

# MIND MATTERS

HOW CAN YOU KEEP YOUR BRAIN FIT AND HEALTHY?

THURSDAY 22 MARCH 2018



## FORUM OVERVIEW

The forum will explore the design and capabilities of the human brain: its power, flexibility and potential.

Our panel of speakers will explain the impact of stress on brain function, how the brain responds to addiction, how to promote emotional resilience to adversity, plus outline what you can do to keep your brain fit and healthy.

The forum has been organised by Pathfinders, a collective-giving group who support innovative cancer research projects at the Garvan Institute of Medical Research.



In 2017, the **Global Council on Brain Health (GCBH)** examined the impact that diet has on brain health in adults age 50 and older.

The GCBH found that a plant-based diet rich in green leafy vegetables and berries contributes to better brain health, while a diet high in red meat, saturated fats, sugar and salt can potentially harm your brain health. GCBH recommended a diet with a variety of fruits and vegetables and healthy grains, while reducing butter and red meats for more olive oil and omega-3 rich fish.

### HEALTH TIPS

-  Eat nutritious foods in sensible portion sizes
-  Add lemon, spices & herbs instead of salt
-  Seek out green leafy vegetables & berries
-  Rinse canned foods to remove excess salt & sugar
-  Cooking at home results in better diet quality



# FORUM SPEAKERS



**Dr Rose Chesworth**

Post Doctoral Research Fellow,  
School Of Medicine,  
Western Sydney University

Dr Rose Chesworth is a neuroscientist studying gene-environment interactions in the context of Schizophrenia and drug addiction.

Dr Chesworth graduated from the University of Sydney in 2007 with a Bachelor of Psychology (Honours). She then worked as a research assistant investigating gene-environment interactions in schizophrenia using genetic mouse models. In her PhD (2011-2014), Dr Chesworth examined the role of specific glutamate and adenosine receptors in methamphetamine addiction using genetic mouse models and viral mediated receptor deletion, to determine potential receptor targets for new addiction therapeutics.

Dr Chesworth is currently examining gene-drug and gene-environment interactions in mouse models of schizophrenia at Western Sydney University.



**Dr Justine Gatt**

Group Leader and Senior Research Scientist  
Gatt Resilience Group, Neuroscience Research  
Australia. Senior Lecturer, School of Psychology,  
University of New South Wales

Dr Gatt leads the Gatt Resilience Group at Neuroscience Research Australia (NeuRA), where she investigates the neuroscience and genetics of resilience and mental wellbeing.

Dr Gatt completed her PhD in Psychology at the University of Sydney in 2005. She completed her postdoctoral training in genetics and neuroimaging at the Brain Dynamics Centre, Westmead Hospital and University of Sydney (2006-2009). Dr Gatt was awarded an ARC Linkage Postdoctoral Fellowship (2008-2011) in emotional wellbeing in twins (the TWIN-E study) and a NHMRC Career Development Fellowship (2014-2017) in the neuroscience and genetics of resilience.

In 2014, she joined the School of Psychology at the University of New South Wales with a conjoint position at NeuRA. In 2016, Dr Gatt was appointed Group Leader and Senior Research Scientist at NeuRA and Senior Lecturer at the University of New South Wales, where she leads projects in resilience and wellbeing.



**Dr Asheeta Prasad**

Australian Research Council Discovery  
Early Career Researcher, School of  
Psychology, University of New South Wales

Dr Prasad is interested in the wiring of the brain, how neurons grow and form neural circuits and their functions. Her research focusses on neural circuitry underlying complex behaviours such as learning, memory, reward related behaviour and movement. Disturbances in the neural circuitry of these behaviours contribute to pathophysiology of several neurological disorders such as drug addiction, depression, Parkinson's disease, Huntington's disease and multiple sclerosis.

Dr Prasad applies unique and interdisciplinary research tools of molecular biology, optogenetics, chemogenetics and behavioural neuroscience.



**Professor Michael Valenzuela**

Leader, Regenerative Neuroscience Group,  
Brain & Mind Centre, University of Sydney.  
NHMRC Career Development Fellow & USYD  
SOAR Fellow

Professor Michael Valenzuela leads the Regenerative Neuroscience Group (RNG) at the Brain and Mind Research Centre, which is focussed on understanding the competing forces of neuroplasticity and degeneration in the ageing brain and harnessing this knowledge to better prevent and treat dementia.

