgang Weninger	**Cancer Australia**	Project
Justin Wong	**Cancer Institute NSW**	Early Career Fellowship
Kim Beaumont	**Cancer Institute NSW**	Early Career Fellowship
Maté Biro	**Cancer Institute NSW**	Early Career Fellowship
Devanshi Seth	**Commonwealth of Australia**	Project
Genevieve Almouzni, Adam Cook	**Epigenesys Network of Excellence**	Project
Chris Semsarian, Jodie Ingles	**HeartKids**	Project
Chris Semsarian	**Mamma Lena and Dino Gustin Foundation**	Research
Jennifer Gamble	**Mirrx Therapeutics A/S**	Project
Renjing Liu	**National Australia Bank**	Project
Helen McGuire	**National Health & Medical Research Council**	Early Career Fellowship
Chris Jolly, Adam Cook, Wolfgang Weninger, Barbara Fazekas de st Groth, Robert Brink	**National Health & Medical Research Council**	Project
Eddy Thientosapol	**National Health & Medical Research Council**	Project
Jodie Ingles, Chris Semsarian, Julie Redfern, Nadine Kasparian	**National Health & Medical Research Council**	Project
John Rasko, William Ritchie, Jeffrey Holst, Charles Mulligan, Matthais Selbach, Timothy Hughes, Justin Wong, Natalia Pinello Gini	**National Health & Medical Research Council**	Project
Nicholas Shackel, Goeff McCaughan, Sue McLennan, Fiona Warner, Alexandra Sharland, James Kench, Christine Yee	**National Health & Medical Research Council**	Project
Robert Cheng	**National Health & Medical Research Council**	Project
Wolfgang Weninger, Neville Firth, Andrew Mitchell	**National Health & Medical Research Council**	Project
Xiangjian Zheng	**National Health & Medical Research Council**	Project
Jai Li, Jennifer Gamble, Mathew Vadas	**National Health & Medical Research Council**	Scholarship
John Rasko, Charles Bailey, David Adams, Jeffrey Holst, William Ritchie, Charles Millighan, Victor Lobanenkov, Joel Makay	**New South Wales Cancer Council**	Project
John Rasko, Elaile Mardis, David Adams, Charles Bailey, Lyndal Anderson, Selvan Panther, Victor Lobanenkov, Amy Marshall	**New South Wales Cancer Council**	Project
Renjing Liu	**Perpetual Trust**	Project
Qian Wang, Andreas Evdokiou, Ronald Quinn, Jeffrey Holst	**Prostate Cancer Foundation of Australia**	Young Investigator Project Grant
Robert Cheng	**Sydney Catalyst**	Travel
Mark Gorrell	**The Rebecca L. Cooper Foundation**	Equipment
Warwick Britton	**The Rebecca L. Cooper Foundation**	Equipment
Charles Bailey	**Tour de Cure**	Equipment

