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in Queensland

# World Science Festival Brisbane

9 – 13 MARCH 2016  
[worldsciencefestival.com.au](http://worldsciencefestival.com.au)

## MEDIA KIT

STRATEGIC  
PARTNERS



**brisbane**  
australia's new world city



ACADEMIC  
PARTNERS



STREET  
SCIENCE  
PARTNER



PRESENTED BY



# WORLD SCIENCE FESTIVAL BRISBANE

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# WORLD SCIENCE FESTIVAL BRISBANE

## ABOUT THE FESTIVAL

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### WORLD SCIENCE FESTIVAL NEW YORK

The World Science Festival was founded in New York in 2008 by world-renowned physicist and best-selling author Brian Greene and award-winning journalist Tracy Day as an annual week-long celebration and exploration of science.

Through gripping debates, original theatrical works, interactive explorations, musical performances, intimate salons, and major outdoor experiences, the festival takes science out of the laboratory and into the streets, parks, museums, and premier performing arts venues of New York City.

Now an annual highlight in the city's calendar, the World Science Festival attracts leading scientists, artists and influential thinkers from all over the world, drawing more than a million and a half visitors since its launch, with millions more viewing the festival programs online. The World Science Festival's original musical and theatrical works tour nationally and internationally. The World Science Festival Brisbane is the first full World Science Festival to be held outside of New York.

The World Science Festival is a production of the World Science Foundation, a not-for-profit organisation headquartered in New York City. The Foundation's mission is to cultivate a general public informed by science, inspired by its wonder, convinced of its value, and prepared to engage with its implications for the future.

### WORLD SCIENCE FESTIVAL BRISBANE

Exclusive rights have been granted to the Queensland Museum to present the event in the Asia-Pacific region for the next six years.

The inaugural World Science Festival Brisbane will bring some of the world's greatest thought leaders to Queensland, showcase local scientists and performers from around the Asia-Pacific region, and host the brightest and the best from previous events in New York.

The inaugural World Science Festival Brisbane will take place over four days and five nights across the South Bank Cultural Precinct from Wednesday 9 to Sunday 13 March 2016.

Stakeholders from private and public industries are partnering with the Queensland Museum to support the World Science Festival Brisbane in its inaugural year including Queensland Government, Tourism and Events Queensland, Brisbane Marketing, Griffith University, QUT, The University of Queensland, BHP Billiton, Department of Science, Information Technology and Innovation, ABC and ABC Radio National, QGC, Arup, Google, Department of Environment and Heritage Protection, Inspiring Australia, QAGOMA, QPAC, if:Book Australia, South Bank Parklands, State Library of Queensland, Accor, Black and White Cabs, Singapore Airlines, Virgin Australia and Sirromet.

# WORLD SCIENCE FESTIVAL BRISBANE

## ABOUT THE FESTIVAL

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### FESTIVAL MEDIA CONTACTS

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### SCHEDULING INTERVIEWS

A full list of participants and their brief bios are attached as an appendix to this media kit.

Festival participants are available for interview prior to and during the festival. Please note that their schedules vary - including the time each will spend in Brisbane.

To arrange interviews with festival participants please contact the media team on the phone numbers above or email [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

### ACCESS TO WORLD SCIENCE FESTIVAL BRISBANE

We will not be running an official media accreditation program in this inaugural year.

Access for journalists, crews and vehicles to events and public and staging areas, media calls, talent interviews and all other media assistance and liaison will be coordinated by the World Science Festival Brisbane media team.

The festival will be run in multiple venues across the Brisbane Cultural Precinct so please contact the team before arriving on site – they are available 24 hours a day over the period of the festival and are there to assist you in any way they can.

### ATTENDING TICKETED EVENTS

Media representatives are welcome to attend all events in the festival and a limited number of seats have been reserved for media at each ticketed event.

Please contact the media team to reserve tickets.

### FACILITIES

A media room with internet access will be set up on level five of the Queensland Museum during the festival.

There will also be a quiet space available if necessary for interviews.

Limited parking in the museum car park is available for media representatives on request.

Please contact the media team to access these facilities.

# WORLD SCIENCE FESTIVAL BRISBANE

## MEDIA RELEASE

February 2016

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From the Streets of New York to the banks of the Brisbane River, the World Science Festival Brisbane is coming to town with a big-thinking, high-energy, supercharged celebration of science across five days from 9-13 March.

More than 100 scientific luminaries from nine countries will gather for the inaugural World Science Festival Brisbane at venues across the Cultural Precinct and South Bank.

Some of science's brightest stars making special appearances at the festival include Emmy award-winning actor, author, science enthusiast and World Science Festival board member **Alan Alda**; Nobel Laureate physicist **Brian Schmidt**; pioneering marine biologist **Sylvia Earle**; celebrated astronaut **Andy Thomas**; renowned physicist, best-selling author and festival co-founder **Brian Greene**, and many more.

"When people realise that there's so much more to science than what's in the textbooks, science comes alive. That's a life-changing experience. And that's what the World Science Festival is all about," said Brian Greene.

"We are thrilled to join the Queensland Museum in bringing this experience to Brisbane."

Queensland Premier Anastacia Palaszczuk said the World Science Festival Brisbane would focus on new ideas, technologies, challenges and innovative solutions.

"The festival will take science out of the laboratory and engage Queenslanders in museums, galleries and performing arts venues," the Premier said.

"My government supports the inaugural World Science Festival Brisbane as a drawcard for locals and visitors, showcasing our state and reinforcing Queensland's reputation as a destination for world-class events.

"The festival delivers against the government's Advance Queensland initiative, putting Queensland at the forefront of innovation in an era of unprecedented global technological change," the Premier said.

Big thinkers from across the scientific spectrum will debate the latest discoveries and breakthroughs in topics ranging from deep space to deep oceans, the search for alien life, madness and creativity, sports science and ethics, engineering, design, maths, physics, dinosaurs, robots, comets, genetics, science fiction, reality, and technologies of the future.

Queensland Museum Network CEO and Director, Professor Suzanne Miller said the festival will bring science to life with a program that delivers something for everyone to enjoy.

"The festival will showcase the very best science and scientists from around the globe through an incredible array of events where there will truly be something for everyone from free, hands-on street science to the world's experts leading discussions and debates tackling the big questions facing us.

"Queensland Museum is incredibly proud to be presenting this world-renowned event here in our own back yard, giving us the opportunity to showcase the very best research taking place right here in Queensland."

Prof. Miller said the program features a mix of day and evening activities including live performances, big debates, intimate discussions, workshops, films, and hands-on demonstrations.

“We want everyone talking, doing and enjoying science!” she said.

Tracy Day, Co-Founder and CEO of the World Science Festival remarked, “By recasting science with art, music and story, we’re shifting science toward the centre of culture. We’re touching all those people who love the arts but run the other way, when it comes to science.