Professor Valenzuela has a background in psychology, clinical medicine and neuroscience research, and previously was a Senior Research Fellow at the School of Psychiatry, UNSW. In 2006, Professor Valenzuela received the Australian Museum's Eureka Prize for Medical Research, and in 2010 a NHMRC Excellence Award for the top-ranked clinical Career Development Award.

Professor Valenzuela is the author of popular-science book "Maintain Your Brain" (ABC Books) and was part of the Alzheimer's Australia team that developed BrainyApp, the world's first iPhone app designed to help users maximise their long term brain health.



**Camille Bianchi**

Forum Moderator

Camille is a finance journalist with CNBC Network's Sydney bureau, reporting on business and financial news.

Camille started her career as a finance journalist working with Fairfax Media and has been a reporter for the Australian Financial Review, the Sydney Morning Herald and Domain. She was a reporter for two years with SBS World News where she reported on local and international affairs across radio, online and television.



## Pathfinders

Pathfinders is a collective-giving group whose members pool their donations to support early-stage cancer research projects. The group's goal is to kick-start research projects by donating seed funding to help a scientist take a concept into the lab to evaluate it and create a research pathway.

Supporters make a monthly \$25 tax-deductible donation to the group's pool account.

We currently support cancer research at the Garvan Institute of Medical Research by donating the annual Pathfinders Award (\$10,000) to initiate an innovative research project.

Pathfinders is authorised to fundraise for the Garvan Research Foundation, the Institute's fundraising arm. All donations to Pathfinders are fully tax-deductible and are processed by Garvan on our behalf.

 [www.pathfindersgroup.com.au](http://www.pathfindersgroup.com.au)



## Garvan Institute of Medical Research

The Garvan Institute of Medical Research was founded in 1963. Initially a research department of St Vincent's Hospital in Sydney, it is now one of Australia's largest medical research institutions with more than 700 scientists, students and support staff. Garvan's mission is to make significant contributions to medical research that will change the directions of science and medicine and have major impacts on human health.

Garvan strives to enhance and develop research programs that combine fundamental science with strong clinical interactions.

 [www.garvan.org.au](http://www.garvan.org.au)



# PATHFINDERS AWARD SHINES A LIGHT ON DNA PACKAGING IN CANCER

The Pathfinders Committee was delighted to present the 2017 Pathfinders Award to Katherine Giles and Qian Du, who are final-stage PhD students in the Epigenetics Research laboratory within Garvan's Genomics and Epigenetics Division.

The researchers are using the \$10,000 grant to investigate how DNA packaging can change dynamically, and how this impacts on disease.

"We want to look, in a new way, at how chromatin changes in cancer cells," Katherine said, "and we're especially keen to focus on 'chromatin remodellers' – which are proteins in the cell that bring about changes to DNA packaging. We know that these proteins are important in cancer, and we want to watch how they act in prostate, breast, ovarian and pancreatic cancer cell lines."

"Most techniques that look at chromatin changes give a static readout – like a photo, rather than a video," said Qian, "but we want to watch the changes as they happen. To do this, we'll be 'labelling' chromatin with a fluorescent tag that changes colour as the chromatin structure shifts."

"You can think of fluorescence as being like the glow-in-the-dark stars on a kid's bedroom ceiling – with fluorescence we can watch changes in a cell, as they happen, by using sophisticated microscopes such as we have at Garvan. Once we have established our fluorescence technique, we'll be exploring how different cancer therapies respond to changes to chromatin structure – and whether this might differ from person to person."



Katherine Giles



Qian Du



Pathfinders Awards at Wentworth Galleries.

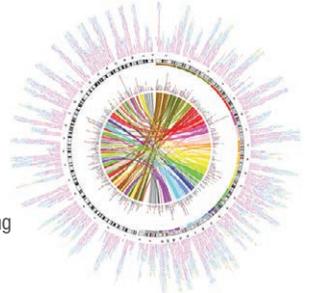
## NEXT EVENT

21 JUNE 2018

### The Genomic Generation Forum

#### How will precision medicine change the way we live?

Precision medicine is fast becoming a reality, enabling doctors to analyse a person's genetic makeup and target treatments based on their specific needs. The forum will look at how precision medicine and genome sequencing are making a difference in health care today, and some of the ways these techniques may transform our approach to medicine and the treatment of disease in the future.



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If you would like to learn more about what we do, please contact us:

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