

ECU MELANOMA RESEARCH GROUP

2016/2017 NEWSLETTER



We thank you so much for your generous ongoing support. The 2016-2017 year has been so exciting with some of our studies coming to completion and others just commencing. Thanks to you, we have raised awareness of melanoma and provided clinicians with research support, that is now driving changes in the management of patients with melanoma.

Our team hosted various world renowned scientists and collaborators during the past year. This provided opportunities for very stimulating discussions about our research and it was a great experience for our students.

We hosted our first Consumer Forum event in April 2017 which was supported by Melanoma WA. It was very humbling to see the support and interest in our research from those most affected by this disease. We will be hosting another forum next year and hope to engage an even bigger crowd.

In 2017, to enhance our world leading expertise in Melanoma research, we are seeking your help to raise funds to purchase a 10X cutting edge technology that will allow us to study the whole genome expression of eukaryotic cells, at single cell level for thousands of cells.

This technology will separate the cells into single cell compartments that become single cell reactors and provide critical insight into the levels of expression of genes within a cell, indicating what makes a circulating tumour cell different from tissue cancer cells and from blood cells.

We would deeply appreciate your support. If you can help, please donate by visiting at www.ecu.au/giving-to-ecu/supporting-our-communities

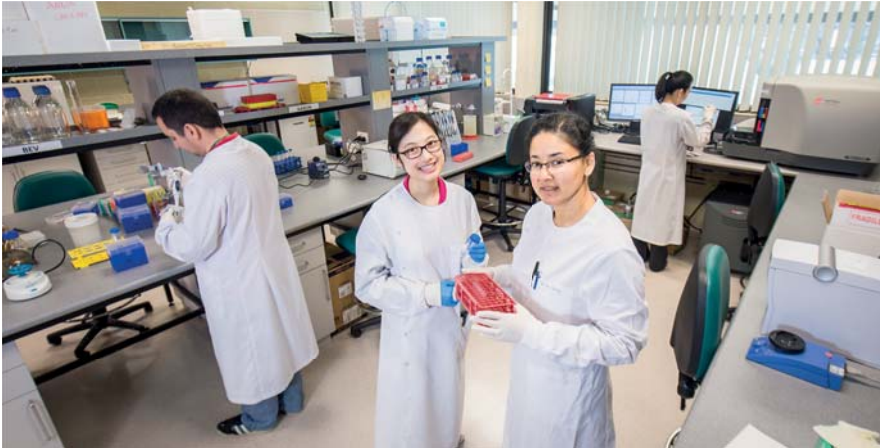
Thank you,

Professor Mel Ziman



10X Genomics Chromium machine

SHOWCASING OUR WORK



Our research has attracted the interest of the scientific community, with the team invited to present in multiple national and international conferences.

Dr Elin Gray and Dr Carlos Aya-Bonilla gave lectures at the 3rd Thomas Ashworth Circulating Tumour Cells Symposium in September 2016 in Sydney. Dr Leslie Calapre and Master of Science student Aaron Beasley presented their work in melanoma blood biomarkers in poster format.

Dr Elin Gray was also an invited speaker to the Australasian Melanoma Conference, hosted by the Melanoma Institute Australia, 28-29 October 2016 in Sydney.

Professor Mel Ziman was an invited speaker at the Australasian College of Dermatologists' Annual Scientific Meeting, 6-9 May 2017 in Sydney.

Professor Ziman also presented at the US-Australia Emerging Cancer Biomedical Technologies Workshop, 13-15 June 2017; at the Virginia Tech Research Center in Arlington, USA and the 16th European Dermatology Congress in Milan, Italy, 4 June 2017.

A CHIP AGAINST CANCER

A recent study by Dr Carlos Aya-Bonilla demonstrated for the first time the utility of a novel microfluid technology for isolation of melanoma cells in the blood of patients.

Carlos' study entitled, "Isolation and detection of circulating tumour cells from metastatic melanoma patients using a slanted spiral micro-fluidic device", was published in the prestigious journal, *Oncotarget*.

The use of this technology will aid the development of tests for rational decision making for melanoma patients. The study is the result of a collaboration with engineer Dr Majid Warkiani, MSc student Gabriela Marsavella and Associate Prof Markus Frank from Harvard University.

CANCER COUNCIL SUPPORT FOR A COLLABORATIVE MELANOMA STUDY

Dr Gray is heading the \$43,000 Cancer Council WA collaborative research grant to investigate how cancer cells communicate with other cells through examining the blood of melanoma patients.