“Presenting both *Light Falls* and *Dear Albert* at the inaugural festival in Brisbane offers a rare chance to encounter not just the scientific discoveries, but the dramatic journey and fascinating, complicated life of Albert Einstein. We couldn’t be happier that the Asia-Pacific premiere of these two theatrical works will take place at the first World Science Festival Brisbane.”

Lord Mayor Graham Quirk said Australia’s New World City was a centre of innovation in the Asia-Pacific and proud to host the World Science Festival Brisbane.

“Australia’s New World City and the World Science Festival Brisbane are perfect partners to showcase world-leading innovation and scientific endeavours,” Cr Quirk said.

“Brisbane is a great place to live, work and relax – it’s why we’re emerging as Australia’s New World City.

“Brisbane is an influential research hub specialising in many fields, including life sciences, food and agribusiness, energy and resources and advanced manufacturing.

“The World Science Festival Brisbane is an exciting opportunity for the city and to be the first host outside New York shows we have a lot to offer in the science space.”

Over 100 events (free and ticketed) make up the World Science Festival Brisbane program from Wednesday 9-Sunday 13 March 2016. Highlights include:

- Celebrating the recent 100<sup>th</sup> Anniversary of Einstein’s General Theory of Relativity, two premiere performances and a deep dive into the science, impact and unresolved mysteries of Einstein’s most profound discovery:
  - **Light Falls** - a new theatrical work featuring festival co-founder **Brian Greene** and an ensemble cast; written by Greene and created with **composer Jeff Beal (“House of Cards”)** and the 2015 Tony-award winning team from **59 Productions (An American in Paris)**;
  - **Dear Albert** - a reading for the stage written by **Alan Alda**, featuring **Jason Klarwein** as Albert Einstein, with **Anna McGahan** and **Christen O’Leary**;
  - **Relativity Since Einstein** - an illuminating exploration of Einstein’s ground-breaking insights, moderated by Greene and featuring a line-up of top thinkers in the field.
- **Street Science!** - a free two-day extravaganza for the whole family featuring everything from live turtle hatching, drones, coding workshops and robot combat to gastronomic demonstrations, taxidermy exhibitions and science-adventure storytelling
- **New York Signature Events:** The line-up for the inaugural WSF Brisbane includes six Signature Events straight from New York. Provocative, entertaining and accessible, these fast-paced programs explore ground-breaking discoveries, cutting-edge science and the latest technological innovations, guided by leading thinkers from around the world, including:
  - **Dawn of the Human Age** - are we entering a new geological epoch: the Human Age?

- **Alien Life: Will We Know It When We Find It?** Scientists across disciplines -astronomers, astrophysicists, and astrobiologists - are intensely studying the evolution of life on Earth and listening for signals from outer space to help identify life in the universe.
- **The Moral Math of Robots** - Can machines learn right from wrong? As the first generation of driverless cars and battlefield warbots filter into society, scientists are working to develop moral decision-making skills in robots. Break or swerve? Shoot or stand down?
- Diverse and uniquely fascinating events for general audiences and students that showcase scientists, researchers, philosophers, artists, authors, inventors and more, exploring and debating questions about the universe, our changing world, and the role science plays in some of the most urgent issues of our time. Including:
  - **Can We Save our Reefs in Time?** – Global ideas that may help preserve our amazing natural reefs are on the agenda when leading experts discuss revolutionary scientific measures that could assist marine scientists and biologists determine exactly what’s happening to the Great Barrier Reef, and indeed reefs all over the world.
  - **Chasing Down the Comet** – landing a spacecraft on a comet at 40,000 kmph, with scientists from the European Space Agency and NASA who actually did it.
  - **Catching up with the Jetsons: Cities in 2050** – world renowned scientists, urban planners, and futurists consider the future of the city.
  - **The Martian** film and talk – a once in a lifetime opportunity hear an astronaut and a NASA scientist discuss whether the blockbuster movie gets the science right, with Andy Thomas and Pamela Conrad.
- Salon events that dive deeper into the science of specific topics with informal discussions challenging participants to consider their shared passions from a fresh perspective.
- Hands-on workshops where budding scientists can spend time with working scientists, learning about their fascinating work in fields as diverse as genetics, art conservation, biology, the environment, ichthyology, game design, zoology, palaeontology, robotics and sports engineering.

**View the full program at the World Science Festival Brisbane website - the one-stop-shop for all program and ticketing information at [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)**

The World Science Festival was co-founded by physicist and author Brian Greene and award-winning journalist Tracy Day in New York in 2008.

Exclusive rights have been granted to Queensland Museum to present the event in the Asia-Pacific region for the next six years.

Stakeholders from private and public industries are partnering with the Queensland Museum to support the World Science Festival Brisbane in its inaugural year including Queensland Government, Tourism and Events Queensland, Brisbane Marketing, Griffith University, QUT, The University of Queensland, BHP Billiton, Department of Science, Information Technology and Innovation, ABC and ABC Radio National, QGC, Arup, Google, Department of Environment and Heritage Protection, Inspiring Australia, QAGOMA, QPAC, if:Book Australia, South Bank Parklands, State Library of Queensland, Accor, Black and White Cabs, Singapore Airlines, Virgin Australia and Sirromet.

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# WORLD SCIENCE FESTIVAL BRISBANE

## PROGRAM 2016

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WEDNESDAY 9 MARCH

Event type	Name	Time	Tickets	Location
Family	Queensland Museum hosting demonstrations of Bioluminescent Bacteria and Taxidermy	9.30am-5pm	Free	Queensland Museum
Conversations and Talks	FameLab	10am-4pm	Free	Queensland Museum
Film	Ex Machina - Film Festival Mind Vs Machine: What makes us Human?	6-8pm	Ticketed	Cinematheque GOMA
Film	The Matrix - Film Festival Mind Vs Machine: What makes us Human?	8-10pm	Ticketed	Cinematheque GOMA
Performance	Light Falls: Space, Time and an Obsession of Einstein - opening night premiere	8-9:30pm	Ticketed	Playhouse QPAC

