

**ONE BIG NIGHT, TWELVE SCIENTISTS  
LIVE ON STAGE!**

**A fast-paced session of science, drama, genius and stories of STEM\***

The FameLab semi-final is returning to the Queensland Museum on Tuesday 20 March 2018 as part of the [World Science Festival Brisbane](#).

Renowned Science Communicator Jenni Metcalfe will MC the evening and introduce some of the country's brightest minds to the stage as they tell their science stories in three minutes and explain why their work matters to the world. Watch as these brilliant researchers deliver short sharp tales of their work in order to become the next FameLab champion.

Have you ever wondered what happens to fish adapting to climate change in Antarctica or how snakes can help us make better medicines?

Join us at this FREE event, presented by the British Council in Australia, to hear STEM researchers explain complex concepts while the clocks ticks - armed with only their wits and a few props! Jargon and PowerPoint are strictly banned.

The winner will be announced on the night and will compete in the FameLab national final at the Octagon theatre, University of Western Australia in Perth on 10<sup>th</sup> May 2018. The Australian winner will then go on to compete at FameLab International Finals at the Times Cheltenham Science Festival in the UK on 7<sup>th</sup> June.

Helen Salmon, Director of the British Council in Australia, says, "FameLab is such a fun way to immerse yourself in our awe inspiring world. Australian Dr Nural Cokcetin (2017 Global Runner Up) said a schoolgirl told her she had no idea that she could be creative and still be a scientist! Creative scientists are at the cutting edge of Australia's innovation economy, and many of them will change our lives through their work. Come along and let them show you how."

Creative scientists are at the cutting edge of Australia's innovation economy, and many of them will change our lives through their work. Come along and let them show you how."

**The 2018 Queensland semi-finalists are:**

1. Jordan Debono – University of Queensland, **Getting to know our blood through snakes**
2. Jasmine Lee - University of Queensland, **Climate change's affect on plants and animals in Antarctica**
3. Diana Lucia - University of Queensland, **Risky drinking in pregnancy**
4. Benson U Wang Lei - University of Queensland, **Diagnosis of Melanoma through 3D printing**
5. Ann-Katrin Kraeuter- James Cook University, **Low carb high fat diet for people with schizophrenia**
6. Ayda Sefidani Forough - Queensland University of Technology, **Swallowing, when swallowing is hard**
7. Taryn Laubenstein - James Cook University, **Why we can't rely on adaptation to save fish from climate change**
8. Zane Stromberga - Bond University, **Finding new treatments for embarrassing bladder dysfunction**

9. James O'Hanlon - University of New England, **Ants, engineers of the forest**
10. Nathan Chapman - University of Tasmania, **Telling the time with fishing sinkers and the periodic table**
11. Pegah Maasoumi - ARC Centre of Excellence for exciton science, **Solar energy for all, even city folks**
12. Oyungerel Byambasuren – Bond University, **Can an app a day keep the doctor at bay?**

Presentations will be judged according to FameLab's 3Cs: [content, clarity and charisma](#) - by an esteemed panel of media professionals, and public figures.

The winner will be announced on the night and will then go on to compete in the national final – hosted by superstar astrophysicist, Dr Alan Duffy – at the Octagon Theatre, University of Western Australia in Perth on May 10.

Come along for a night that's guaranteed to be full of FameLabulous fun!

**Date:** Tuesday 20 March

**Time:** 6.30 - 8.30pm – note: *doors open at 6.00pm for a 6.30pm start.*

**Location:** Festival Lab, Queensland Museum, Cnr Grey & Melbourne Streets, South Brisbane QLD 4101

**RSVP:** <https://www.eventbrite.com.au/e/famelab-2018-queensland-semi-final-tickets-39381357701>

**Free event - all welcome**

## **MORE ON OUR FINALISTS FOR MEDIA:**

### **Jordan Debono – University of QLD**

#### **Getting to know our blood through snakes**

Snakebite is a massive global burden and is the most neglected of all tropical diseases. This neglect means that there is a poor understanding of the treatment of snakebite. Previous research has been conducted on neurotoxins (toxins which affect the nervous system) within snake venom, little to no research has been conducted on coagulatoxins (toxins which affect the blood). Coagulatoxins produce one of two effects: anticoagulant (prevents a blood clot) or procoagulant (promotes a blood clot). My research investigates snake venom coagulatoxins. By exploring the effects of venom on blood I seek to increase understanding of the human blood system and the interactions which occur. This research can also lead to the discovery of novel properties which can be further developed into novel drug design in blood medications, aiding in such areas as heart disease, stroke and diabetes.