In collaboration with Dr Katie Meehan at the University of Western Australia, Dr Jason Whiteman from Telethon Kids Institute and Dr Tarek Meniawy, Department of Medical Oncology at Sir Charles Gairdner Hospital, the research team is investigating how small vesicles derived from tumour cells can help the tumour communicate with other cells in the body, especially the immune system. Newly enrolled PhD student Michael Clark, is joining this exciting project after graduating with First Class Honours last year.

MEET THE TEAM

AARON BEASLEY

May 2017 has been a fulfilling month for Aaron Beasley as he was awarded his MSc degree. He also submitted his first journal article for publication. Aaron is now preparing to embark on his PhD studies. Luckily for our team, Aaron will be applying the expertise acquired through his Masters to more decisively tackle uveal melanoma (melanoma of the eye). In Aaron's own words, "It's not good enough that we can now tell the patients that their tumour is of the "bad" kind, we need to offer them options to treat it as early as possible, before it is too late". This is what his PhD aims to achieve.



Aaron is passionate about uveal melanoma, an uncommon form of melanoma. Once uveal melanoma has spread throughout the body there is no treatment available, and current treatments for skin melanoma do not work.

In collaboration, with the Lions Eye Institute and Perth Retina, Aaron implemented novel methodologies for capturing and analysing single cancer cells from the blood to determine the risk of metastatic spread within the patient. He will continue his work on validating these methods, but more importantly he will now create models in which to test potential drugs to treat this cancer.

LYDIA WARBURTON

Lydia Warburton is an Oncology Trainee and Fellow to the ECU Melanoma Research Group. Lydia was the recipient of a Department of Health WA Cancer and Palliative Care Network 12 month fellowship.

Lydia has been working with the ECU Melanoma research group to determine if a blood test can predict which patients that may have recurrent melanoma after curative lymph node surgery for stage III melanoma.

She continues to work in the melanoma clinic at SCGH as an oncology registrar and attends the multidisciplinary meetings at Fiona Stanley Hospital and WwwwAMAS.

In her spare time Lydia is kept busy with her toddler twin girls.

SARAH WICKHAM

Sarah Wickham joined the team as a Research Nurse in March this year. She rotates between Sir Charles Gardner Hospital and Fiona Stanley Oncology Units coordinating and supporting clinicians and study participants.

Prior to this position, she was a Care Coordinator in Aboriginal Health at GP Down South in Bunbury. Sarah graduated with a Bachelor of Nursing in 2003 and has a Post Graduate Diploma of Clinical Specialisation (family and community health).

Sarah is currently studying her Master of Nursing at Edith Cowan University.

Sarah Wickam (left) Lydia Warburton (right)



FUNDING BOOST FOR MELANOMA BLOOD FOR A COLLABORATION OF RESEARCHERS

Our team at ECU, together with four hospitals in Perth and researchers in Sydney, Brisbane and the USA have been working on a test to facilitate patient monitoring and early detection of progression, harnessing the information that can be derived from tiny fragments of tumour DNA found in blood.

Identifying which treatment is best suited to each melanoma patient will allow the personalisation of cancer therapy while reducing the cost and side effects of their treatment and increase effectiveness at the same time.

The injection of \$820,000 through a very competitive grant scheme funded by the National Health and Medical Research Council of Australia (NHMRC) will aide this important research. Together with BioRad, (an international biotechnology company) the team can now collaborate with 4 hospitals in Perth as well as researchers in Sydney and Brisbane to further develop and validate this blood test for melanoma.

The grant will help with bringing the blood test into clinical practice, making it accessible for all melanoma patients undergoing treatment and for those patients that require routine monitoring.

“With this blood test doctors will be able to monitor patients on a routine basis using a simple blood test. We can detect when drugs are effective, or when the patient relapses very much earlier than current clinical methods of assessment, providing a safe, effective liquid biopsy, showing information about disease burden in real time” – Professor Mel Ziman.



OVERCOMING DRUG RESISTANCE

Lokeswari Prathyusha Tangella is a talented PhD student from India, and recipient of an ECU International Postgraduate Research Scholarship. Her expertise in pharmacology is now being applied to tackle drug resistance in melanoma research at ECU.

Lokeswari’s target is a complex membrane transporter embedded in the membrane of melanoma cells. This protein acts as a pump excreting the anti-cancer drug out of the cells heereby reducing its benefit. Her research aims to identify molecules that can block this transporter and keep the anti-cancer drug inside the melanoma cells to improve melanoma treatment response.

FIND OUT MORE

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100% of all funds go directly to the ECU Melanoma Research Group.