# WORLD SCIENCE FESTIVAL BRISBANE

## PROGRAM 2016

### THURSDAY 10 MARCH

Event type	Name	Time	Tickets	Location
Family	Queensland Museum hosting demonstrations of Turtle Hatching, Bioluminescent Bacteria and Taxidermy	9:30am-5pm	Free	Queensland Museum
Education	Mighty Makers	10am-4pm	Ticketed	INVENTory Queensland Museum
Family/Film	Cool Jobs	10-11am 1-2pm	Ticketed	Plaza Auditorium BCEC
Film	Kids Cinema	10am-2pm	Free	Playsaurus Place Queensland Museum
Conversations and Talks	Pioneers in Science - Sylvia Earle	10-11:30am	Free (by invitation)	Queensland Museum Theatre
Kids	Atomic Kids	10-11:30am 12:30-2pm	Ticketed	Sciencentre Queensland Museum
Conversations and Talks	Can we Save our Precious Reefs in time?	12:30-2pm	Ticketed	Conservatorium Theatre Griffith University
Workshops	ARS Electronica Futurelab's Shared Space Bots	3:30-4pm 4:40-5:10pm	Free	Gardens Theatre Foyer QUT
Conversations and Talks	Last Days of Mephisto: Forensic and Ballistic Science	3.30-4:30pm	Free	Queensland Museum Theatre
Conversations and Talks	Playing for Time: Music and Memory	6-7:30pm	Ticketed	Conservatorium Theatre Griffith University
Salons	The First Scientists: Aboriginal Science	6-7pm	Ticketed	Queensland Museum Theatre
Conversations and Talks	Discovering the Deep	6-7.30pm	Ticketed	Cinema B, GOMA,
Signature Event	Dawn of the Human Age	8-9:30pm	Ticketed	Plaza Auditorium BCEC
Performance	Light Falls: Space, Time and an Obsession of Einstein	8-9:30pm	Ticketed	Playhouse QPAC
Salons	The Rosetta Rendezvous	8-9pm	Ticketed	Queensland Museum Theatre
Festival Lab	Cosmic Nomad	8:30-9:20pm	Ticketed	Festival Lab

# WORLD SCIENCE FESTIVAL BRISBANE

## PROGRAM 2016

### FRIDAY 11 MARCH

Event type	Name	Time	Tickets	Location
Conversations and Talks	Breakfast with the Brians	8:15-10am	Ticketed	Plaza Auditorium BCEC
Family	Queensland Museum hosting demonstrations of Turtle Hatching, Bioluminescent Bacteria and Taxidermy	9:30am-5pm	Free	Queensland Museum
Education	Mighty Makers	10am-4pm	Ticketed	INVENTory Queensland Museum
Workshops	ARS Electronica Futurelab's Shared Space Bots	11:30am-12noon 1:30-2pm 3:30-4pm	Free	Gardens Theatre Foyer QUT
Film	Documentary Double: Mathematics	10am-12noon	Ticketed	Auditorium 2 State Library of Queensland
Film	Kids Cinema	10am-4pm	Free	Playsaurus Place Queensland Museum
Conversations and Talks	Pioneers in Science - Andy Thomas	10-11:30am	Ticketed	Queensland Museum Theatre
Kids	Atomic Kids	10-11:30am 12:30-2pm	Ticketed	Sciencentre Queensland Museum
Performance	Dear Albert (Friday Matinee)	11am-12:15pm	Ticketed	Playhouse QPAC
Education	Green Heart Schools	8am – 3pm	Free	King George Square
Signature Event	To Infinity and Beyond: The Accelerating Universe	11:30am-1pm	Ticketed	Plaza Auditorium BCEC
Conversations and Talks	Chasing Down the Comet	12:30-2pm	Ticketed	Conservatorium Theatre Griffith University
Salons	Alzheimer's: Don't forget your genes	1pm-2.30pm	Ticketed	Queensland Museum Theatre
Film	Documentary Double: Space	2-4pm	Ticketed	Auditorium 2 State Library of Queensland
Salons	Shining New Light on Dark Matter	4-5.30pm	Ticketed	Queensland Museum Theatre

Festival Lab	Bucking the sySTEM	1-6:30pm	Invite	Festival Lab
Salons	Robots: The new Eco Warriors	8-9:30pm	Ticketed	Queensland Museum Theatre
Family	Great Moments in Science with Dr Karl	5-6pm	Ticketed	Plaza Auditorium BCEC
Film	eXistenZ - Film Festival Mind Vs Machine: What makes us Human?	6-8pm	Ticketed	Cinematheque GOMA
Family/Film	Outdoor Family Film Festival <ul style="list-style-type: none"> <li>• Fern Gully</li> <li>• Racing Extinction</li> </ul>	6.30-10pm	Free	Cultural Forecourt
Evening at Festival Lab	Let's Get Quizzical with Dr Karl	7pm-9pm	Ticketed	Festival Lab
Film	Her - Film Festival Mind Vs Machine: What makes us Human?	7.45-9:30pm	Ticketed	Cinematheque GOMA
Conversations and Talks	Under the Microscope	7:30-9:30pm	Ticketed	Conservatorium Theatre Griffith University
Performance	Dear Albert (includes post-show discussion with Alan Alda and Brian Greene)	8-9:30pm	Ticketed	Playhouse QPAC

# WORLD SCIENCE FESTIVAL BRISBANE

## PROGRAM 2016

### SATURDAY 12 MARCH

Event type	Name	Time	Tickets	Location
Family	Queensland Museum hosting demonstrations of Turtle Hatching, Bioluminescent Bacteria and Taxidermy	9:30am–5pm	Free	Queensland Museum
Family	Street Science!	10am-4pm	Free	Cultural Forecourt
Family	Dr Karl for Kids: Dr Karl has the answers when Mum and Dad don't...	10am-11am	Ticketed	Festival Lab
Family/Film	Kids Cinema	10-2pm	Free	Playsaurus Place Queensland Museum
Workshops	Sports Engineer's Apprentice	10-11:30am	Ticketed	Griffith University
Workshops	Marine Biologist's Apprentice	10-11:30am	Ticketed	Queensland Museum
Workshops	Bioengineer's Apprentice	10-11:30am	Ticketed	TRI
Workshops	Art Conservator's Apprentice	10-11:30am	Ticketed	GOMA
Workshops	Geneticist's Apprentice	10-11:30am	Ticketed	QIMR Berghofer
Workshops	Palaeontologist's Apprentice	10-11:30am	Ticketed	UQ
Workshops	Marine Zoologist's Apprentice	10-11:30am	Ticketed	UQ
Workshops	Environmental Scientist's Apprentice	10-11:30am	Ticketed	South Bank Parklands
Salons	1.5 Degrees of Separation	10-11:30am	Ticketed	Queensland Museum Theatre
Workshops	Game Designer's Apprentice	10am-12noon	Ticketed	QUT
Workshops	Robotocist's Apprentice	10am-12noon	Ticketed	QUT
Workshops	ARS Electronica Futurelab's Shared Space Bots	10:30-11am 11.30am-12pm 3.30-4pm 4.30-5pm	Workshops	ARS Electronica Futurelab's Shared Space Bots
Family	Atomic Kids	10:30am-12noon	Kids	Atomic Kids
Signature Event	Madness Redefined: Creativity, Intelligence and the Dark Side of the Mind	12-1:30pm	Ticketed	Plaza Auditorium, BCEC