### **Jasmine Lee - University of QLD**

#### **Climate change's effect on plants and animals in Antarctica**

My PhD research is all about the conservation of the Antarctic environment and the plants and animals that live there. We all think of Antarctica as being incredibly safe and protected, but it's not – I found climate change has the potential to completely transform the terrestrial environment, in fact it already has. Ice-free areas are home to the majority of Antarctic plants and animals, yet only make up a tiny portion of the continent, but by the end of this century they may expand by up to 25% as the ice melts. This will create new opportunities for both native and alien species. And on top of this there is sea-level change, plastic pollution, an expanding human footprint and potential overfishing. I am prioritising conservation management actions for Antarctic species in the face of these multiple threats and I plan to present it to the Antarctic Treaty System to help better inform management of the region. Conservation is reasonably new in the Antarctic, but it is becoming increasingly more important and more sought after as we better understand the risks to the region.

**Diana Lucia - University of Queensland**

### **Alcohol around conception – Risky drinking in pregnancy**

I use a preclinical model to understand the impact of maternal alcohol around conception and its effects on the function of the brain in adulthood. Abstaining from alcohol during preconception and pregnancy is usually considered the woman's responsibility. The main concern surrounding alcohol exposure during pregnancy often relates to evidence of newborns developing a range of behavioural, physical and cognitive disabilities later in life. But recent research is also pointing to a link between alcohol and poor sperm development meaning the onus is on expectant fathers too. My research looks in to how Mum and dad's drinking can lead to Learning and memory difficulties in the adult child

**Benson U Wang Lei - The University of Queensland**

### **Diagnosis of Melanoma through 3D printing at home**

Melanoma skin cancer is one of the most common cancers in Australia, with about 140,000 new cases reported in 2017. The current standard for skin cancer diagnosis involves using skin biopsy to remove suspicious spot for examination. Although effective in diagnosing skin cancer, skin biopsy is highly invasive and makes follow-up treatment difficult as the questionable lesion is sometimes completely removed during the process. This is not ideal as melanoma can be curable most of the time when treated early. The goal of this study is to address the unmet clinical need for a low-cost and minimally invasive platform for skin sampling. With laser cutting and 3D printing technologies, we developed a micro-biopsy that would enable sample collection of both blood and skin tissues, aiming to facilitate the early diagnosis of skin diseases. Due to its simple design, our device can be fabricated at a low material cost (~A\$10) and assembled in-house in under 5 min. Currently, more than 2000 microbiopsies have been performed around the world through collaborative projects. Our future goal is to further simplify the device and facilitate home-sampling.

**Ann-Katrin Kraeuter- James Cook University**

### **Low carb high fat diet for schizophrenia**

Schizophrenia is chronic neurodevelopmental disorder affecting 70 million people world-wide. Current treatment options are only effective for some patients and some symptoms. Therefore, there is an urgent need for new and safer treatment options. Normally the human body uses glucose (sugar) as a main source for energy production. Recently studies suggest abnormal glucose metabolism in patients with schizophrenia. Therefore, we proposed a Ketogenic diet (KD) as a novel and safer treatment for schizophrenia. KD is a high fat, low carbohydrate diet, which has been in use safely and effectively in the treatment of childhood refractory epilepsy for over 100 years. Patients on KD bypass glycolysis (process of energy production through glucose) and use fat as an alternative fuel source to feed the brain. Schizophrenia is a complex neurodevelopmental disorder influenced by environmental and genetic factors. I have been using animal models to encompass the whole disease. "Schizophrenic mice" were then placed on a KD for 3 weeks. Through my research, I have found that KD was effective in treating all symptoms of schizophrenia. This raises the possibility that KD might be a possible novel, safe and effective treatment for 70 million people world-wide.