6 COLLABORATIONS

- A.O. Ordine Mauriziano di Torino, Torino, Italy
- Aarhus University, Aarhus, Denmark
- Alma Mater Studiorum, Università di Bologna, Bologna, Italy.
- Austin Hospital, Melbourne, VIC
- Australian National University. Canberra, ACT
- Burnet Institute, Melbourne, VIC
- Canberra Hospital, Canberra, ACT
- Careggi University Hospital, Florence, Italy
- Centre national de la recherche scientifique, Paris, France
- Centro di Coordinamento Sperimentazioni Cliniche, Istituto Toscano Tumori/Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy
- Columbia University, New York, USA
- Cukurova University, Adana, Turkey
- Curtin University, Perth, WA
- Deptt of Forensic Medicine Monash University VIC
- Diamantina Institute, Woolloongabba, QLD
- Duke University, Durham, North Carolina, USA
- Ente Ospedaliero Cantonale, Bellinzona, Switzerland
- Feinstein Institute, New York, USA
- Flinders University, Adelaide, SA
- Fremantle Hospital, Femantle, WA
- Fudan University, Shanghai, China
- Garvan Institute of Medical Research, Darlinghurst, NSW
- Gold Coast Hospital, Southport, QLD
- Greenslopes Hospital, Brisbane, QLD
- Griffith University, Nathan, QLD
- Guangzhou General Hospital of Guangzhou Military Command, Guangdong, China
- Hanoi Medical University, Hanoi, Vietnam
- Harvard University, Massachusetts, USA
- Heart Research Institute, Newtown, NSW
- Jai Tong University, Shanghai, China
- John Hunter Hospital, Newcastle, NSW
- Johns Hopkins University, Maryland, USA
- Kyoto University, Kyoto, Japan
- La Trobe University, Melbourne, VIC
- Life Science Institute, Macrogen Inc, Seoul, South Korea
- Liverpool Hospital, Liverpool, NSW
- Loma Linda University Medical Centre, California, USA
- Malaghan Institute of Medical Research, Wellington, New Zealand
- Max Planck Institute of Moleculat Cell Biology and Genetics, Dresden, Germany
- Mayo Clinic Rochester, Minnesota, USA
- McGill University, Montréal, Canada
- Minneapolis Heart Institute Foundation, Minneapolis, USA
- Monash University, Melbourne, VIC
- Mount Sinai Hospital New York, New York, USA
- Murdoch Children's Research Institute, Parkville, VIC
- Nambour Hospital, Nambour, QLD
- National Institute of Allergy and Infectious Disease Bethesda, Maryland, USA
- National Lung Hospital, Hanoi, Vietnam
- Nepean Hospital, Kingswood, NSW
- Netherlands Proteomics Centre, Utrecht, Netherlands
- Northern Health Melbourne Epilepsy Research Centre, Epping, VIC
- Princess Alexandra Hospital, Woolloongabba, QLD
- QIMR Berghofer Medical Research Institute, Brisbane, QLD
- Raudonikis Database Services, Mount Colah, NSW
- Royal Brisbane Hospital, Herston, QLD
- Royal Children's Hospital, Melbourne, VIC
- Royal Hospital for Sick Children, Glasgow, Scotland
- Royal Melbourne Hospital, Parkville, VIC
- Royal Perth Hospital, Perth, WA
- Royal Prince Alfred Hospital, Camperdown, NSW
- Seoul National University, Gwanak District, South Korea
- Singapore Immunology Network, Singapore, Malaysia
- Sir Charles Gairdner Hospital, Perth, WA
- Southern General Hospital, Glasgow, UK
- St George Hospital, Kogarah, NSW
- St Vincents Hospital, Fitzroy, VIC
- Stanford University, Stanford, California, USA
- Sun Yet-sen University, Guangshou, China
- The Alfred Hospital, Melbourne, VIC
- The International Institute of Molecular and Cell Biology, Warsaw, Poland
- The John Curtin School of Medical Research, Acton, ACT
- The Kirby Institute for Infection and Immunity in Society, Sydney, NSW
- The University of Adelaide, Adelaide, SA
- Tufts Medical Center Boston, Massachusetts, USA
- Tufts University School of Medicine Boston, Massachusetts, USA
- Università Sapienza, Roma, Italy
- Université de Montréal, Montréal, Canada
- Universiti Sains Malaysia, George Town, Malaysia
- University College London, London, England
- University Hospital Hamburg-Eppendorf, Hamburg, Germany
- University of Adelaide, Adelaide, SA
- University of Birmingham, Birmingham, England
- University of British Columbia, Vancouver, Canada
- University of California San Diego, California, USA
- University of California San Francisco, California, USA
- University of Freiburg, Freiburg im Breisgau, Germany
- University of Glasgow, Glasgow, Scotland
- University of Melbourne, Melbourne, VIC
- University of New South Wales, Sydney, NSW
- University of Newcastle, Callaghan, NSW
- University of Queensland, Brisbane, QLD
- University of Sydney, Sydney, NSW
- University of Toronto, Toronto, Canada
- University of Washington, Seattle, Washington, USA
- University of Western Australia, Perth, WA
- University of Western Sydney, South Penrith, NSW
- University of Wollongong, Wollongong, NSW
- University of Zurich, Zurich, Switzerland
- Utrecht University, Utrecht, Netherlands
- Victor Chang Cardiac Research Institute, Sydney, NSW
- Victorian Infectious Diseases Reference Laboratory, Parkville, VIC
- Westmead Hospital, Westmead, NSW
- Winstar Institute, Philadelphia, USA
- Woolcock Institute, Sydney, NSW
- Yale University, New Haven, Connecticut, USA
- Yeshiva University New York, New York, USA
- Zhenjiang Hospital, Jiangsu, China
- Zhenjiang University, Hangzhou, China

Organisational STRUCTURE



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