

World Science Festival Brisbane

20–24 March 2019 worldsciencefestival.com.au

PROGRAM GUIDE

WELCOME



Welcome to World Science Festival Brisbane 2019. For more than 200,000 visitors across Queensland, March means science; a month when the world turns to Brisbane and regional centres, as they transform into hubs of science and innovation.

World Science Festival Brisbane has fast become the Asia-Pacific destination for exploring and celebrating the entanglement of science and art through a program of inspiring experiences and engaging workshops.

From 20-24 March 2019, the festival in the heart of Brisbane's Cultural Centre, brings together world-leading scientists and performers from across the globe to explore ideas and debate the challenges confronting humankind.

Regional centres across Queensland will light up as festival programming presents challenging questions and new frontiers to audiences in Ipswich, Toowoomba, Chinchilla, Gladstone and Townsville.

We're thrilled to present an unparalleled line-up of speakers including astrophysicist Brian Greene on our future on Mars; Hugh Possingham discussing the future of Australia's wildlife under threat; and Gwen Fenton, Chief Scientist of the Australian Antarctic Division leading the conversation on the future of our frozen continent.

We will hear from Australian-born NASA astronaut Andrew Thomas; conservationist Tim Flannery; NASA Astronaut Yvonne Cagle; pioneer of science Professor Adele Green; and we encourage families and children to discover the fun in science with national icon Dr Karl. Audiences can also explore the endeavour of human achievement with NASA – A Human Adventure exhibition at Queensland Museum until October 2019.

As you explore the festival you will no doubt see and hear extraordinary science presented in collaboration with, and supported by, Queensland Government and our committed partners. Without this support we would be unable to bring you this unmissable event. Thank you.

Programming of this calibre enables Queensland Museum Network to be a conversation-leader, inspiring the next generation of creators and innovators. I encourage you to attend the performances and discussions, and uncover the brave new ideas at this year's World Science Festival Brisbane.

Dr Jim Thompson

Chief Executive Officer

Queensland Museum Network

ACKNOWLEDGEMENT OF COUNTRY

In keeping with the spirit of reconciliation, we acknowledge the Traditional Custodians of the land that the festival is created and presented on – we recognise and pay respect to the first scientists and acknowledge the important contribution this unique wisdom provides to contemporary scientific conversations and collaborations. We acknowledge the deep and timeless relationship between Country and Aboriginal peoples and Torres Strait Islanders and pay respect to the Elders of the community and extend recognition to their descendants both past and present.





Welcome to the fourth World Science Festival Brisbane, one of the world's most engaging, exciting and educational science events.

The Queensland Government is immensely proud to see the return of this landmark event which connects Queenslanders to the wonder of science and opens opportunities for Queenslanders to engage with some of the world's leading scientists.

Since 2016, World Science Festival Brisbane has enthralled audiences, attracting over 500,000 visitors and injecting \$21 million into the state's economy.

This year, Queensland can expect another fantastic celebration of science where visitors young and old can meet the champions of science and explore the dynamic connection between science and our everyday world.

The 2019 festival offers thoughtprovoking conversation and signature events, brave new ideas and stimulating debate on some of the biggest challenges confronting humankind in the face of the planet's increasing population and escalating climate change.

Once again, the festival will also take place in Gladstone, Townsville, Ipswich, Toowoomba and Chinchilla bringing opportunities to drive investment in science, technology, engineering and maths.

The Queensland Government supports World Science Festival Brisbane through Tourism and Events Queensland and Arts Queensland, alongside Queensland Museum Network and the many festival partners in academia and industry.

This year, the festival will take place as a pillar program in Curiocity Brisbane as the program embarks on its inaugural year. Over three weeks, Brisbane will come to life with Curiocities throughout the city and from 20-24 March it will light up red, as the World Science Festival Brisbane takes centre stage.

Embrace the festival in 2019 as we once again bring science out of the labs to communities across the state.

The Hon Leeanne Enoch MP

Minister for Environment and the Great
Barrier Reef and Minister for Science
and Minister for the Arts

The Hon Kate Jones MP
Minister for Innovation and Tourism
Industry Development and Minister
for the Commonwealth Games



Welcome to Brisbane.

As Australia's New World City, Brisbane is proud to host the only global extension of the World Science Festival outside of New York.

Now in its fourth year, the continued success of this popular event affirms Brisbane as an innovative city with strengths in science, technology and the arts.

I'm delighted that this year the World Science Festival Brisbane will form part of Curiocity Brisbane - a new three-week event which invites people to explore, create and play in our safe, vibrant, green and prosperous city.

Enjoy World Science Festival Brisbane and all that our city has to offer including cultural and outdoor attractions, diverse dining, world-class accommodation and shopping.

Graham Quirk Lord Mayor of Brisbane

Cover image: Antissa notha. Soldier Fly. Image by Geoff Thompson, Collection Imager © Queensland Museum, 2017

SPECIAL EVENTS

SCIENTIA ADDRESS: Tim Flannery Including an intimate conversation with John Doyle

"Sometime this century, the day will arrive when the human influence on the climate will overwhelm all natural factors." – Tim Flannery

World Science Festival Brisbane is proud to present the inaugural Scientia Address, an opportunity for audiences to hear from someone who has changed our thinking, bettered our lives and opened our minds to the limitless capacity of science for exploring new ideas.

The Scientia Address 2019 will be given by Tim Flannery – internationally renowned scientist, explorer, conservationist and writer on climate change.

Tim Flannery has inspired a generation of Australians to stand up for the environment, consider renewable energy sources and fight to sustain our planet's forests, food sources, waterways and atmosphere.

The evening will also feature an intimate conversation with frequent collaborator John Doyle.

Tuesday 19 March 2019 7.00pm - 8.30pm Concert Hall, QPAC \$35/\$30/\$25

PARTICLE/WAVE

An immersive multimedia celebration of the discovery of gravitational waves that combines poetry, video art, live music and science.

Discovered in 2017, gravitational waves are ripples in space-time, travelling away from exploding stars, merging black holes or other universal phenomena. Cosmologist Stephen Hawking has said, 'Gravitational waves provide a completely new way of looking at the universe.'

A mind-expanding collaboration of artists and internationally renowned scientists, Particle/Wave offers a lens into this incredible discovery. Look deep into the universe under the spectacular dome of the Sir Thomas Brisbane Planetarium.

Wednesday 20 March 2019 7.00pm - 8.00pm

Thursday 21 March 2019 7.00pm - 8.00pm

Friday 22 March 2019 7.00pm - 8.00pm 9.00pm - 10.00pm

Saturday 23 March 2019 4.30pm - 5.30pm 8.00pm - 9.00pm

Sir Thomas Brisbane Planetarium **Brisbane Botanic Gardens** \$35/\$25/\$10 For ages 14 years +

GALA EVENT



TIME AND THE CREATIVE COSMOS

A celebration of the human spirit, exploration and discovery.

Queensland Museum in association with World Science Festival and Queensland Performing Arts Centre presents

TIME AND THE CREATIVE COSMOS

Created by World Science Festival and Pilobolus Written by Brian Greene

Featuring Brian Greene and Pilobolus

Including a stellar line-up of Australian stage and screen artists

This thrilling fusion of science and art highlights our collective longing to transcend the boundaries of space and time. Through original choreography of the innovative dance troupe Pilobolus, together with eclectic musical and stage performances, acclaimed physicist Brian Greene unveils the mysteries of life and the universe.

Saturday 23 March 2019 8.00pm - 9.30pm Concert Hall, QPAC

A Reserve \$95 (Adult)

\$75 (Conc/QM Member)

B Reserve \$75 (Adult)

\$55 (Conc/QM Member)



THE HATCHERY



THE HATCHERY: Turtle Conservation Experience

World Science Festival Brisbane's annual turtle hatching is an important conservation initiative that allows intimate access to Australia's precious Loggerhead turtles.

Visitors to the festival can get a rare glimpse of hatching turtles in their incubation chambers and the first moments of their lives as they meet a seawater environment in specially designed tanks. At the close of the festival, the newborn turtles will be transported to the Sunshine Coast and released 20km offshore.

This important conservation initiative is designed in collaboration with internationally renowned herpetologist Colin Limpus and Queensland Museum Senior Curator of Reptiles and Amphibians, Patrick Couper.

Please allow 10-15 minutes to learn about the turtle life cycle, habitats and the Mon Repos conservation success story prior to viewing the hatchlings.

BOOKINGS

Wednesday 20 March -Friday 22 March 2019 9.00am - 10.00am Queensland Museum FREE ticketed event. bookings essential

Wednesday 20 March -Friday 22 March 2019 2.30pm - 4.30pm **Queensland Museum** FREE, queue for entry No bookings required

Saturday 23 March -Sunday 24 March 2019 9.30am - 4.30pm **Queensland Museum** FREE, queue for entry No bookings required

PRAM PARKING

Due to space limitations, pram parking is compulsory before entering The Hatchery queue. There is a dedicated Pram Parking facility available in the Whale Mall, opposite the entry to The Hatchery.

LIVE STREAMING

The team from the World Science Festival Brisbane are using cameras to live stream our baby turtles hatching! So there is a possibility you may be filmed.

THE HATCHERY: Turtle Conservation Experience School Sessions

In 2019 The Hatchery will be extended into an education program focused on the increasing threats from plastic pollution to these special and endearing marine animals.

Students are invited to learn some amazing facts about turtles at the turtle talk, get hands-on at the marine plastic workstation and get up close to the baby turtles in The Hatchery.

Wednesday 20 March -Friday 22 March 2019 **Queensland Museum**

Visit the website for session times.

BOOKINGS

Complete the QTIX School **Group Booking Request** Form on our website or call the QTIX Group Bookings Officer on (07) 3840 7466.