Conversations and Talks	Where Worlds Collide: Science, Values and Etthics	12-1:30pm	Ticketed	Conservatorium Theatre Griffith University
Workshops	Robotocist's Apprentice	1-3pm	Ticketed	QUT
Workshops	Quantum Physicist's Apprentice	1-3pm	Ticketed	Griffith University
Workshops	Game Designer's Apprentice	1-3pm	Ticketed	QUT
Workshops	Fish Doctor's Apprentice	1:30-3pm	Ticketed	Queensland Museum
Workshops	Cancer Biologist's Apprentice	2-3:30pm	Ticketed	TRI
Workshops	Microbiologist's Apprentice	2-3:30pm	Ticketed	QIMR Berghofer
Performance	Dear Albert (Saturday matinee)	2-3.15pm	Ticketed	Playhouse, QPAC
Film	Documentary Double: Mind	2-4pm	Ticketed	Auditorium 2 State Library of Queensland
Film	The Stanford Prison Experiment	3-5pm	Ticketed	GOMA Cinema A
Salons	Winning Ways: The use and abuse of performance enhancing technologies	12.30-2pm	Ticketed	Queensland Museum Theatre
Salons	Wired for Genius: The roots of creativity in artists and machines	3-4.30pm	Ticketed	Queensland Museum Theatre
Conversations and Talks	Going with the Floe: The changing shape of sea ice	4-5:30pm	Ticketed	Conservatorium Theatre Griffith University
Salons	Intelligent Alien Life: Little green men or machines?	5.30-7pm	Ticketed	Lecture Theatre Queensland Museum
Conversations and Talks	Science and Story: Getting it write	6-7:30pm	Ticketed	Auditorium State Library of Queensland
Salons	Earth's Evolution: Lessons from the cosmos	8-9.30pm	Ticketed	Queensland Museum Theatre
Family/Film	Outdoor Family Film Festival <ul style="list-style-type: none"> <li>• Wall-e</li> <li>• The Man who Fell to Earth</li> </ul>	6.30-11pm	Free	Cultural Forecourt
Signature Event	Reality Since Einstein	8-9:30pm	Ticketed	Plaza Auditorium BCEC
Conversations and Talks	The Thomas Conservation Oration 2016	8-9:30pm	Ticketed	Festival Lab
Salons	Evolution: Lessons from the Cosmos	8-9:30pm	Ticketed	Queensland Museum Theatre

# WORLD SCIENCE FESTIVAL BRISBANE

## PROGRAM 2016

SUNDAY 13 MARCH

Event type	Name	Time	Tickets	Location
Family	Queensland Museum hosting demonstrations of Turtle Hatching, Bioluminescent Bacteria and Taxidermy	9:30am-5pm	Free	Queensland Museum
Family	Street Science!	10am-4pm	Free	Cultural Forecourt and Queensland Museum
Family/Film	Kids Cinema	10am-2pm	Free	Queensland Museum
Film	Science and Islam	11am-2pm	Free	Cinematheque GOMA
Workshops	ARS Electronica Futurelab's Shared Space Bots	10:30-11am 11:30am-12noon 1:30-2pm 3:30-4pm	Free	Gardens Theatre Foyer QUT
Kids	Atomic Kids	10:30am-12noon 1-2:30pm	Ticketed	Sciencentre Queensland Museum
Salons	Make Way for Warbots?	11am-12pm	Ticketed	Queensland Museum Theatre
Signature Event	Alien Life: Will We Know it When We Find it?	12-1:30pm	Ticketed	Plaza Auditorium BCEC
Film	Bladerunner - Film Festival Mind Vs Machine: What makes us Human?	3-5pm	Ticketed	Cinematheque GOMA
Film and discussion	The Martian - Film and Panel Discussion with Andy Thomas and Pam Conrad	3-6:30pm	Ticketed	Playhouse QPAC
Salons	From Simplicity to Complexity: Complex Systems across Science	3-4.30pm	Ticketed	Queensland Museum Theatre
Signature Event	The Moral Math of Robots	4-5:30pm	Ticketed	Plaza Auditorium BCEC
Conversations and Talks	Catching up with The Jetsons: Cities in 2050	4-5:30pm	Ticketed	Conservatorium Theatre Griffith University

### Light Falls: Space, Time and an Obsession of Einstein

Brian Greene and an ensemble cast perform this new theatrical work tracing Albert Einstein's electrifying journey toward one of the most beautiful ideas ever conceived—the General Theory of Relativity.

With state-of-the-art animation and innovative projection techniques, Light Falls illuminates Einstein's breakthrough moments, near misses, agonising frustrations, and final emergence into the light, as one intrepid mind took on the universe...and won.

Written by Brian Greene

Composed by Jeff Beal

Design by 59 Productions

Directed by Scott Faris

- **Brian Greene** - Professor of physics and mathematics at Columbia University, and is recognised for a number of ground-breaking discoveries in superstring theory. His books have earned him a place on the New York Times bestseller list; a finalist position for the Pulitzer Prize; and a reputation as being the 'single best explainer of abstruse ideas in the world today'. Brian has appeared on top rating television shows, and has won Emmy and Peabody awards for his NOVA TV specials. Greene is co-director of Columbia's Institute for Strings, Cosmology, and Astroparticle Physics (ISCAP); and is the co-founder of the World Science Festival.
- **Carl Howell** – Actor and musician whose theatre credits include the Tony Award-winning Peter and the Starcatcher (first national US tour). Off-Broadway, Howell has appeared in Twelfth Night (The Pearl Theatre Co.) and The Land Whale Murders. His regional credits include A Midsummer Night's Dream (Repertory Theatre of St. Louis), Romeo and Juliet, Love's Labour's Lost, Cymbeline, Twelfth Night (all with Hudson Valley Shakespeare Festival), and A Midsummer Night's Dream (HVSF and Cape Cod Symphony Orchestra).
- **Angela Janas** - New York-based actor who has toured nationally with the critically acclaimed Acting Company, playing Ophelia in both Hamlet and Rosencrantz and Guildenstern are Dead, and Lady Macbeth in Macbeth. Her other credits include: A Connecticut Yankee in King Arthur's Court (The Acting Company), Romeo and Juliet, The Three Musketeers, King Lear (Hudson Valley Shakespeare Festival), In Game or Real (Guthrie Studio), and Arcadia (Nevada Conservatory Theatre).
- **Michael Winther** - Broadway credits include 33 Variations, Mamma Mia!, 1776, The Crucible, Artist Descending a Staircase, and Damn Yankees. Other credits include the Pulitzer Prize-winning musical Next to Normal, at Baltimore/Centerstage; Rooms of Light at Peak Performances; Songs From An Unmade Bed at SubCulture, NYC; Tectonic's The Laramie Project Cycle at BAM; My Coma Dreams in NYC, Berlin, and San Francisco; Merrily We Roll Along at City Center Encores!