**Ayda Sefidani Forough - Queensland University of Technology**

### **Medication administration when swallowing is hard**

"Swallowing difficulties" is a silent disability with a significant impact on a person's quality of life. Swallowing difficulties can affect anyone from children to adults, but is particularly common among older people. It can compromise the ability of a person to eat, drink, and to take oral medications. As a result of inability to swallow oral medications patients as well as healthcare professionals may resort to inappropriate practices of modifying medications such as crushing/splitting tablets, or opening capsules. These practices can put patients at increased risk of drug toxicities and medication side effects and in severe cases they can be fatal. My PhD project aims to investigate possible strategies and

design effective interventions to improve medication administration to people with swallowing difficulties especially older patients.

## **Taryn Laubenstein - James Cook University**

### **We can't rely on adaptation to save fish from climate change.**

The world's oceans are becoming warmer and more acidic due to the burning of fossil fuels. This creates an environment that is harmful to fish, affecting both their behavior and physical condition. We know that fish, like other animals, have the potential to adapt to new environmental conditions. However, the climate is changing very quickly, so the question arises- will fish be able to keep up with climate change? My research investigates how tradeoffs between behavioral and physical performance might slow or constrain adaptation. I tested how fish perform both behaviorally and physically under current-day conditions, and under future climate change conditions. What I found was a tradeoff- in future climate conditions, fish either perform well behaviorally and suffer physically, or vice versa. This means that when reef fish populations are undergoing adaptation, if their behavioral performance gets better on average, their physical performance gets worse- it's like two steps forward, one step back. This means that we cannot rely on adaptation to save fish from climate change. Instead, if we want to protect fish and resources they provide, we need to reduce carbon emissions to slow climate change.

## **Zane Stromberga - Bond University**

### **Finding new treatments for embarrassing bladder dysfunction**

Around 17% of the world population suffers from overactive bladder, and yet the underlying causes of this disease are poorly understood. Overactive bladder has a significant effect on sufferers' quality of life, including having a direct social, physical and psychological effect. Many of the sufferers feel too embarrassed to seek out treatment options. Without treatment, symptoms of this disease make it hard to get through the day without many trips to the bathroom. This can prevent people from engaging in their normal every-day activities. This leads to feelings of isolation and loneliness. The current pharmaceutical treatments present many side effects, meaning that most people on these medications stop their treatment regimes. My research aims to find novel pharmaceutical treatments for bladder dysfunction that would enhance the quality of life for people suffering from this debilitating condition. In particular, my research focuses on the role of histamine, and the potential for antihistamines to reduce its effect.

## **James O'Hanlon - University of New England**

### **Ants: Engineers of the forest**

I study the ecology of seed and egg dispersal by ants. Certain tree seeds actually provide ants with a food reward so that ants will collect the seeds and carry them into their nests, planting that seed underground. Some stick insects do the same, their eggs contain food rewards for ants so that ants will carry the egg underground where the eggs are incubated until they hatch. My research looks at the large scale effects of this and asks whether ants actually influence forest and insect distributions across Australia. Australia is a 'hot-spot' for seed and egg dispersal, we have a superabundance of ants and more groups of ant-dispersed plants than anywhere else on the planet. My research provides fundamental information on how important ants are for the health and formation of our natural landscapes. By understanding the critical role ants play in the survival of plants and other insects will allow us to more effectively manage these natural resources in the face of environmental change.

## **Nathan Chapman - University of Tasmania**

### **Telling the time with fishing sinkers and the periodic table**

Both the elements uranium and thorium radioactively decay to the element lead (Pb) at a continuous rate. Thus we can effectively 'count' how much Pb we have in order to tell geological time. Also, because Pb, U and Th all behave chemically different, we can actually see the various chemical history of any Pb thereby being able to know 'how' and 'when' a chemical reaction took place. This is very

useful in geology. For example we can tell where a volcanic magma originated in the earth's crust, how a mineral deposit formed, or even which mine site in the world the Pb in a sample came from. This is particularly useful in mineral exploration and environmental studies. I have used the Pb-isotopes in shark spines to show how they migrated in and out of Tasmanian waterways, recorded through human-caused contamination.