SIGNATURE EVENTS



OUR JEWELLED SEAS: Future-Proofing the Great Barrier Reef

It's five minutes to midnight and scientists are leaving no coral unturned to save the reef.

Coral reefs contribute considerably to Earth's biodiversity, harbouring 25 per cent of all marine life. Beyond their breathtaking natural beauty, reefs also maintain ocean health and protect the shore from the sea.

Australia's own jewelled wonder, the Great Barrier Reef is an integral part of the global reef system and deeply embedded in the Australian psyche. Sadly, the reef is facing several ongoing threats, with climate change top of the list. Back-to-back bleaching events in the past two years due to ocean warming have damaged large areas and action on all fronts is needed now.

Join our panel of experts to explore the state of these fragile ecosystems and how Australian and international science and innovation aims to limit, or mitigate further damage.

OUR JEWELLED SEAS: Future-Proofing the Great Barrier Reef is presented in conjunction with Academic Partner The University of Queensland.

MODERATOR Paul Willis

PARTICIPANTS

Paul Falkowski Tracevlee Forester Ove Hoegh-Guldberg **Gavin Singleton** Madeleine van Oppen Liz Wren

Thursday 21 March 2019 7.00pm - 8.30pm Concert Hall, QPAC \$35/\$30/\$25

MODERATOR Norman Swan **PARTICIPANTS**

Katherine Andrews Jonathan Epstein Raina MacIntyre Peta-Anne Zimmerman Friday 22 March 2019 8.00pm - 9.30pm Concert Hall, QPAC \$35/\$30/\$25



PANDEMICS & EPIDEMICS: Preparing for the Ultimate Travel Bug

Can 21st century intelligence finally tame age-old enemies?

From the bubonic plague to malaria and swine flu, infectious diseases that spread through communities and across borders have significantly shaped human history. Today, a new strain of influenza could spread even more rapidly than in 1918 when millions died worldwide. Alarmingly, despite modern medical and communication advances, disease epidemics and pandemics can still wreak havoc as a global public health issue in both scale and impact.

Our panel of experts will discuss significant disease outbreaks, how they affect populations and the most likely 21st century disease threats. What is science doing to improve prevention, prediction and response strategies?

PANDEMICS & EPIDEMICS: Preparing for the Ultimate Travel Bug is presented in conjunction with Academic Partner Griffith University.



WE WILL BE MARTIANS: Our Future on the Red Planet

As the world celebrates the 50th anniversary of the moon landing, take a journey to our next destination: Mars.

Our stellar group of interdisciplinary experts will explore the technological, physiological, and psychological challenges of sending humans to Mars, perhaps one day to live there permanently. And we will explore how we may one day make space as accessible as the skies, with ideas like the Space Elevator, the Space Fountain, the Launch Loop, and the Skyhook.

Join us as we contemplate what it will take to become a space-faring species.



INNOVATION BY DESIGN: Geeks, Style Gurus & Sciencepreneurs

Explore how science, creative design and business are working together to create a new 'normal'.

In today's fast-paced, technology-driven world, the competition to bring a new idea to market is fiercer than ever. Welcome to the rise of sciencepreneurship, where scientists, designers and industry work together to streamline the challenging processes required to achieve groundbreaking outcomes.

Our group of innovators explain the science behind their inspirations, from wearable technology and smart fashion to medical and engineering devices.

INNOVATION BY DESIGN: Geeks, Style Gurus & Sciencepreneurs is presented in conjunction with Academic Partner QUT.

MODERATOR

Brian Greene

PARTICIPANTS

Yvonne Cagle Christine Charles Jon Clarke Kate Reynolds Andrew Thomas

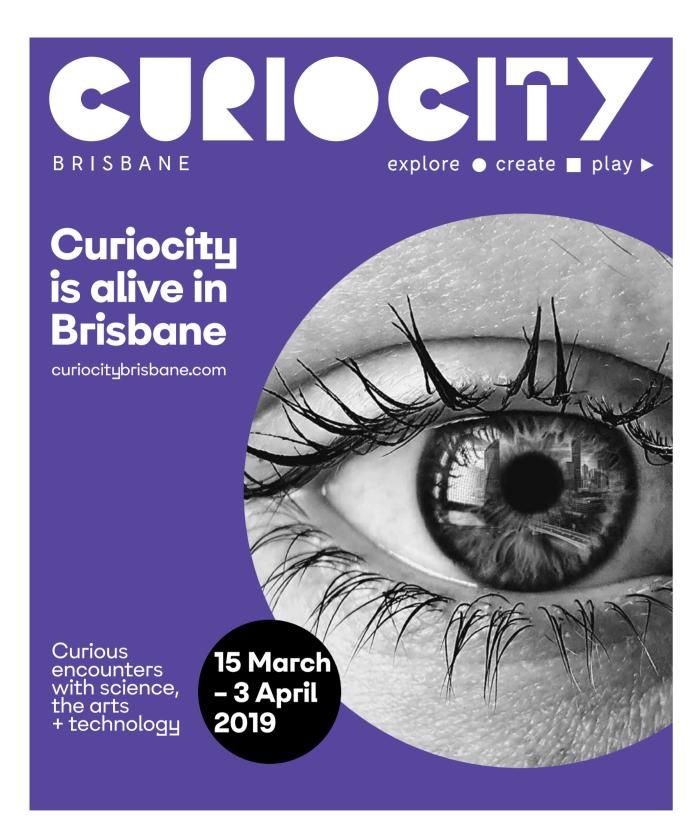
Sunday 24 March 2019 10.30am - 12.00pm Concert Hall, QPAC \$35/\$30/\$25

MODERATOR Jonica Newby

PARTICIPANTS

Madhu Bhaskaran Dietmar W. Hutmacher Alice Payne

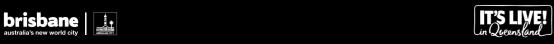
Sunday 24 March 2019 2.00pm - 3.30pm Concert Hall, QPAC \$35/\$30/\$25

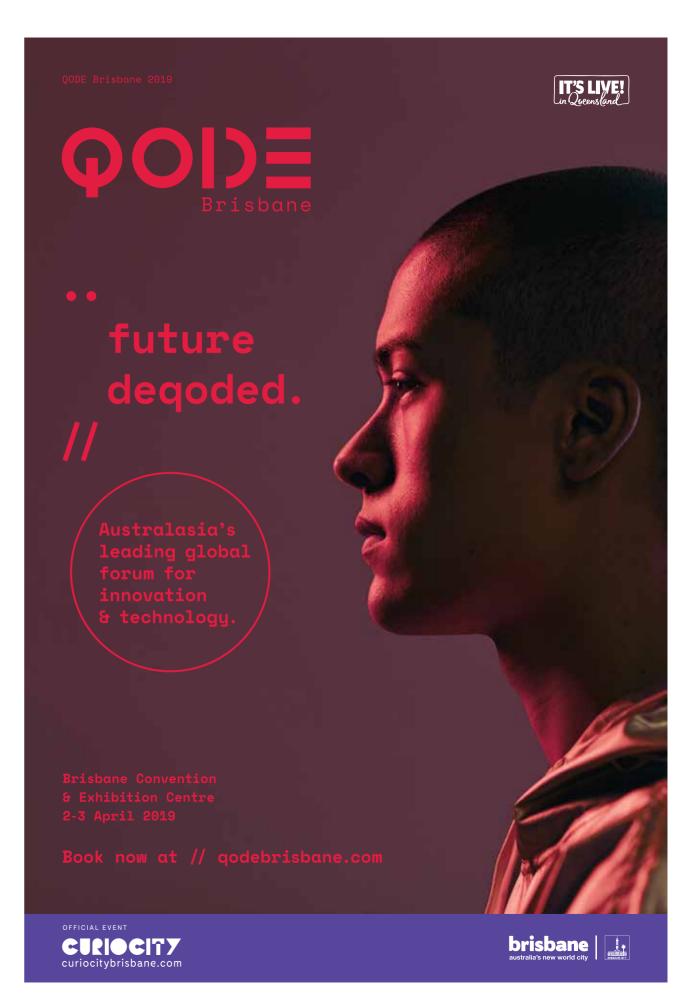












CONVERSATIONS



BRINGING THEM BACK: The De-extinction Debate

If we could...should we?

Earth is experiencing the sixth great extinction, this one created largely by us. Fortunately, human beings now have the tools to potentially undo some of the damage we have caused. New technologies could preserve vanishing species and habitats and even bring back extinct species like the passenger pigeon, the woolly mammoth and our beloved Tassie tiger.

However, the case for de-extinction is complicated. Do we try everything we can or are resources better spent addressing the escalating human impact on our current wildlife and saving what we've got? Join our panel of experts for a robust conversation exploring the possibilities of de-extinction science and the compelling question – just because we can, should we?



ANTARCTICA: What Happens There Matters Everywhere

The future of our frozen continent.

The land covering Earth's southern pole is a place of extremes – fierce weather, raw beauty and essential science. Like the canary in the coal mine, our Southern Ocean neighbour has also become a vital prognostic indicator of our warming planet.

Our panel will reflect on the fascinating history of Antarctica which is governed by a unique global treaty. Exploring the weather, wildlife and the utmost importance of ice, this team of experts will reinforce why continued and collaborative Antarctic research is so important, now more than ever.

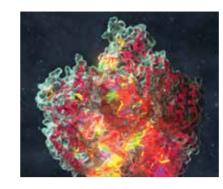


FEEDING THE WORLD: The Big and Small Solutions

Global food security and why it matters.

The world population is expected to nudge 10 billion by 2050, but predictions of food availability for this estimation are less certain. Food security is a basic human right, but it is not a guarantee. Indeed, distribution of food on our planet has never been equal and economies worldwide now face the increased pressure of climate change that will make fresh water more scarce and soil less productive.