Light Falls: Space, Time and an Obsession of Einstein is a World Science Festival Signature Event direct from New York.

World Science Festival Brisbane is five action-packed days of science at its best, featuring more than a hundred public events and big thinkers from across the globe.

The World Science Festival was founded in New York in 2008 and exclusive rights have been granted to the Queensland Museum to present the event in the Asia-Pacific region.

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# WORLD SCIENCE FESTIVAL BRISBANE

## MEDIA BACKGROUNDER

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### Media contacts:

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**Christine Robertson** +61 7 3840 7789 | 0417 741 710

**email:** [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

### Event information:

There will be two performances of Light Falls: Space, Time and an Obsession of Einstein over the course of the World Science Festival Brisbane:

**When:** Wednesday, 9 March 2016

**Where:** Playhouse, QPAC

**Duration:** 8 - 9.30pm

**Tickets and bookings:** Adult \$89 | Concession \$69 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

**Additional information:** This performance of Light Falls: Space, Time and an Obsession of Einstein is the opening event of the 2016 World Science Festival Brisbane.

**When:** Thursday, 10 March 2016

**Where:** Playhouse, QPAC, Cnr Melbourne and Grey Streets, South Brisbane

**Duration:** 8-9.30pm

**Tickets and bookings:** Adult \$89 | Concession \$69 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Dear Albert

Dear Albert, written by Alan Alda and performed by an ensemble cast, delves into Albert Einstein's personal correspondence, tracing an intimate and unfamiliar line across his life and work.

Unquestionably one of the greatest – if not the greatest – minds of the 20<sup>th</sup> century, Einstein was as celebrated for his wit as for his Theory of Relativity.

The reading humanises a giant in the pantheon of great scientists and sheds light upon his momentous scientific insights through first-hand accounts of his ground-breaking discoveries.

Dear Albert will be performed by an ensemble cast. Exclusively on Friday night following the performance, Alan Alda will be joined on stage by Brian Greene to discuss the life and work of Albert Einstein.

**Alan Alda** - Seven-time Emmy Award winner best known for his leading role in M\*A\*S\*H, has starred in, written, and directed many films; hosted scientific television series; won the 2010 Kavli Science Journalism Award; and was nominated for an Academy Award for his role in The Aviator. He has won a suite of awards for his public service to science, and is currently a visiting Professor at Stony Brook University's Alan Alda Center for Communicating Science.

**Brian Greene** - Professor of physics and mathematics at Columbia University, Greene is recognised for a number of ground-breaking discoveries in superstring theory. His books have earned him a place on the New York Times bestseller list; a finalist position for the Pulitzer Prize; and a reputation as being the 'single best explainer of abstruse ideas in the world today.' Greene has appeared on top rating television shows, and has won Emmy and Peabody awards for his NOVA TV specials. Greene is co-director of Columbia's Institute for Strings, Cosmology, and Astroparticle Physics (ISCAP); and is the co-founder of the World Science Festival.

#### Ensemble Cast

- Jason Klarwein
- Anna McGahan
- Christen O'Leary

**Directed** by Sean Mee

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### Event information:

There will be three performances of Dear Albert over the course of the World Science Festival Brisbane:

**When:** Friday 11 March, 2016 Matinee Performance

**Where:** Playhouse, QPAC, Cnr Melbourne and Grey Streets, South Brisbane

**Duration:** 11am-12:15pm

**Tickets and bookings:** Adult \$35 | Concession \$30 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

**Additional information:** This staged reading will be performed by an ensemble cast.

**When:** Friday 11 March, 2016

**Where:** Playhouse, QPAC, Cnr Melbourne and Grey Streets, South Brisbane

**Duration:** 8-9.30pm

**Tickets and bookings:** Adult \$60 | Concession \$50 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

**Additional information:** This staged reading will be performed by an ensemble cast, and post-performance Alan Alda will be joined on stage by Brian Greene to discuss the life and work of Albert Einstein.

**When:** Saturday 12 March, 2016

**Where:** Playhouse, QPAC, Cnr Melbourne and Grey Streets, South Brisbane

**Duration:** 2-3.15pm

**Tickets and bookings:** Adult \$35 | Concession \$30 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

**Additional information:** This staged reading will be performed by an ensemble cast.

### Dawn of the Human Age

Over millennia, has humankind evolved into the strongest force of nature on earth – far more powerful than a meteor strike or earthquake? That’s the starting point for a robust discussion among an international and multidisciplinary team of scientists as we look to classify our current geological era as ‘The Human Age’.

An international line up of biologists, oceanographers, climatologists and an award winning journalist will gather to explore the evidence of what will likely be termed The Human Age – and what the implications might be for future civilisations.

Our damming of watercourses, construction of massive cities of cement and steel, mining the earth for minerals and layering our atmosphere and landscape with toxic gases and radiation – the true impact of our way of life will be forever imprinted in the earth’s crust.

Featuring:

- **Sylvia Earle** - National Geographic Society Explorer-in-Residence, pioneering oceanographer, author and lecturer
- **Lesley Hughes** - Climate change researcher, Professor of Biology at Macquarie University
- **Will Steffen** - Climate Council of Australia councillor and former executive director of the International Geosphere-Biosphere Programme in Stockholm
- **Michael Shellenberger** - Author, environmental policy expert, and cofounder of Breakthrough Institute
- **John Hockenberry (Moderator)** - Three-time Peabody Award winner, four-time Emmy Award winner, and Dateline NBC correspondent

*Dawn of the Human Age* is a World Science Festival Signature Event direct from New York.

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**email:** [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

### Event information:

**When:** Thursday 10 March, 2016

**Where:** Plaza Auditorium, Brisbane Convention & Exhibition Centre, Grey Street South Brisbane

**Duration:** 8-9:30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

## To Infinity and Beyond: The Accelerating Universe

It's modern cosmology's biggest mystery – an unexplained energy that one day could rip the universe apart. It's called dark energy, an anti-gravitational force that confounds the conventional laws of physics. It's the most dominant substance in our universe, comprising nearly two-thirds of the cosmos.

Two decades after its discovery, the scientific world still knows very little about dark energy, and the quest to explain dark energy's existence and purpose is currently being studied by the world's top scientists, including cosmologists, physicists and astronomers.