## **Pegah Maasoumi - University of Melbourne**

### **Solar energy for all, even city folks**

In the last decade energy has been stated as the single most important crisis in the world. The leading economies rely mainly on burning fossil fuels, which is not only a limited resource, but in the shorter term is causing global warming. Solar energy is a promising solution to meet this energy challenge as well as providing sustainability to our planet. It seems pretty easy to install couple of solar cells on the roof to access cheap energy, however, not everyone has their own private roof. In large cities like Melbourne, the majority of people live in tall towers with large windows from bottom to the top. Even on the side way of highways more often there are many glass slides as road guards. My work will help everyone even in tiny apartments to get access to cheap energy. Every window or glass slides would act as solar cell by harvesting the sun light during the day, store in batteries to be utilized at night time. My research is unique not only to provide cheap energy but also sustainable and would be beneficial toward global warming.

## **Oyungerel Byambasuren (Yuki)**

### **Can an app a day keep the doctor at bay?**

I'm researching effectiveness of health apps and their usability in primary care. My research will benefit GPs by providing them with evidence-based apps they can directly use in their daily practice and help teach them about how to evaluate and navigate 320 000 apps that are available in the major app stores. I found that only a handful of apps that are shown to make meaningful difference in patients. I also interviewed GPs and patients about their current knowledge, attitude and use of health apps. I surveyed more than 600 GPs to validate the barriers and facilitators to app prescribing I identified from the interviews. The biggest barriers are doctors' lack of knowledge of effective apps and lack of trustworthy source to access them. I hope to address these issues by collaborating with the Royal Australian College of GPs and equip GPs with the knowledge and the apps that will ultimately benefit patients.

**END:**

Keep up with all of the action by following @BritishCouncilAustralia on Facebook and @auBritish on Twitter and Instagram, and join the conversation using #FameLabAus. For further information, visit [famelab.org.au](http://famelab.org.au)

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FameLab International has been running annually since 2007. So far, more than 9,000 researchers from 31 countries have brought their science to live audiences on the FameLab stage.

FameLab 2018 is presented by the British Council and Cheltenham Festivals | Founding partners: Western Australian Museum and The McCusker Foundation | Major partner: Woodside Energy Ltd | University partners: Curtin University, Edith Cowan University, Murdoch University, University of Technology Sydney and University of Western Australia | Venue partners: Museum of Applied Arts & Sciences, Queensland Museum,



Museum Victoria, Western Australian Museum and Western Australian Museum Foundation | QLD presenting partner: World Science Festival, Brisbane | WA presenting partner: the Department of Jobs, Tourism, Science & Innovation | UK Government partner: British High Commission | Media partner: Australia's Science Channel | Training and advocacy partner: Inspiring Australia

#### **Notes to editors:**

FameLab® is a competition owned and created by Cheltenham Festivals in the UK. The British Council has license to deliver the competition in over 30 countries overseas. Since its birth at the Festival in 2005, FameLab has grown into the world's leading science communication competition. A partnership with the British Council since 2007 has seen the competition go global with more than 9000 young scientists and engineers participating to date.

#### **About the British Council**

The British Council is the UK's international organisation for cultural relations and educational opportunities. We work with over 100 countries in the fields of arts and culture, English language, education and civil society. Last year we reached over 65 million people directly and 731 million people overall including online, broadcasts and publications. We make a positive contribution to the countries we work with – changing lives by creating opportunities, building connections and engendering trust. Founded in 1934 we are a UK charity governed by Royal Charter and a UK public body. We receive 15 per cent core funding grant from the UK government. [www.britishcouncil.org](http://www.britishcouncil.org)

\*STEM – Science Technology Engineering & Mathematics