On the positive side, humanity has engineered green revolutions before and recent science has produced powerful new technologies impacting agriculture. Join our experts as they discuss the sustainable solutions, big and small, to feeding the world.



CRISPR: The Modern Creation Story

Splicing and dicing DNA.

The development and refinement of CRISPR-based gene editing over the past decade has accelerated the progress of genetic manipulation like never before, including the prospect of engineering the DNA of future generations. Indeed, CRISPR carries grave risks and profound ethical challenges, but it also offers great promise – to prevent disease, feed the growing billions and even save vanishing species.

Join us for a discussion of this brave new molecular world with a panel of experts including one of the inventors of this game-changing technology.



CSI@WSFB: Forensic Science in the 21st Century

A unique and sometimes murky melding of science, law enforcement and justice.

Forensic science has long held a public fascination, glamorised in popular culture. From DNA evidence and human body farms to the dark web and the alarming rise of cybercrime, real life forensic experts inhabit a world just as exciting and weird as the fictional version.

Join our discussion as we interrogate a few modern CSI practitioners.

Take a deep dive into current forensic techniques and how they are used to convict 21st century criminals.



WHEN SCIENCE MEETS ART: Shifting Perspectives on the Australian Landscape

Australia is one of the slowest changing landscapes in the world.

In some remote regions, little has changed for 130,000 years. How do scientists and artists interpret this timescale? The ARC Centre of Excellence for Australian Biodiversity and Heritage (CABAH), connect artists with science researchers to collaborate in the field and high-tech labs. CABAH geologist Tim Cohen and sound and video artists Sonia Leber and David Chesworth will showcase this work by exploring the intersection between art and science.

WHEN SCIENCE MEETS ART: Shifting Perspectives on the Australian Landscape is presented in conjunction with Program Partner CABAH.

MODERATOR

Robyn Williams

PARTICIPANTS

Duan Biggs Thomas Hildebrandt Andrew Pask Kerrie Wilson

Wednesday 20 March 2019 7.00pm – 8.30pm Concert Hall, QPAC \$35/\$30/\$25

MODERATOR

Paul Willis

PARTICIPANTS

Steven Chown Gwen Fenton Michelle LaRue Tas van Ommen

Friday 22 March 2019 5.30pm – 7.00pm Concert Hall, QPAC \$35/\$30/\$25

MODERATOR

Pip Courtney

PARTICIPANTS

Rachel A. Ankeny Nina Fedoroff Rebecca Ford Ian Godwin

Saturday 23 March 2019 11.00am – 12.30pm Cremorne Theatre, QPAC \$35/\$30/\$25

MODERATOR

Norman Swan

PARTICIPANTS

Rachel A. Ankeny Merlin Crossley Sara Howden Virginijus Šikšnys

Saturday 23 March 2019 4.30pm - 6.00pm Cremorne Theatre, QPAC \$35/\$30/\$25

MODERATOR

Robyn Williams

PARTICIPANTS

Niamh Nic Daéid Dennis McNevin Maiken Ueland

Sunday 24 March 2019 10.00am – 11.30am Cremorne Theatre, QPAC \$35/\$30/\$25

MODERATOR

Bianca Beetson

PARTICIPANTS

David Chesworth Timothy Cohen Sonia Leber

Sunday 24 March 2019 2.00pm - 3.00pm slq Auditorium 2, SLQ \$30/\$25/\$20

SALONS



HOMEWARD BOUND: Mother Nature Needs Her Daughters

Going to extremes to save the planet.

In 2015 a leadership expert from Melbourne and a marine scientist from Tasmania launched a bold idea - to gather 80 or so female scientists from across the globe and send them to the most isolated and least visited place on Earth... Antarctica.

This dream, dubbed 'Homeward Bound', became a reality in 2017 with the first expedition safely completed and the next cohort enrolled. We have assembled a group of Homeward Bounders to showcase the stories, science and achievements behind this important and inspirational plan to influence big decisions made globally for the future of our planet.

MODERATOR

Rhianna Patrick

PARTICIPANTS

Cecile Godde Mary-Anne Lea Beth Strain

Wednesday 20 March 2019 6.30pm - 7.30pm Cremorne Theatre, QPAC \$30/\$25/\$20



SAVING WHAT WE'VE GOT: Australia's Wildlife Under Threat

Australia has one of the most biodiverse and unique collections of animals and plants on Earth.

Yet, from the time Europeans started calling Australia home, many native species have been fighting for survival, against introduced predators, land clearing and ongoing disturbances to their ecosystems.

Fortunately, many of Australia's best 'human' experts are working hard to halt and even reverse our loss of precious wildlife, with science and technology as their guiding light. Find out what is being done and what science can offer to maintain and sustain Australia's amazing natural diversity.



WHOSE DNA IS IT **ANYWAY: It's a Fine Line Between Profiling** and Privacy

The perks and pitfalls of DNA testina.

Terms like DNA profiling, genetic testing and genome sequencing have become a part of our everyday lexicon, and many of us are intrigued by what links, secrets and problems can be found in our genetic code. What really happens when you submit a DNA sample for analysis? Who is actually using it and what can it show about your health, past and future? And what are the ethical, social and legal issues around this most personal form of data? This wide-ranging discussion will explore the place of DNA data in today's technology-driven world.



MEDICINE: Every Bodies' Business

Medicine made to order.

The last 50 years has produced phenomenal breakthroughs in medical science that have revolutionalised human health. We can now probe, image and analyse the human body in more detail than ever before. The next iteration is made-to-measure health, a prospect that has tantalised medical professionals since the first human genome was mapped 15 years ago. Our panel of scientists and clinicians will explore the future of so-called precision medicine and the possibilities, availability and affordability of truly personalised health care.



FARMING, FOOD & THE FUTURE: What's on the Menu in 2050?

Rare, medium or lab-grown.

What we will be eating in 30 years and where it will come from are major issues facing science and decision-makers worldwide. At a local level, what is the future for primary production-rich countries like Australia?

Vertical urban plots, pastoral labs and aquaculture stockyards are all being explored as the new norm in agricultural practice. Can we convert traditional farming practice through innovation and ingenuity to live more sustainably in our drier and browner land?

In this future-looking discussion, our panel of land-loving experts will explore what's on the menu for Australians in 2050.



AUSTRALIA IN SPACE: Our story in the stars

Australia has been a part of the human journey into space since NASA's Mercury program.

The Muchea Tracking Station gave critical southern hemisphere support to John Glenn in 1962 as he became the first American to orbit the Earth. In the ensuing 56 years, while 74 other nations formed space agencies, Australia did not. In 2018, that changed.

This event will look at the history of Australia's role in space exploration, take a deep dive into the forces that formed the new Australian Space Agency (ASA) and examine the visionary science that will propel our nation into humanity's future in space. Join us for a fascinating celebration of Down Under amongst the stars.

Hamish McCallum **Hugh Possingham** Jodie Rummer

> Friday 22 March 2019 11.15am - 12.15pm Cremorne Theatre, QPAC \$30/\$25/\$20

MODERATOR

Natasha Mitchell

PARTICIPANTS

MODERATOR

Natasha Mitchell

PARTICIPANTS

Andrew Crowden Aideen McInerney-Leo Dennis McNevin

Friday 22 March 2019 7.00pm - 8.00pm Cremorne Theatre, QPAC \$30/\$25/\$20

MODERATOR

Norman Swan

PARTICIPANTS

David Bunker Nic Waddell

Saturday 23 March 2019 8.00pm - 9.00pm Cremorne Theatre, QPAC \$30/\$25/\$20

MODERATOR

Pip Courtney

PARTICIPANTS

Nina Fedoroff Craig Heraghty Fiona Simson

Sunday 24 March 2019 11.00am - 12.00pm slq Auditorium 1, SLQ \$30/\$25/\$20

MODERATOR

Robyn Williams

PARTICIPANTS

Christine Charles **Andrew Dempster** Kerrie Dougherty Adam Gilmour Anthony Murfett

Sunday 24 March 2019 1.30pm - 2.30pm Cremorne Theatre, QPAC \$30/\$25/\$20



SALONS



MAKING IT GREAT: Celebrating Queensland Invention

From medical breakthroughs to remarkable robot technology science in Queensland continues to shine.

Meet our group of acclaimed inventive Queenslanders to find out why and how their Eureka moments and years of hard work came to fruition to leave an indelible mark on the future.

Hosting this event will be Professor Ian Frazer, one of Queensland's bestknown scientists and co-inventor of the Gardasil vaccine, predicted to rid the world of cervical cancer within 10 years.

MAKING IT GREAT: Celebrating Queensland Invention is presented in conjunction with Academic Partner QUT.



TACKLING IMMUNITY: Best Friend. Worst Enemy

Protection against harm is not always without consequence.

The immune system is our body's defender against potential harm. Infectious agents, allergens, disease - not much gets past our silent and loyal protector. Sometimes however, the immune response does not know when to stop, causing short-term damage or long-term autoimmune disease.

Join us for an exciting adventure into the intricacies, perils and promise of immunity, including recent research into immunotherapies designed to defeat cancer, minimising the need for chemotherapy and radiation.

TACKLING IMMUNITY: Best Friend, Worst Enemy is presented in conjunction with Academic Partner Griffith University.



CITIZENS + SCIENCE: The Reef Needs Us All

Working together to save our national icon.

Ancient and vast, Australia's Great Barrier Reef belongs to us all. Sadly, this giant living organism that hugs so much of our eastern coastline is facing potential catastrophe. Scientists are doing what they can to monitor, repair and build resilience into the reef's natural systems, but they need all the help we can give.

Join our panel of reef specialists to find out how 'people power' is working alongside science to defend and preserve this amazing ecosystem for future generations.

CITIZENS+SCIENCE: The Reef Needs Us All is presented in conjunction with Academic Partner The University of Queensland.

