



## ECU MELANOMA RESEARCH GROUP

### 2015/2016 NEWSLETTER

Thank you all so much for your generous ongoing support – 2015/2016 has been an exciting and rewarding year of growth and success. We have, thanks to you, raised the awareness of melanoma and provided clinicians with research support that is now driving changes in the management of patients with melanoma.

Our team has grown. We have a new postdoctoral researcher, **Dr Leslie Calapre**, who completed her PhD in 2015. Congratulations Leslie! We also have a new PhD student from India and a Masters student from Spain, so we are a very multinational and multitalented group.

Our postdoctoral researcher **Dr Carlos Aya Bonilla** has been driving collaboration with the University of Sydney and has secured funding to continue our exciting research into the isolation of circulating tumour cells.

Our star researcher, **Dr Elin Gray**, has also been successful this year and has secured funding from local and national funding agencies to grow our research.

Last year, the Rotary Club of Bay View Claremont led a very successful fundraising drive, in conjunction with other western suburbs Rotary Clubs for ECU Melanoma Research. Thanks to everyone who contributed to this project, we raised sufficient funds to purchase a state of the art Droplet Digital PCR machine in three months!

Our team are world leaders in current investigations into the biology of melanoma metastasis and treatment efficacy. Such information provides crucial information for clinical decision making and will assist every metastatic melanoma patient in Western Australia, Australia and the world through publications and collaborations.

In 2016, we are aiming to raise funds to assist with translation of our Melanoma Research Projects into the clinic. At this time of uncertainty in national government funding for research, this funding is vital to ensure better outcomes for all patients.

If you would like to support this effort, please donate by visiting us at [www.ecu.edu.au/giving-to-ecu/supporting-our-communities/living-well-living-sustainably/melanoma-research](http://www.ecu.edu.au/giving-to-ecu/supporting-our-communities/living-well-living-sustainably/melanoma-research)

We would deeply appreciate your support. For more information about the research and the Rotary appeal, please visit the 'Rotary for Melanoma Research' website [www.rotaryformelanoma.com.au](http://www.rotaryformelanoma.com.au)

Best wishes and thank you,  
**Professor Mel Ziman**

## An update from Pauline – Inspiring Minds Scholarship Recipient



In January 2015, PhD student and ECU Inspiring Minds Scholarship recipient Pauline Zaenker and her supervisors Professor Mel Ziman and Dr Elin Gray, published an article in the well renowned journal *Autoimmunity Reviews*.

Pauline's project aims to identify Autoantibodies as novel biomarkers for the early detection of melanoma. Autoantibodies are well known for their association with autoimmune conditions, but have also been detected prior to the clinical manifestation of many tumours including breast and prostate cancers. The published article summarises current theories of autoantibody production in cancer.

The journal editor-in-chief, Professor Schoenfeld invited Pauline to present a poster at the 'International Congress on Autoimmunity' conference in Leipzig, Germany in April 2016.



## Funding boost for new approaches to cancer treatment

Our researchers have, thus far, been awarded \$334,000 from the Cancer Council Western Australia in 2016 to improve the ways we detect and treat melanoma. Dr Elin Gray was awarded \$199,182 to support her work on the detection of circulating tumour DNA for early prediction of treatment effectiveness.

### Other grants for the Melanoma Research Group:

- Benedicta Santoso: \$3,000 – Role of the receptor activator of NFκB on resistance of melanoma cells to treatment with vemurafenib and dabrafenib.
- Aaron Beasley: \$7,500 – Markers in single tumour cells within the blood for determining the spread of uveal melanoma.
- Dr Carlos Aya-Bonilla: \$35,000 – Isolation and study of circulating melanoma cells from the blood of patients diagnosed with metastatic melanoma.

## What is a melanoma?

**Melanoma is a cancer which tends to start in the skin, either in a mole or in normal-looking skin.**

It develops from melanocytes (cells that produce a pigment in the skin).

In melanoma the melanocytes start to grow and divide more quickly than usual and start to spread into the surrounding surface layers of skin.

When they grow out of control they usually look like a dark spot or mole on your skin.

Finding and treating melanoma as early as possible is very important. If a melanoma is detected early it can be surgically removed eliminating the threat in most cases.

### WHY IS IT DEADLY?

Once a melanoma has started to grow, it can extend downward into the dermis of the skin and develop the ability to infiltrate the blood vessels.

These melanoma cells in the blood can circulate in the body and attach to the surface of another organ.

It is when the cells start to invade the new organ and grow into a tumour, that the survival rate of the patient starts to decrease.

Our research is aimed at detecting melanoma spread earlier than current clinical imaging methods to improve patient monitoring and outcome.

### MELANOMA FAST FACTS

- Melanoma is one of the most aggressive cancers and causes 80% of skin cancer related deaths.
- Melanoma is becoming much more prevalent and over 1,000 Australians will die from the disease each year.
- Melanoma is the most common cancer in men and women aged between 15-39 years, more common than breast and testicular cancer.
- Australia and New Zealand have the highest incidence of melanoma in the world and it ranks as the third most common cancer in Australia.



# Meet the Team

## LESLIE CALAPRE

Leslie recently received her PhD degree from ECU, under the supervision of Professor Mel Ziman and Dr Elin Gray. Her PhD research examined the effects of heat exposure on human skin. She showed that exposure to heat triggers the survival of UV-damaged skin cells, and therefore presents another potential skin cancer risk factor. Her research was recently published in *BMC Dermatology*.