Join experts as they search for clues to solve cosmology's most vexing puzzle, featuring:

- **Josh Frieman** - Professor of Astronomy and Astrophysics and scientist at USA's Fermi National Accelerator Laboratory ; Director of the Dark Energy Survey
- **Priya Natarajan** - Professor in the Departments of Astronomy and Physics at Yale University
- **Sean Carroll** - Theoretical physicist from the California Institute of Technology
- **Brian Schmidt** - Nobel prize winning Astrophysicist & Vice-Chancellor from Australian National University
- **Robyn Williams (moderator)** - journalist and broadcaster

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### Event information:

**When:** Friday, 11 March, 2016

**Where:** Plaza Auditorium, Brisbane Convention and Exhibition Centre, Grey St South Brisbane

**Duration:** 11.30am-1pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

## Madness Redefined: Creativity, Intelligence and the Dark Side of the Mind

Virginia Woolf, John Keats, Emily Dickinson, Edgar Allen Poe - teetering on the thin line between madness and genius, they contributed to the world some of the greatest works of literature at the cost of their own mental vitality. Even they suspected a link between the moments of crystal clear lucidity amongst their disordered emotions. Now science is proving them right.

Research shows that bipolar disorder and schizophrenia correlate with high creativity and intelligence, raising tantalising questions: What role does environment play in the path to mental illness? Are so-called mental defects being positively selected for in the gene pool? Where's the line between gift and disorder?

As studies mount supporting the storied link between special aptitudes and mental illnesses, science is re-examining the shifting spectrum between brilliance and madness.

Join our global experts as they untangle the complicated nature of genius, creativity, and exceptionalism.

Featuring:

- **Nancy C Andreasen** - Pioneer in the study of the association between creativity and mood disorders and Chair of Psychiatry at the University of Iowa. Nancy is currently conducting a major study of creativity in prominent artists and scientists using neuroimaging techniques
- **Kári Stefánsson** - Icelandic Professor of Neurology, Neuropathology and Neuroscience. He was chosen by Newsweek as one of the 10 most important biologists of the 21st century
- **Simon Kyaga** - Physician in psychiatry and researcher. Simon was part of the research group that conducted the largest study ever on the association between creativity and psychiatric disorder involving more than one million patients
- **Neil Cole** - Associate Professor at the University of Melbourne based at the Florey Institute For Neuroscience and Mental Health, a staunch advocate for those suffering from mental health issues, and an award-winning playwright and author
- **John Hockenberry (Moderator)** - Peabody Award Winning journalist and NBC correspondent

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### Event information:

**When:** Saturday, 12 March, 2016

**Where:** Plaza Auditorium, Brisbane Convention and Exhibition Centre, Grey Street South Brisbane

**Duration:** 12-1.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Reality Since Einstein

Never has a scientist captured the world's imagination like Albert Einstein. His dishevelled hair and mischievous grin are instantly recognisable to children and adults the world over.

But it was his revolutionary concept of gravity that opened our eyes to the true nature of the universe. Fresh off the 100 Anniversary of Einstein's Theory of Relativity, we examine its essential insights, the lingering questions that remain unanswered, the latest work fuelled by the theory, and the allied fields of research that have resulted from it.

World-renowned leaders in theoretical physics, cosmology, black holes and unification discuss Einstein's ten-year odyssey and the ideas and discoveries that it has generated.

Featuring:

- **Tamara Davis** - A prize-winning Professor of astrophysics at University of Queensland, Tamara observes space in order to learn more about the physics of the world we live in including the nature of gravity, spacetime, and the fundamental laws of physics
- **Brian Greene (Moderator)** - Professor of Physics and Mathematics at Columbia University, and director of Columbia's Centre for Theoretical Physics. He is recognised for a number of ground breaking discoveries in mathematical physics and superstring theory
- **Samir Mathur** - Physicist who has spent over two decades working on the black hole information paradox. He is now applying his insights to understanding the singularity at the origin of the Universe—the Big Bang
- **Norna Robertson** - Lead scientist with the Laser Interferometric Gravitational-Wave Observatory in California, Norna has worked in the field of gravitational wave detection for more than 35 years
- **Michael Turner** - Theoretical astrophysicist who helped pioneer the interdisciplinary field of particle astrophysics and cosmology, and his contributions include predicting cosmic acceleration and coining the term 'dark energy'

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### Event information:

**When:** Saturday, 12 March, 2016

**Where:** Plaza Auditorium, Brisbane Convention & Exhibition Centre, Grey Street South Brisbane

**Duration:** 8-9.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Alien Life – Will we know it when we find it?

Are we alone in the universe? Scientists haven't found aliens yet, but by scanning the sky they've shown that our galaxy harbors billions of planets, many of which may have conditions similar to those on Earth.

These discoveries cause us to ask: When searching for life beyond our home planet, do we know what to look for? What human prejudices might cause us to overlook life that is very different from what we expect? Whether searching for signs of alien microbes or listening for signals from an advanced civilization, these are the questions that nag and inspire.

Learn how scientists across disciplines - astronomy, physics, chemistry and astrobiology - are combining their knowledge about life on Earth to identify life beyond.

Featuring:

- **Matthew Bailes** - One of the world's leading pulsar astronomers and the founding Director of the Swinburne Centre for Astrophysics and Supercomputing
- **Pamela Conrad** - An astrobiologist and planetary scientist working in the planetary environments laboratory at NASA Goddard Space Flight Centre where her research focuses on planetary habitability on Earth and on other planets, especially Mars
- **Paul Davies** - Theoretical physicist, cosmologist, astrobiologist, and best-selling author. He is regents' professor at Arizona State University where his research focuses on the 'big questions', from the origin of the universe to the origin of life
- **Lisa Harvey-Smith** - Science writer, speaker, and astronomer at the CSIRO, where she studies the birth and death of stars in our Galaxy. She is the Project Scientist for the Australian Square Kilometre Array Pathfinder, a telescope comprising 36 large radio dishes under construction in the Western Australian outback
- **Charles Lineweaver** - Astrophysicist and associate professor at the Australian National University's Planetary Science Institute His research areas include cosmology, exoplanetology, astrobiology, and cancer.
- **John Hockenberry (Moderator)** - Three-time Peabody Award winner, four-time Emmy Award winner, and Dateline NBC correspondent, Hockenberry is the anchor of the public radio show The Takeaway on WNYC and PRI. He has reported from all over the world in virtually every medium.

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### Event information:

**When:** Sunday, 13 March, 2016

**Where:** Plaza Auditorium, Brisbane Convention & Exhibition Centre, Grey Street South Brisbane

**Duration:** 12-1.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)



### The Moral Math of Robots

Can machines learn right from wrong? As the first generation of driverless cars and battlefield warbots filter into society, scientists are working to develop moral decision-making skills in robots. Break or swerve? Shoot or stand down?

These decisions may be based on algorithms created with a defined set of parameters — the international laws of war, for example, or they might be influenced by ‘ethical adapters,’ programs that simulate human emotions like guilt and shame.

It may even be possible for intelligent machines to develop a moral framework through accumulated experience, much like a child does. But as ‘ethical robotic software’ proliferates, who will be responsible for those decisions? What other emotions might robots acquire? And how will society adapt to machines that appear — and yet aren’t quite — human?