MODERATOR

Ian Frazer

PARTICIPANTS

Chris Jeffery David Lloyd Neena Mitter Chamindie Punvadeera

Thursday 21 March 2019 1.00pm - 2.15pm Cremorne Theatre, QPAC \$30/\$25/\$20

MODERATOR

Norman Swan

PARTICIPANTS

Katie Allen Nigel McMillan Mark Smyth

Thursday 21 March 2019 7.00pm - 8.00pm Cremorne Theatre, QPAC \$30/\$25/\$20

MODERATOR

Jonathan Webb

PARTICIPANTS

Emma Kennedy Justin Marshall David Wachenfeld

Sunday 24 March 2019 1.00pm - 2.00pm sla Auditorium 1. SLQ \$30/\$25/\$20

QUEENSLAND MUSEUM



LET'S TALK: **Tarantulas**

Immerse yourself in the captivating eight-legged world inhabited by one of the most feared and misunderstood land animals - the tarantula. Overcome fear with fascination as renowned Queensland Museum arachnologist, Dr Robert Raven, provides a rare insight into the diverse characteristics and life cycles of these amazing creatures.

Thursday 21 March 2019 3.30pm - 4.30pm Level 2 Theatre, Queensland Museum \$20/\$15/\$15 For all ages

The Let's Talk Series is presented with support from Program Partner Inspiring Australia.



LET'S TALK: A Bug's Life

Making up 75 per cent of all terrestrial animals, insects are one of the most successful creatures on the planet and are found in almost every environment. Insects are also an integral part of Queensland Museum's priceless collection, from the oldest Australian Monarch butterfly specimen to the extraordinary Dodd Collection. Join Queensland Museum's Susan Wright who will unveil the Museum's spectacular insect collection to show their importance and beauty.

Friday 22 March 2019 3.30pm - 4.30pm Level 2 Theatre, Queensland Museum \$20/\$15/\$15 For all ages



LET'S TALK: Sharks

With the exception of Nemo's friend Bruce, sharks are rarely portrayed kindly, despite their important ecological roles as apex predators and as important indicators for ocean health. Like many of their housemates, they face threats from fishing, marine pollution, habitat destruction and climate change. Join Associate Professor Jodie Rummer to hear fascinating insights into the initiatives and research being undertaken to protect our precious baby sharks. Image credit Steve Arklay

Saturday 23 March 2019 10.30am - 11.30pm Level 2 Theatre, Queensland Museum \$20/\$15/\$15 For all ages



LET'S TALK: Space Travel

What does it take for someone to willingly propel themselves beyond Earth's atmosphere? How does it feel to be in space and can it change a life forever? Join Australia's first astronaut Andrew Thomas as he shares his fascinating journey into the great unknown. Includes entry into Queensland Museum's new exhibition NASA - A Human Adventure.

Saturday 23 March 2019 1.30pm - 2.30pm Level 2 Theatre, Queensland Museum \$20/\$15/\$15 For all ages

10.30am - 11.30am Level 2 Theatre, Queensland Museum \$20/\$15/\$15 For all ages

AFTER DARK

After the ultimate post-work knockoff session that will impress a date and top up your science quota? Queensland Museum's After Dark is for you. Explore all the Museum has to offer including access to the blockbuster exhibition NASA - A Human Adventure. Enjoy expert talks, science demonstrations and displays, live music and entertainment.

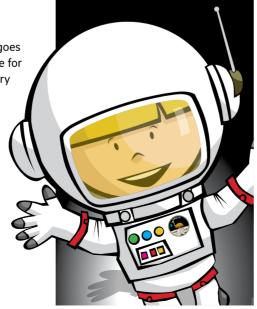
Presented with support from Program Partner Australian Academy of Science.

Friday 22 March 2019 5.30pm - 9.00pm **Queensland Museum** \$25 For ages 18+

A NIGHT AT THE MUSEUM

Explore the Museum as the sun goes down at our night time adventure for our smallest visitors. Explore every nook including the exhibitions NASA - A Human Adventure and SparkLab. Meet the locals in Wild State! Dance along with live music. See demonstrations, amazing objects, performances and more.

Saturday 23 March 2019 5.30pm - 8.30pm **Queensland Museum** From \$15 For all ages



LET'S TALK: Astrophotography Join Andrew Campbell, one of

Australia's best astrophotographers on a stellar journey of discovery. Learn about this specialised field

of photography that captures astronomical bodies, and learn how to photograph these Deep Space Objects invisible to the human eye through long exposures and late nights under the stars with a telescope.

Sunday 24 March 2019

The Let's Talk Series is presented with support from Program Partner Inspiring Australia.

QUEENSLAND MUSEUM EXPERTS: Mammals

Queensland Museum collection has one of the best collections of rare and threatened Queensland species which will be on display during the World Science Festival Brisbane. See some extraordinary specimens from out of the vaults and onto the Museum floors.

Thursday 21 March and Friday 22 March 2019 9.30am - 4.30pm Level 2, Queensland Museum **FREE** For all ages

QUEENSLAND MUSEUM EXPERTS: Insects

Immerse yourself in the colourful world of bugs. Queensland Museum entomology team will showcase some of their most brilliant specimens in the collection, show you the secrets of keeping a beautiful insect collection and share some secrets about a bug's life.

Saturday 23 March and Sunday 24 March 2019 9.30am - 4.30pm Level 2, Queensland Museum FREE For all ages

CORALWATCH

Come and talk to CoralWatch ambassadors about citizen science. Learn about our precious corals through beautiful coral specimens and fun learning activities, and how you can become a coral health expert using easy-to-use Coral Health Charts.

Thursday 21 - Sunday 24 March 2019 9.30am - 4.30pm Level 2. Queensland Museum FREE For all ages

MEET THE CURATOR

Get up close with museum collections, uncover the amazing discoveries and work of our scientists, ask questions and share your own stories and experiences.

During each session our museum staff will take you on a unique journey of discovery sharing stories about their favourite collection items.

Thursday 21 March 2019 10.00am - 11.00am Dr Chris Burwell Senior Curator. Insects, Biodiversity Program

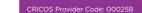
Friday 22 March 2019 10.00am - 11.00am, 1.00pm - 2.00pm Jeff Johnson Collection Manager, Ichthyology (Fish), **Biodiversity Program**

Saturday 23 March 2019 10.00am - 11.00am, 1.00pm - 2.00pm Dr Sue-Ann Watson Senior Curator (Marine Invertebrates)

Sunday 24 March 2019 10.00am - 11.00am, 1.00pm - 2.00pm Dr Paul Oliver Senior Curator of Vertebrates, Biodiversity

Discovery Centre Level 4 Queensland Museum FRFF For all ages

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Advances in science and technology are creating new opportunities—changing the ways we live and work.

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PARTNER OF WORLD
SCIENCE FESTIVAL
BRISBANE



Hello science, welcome to Brisbane.

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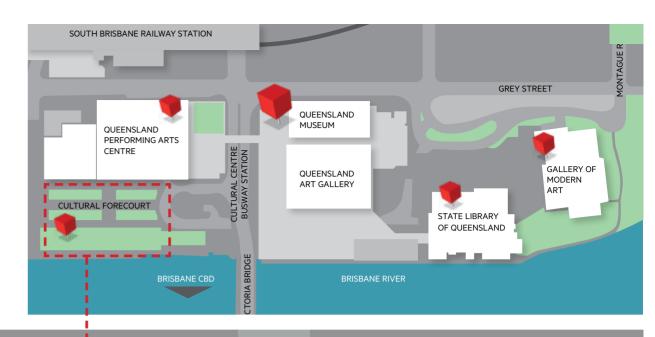


FESTIVAL MAP

Queensland Museum and World Science Festival Brisbane are committed to achieving environmental and socially sustainable practices in all areas of festival management and operation.

Thirsty?

BYO water bottle and top up your H2O on the go at one of our many water refill stations thanks to Seqwater.





22 BOOK NOW worldsciencefestival.com.au BOOK NOW worldsciencefestival.com.au

We're taking it to the street for STEM Join the BHP Foundation in celebrating STEM and the opportunity for everyone to be included. Come along and have your mind blown at our Science Fiction... Or Fact?! Experience. Find out what Star Trek has to do with 3D printing, how HG Wells predicted iPads, plus lots more during Street Science! 23-24 March **South Bank Cultural Forecourt**







STREET SCIENCE!

Presented by Queensland Museum and BHP Foundation



In 2019 the cultural forecourt at South Bank Parklands will again turn into a science playground with dozens of FREE **Street Science!** family-friendly activities for everyone to enjoy.

Saturday 23 March and Sunday 24 March 10.00am – 5.00pm FREE

Take a seat at **The Osmosis Stage** and enjoy a stellar line-up of science shows and science surprises guaranteed to inspire and delight the young and the young-at-heart.

Grab a drink and join in the discussions at the **Festival Lab** where you can discover the wonders of science through casual conversations and live events.

ABC Radio Brisbane Weekends with Emma Griffiths broadcast live

Saturday 23 March 10.00am – 12.00pm Street Science! Cultural Forecourt, South Bank Parklands FRFF

STREET SCIENCE! ACTIVITIES

- 1. Wildlife Exploration
 Presented by Lone Pine
 Koala Sanctuary
- 2. Soils: Now and for the Future! Presented by Soil Science Australia
- Inventions, Inquiry and Life on Earth Presented by The Royal Society of Queensland
- 4. DNA Collection from Wild Crocodiles Presented by Department of Environment and Science
- 5. Create, Experience and Learn with QUT Presented by QUT
- Bringing Science
 and Mystery from a
 Wonderful Island
 Presented by National Museum
 of Natural Science Taiwan
- Experience Science with UQ Presented by The University of Queensland
- 8. Build your Tomorrow, Today!
 Presented by Young
 Engineers Brisbane
- Mountains, Mangroves and Moreton Bay Presented by Healthy Land and Water
- 10. DuckieTown
 Presented by Micromelon
 Robotics and Robotics
 Playground
- 11. Incredible Inventions
 Presented by Street Science
- 12. BrainBuzz
 Presented by Channel 9
- 13. & 14. Reef Builders

 Presented by Great Barrier Reef
 Foundation and Department of
 Environment and Science
- 15. Science on the GO!