Leslie Calapre

## CARLOS AYA-BONILLA

Dr Carlos Aya-Bonilla, originally from Colombia where he undertook his BSc (2003) and MSc (2008) studies, completed his PhD at Griffith University (Australia) in 2013. Dr Aya-Bonilla joined the ECU Melanoma Research Group in late April 2015, motivated by the high quality and impact of the research on blood based biomarkers in melanoma. Dr Aya-Bonilla has significant experience and skills in molecular, functional and genomics approaches, which he will utilise for the study of circulating tumour cells (CTCs) isolated from metastatic melanoma patients. Particularly, Dr Aya-Bonilla's research interest is to identify genetic profiles of CTCs to better understand the biology of melanoma and the response of melanoma tumour(s) to current treatment. Since joining the team, he has established collaborations with world-recognised leaders, including Dr Majid Warkiani (University of New South Wales) for microfluidic devices and Dr Julie Lang (University of Southern California, United States) for gene expression profiling of CTCs.



Dr Carlos Aya-Bonilla

Dr Aya-Bonilla's has secured a 2016 *Western Australia Cancer Council Suzanne Cavanagh Early Career Investigator grant*, an *ECU Early Career Researcher Grant* and a 2016 *ECU School of Medical and Health Sciences Research Grant*. Dr Aya-Bonilla was also awarded as a runner-up best rapid fire oral presentation at the 2nd Thomas Ashworth Circulating Tumour Cell Symposium (Melbourne, October 2015).

## ASHLEIGH MCEVOY

Ashleigh is a PhD student and an Inspiring Minds Scholarship recipient. Her research focuses on developing a method of identifying patients at high risk of disease progression from early stage melanoma so that they may benefit from early intervention, which will ultimately reduce loss of life. In an ever changing field of Medical Science, researchers need to be totally focused on their research and the award of the Inspiring Minds Scholarship has enabled Ashleigh to do this without being concerned with supplementing her family budget.



Ashleigh McEvoy

# \$9,000 Raised from Freckle Check Day



Professor Mel Ziman receiving the cheque from Dr Henry Law from Skin Check WA

Skin Check WA and the ECU Melanoma Research Group, together with MIX 94.5 and Melanoma WA, hosted a charity event on 2 May 2015, to promote skin cancer awareness, in particular early detection of Melanoma. Doctors from Skin Check WA kindly donated their fees for the day to Melanoma WA (patient support organisation) and to the ECU Melanoma Research Group.

ECU melanoma researchers were there on the day to lend support for over 230 skin checks.

"ECU Melanoma Research Group is leading research into the early detection of melanoma. This has tremendous potential in reducing the impact of melanoma for Australians. Our clinics and doctors are 100% dedicated towards early detection and treatment of skin cancers. It is a natural fit for us to support Professor Mel Ziman's team," said Dr Henry Law from Skin Check WA.

The funds were presented to both groups at a presentation lunch. Professor Mel Ziman said, "The inaugural Freckle Checkle skin screening event was a fantastic event for the community. We were honoured to be involved and to be the recipients of such generosity from Skin Check WA. The funds were for much needed chemicals allowing us to continue our research".

# Uveal Melanoma

Melanoma of the eye (uveal melanoma) is the most common cancer of the eye. 50% of uveal melanomas spread (metastasise) to other parts of the body and 92% of those with metastatic disease will die within two years.

Therefore, it is important to determine which patients will have metastatic disease, for closer clinical follow-up and early treatment. Fortunately, using genetic analysis we can identify mutations that predict those who will suffer metastatic spread. However, current methods of mutation detection require the patient to have a small piece of tissue removed by a needle inserted into the eye, which can commonly lead to problems such as permanent blindness.

As uveal melanoma can only spread to other sites in the body by moving into the blood stream, methods to detect, acquire and analyse these cells from the blood is highly beneficial.

In collaboration with the *Lions Eye Institute*, the *ECU Melanoma Research Group* is using novel methodologies to capture and analyse single cancer cells from the blood to determine the risk of metastatic spread within the patient. The team has received support from the *Raine Foundation* to undertake this research, which will enable a safer, less invasive method of determining the risk of uveal melanoma spread.

# A word from Dr Elin Gray

Our group recently published a study in the journal *Oncotarget* in collaboration with the Melanoma Institute Australia, clearly demonstrating that the amount of tumour DNA in blood, faithfully tracks the patient's response to treatment.

Importantly, our test provides an earlier indicator of tumour regrowth and the appearance of resistance to treatment prior to this being evident in radiological scans. We are now working on a test to accurately predict which treatments are better suited for patients based on the particular characteristics of their tumour(s) (ie. to personalise their treatment). To support this work, Dr Elin Gray recently received funding from the Cancer Council of Western Australia and the Ramaciotti Foundation.



## Rotary for Melanoma Research

Rotary for Melanoma helped raise the \$135,000 needed to purchase a droplet digital PCR Machine to further develop Melanoma Research.

The Rotary Club of Bayview Claremont, along with other Rotary clubs donated over \$35,000. A thank you event was held at Joondalup Campus to thank the Rotary Clubs for their generous support. The donors were able to view the machine and speak with our researchers about the cutting edge research.



Presentation of plaque by Rotary for Melanoma Research – (pictured, L to R) ECU representatives, Professor John Finlay-Jones; Professor Mel Ziman; Dr Carlos Aya-Bonilla; Rotary representatives – Assistant Governor Michele Alexander; Mr David Tucker, Past President, Rotary BayView Claremont

## FIND OUT MORE

For more information about melanoma research please contact:

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If you would like to receive information by email, please contact Sarah Seymour [development@ecu.edu.au](mailto:development@ecu.edu.au) with your updated details.

For more information about giving to melanoma research, please contact:

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