We’ll tackle these and other questions as the leading cognitive scientists, roboticists, philosophers, and computer scientists take us inside the emerging field of robot morality.

Featuring:

- **Ron Arkin** - Regents’ professor at the College of Computing at Georgia Tech. His research interests include human-robot interaction and robot ethics
- **Matthias Scheutz** - Professor at Tufts University and Director of the Human-Robot Interaction Laboratory. His current research focuses on robots with natural language capabilities for human-robot interaction.
- **Rob Sparrow** - Professor in the Philosophy program; Chief investigator in the Australian Research Council Centre of Excellence for Electromaterials Science; and an adjunct professor in the Centre for Human Bioethics at Monash University, where he works on ethical issues raised by new technologies
- **Janet Wiles** - Researcher of bio-inspired computation and biorobotics. Janet formed the Complex and Intelligent Systems research group at the University of Queensland

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#### Event information:

**When:** Sunday, 13 March, 2016

**Where:** Plaza Auditorium, Brisbane Convention & Exhibition Centre, Grey Street South Brisbane

**Duration:** 4-5.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Can We Save Our Precious Reefs in Time?

Global ideas that may help preserve our amazing natural reefs are on the agenda at the World Science Festival Brisbane in a fascinating expert discussion that asks *Can We Save Our Precious Reefs in Time?*

Leading experts will discuss revolutionary scientific measures that could assist marine scientists and biologists to determine exactly what's happening to the Great Barrier Reef, and indeed reefs all over the world.

From pollution, over fishing, rising ocean temperatures and greenhouse gases, the threats facing our living water landscapes will affect 500 million people worldwide if these magnificent coral reefs cannot be saved.

This leading panel of experts will discuss global and local insights into the worldwide decline of reefs over the past 30 years, and explore the latest thinking on what can be done to halt this alarming trend.

Featuring:

- **Ove Hoegh-Guldberg** - Professor of Marine Studies and Director of the Global Change Institute at the University of Queensland
- **Terry Hughes** - Professor of Marine Biology James Cook University
- **Brendan Mackey** - Director of the Climate Change Response Program at Griffith University
- **Russell Reichelt** - Great Barrier Reef Foundation

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#### Event information:

**When:** Thursday 10 March, 2016

**Where:** Griffith University Conservatorium Theatre, Grey Street South Brisbane

**Duration:** 12.30-2pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Last days of Mephisto – Forensic and Ballistic Science

Take a virtual look inside the German tank Mephisto with PHD Candidate Chris Little who will share his research during Last Days of Mephisto - Forensic and Ballistic Science.

Find out more about the ballistic history performed on the only remaining A7V Sturmpanzerwagen from World War 1 and its story as experts try to solve the mystery behind what happened leading up to its retrieval by Australian troops in July 1918.

Mr Little shares the latest developments in advanced 3D scanning technology to create an accurate three dimensional model of the Mephisto tank.

This 3D data also provides forensic experts useful information for ballistic analysis, perhaps bridging the gap surrounding questions of what caused the Mephisto's battle scars in Villers-Bretonneux.

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#### Event information:

**When:** Thursday, 10 March 2016

**Where:** Lecture Theatre, Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 3.30-4.30pm

**Tickets and bookings:** Free event | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Playing for Time: Music and Memory

Playing for Time: Music and Memory explores the power of music on the mind, revealing how researchers, therapists and neurologists are using music in the treatment of patients with brain injuries and disorders including Alzheimer's, dementia and depression to astounding results.

Experts include:

- **Aimee Baird** - an Australian researcher specialising in using music as a tool for improving memory in patients with brain injuries and disease
- **Jürgen Götz** - the Foundation Chair of Dementia Research and Director of the Clem Jones Centre for Ageing Dementia Research at the Queensland Brain Institute
- **Gary Thorpe** - General Manager of classical music radio station 4MBS
- **Jeanette Tamplin** - Music Therapist, Dementia Research Fellow, University of Melbourne
- **Lynne Malcolm (Moderator)** - Multi-award winning science journalist

Discover how listening to and performing music can be used to manage anxiety, aggression and pain, improve communication and emotional expression and overall quality life and outcomes for people with brain injuries and diseases.

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**Christine Robertson** +61 7 3840 7789 | 0417 741 710

**email:** [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

#### Event information:

**When:** Thursday, 10 March 2016

**Where:** Griffith University Conservatorium Theatre, Grey Street South Brisbane

**Duration:** 6-7.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Breakfast with the Brians

In a breakfast event that promises to be as entertaining as it is thought provoking, Australia's Nobel Prize winning astrophysicist (and successful winery owner) Brian Schmidt, meets internationally renowned string theorist, best-selling author and festival co-founder Brian Greene to discuss 'life, the universe and everything'.

Favourites on talk shows from Adam Hills to David Letterman, they will discuss 'life, the universe and everything' with science broadcaster Robyn Williams.

Featuring:

**Brian Greene** is a Professor of Physics and Mathematics at Columbia University, and director of Columbia's Centre for Theoretical Physics. He is recognised for a number of ground breaking discoveries in mathematical physics and superstring theory. Professor Greene's books, *The Elegant Universe*, *The Fabric of the Cosmos* and *The Hidden Reality*, have collectively spent 65 weeks on the New York Times bestseller list. He is the co-founder of the World Science Festival

**Brian Schmidt** is a Nobel Laureate and Distinguished Professor at The Australian National University (ANU), and is a Fellow of the Australian Academy of Science, The United States Academy of Science, and the Royal Society. Brian Schmidt was made a Companion of the Order of Australia in 2013

**Robyn Williams (moderator)** is a science journalist and broadcaster who has hosted a variety of programs on the ABC including Ockham's Razor and the Science Show which recently celebrated its 40<sup>th</sup> anniversary

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### Event information:

**When:** Friday, 11 March 2016

**Where:** Plaza Auditorium, Brisbane Convention & Exhibition Centre, Grey Street South Brisbane

**Duration:** 8:15-10am

**Tickets and bookings:** Adult \$55 | Concession \$50 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

**Additional information:** A light breakfast will be served in the foyer at 8:30am followed by the discussion in the Plaza Auditorium at 9am

### Pioneers in Science

Great minds inspire greatness. Our Pioneers in Science program offers high school students a path toward greatness through a rare opportunity to interact with world-renowned scientists. This year, students will spend time with a renowned marine biologist and seasoned astronaut.

These two Q&A sessions offer Queensland's local and remote students a rare opportunity to pose their burning questions. These events have been created for students in years 8-12.

Selected students from local schools will be invited to attend these two events while remote schools will send in their questions (either videotaped or written) and be able to stream the session live.

In each 60 minute program, a pioneer in science will give a short presentation, which will be followed by a Q&A session. Each student will develop a question prior to the event.