 Presented by Griffith University
- 16. Citizen Science Everyday People, Powering Science Presented by Australian Citizen Science Association - Queensland Chapter and the Department of Environment and Science

- 17. The Future of Health
 Presented by QIMR Berghofer
 Medical Research Institute
- 18. How to Tell the Weather in the Ice Age Presented by ARC Centre of Excellence for Australian Biodiversity and Heritage (CARAH)
- 19. Science Fiction... or Fact?!
 Presented by BHP Foundation
- 20. How Healthy is Your
 Waterway? Ask a Waterbug!
 Presented by Queensland Urban
 Utilities & SAS Laboratory
- 21. Creative Technology and Digital Inventions
 Presented by BOP Industries
- 22. The Science of Growing Your Own Food Presented by Sow Great
- 23. Collaborating for Cures
 Presented by Translational
 Research Institute
- 24. Future City Makers
 Presented by STEM Punks
- 25. Past, Present and Future Play for Under 5's Presented by C&K
- 26. Radiation Exploration
 Presented by Australian
 Radiation Protection Society
 (QARPS)
- 27. Geology of Brisbane
 Presented by Geological Society
 of Australia
- 28. Journey into the Atomic World – Free VR tour of the OPAL Research Reactor Presented by ANSTO
- 29. Blast Off to the Virtual
 Universe! Presented by
 ARC Centre of Excellence for
 Gravitational Wave Discovery
 (OzGrav)
- 30. Solar and Astronomical Telescope Observing Presented by Brisbane Astronomical Society



BRAIN FOOD BREAKFAST SERIES



IN THE NAME OF SCIENCE

Science has delivered untold good to humankind... from antibiotics to Wifi... but what about the bad and the ugly sides of scientific experimentation? What ethical norms have been set aside in the name of 'the greater good'? Join us for a look back in history at some of the darker sides of science and whether the ends always justified the means.

Thursday 21 March 2019 7.30am – 9.00am Festival Lab, South Bank Parklands \$25/\$20/\$20 – incl. a light breakfast For ages 13+



BACKYARD FOOD REVOLUTION

With cities ever-expanding, farmland shrinking and the world warming, Australia will need a lot more loaves and fishes on future tables. But perhaps we don't need to travel much further than our own backyard for the solutions.

Saturday 23 March 2019 8.30am – 10.00am Festival Lab, South Bank Parklands \$25/\$20/\$20 – incl. a light breakfast For ages 13+



WHY THE FACTS DON'T MATTER

How do we perceive facts in a world where fake news is a daily trend and a frequent political football?

Let's take an educated look at how photographs, public opinion and personal beliefs affect how humans evaluate a fact to decide what is real in our information-saturated age.

Friday 22 March 2019 7.30am – 9.00am Festival Lab, South Bank Parklands \$25/\$20/\$20 – incl. a light breakfast For ages 13+



AN ARMY OF PERFECT SOLDIERS

It's happened. The first human children reportedly engineered with the powerful gene-editing tool called CRISPR-Cas9 have been born in China. While medical need will be the main driver of future such technology, could 'designer' babies or armies of perfect soldiers ever be a real possibility?

Sunday 24 March 2019 8.30am – 10.00am Festival Lab, South Bank Parklands \$25/\$20/\$20 – incl. a light breakfast For ages 13+

SCIENCE GETS SOCIAL



LAW & ORDER IN THE LAB

Scientifically rigorous and accessible forensic science is crucial to the criminal justice system, but how does the science community and judiciary ensure exacting standards are reinforced to uphold the law? Historically, scientists and the judiciary rarely seek each other's counsel outside the theatre of the courtroom.

Join us for a very public conversation with leading international forensic chemist Professor Niamh Nic Daéid and an esteemed member of the judiciary to discuss how their professional ecosystems can work together to raise standards and in turn raise public confidence in the justice system.

Saturday 23 March 2019
7.30pm – 9.00pm
Festival Lab, South Bank Parklands
\$20/\$15/\$15
For ages 18+ | Venue is licensed

THE OSMOSIS STAGE

Take a seat at **The Osmosis Stage** and enjoy a stellar line-up of science shows and science surprises guaranteed to inspire and delight the young and the young-at-heart.

Saturday 23 March 10.00am – 9.00pm FREE

Sunday 24 March 10.00am – 5.00pm FREE

SCIENCE GETS SOCIAL



WHO'S YOUR DADDY'S DADDY?

The increasing availability of personal DNA ancestry testing is delivering more than people expect, and not all of it welcome. Find out what these DNA samples tell us about ourselves and if people are sufficiently prepared for the answers.

Thursday 21 March 2019 6.00pm – 7.30pm Festival Lab, South Bank Parklands \$20/\$15/\$15 For ages 18+ | Venue is licensed



SCIENCE SAYS!

Science as you've never seen or heard it before! Join Dr Joel and teams of scientists, comedians and science communicators as they battle and banter their way through the big headlines of science and technology from around the world!

Friday 22 March 2019 5.30pm – 7.00pm Festival Lab, South Bank Parklands \$20/\$15/\$15 For ages 18+ | Venue is licensed



FERMENTED SCIENCE

How might the 'nectar of the gods' be affected as vineyards are subject to rising temperatures? How will science and biodiversity assist vineyard management with these challenges? Could Australian wine producers be better off as the conditions become more extreme?

Saturday 23 March 2019 5.00pm – 6.30pm Festival Lab, South Bank Parklands \$20/\$15/\$15 For ages 18+ | Venue is licensed



ABC LIVE SCIENCE PODCAST: Ockham's Razor

Ockham's Razor is ABC's scientific soapbox: stories, insights, arguments or tributes – anything that can grip an audience for 10 straight minutes. A hand-picked roster of superb speakers will feature in this evening of short talks that will intrigue, excite and inspire.

Friday 22 March 2019 8.00pm – 9.30pm Festival Lab, South Bank Parklands FREE ticketed event For ages 18+ | Venue is licensed



UNPLUG & PLAY POP UP STEM PLAYGROUND

Visit the Unplug & Play Pop Up STEM Playgrounds where imagination, creativity, and open-ended play take centre stage!

Children must be accompanied by an adult. Accompanying adults do not require a ticket.

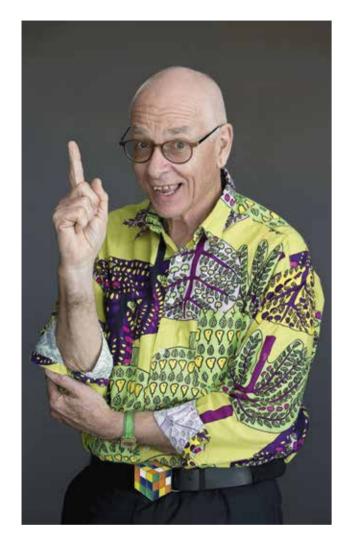
Saturday 23 March 2019 and Sunday 24 March 2019 12.00pm – 12.45pm 1.00pm – 1.45pm 2.00pm – 2.45pm Festival Lab, South Bank Parklands FREE ticketed event For ages 3+



STARGAZING

Do you ever wonder about the stars twinkling above you? This is the perfect opportunity to explore Brisbane's beautiful night sky. Celestron and Brisbane Astronomical Society will provide telescopes for you to explore and identify the stars to unlock the secrets of our observable universe.

Saturday 23 March 2019 6.00pm – 9.00pm Cultural Forecourt, South Bank Parklands FREE event For all ages



DR KARL FOR KIDS: Townsville

Join science broadcaster Dr Karl Kruszelnicki as he investigates the Big Question – is there life beyond Earth? You'll also get the chance to ask all your burning science questions be they chemical, physical, technological, astrophysical or astronomical!

Saturday 9 March 2019 11.30am – 12.30pm The Grand Ballroom, The Ville Resort-Casino Townsville \$10/\$5/\$5 For all ages

FOR SCHOOL BOOKINGS:

Complete the QTIX School Group Booking Request form online. If you have any questions, please phone a QTIX Group Bookings Officer on (07) 3840 7466.

EXTREME MOMENTS IN SCIENCE WITH DR KARL

Dr Karl will take you on a brand new rollercoaster ride through the 'badlands' of science where you'll discover the answers to questions you never knew existed – and where you will laugh and learn. The universe is a strange and wonderful place and in his Extreme Moments, Dr Karl has scaled the highest peaks and turned over the tiniest pebbles to reveal what's underneath. Prepare to be amused and amazed as Australia's favourite science guru takes you on an excursion around a scientific landscape from the sublime moments of deep thought to the arcane and bizarre.

This event will be followed by a book signing.

Friday 8 March 2019
7.00pm - 8.30pm
The Grand Ballroom,
The Ville Resort-Casino,
Townsville
\$15/\$10/\$10 | For ages 13+

Friday 22 March 2019 7.00pm - 8.30pm slq Auditorium 1, SLQ Brisbane \$15/\$10/\$10 | For ages 13+

FUTURE CAREERS IN SCIENCE WITH DR KARL KRUSZELNICKI

Science is probably the best possible 'mental toolbox' that you can have, enabling you to change your career many times if desired. Dr Karl will discuss future careers in genetics, engineering, basic physics, computer science and the big one – your environment. Part science, part career guidance, part entertainment, and all fun. Bring your burning science questions for the Q&A!

