News Update

Summer 2019/20

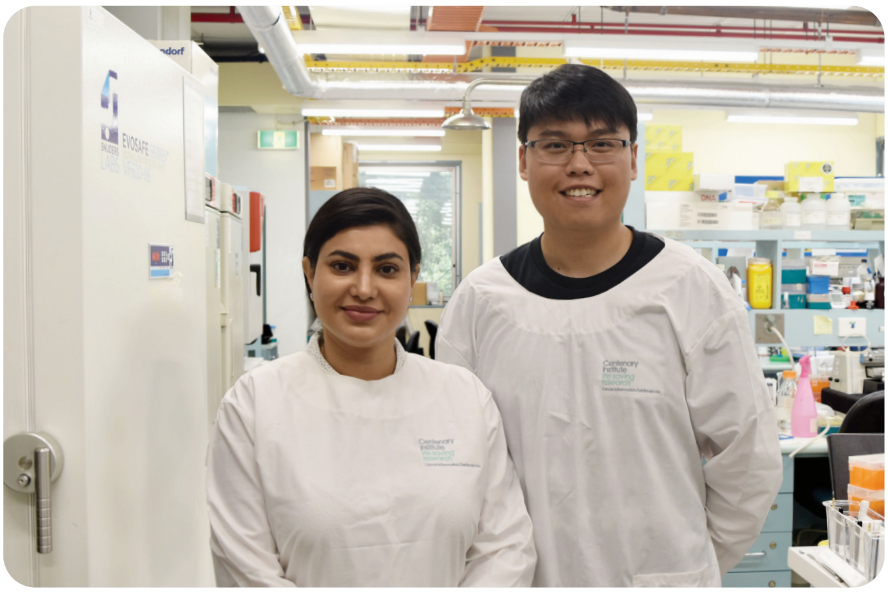
Discovered: New strategy to stop melanoma spread

Scientists from the Centenary Institute have developed a new therapeutic strategy that could potentially help the fight against advanced-stage melanoma.

In a study the scientists were able to show that they could effectively reduce the migration and invasive properties of melanoma cells. This was achieved by successfully inhibiting the interaction between two proteins involved in intracellular trafficking (the process by which molecules cross the membranes of living cells).

The research is significant as metastasis–the process by which cancer moves to new areas of the body–is the leading cause of death in melanoma patients.

Published in the highly regarded Journal of Investigative Dermatology, the researchers first found that high expression of the protein melanophilin was indicative of poor prognosis in melanoma patients.



Dr Shweta Tikoo, (left) and Mr Dajiang Guo, PhD researcher (right) from Centenary Institute's Immune Imaging Program.

Employing human melanoma cell line models, the researchers were then able to demonstrate a significant reduction in the spread of cancer by blocking the ability of melanophilin to bind with the protein RAB27A (one of the critical regulators of intracellular transport).

"We have known for some time that the proteins melanophilin and RAB27A bind together and that this process could be crucial to help melanoma cells spread around the body," said study author and Centenary Institute PhD researcher, Mr Dajiang Guo.

"By disrupting the binding of these two proteins with a recently developed blocking compound, we were able to successfully restrict the melanoma cell movement and invasion. What our findings suggest is that the development of new drugs that can specifically target melanophilin-RAB27A interactions are a promising target for advanced melanoma treatment."

ACRF Tumour Metabolism Laboratory

The ACRF Tumour Metabolism Laboratory – part of the ACRF Centenary Cancer Research Centre – has been officially launched, with the laboratory sporting the latest in advanced equipment and technology to help support its innovative cancer research.

The laboratory, established by a $2.5M grant from the Australian Cancer Research Foundation (ACRF) and in collaboration with the Centenary Institute, is dedicated to better understanding how cancer cells change their metabolism.

It will provide critical knowledge to the development of new cancer diagnostics and therapies.