Friday 8 March 2019
11.30am – 1.00pm
The Science Place,
James Cook University
Townsville
FREE ticketed event
For School Years 7–12

Friday 22 March 2019 1.30pm – 2.45pm Cremorne Theatre, QPAC, Brisbane School Students \$10 For School Years 7-12

Q&A WITH DR K: Schools Show

Join science broadcaster and author Dr Karl Kruszelnicki as he answers all the burning science questions – be they chemical, physical, technological, biological, astrophysical or astronomical!

Friday 22 March 2019 12.00pm – 1.00pm Concert Hall, QPAC Brisbane School Students \$10 For School Years 3–6

FILM PROGRAM

GOMA AUSTRALIAN CINÉMATHÈQUE

To celebrate 50 years since the moon landing, the Australian Cinémathèque will program Far From Home: Cinema's Fascination with Space as part of World Science Festival Brisbane 2019.

Since the beginnings of film through to today's contemporary cinema we are fascinated by the vast unknown of the stellar realm. The films selected are bold and fantastical imaginings of journeys to the moon, life on Mars and the psychological impact of travelling through space.



THE DISH

Thursday 21 March 2019 2.00pm \$10/\$8/\$8/GOMAMember \$8

TOTAL RECALL

Thursday 21 March 2019 6.00pm \$10/\$8/\$8/GOMAMember \$8

KAUBŌI BIBAPPU: TENGOKU NO TOBIRA (COWBOY BEBOP: THE MOVIE)

Thursday 21 March 2019 8.00pm \$10/\$8/\$8/GOMAMember \$8

WALLACE AND GROMIT: A GRAND DAY OUT

Friday 22 March and Saturday 23 March 2019 10.30am FREE

SHORT FILMS

LE VOYAGE DANS LA LUNE (A TRIP TO THE MOON)

11.00am (Screens with Earthrise)

EARTHRISE

11.16am (Screens with A Trip to the Moon)

Friday 22 March and Saturday 23 March 2019 \$10/\$8/\$8/GOMAMember \$8

NASA'S PROJECT MARS WINNING FILMS 2018:

RENDEZVOUS WITH MARS MORNING BLUE NOMADIC CLOUD 92MARS

Friday 22 March 2019 12.00pm Saturday 23 March 2019 10.00am FREE

BARBARELLA

Friday 22 March 2019 6.00pm \$10/\$8/\$8/GOMAMember \$8

GRAVITY

Friday 22 March 2019 7.45pm \$10/\$8/\$8/GOMAMember \$8

СоляриС /SOLYARIS (SOLARIS)

Saturday 23 March 2019 12.30pm \$10/\$8/\$8/GOMAMember \$8

SUNSHINE

Saturday 23 March 2019 3.30pm \$10/\$8/\$8/GOMAMember \$8

REGIONAL EVENTS

GLADSTONE | 1-2 MARCH 2019



COOL JOBS: Gladstone

Come face to face with scientists doing amazing jobs, and see how they carved their path to an exciting career in STEM. From medical researchers to inventive engineers, our panel of professionals will inspire students to pursue cool jobs of

Friday 1 March 2019 9.00am - 11.15am 10.30am - 12.45pm Gladstone Entertainment **Convention Centre** FREE ticketed event For School Years 5-9

Friday 1 March 2019 12.30pm - 2.45pm Gladstone Entertainment **Convention Centre** FREE ticketed event For School Years 7-12

Saturday 2 March 2019

Gladstone Entertainment

Saturday 2 March 2019

Gladstone Entertainment

9.30am - 10.00am

2.30pm - 3.00pm

Convention Centre

For all ages

FREE ticketed event

Saturday 2 March 2019

Gladstone Entertainment

4.00pm - 5.00pm

Convention Centre

FREE ticketed event

9.00am - 4.00pm

Convention Centre

FREE

For all ages



PIONEERS IN SCIENCE: Gladstone

A rare opportunity for students to interview a renowned scientist live on stage - Professor Adele Green, Senior Scientist at QIMR Berghofer Medical Research Institute, studies one of Australia's most pressing and widespread health issues: skin cancer. Her landmark 20-year study into the regular use of sunscreen was a breakthrough in cancer research.

ABC Capricornia's Jacquie Mackay invites students to ask their own questions of Professor Green live on stage.



STREET SCIENCE! Gladstone

Gladstone Entertainment Convention Centre will become a science playground with FREE immersive and family-friendly events for everyone to enjoy. Take part in a range of handson activities that explore everything from new technology to environmental conservation, as you discover the wonder and excitement of science.



BLASTING THE PAST WITH SCIENCE STEVE

Learn about the world's coolest scientists, their discoveries and some of science's biggest revelations including a journey through the great scientific breakthroughs of the past 150 years.



LET'S TALK: Astrophotography

Join Andrew Campbell, one of Australia's best astrophotographers on a stellar journey of discovery. Learn how Deep Space Objects invisible to the human eye are photographed.

The Let's Talk Series is presented with support from Program Partner Inspiring Australia.



STARGAZING: Gladstone

Do you ever wonder about the stars twinkling above you? This is the perfect opportunity for the entire family to explore Gladstone's beautiful night sky. Bring your picnic blanket and relax in the Marina Parklands. Telescopes will be provided for you to discover the stars and galaxies.

Saturday 2 March 2019 6.30pm - 8.30pm **Gladstone Ports** Corporation Marina **Parklands** FREE For all ages

TOWNSVILLE | 8-9 MARCH 2019



DR KARL FOR KIDS: Townsville

Join science broadcaster Dr Karl Kruszelnicki as he investigates the Big Question - is there life beyond Earth? You'll also get the chance to ask all your burning science questions be they chemical, physical, technological, astrophysical or astronomical!

Saturday 9 March 2019 11.30am - 12.30pm Ballroom, The Ville Resort-Casino \$10/\$5/\$5 For all ages



STREET SCIENCE! Townsville

In 2019 the Museum of Tropical Queensland will turn into a science playground with FREE immersive and family-friendly events for everyone to enjoy. Take part in a range of handson activities that explore everything from new technology to environmental conservation, as you discover the wonder and excitement of science.

Saturday 9 March 2019 9.30am - 3.00pm Museum of Tropical Queensland FREE For all ages



COOL JOBS: Townsville

The festival's ever-popular Cool Jobs is back to bring you face to face with amazing scientists doing amazing jobs. Learn what it takes to do some of the coolest jobs on earth and how these people inspire the world to learn and get excited about science. COOL JOBS: Townsville is free thanks to support from Community Partner James Cook University.

Friday 8 March 2019 10.00am - 11.00am The Science Place. **James Cook University** FREE ticketed event For School Years 7-12



EXTREME MOMENTS IN SCIENCE WITH DR KARL: Townsville

Dr Karl will take you on a brand new rollercoaster ride through the 'badlands' of science where you'll discover the answers to questions you never knew existed - and where you will laugh and learn. The universe is a strange and wonderful place and in his Extreme Moments, Dr Karl has scaled the highest peaks and turned over the tiniest pebbles to reveal what's underneath. Prepare to be amused and amazed as Australia's favourite science guru takes you on an excursion around a scientific landscape from the sublime moments of deep thought to the arcane and bizarre.

Friday 8 March 2019 7.00pm - 8.30pm The Grand Ballroom. The Ville Resort-Casino \$10/\$5/\$5 For ages 13+

This event will be followed by a book signing.



FUTURE CAREERS IN SCIENCE WITH DR KARL KRUSZELNICKI

Science is probably the best possible 'mental toolbox' that you can have, enabling you to change your career many times if desired. Dr Karl will discuss future careers in genetics, engineering, basic physics, computer science and the big one - your environment. Part science, part career guidance, part entertainment, and all fun. Bring your burning science questions for the Q&A!

FUTURE CAREERS IN SCIENCE WITH DR KARL KRUSZELNICKI is free thanks to support from Community James Cook University.

Friday 8 March 2019 11.30am - 1.00pm The Science Place, **James Cook University FREE ticketed event** For School Years 7-12

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REGIONAL EVENTS

IPSWICH | 16-18 MARCH 2019



STARGAZING: Ipswich

Do you ever wonder about the stars twinkling above you? This is the perfect opportunity to explore the natural luminosity of Ipswich's beautiful night sky. Brisbane Astronomical Society will provide telescopes for you to explore and identify the stars to unlock the secrets of our observable universe.

Families with young children are encouraged to book the earlier session.

Saturday 16 March 2019 6.30pm – 7.15pm and 7.30pm – 8.15pm The Workshops Rail Museum FREE ticketed event For all ages



COOL JOBS: Ipswich

The festival's ever-popular *Cool Jobs* is back to bring you face to face with amazing scientists doing amazing jobs. Learn what it takes to do some of the coolest jobs on earth and how these people inspire the world to learn and get excited about science.

Monday 18 March 2019 10.00am – 11.00am The Workshops Rail Museum School Students \$5 For School Years 5–10



STREET SCIENCE! Ipswich

In 2019 the Workshop Rail Museum will turn into a science playground with FREE immersive and family-friendly events for everyone to enjoy. Take part in a range of hands-on activities that explore everything from new technology to environmental conservation, as you discover the wonder and excitement of science.

Sunday 17 March 2019 9.30am – 3.00pm The Workshops Rail Museum FREE For all ages



SCIENCE NATION: Science Says!

Presented by The Science Nation, Science Says! is science as you've never seen it before. Join us as brilliant scientists, gifted comedians and talented communicators use their wits to uncover the top scientific discoveries. Hosted by Dr Joel – scientist, comedian and co-host of Food Lab on SBS. You're guaranteed a night of raucous fun.

Sunday 17 March 2019 6.00pm - 7.30pm The Workshops Rail Museum All tickets \$10 For ages 13+

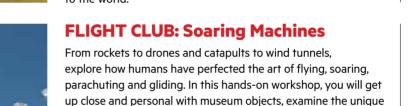
TOOWOOMBA | 22-23 MARCH 2019



FROM AUSTRALIA TO THE WORLD: The Lost Apollo Moments

Australia had a bigger role in that 'one giant leap' than most ever knew. By 1970, Australia housed a number of NASA-operated technological facilities that played a significant role in the early exploration of space. In fact, the largest number of these facilities, outside the USA, were in Australia. From Honey Suckle Creek in the ACT to Cooby Creek in Queensland, these deep space-tracking networks were instrumental in the success of several NASA missions including making sure that eager television viewers worldwide could watch Neil Armstrong's first steps on the Moon.

Learn the untold story of Australia's early contributions to the space race and hear first hand from the unsung Aussies who worked tirelessly to transmit the first signals from the moon to the world.





COOL JOBS: Toowoomba

The festival's ever-popular *Cool Jobs* is back to bring you face to face with amazing scientists doing amazing jobs. Learn what it takes to do some of the coolest jobs on earth and how these people inspire the world to learn and get excited about science.

physical properties that enable flight, and use the wonders of

man-made machines to inspire your very own winged creation.



STREET SCIENCE! Toowoomba

In 2019 Cobb+Co will turn into a science playground with FREE immersive and family-friendly events for everyone to enjoy. Take part in a range of hands-on activities that explore everything from new technology to environmental conservation, as you discover the wonder and excitement of science.



PARTICIPANTS

Kerrie Dougherty

Colin MacKellar

John Saxon

Patrick Hetherman

Friday 22 March 2019

Image credit Bruce Withey https://honeysucklecreek.net/

Friday 22 March 2019

9.30am - 10.30am

11.00am - 12.00pm

12.30pm - 1.30pm

Cobb+Co Museum

School Students \$5

For School Years 5-10

Friday 22 March 2019

10.00am - 11.00am

National Carriage

Cobb+Co Museum

Gallery.

FREE

For all ages

7.00pm - 8.30pm

\$15/\$10/\$10

Empire Church Theatre



STARGAZING: Toowoomba

Do you ever wonder about the stars twinkling above you? Come along for a night under the stars. This is the perfect opportunity to switch off and explore the natural luminosity of the Darling Down's beautiful night sky. Toowoomba Astronomy Inc. will provide telescopes for you to explore and identify the stars to unlock the secrets of our observable universe.

Saturday 23 March 2019 6.30pm – 7.00pm 7.00pm – 7.30pm 7.30pm – 8.00pm 8.00pm – 8.30pm Cobb+Co Museum FREE ticketed event For all ages

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REGIONAL EVENTS

CHINCHILLA | 29-30 MARCH 2019



PIONEERS IN SCIENCE: Chinchilla

A rare opportunity for students to interview a renowned scientist live on stage – Professor Adele Green, Senior Scientist at QIMR Berghofer Medical Research Institute, studies one of Australia's most pressing and widespread health issues: skin cancer. Her landmark 20-year study into the regular use of sunscreen was a breakthrough in cancer research.

Moderator Rob Bell invites students to ask their own questions of Professor Green live on stage.

Friday 29 March 2019 12.30pm – 2.45 pm Chinchilla Cultural Centre FREE ticketed event For School Years 7–12



COOL JOBS: Chinchilla

Come face to face with scientists doing amazing jobs and see how they carved their path to an exciting career in STEM. From medical researchers to inventive engineers, our panel of professionals will inspire students to pursue cool jobs of their own

Friday 29 March 2019 9.00am – 11.15am 10.30am – 12.45pm Chinchilla Cultural Centre FREE ticketed event For School Years 5–9



STREET SCIENCE! Chinchilla

Chinchilla Cultural Centre will become a science playground with FREE immersive and family-friendly events for everyone to enjoy. Take part in a range of hands-on activities that explore everything from new technology to environmental conservation, as you discover the wonder and excitement of science.

Saturday 30 March 2019 9.00am-4.00pm Chinchilla Cultural Centre FREE For all ages



DINOSAUR TIME MACHINE

Dinosaur Time Machine presents up to date science and discoveries about dinosaurs in a fun and highly visual way, incorporating circus, puppetry, simple narrative and imaginative play in this unique educational theatre production, aimed at children aged 3-9.

Saturday 30 March 2019 10.00am – 10.45am and 1.00pm – 1.45pm Chinchilla Cultural Centre FREE ticketed event For ages 3–9 years and their families



BLASTING THE PAST WITH SCIENCE STEVE

Learn about the world's coolest scientists, their discoveries and some of science's biggest revelations including a journey through the great scientific breakthroughs of the past 150 years.

Saturday 30 March 2019 11.30am – 12.00pm and 2.30pm – 3.00pm Chinchilla Cultural Centre FREE ticketed event For all ages



STARGAZING: Chinchilla

Do you ever wonder about the stars twinkling above you? Bring your picnic blanket and entire family to explore Chinchilla's beautiful night sky. Telescopes will be provided to discover the secrets of our observable universe with a tour of the night's sky.

Saturday 30 March 2019 6.30pm – 8.30pm Chinchilla State Primary School Oval FREE For all ages



INTERNATIONAL PARTICIPANTS



YVONNE CAGLE (USA)

Yvonne Cagle is a NASA astronaut, physician and former Colonel in the United States Air Force where she served as a Senior Flight Surgeon. Dr Cagle serves as an innovation liaison for exploration space operations and is studying how to optimise astronaut health and adaptation during multiple-year interplanetary missions.



NINA FEDOROFF (USA)

Nina Fedoroff is a molecular biologist who has published three books and more than 170 scientific papers.

She previously served as the Science and Technology Adviser to the Secretary of State, is a member of the U.S. National Academy of Sciences and a 2006 National Medal of Science laureate.



NIAMH NIC DAÉID (SCOTLAND)

Niamh Nic Daéid has been involved in forensic science education, research and casework for over 24 years, working with a wide range of scientists, judges and science communicators. She is the Director of the Leverhulme Research Centre for Forensic Science at the University of Dundee in Scotland, UK.



JONATHAN EPSTEIN (USA)

Jonathan Epstein is a veterinarian and epidemiologist. His research focuses on bat-associated emerging zoonotic viruses including Nipah, Hendra, Ebola, SARS and MERS. He is the Vice President for Science and Outreach at EcoHealth Alliance, a New York-based NGO committed to pandemic prevention.



PAUL FALKOWSKI (USA)

Paul Falkowski has worked on corals for over 40 years and heads the Environmental Biophysics and Molecular Ecology program at Rutgers University, New Jersey. He has received numerous honours, including the Tyler Prize and is a member of the US National Academy of Sciences.



THOMAS HILDEBRANDT (GERMANY)

Thomas Hildebrandt is a Professor of Wildlife Reproduction Medicine at the Free University of Berlin. His work in wildlife reproduction management has been recognised internationally with multiple accolades. Professor Hildebrandt is the current scientific advisor for the Chengdu Panda Base, Chengdu, People's Republic of China.



MICHELLE LARUE (NZ)

Michelle LaRue is a research ecologist within Gateway Antarctica at the University of Canterbury. She takes a multi-scale approach to understanding populations of penguins and seals in Antarctica. Michelle is also a passionate science communicator who hopes to make science accessible – and interesting – to everyone.



VIRGINIJUS ŠIKŠNYS (LITHUANIA)

Virginijus Šikšnys is a researcher of the CRISPR-Cas system which has had a major impact on the genome editing field. He is a member of the Lithuanian Academy of Sciences, Norwegian Academy of Science and Letters and EMBO. His work was recently recognised by winning the prestigious Kavli Prize.



ANDREW THOMAS (USA)

Andrew Thomas is an Australianborn NASA astronaut and aerospace engineer. He is the first Australian to fly in space and has flown four space shuttle missions, assisted in the assembly of the International Space Station and lived on the Russian Mir space station for 20 weeks.

PARTICIPANTS

Marwa Al-Ansary
Rachel Allavena
Katrina Allen
Andrew Amey
Katherine Andrews
Rachel A. Ankeny

Bianca **Beetson**

Rob **Bell**

Madhu **Bhaskaran**

Duan **Biggs**Mal **Bryant**David **Bunker**

Chris **Burwell**

Andrew Campbell

Christine **Charles**

David Chesworth

Steven **Chown**

Andrew Christy

Jon **Clarke**

Owen **Coffee**Timothy **Cohen**

Tony Coonan

Patrick Couper
Pip Courtney

Merlin **Crossley**

Andrew **Crowden**Robyn **Cumming**

Andrew **Dempster**

Greg **Devine**Kerrie **Dougherty**

John Doyle

Ken Dutton-Regester

Merrick **Ekins**Gwen **Fenton**Kimberly **Finlayson**

Nancy FitzSimmons

Tim **Flannery** Rebecca **Ford**

Traceylee Forester

lan Frazer
Joel Gilmore
Adam Gilmour
Cecile Godde
lan Godwin

lan **Godwin**Adele **Green**Nicholas **Hadnutt**

Mark Hamann
David Hampton
Ashraful Haque
John Healy
Craig Heraghty
Patrick Hetherman

Bernie **Hobbs**Ove **Hoegh-Guldberg**Lorelle **Holcroft**

Dietmar W. **Hutmacher**

David **Iliffe**Heather **Janetzki**Chris **Jeffery**Jeff **Johnson**

Emma Kennedy

Sara Howden

Madeleine **Kersting Flynn**

Todd Knight
Espen Knutsen
Karin Koch
Karl Kruszelnicki
Christine Lambkin
Mary-Anne Lea
Sonia Leber
David Lloyd
Rowena Long

Rowena Long
Raina MacIntyre
Jacqueline Mackay
Colin Mackellar
Alison Mann
Justin Marshall