AUSTRALIAN CANCER RESEARCH FOUNDATION

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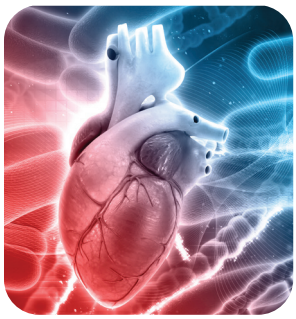
Heart and Alzheimer's research funding boost

World-class study into inherited heart disease as well as Alzheimer's disease have been boosted after two Centenary Institute researchers successfully secured a highly competitive National Health and Medical Research Council (NHMRC) funding.



Associate Professor Jodie Ingles, Head of the Institute's Clinical Cardiac Genetics Group in the Molecular Cardiology Program was awarded a Clinical Trials and Cohort Studies Grant. This will fund a five-year study into inherited cardiomyopathies involving approximately 2,500 participants.

Professor Jenny Gamble, Head of the Vascular Biology Program at the Centenary Institute was awarded an Ideas Grant. The grant will fund research into Alzheimer's disease, the most common form of dementia. Supported by secondary Chief Investigator Doctor Ka Ka Ting also from the Centenary Institute, the research program will focus on the blood vessels of the brain and their potential role in Alzheimer's development and progression.

NSW Asthma Meeting hosted

The Centenary Institute and UTS have come together to jointly host the 15th Annual NSW Asthma Meeting held at the Centenary Institute.

This Meeting brought scientists and clinicians together from some of the premier asthma and respiratory research groups in Australia and New Zealand to share knowledge and foster collaborations. Areas covered included asthma, Chronic Obstructive Pulmonary Disease (COPD) and airways research.

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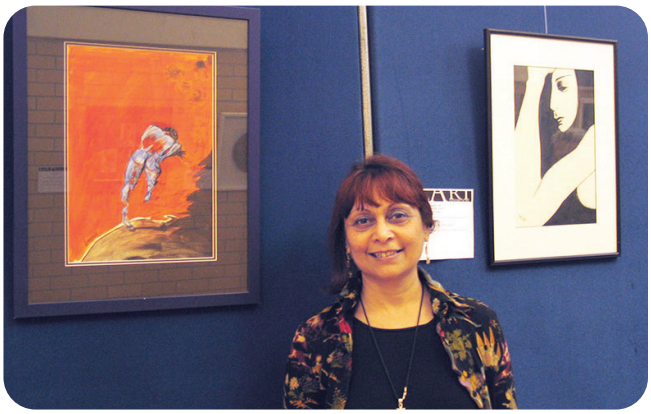

HUMANS OF MEDICAL RESEARCH

Associate Professor Devanshi Seth

It's colours, textures and the joy of creating something from nothing which lies at the core of Devanshi Seth and her lifelong interest in arts and crafts activities. "I've always been very passionate about my hobbies and remember drawing and painting from an early age," she says.

Over time Devanshi's interests have taken in a wider-range of artistic undertakings including painting, sculpture, pottery, crochet and more.

"Painting with watercolours is a particular fascination," she says. This passion for art has seen Devanshi exhibit in both Sydney and Perth with her artwork being recognised with awards on several occasions. "I paint portraits, landscapes, old buildings and even abstracts," she says.

It's this same creativity and passion that Devanshi brings to her career as a medical researcher. Heading up Centenary's Alcoholic Liver Disease Laboratory, Devanshi is focused on studying the genetic mechanisms that underlie alcohol-use generated cirrhosis.

"Alcohol-related liver disease has the highest mortality rates amongst all alcohol related disorders and there currently exists no effective treatment," she says. "I want to understand how genes, as well as lifestyle and other contributory factors influence the development and progression of this debilitating disease," says Devanshi.

"When we better understand this disease we can better improve patient outcomes and care."

Devanshi is excelling in her chosen area of research. She is currently leading an international consortium which is completing the largest clinical study ever taken of its type– an analysis of genetic and epigenetic factors taken from over 6,000 drinkers. Results from this study, funded by the National Institutes of Health, have the potential to change patient practice on a global scale.

Learn more about our Humans of Medical Research **www.centenary.org.au/meet-us**

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