Hamish **McCallum** Aideen **McInerney-Leo** Nigel **McMillan**

Marissa **McNamara** Dennis **McNevin**

Jess Melbourne-Thomas Natasha Mitchell

Neena Mitter
Anthony Murfett
Jonica Newby
Stacey O'Brien
Elvis Okotto

Stacey **O'Brien**Elvis **Okotto**Paul **Oliver**Andrew **Pask**Rhianna **Patrick**

Alice Payne

Hugh **Possingham**Darryl **Potter**

Chamindie Punyadeera

Rob Raven

Katherine **Reynolds** Francisca **Ribeiro**

Michael **Rix** Jillian **Roberts** Andrew **Rozefelds**

Jodie **Rummer**John **Saxon**Owen **Seeman**

Fiona **Simson**Gavin **Singleton**

Mark **Smyth** Alicia **Sometimes** John **Stanisic**

Liam **St Pierre** Beth **Strain** Norman **Swan**

Chae Swindell
Paula Tapiolas
Heidi Taylor

Kevin **Thomas**Brad **Tucker**Maiken **Ueland**Tas **van Ommen**

Madeleine van Oppen
David Wachenfeld

Nic Waddell
Andrew Watson
Sue-Ann Watson
Jonathan Webb
Jo Wilkinson
Robyn Williams
Paul Willis

Jessica Worthington Wilmer

Liz **Wren** Susan **Wright**

Kerrie Wilson

Peta-Anne **Zimmerman**

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EDUCATION PROGRAM



COOL JOBS

Gladstone

Friday 1 March 2019 9.00am - 11.15am 10.30am - 12.45pm Gladstone Entertainment Convention Centre FREE ticketed event School Years 5-9

Townsville

Friday 8 March 2019 10.00am – 11.00am James Cook University FREE ticketed event School Years 7–12

Ipswich

Monday 18 March 2019 10.00am – 11.00am The Workshops Rail Museum \$5 | School Years 5–10

Brisbane

Friday 22 March 2019 10.00am – 11.00am QPAC \$10 | School Years 5–10

Toowoomba

Friday 22 March 2019 10.00am – 11.00am Cobb+Co Museum \$5 | School Years 5–10

Chinchilla

Friday 29 March 2019 9.00am - 11.15am 10.30am - 12.45pm Chinchilla Cultural Centre FREE ticketed event School Years 5-9

PIONEERS IN SCIENCE

Gladstone

Friday 1 March 2019
12.30pm - 2.45pm
Gladstone Entertainment
Convention Centre
FREE ticketed event
School Years 10-12
Brisbane

Thursday 21 March 2019 11.30am – 12.30pm slq Auditorium 1, SLQ \$10 | School Years 9–12

Chinchilla

Friday 29 March 2019 12.30pm – 2.45 pm Chinchilla Cultural Centre FREE ticketed event School Years 10–12

FUTURE CAREERS IN SCIENCE WITH DR KARL

Townsville

Friday 8 March 2019 11.30am – 1.00pm James Cook University FREE ticketed event School Years 7–12

Brisbane

Friday 22 March 2019 1.30pm - 2.45pm Cremorne Theatre, QPAC \$10 | School Years 7-12

GREEN HEART SCHOOLS FUTURE BNE: Sustainable City Challenge

Wednesday 20 March 2019 8.00am – 2.00pm Brisbane City Hall FREE | School Year 7 only

IMMUNOLIGIST'S APPRENTICE

Wednesday 20 March – Friday 22 March 2019 QIMR Berghofer Medical Research Institute 9.30am – 11.00am and 12.30pm – 2.00pm daily \$10 | School Years 9–12

THE HATCHERY: Turtle Conservation Experience School Session

Wednesday 20 March – Friday 22 March 2019 10.00am – 11.00am 11.00am – 12.00pm 12.30pm – 1.30pm 1.30pm – 2.30pm Queensland Museum FREE | All School Years

VIRTUAL REALITY SANDBOX

Thursday 21 March – Sunday 24 March 2019 9.30am – 4.30pm daily Queensland Museum FREE

ICE ICE BABY

Thursday 21 March – Sunday 24 March 2019 9.30am – 4.30pm daily Queensland Museum FREE

NATIONAL YOUTH SCIENCE FORUM: Five Minutes With Your Future

Thursday 21 March 2019 10.00am - 11.00am 11.30am - 12:30pm 12.45pm - 1.45pm Queensland Museum FREE | School Years 10-12

MUSEUM CURATOR'S APPRENTICE: Terrestrial Biodiversity

Thursday 21 March 2019 11.30am – 1.00pm Queensland Museum \$10 | School Years 9–12

FLIGHT CLUB: Soaring Machines

Friday 22 March 2019 9.30am – 10.30am 11.00am – 12.00pm 12.30pm – 1.30pm Cobb+Co Museum \$5 | School Years 5–10

Q&A WITH DR K: Schools Show

Friday 22 March 2019 12.00pm – 1.00pm Concert Hall, QPAC \$10 | School Years 3–6

MUSEUM CURATOR'S APPRENTICE: Marine Biodiversity

Friday 22 March 2019 1.00pm – 2.30pm Queensland Museum \$10 | School Years 9–12



Today's students are tomorrow's leaders, and when it comes to a sustainable future for all, schools will help shape how they value water, their attitudes and usage.

Seqwater's H₂O Kids is an integrated educational program consisting of a suite of experiences and resources for teachers and students from Prep to Year 12. Through storytelling and inquiry-based learning, students engage with the water story, natural and urban water cycle, the role of catchments and the future of water, at their schools or at our Seqwater sites. To find out more, visit seqwater.com.au/education

Come and visit the Seqwater H2O Kids team at the Queensland Museum.





EAT & DRINK



Let's talk about your taste buds! Are you looking for a place to chill before or after an event? We have it all sorted.

The Festival Lab Garden Bar has a range of delicious food options including a kids menu. Come and relax with a meal or a glass of wine, beer or coffee. The Festival Lab Garden Bar is open Thursday to Friday.

On the move and no time to sit? We thought of you as well. Our food vendors have worked hard to find menus that are tasty, healthy and innovative. In between activities or on your way to the Osmosis Stage, how about grabbing an Einstein's Creation, a piece of pizza or a gelato?

QUEENSLAND JOHN NURMINEN EVENTS PRESENTS MANUMAN A 🕯 **ADVENTURE** 15 MARCH to 9 OCTOBER 2019 Buy tickets at qm.qld.gov.au/space #SpaceQM JUHN NURMINEN NINE NEWS

MORE INFORMATION

INFO & ENQUIRIES

Phone: 07 3842 9103

Overseas callers: +61 7 3842 9103

Website: worldsciencefestival.com.au

Queensland Museum

Corner Grey and Melbourne Streets South Brisbane, Q. 4101

TICKET SALES

Book online worldsciencefestival.com.au

QTIX Ticket Sales

Phone: 136 246

+617 3842 9505 AEST (Outside Australia)

Box Office Hours:

9:00am - 8:30pm, Monday to Saturday

Please note the Box Office is open two hours prior to a scheduled performance on Sundays.

Email: info@gtix.com.au

Queensland Performing Arts Centre Level M

Corner Grey and Melbourne Streets South Brisbane, Q, 4101

Other outlets

Ticket sales will be available at Level 2 Queensland Museum and various locations during the festival. See website for full details.

GETTING THERE

The Festival Zone is located across the river from the Brisbane CBD at the Cultural Precinct and South Bank

To Cultural Centre Busway Station

To South Brisbane Station, opposite QPAC on Grey Street

CITYCAT/FERRY

To South Bank Ferry Terminal in South Bank Parklands

TAXI

To the taxi set-down and pick-up area on either the Grey Street side of QPAC or Stanley Place outside State Library of Queensland

Via Melbourne Street, Victoria Bridge or **Grey Street**

PARKING

Riverside Carpark, QPAC enter from Stanley Street

Art Gallery/Museum Carpark and State Library of Queensland Carpark - enter from Stanley Place

Brisbane Convention & Exhibition Centre - enter from Merivale Street or Grey Street

South Bank Parklands Carpark enter from Little Stanley Street

For bus, train and citycat/ferry timetable information call TransLink on 13 12 30 or visit translink.com.au

FESTIVAL VENUES

QUEENSLAND MUSEUM (QM)

Corner Melbourne & Grey Streets, South Brisbane

QUEENSLAND PERFORMING ARTS CENTRE (QPAC)

Corner Melbourne & Grev Streets. South Brisbane

GALLERY OF MODERN ART (GOMA) CINÉMATHÈQUE

Stanley Place, South Brisbane

STATE LIBRARY OF QUEENSLAND (SLQ)

Stanley Place, South Brisbane

FESTIVAL LAB

Cultural Forecourt, South Bank Parklands

OTHER INFORMATION

PRAM STATIONS

Located on the Cultural Forecourt and at Queensland Museum Limited availability. Please do not leave valuables in unattended prams.

INFORMATION

Dedicated booths located on the **Cultural Forecourt**

FOOD OUTLETS

Located throughout the Cultural Forecourt and some festival venues

#WSFBLive

Get amongst the action with #WSFBLive Our dedicated SciComm Champions will be tweeting, posting and broadcasting live content using the hashtag #WSFBLive. Follow along and join the conversation as you discover the brave new ideas on offer at the 2019 festival.

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Like any complex chemical compound, **World Science Festival Brisbane** is a carefully curated combination of elements.

Partnerships feature prominently in these equations, as the oxygen to our propane (the critical elements of combustion). We are serious about partnerships and dedicated to developing genuine relationships premised on shared vision, clearly articulated outcomes and measurable, mutually rewarding impact in STEM.

If you are serious about partnerships, and want to take a leadership role in STEM engagement, contact us on +61 (7) 3842 9344 or email wsfbpartners@qm.qld.gov.au to discuss the opportunities available.

Together, we can make a spark.