Featuring:

- **Sylvia Earle (Thursday session)** - National Geographic Society Explorer-in-Residence, Sylvia Earle is an oceanographer, explorer, author, and lecturer who has been called a 'Hero for the Planet' by Time magazine. She has led more than a hundred expeditions and logged more than 7,000 hours underwater. Her research concerns marine ecosystems with special reference to exploration, conservation, and the development and use of new technologies in the deep sea and other remote environments
- **Andy Thomas (Friday session)** - Australian-born American, Andrew Thomas is an aerospace engineer and a NASA astronaut. He became a U.S. citizen in 1986, in order to gain entry into NASA's astronaut program. Andrew has a Doctorate in Mechanical Engineering from the University of Adelaide
- **Bernie Hobbs (host of both sessions)** - Award-winning science writer and broadcaster with ABC Science

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### Event information:

**THURSDAY** - Sylvia Earle

**When:** Thursday 10 March, 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 10-11.30am

**Tickets and bookings:** [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

**FRIDAY** - Andy Thomas

**When:** Friday 11 March, 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 10-11.30am

**Tickets and bookings:** [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### The First Scientists – Aboriginal Science Panel

If you want to learn about the essence of how science works, how people learn to solve practical problems, the answer may be clearer in an Aboriginal community than in a high-tech laboratory

Aboriginal science has developed through many millennia of inquiry, experimentation and teaching to reveal patterns across vast cycles of space and time. These knowledge systems have a vast number of applications to contemporary science and sustainability in Australia.

Join leading practitioners as they discuss the past, present and future of Indigenous science in Queensland. Featuring:

- **Dale Chapman** - From Australian bush tucker to French chefs in Nice, Dale Chapman is busy sharing her special blend of ancient Australian foods and contemporary cuisine internationally and at home. Born in Dirranbandi, Kooma tribal lands, Dale always had a passion for cooking and moved to Brisbane to start her apprenticeship. After a distinguished career in hospitality and community education, Dale started The Dilly Bag Bush Tucker Products and Learning Programs aiming to share these unique foods and tastes with the public and to also re-introduce her People to using bush tucker
- **Mibu Fischer** - A descendent of the Noonuccal, Ngugi and Gorenpul clans of Quandamooka, Mibu Fischer's childhood affinity with the sea developed into scientific endeavour in her adulthood. Spurred on by a passion for keeping Australia's ocean ecosystem thriving for future generations, she is researching sustainable marine resources, through a variety of techniques both at home in Australia and in the South Pacific.
- **John Locke** - Biocultural strategist with over 20 years' experience and expertise in on-ground and strategic issues intersecting Indigenous rights and interests, and complex biological, linguistic and cultural linkages of Indigenous societies and related landscape scales.
- **Kenneth James (Jim) Walker** - Aboriginal man of the Iman and Goreng Goreng peoples of Central Queensland. He is a member of the Board of Directors of the Murri Mura Aboriginal Corporation and the Foundation for Aboriginal and Islander Research Action. He was also Manager for Indigenous Engagement for CSIRO

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#### Event information:

**When:** Thursday 10 March

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 6-7pm

**Tickets and bookings:** Free event | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Chasing Down the Comet

Hear first-hand how a team of international scientists sent a robotic space probe hurtling through space at 40,000 kilometres per hour to catch a comet.

In this World Science Festival Brisbane event, Chasing Down the Comet, the scientists who worked on this incredible project will share the excitement, trials and tribulations of what is considered the most complex space mission ever attempted.

For more than 10 years, the European Space Agency charted the incredible 11.4 billion kilometre journey of the Rosetta space probe as it chased the 67P/Churyumov–Gerasimenko comet through the solar system.

Will the comet's water molecules help us to find proof of where our oceans originated? Could the journey help us to understand the history of the solar system itself...take this unique opportunity to hear the latest thinking from scientists at the forefront of space exploration.

- **Artur Chmielewski** - NASA -US Rosetta Project Manager
- **Mark McCaughrean** - Senior Advisor in Science and Robotic Exploration at the European Space Agency
- **Lisa Harvey-Smith** - Australian science writer and CSIRO astronomer

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#### Event information:

**When:** Friday, 11 March, 2016

**Where:** Griffith University Conservatorium Theatre, Grey Street South Brisbane

**Duration:** 12.30-2pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)



### Under the Microscope

Under the Microscope puts some of the most renowned celebrities in science in the spotlight to discover more about the person underneath the lab coat.

Richard Fidler, host of ABC's hugely popular radio program *Conversations*, will host this nocturnal musing with some of the world's most intriguing people.

Featuring:

- **Richard Fidler** - Radio presenter and comedian, he is best known for his hour-long interview program, *Conversations with Richard Fidler* heard weekly on ABC Local Radio nationwide.
- **Ian Frazer AC** - Scottish-born Australian scientist and founding CEO and Director of Research of the Translational Research Institute. Frazer and his colleagues developed and patented the technology behind the HPV vaccine against cervical cancer, the first vaccine designed to prevent a cancer.
- **John Hockenberry** - A three-time Peabody Award winner, four-time Emmy Award winner, and Dateline NBC correspondent. Hockenberry has been a journalist and commentator for more than two decades and has reported from all over the world, in virtually every medium
- **Simon Kyaga** - After meeting several patients with exceptional creative talent, he became increasingly interested in the ancient myth of a close relationship between genius and madness.
- **Andy Thomas** - Australian-born American, Dr Andrew Thomas, is an aerospace engineer and a NASA astronaut. He became a U.S. citizen in 1986, in order to gain entry into NASA's astronaut program. Andrew has a Bachelor of Engineering Degree in Mechanical Engineering and a Doctorate in Mechanical Engineering and has logged more than 177 days in space
- **Priya Natarajan** - Professor in Astronomy and Physics at Yale University. Her research is focused on exotica in the universe - dark matter, dark energy, and black holes. She is noted for her key contributions to two of the most challenging problems in cosmology: mapping the distribution of dark matter and tracing the growth history of black holes. She is also a published poet
- **Julienne Stroeve** studies the decline of the Arctic Sea ice cover with the goal of understanding how a seasonally ice-free Arctic will impact climate in the Northern Hemisphere. She is a research scientist with the National Snow and Ice Data Center in Colorado and specialises in reading data gathered by satellite and other remote measuring tools.

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### Event information:

**When:** Friday, 11 March 2016

**Where:** Griffith University Conservatorium Theatre, Grey Street South Brisbane

**Duration:** 7.30-9.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Great Moments in Science with Dr Karl

Great Moments in Science, hosted by Dr Karl Kruszelnicki promises to deliver a whirlwind tour of scientific explanations and bizarre science facts.

What makes you forget why you entered a room? Why is it safer for a cat to fall from 32 stories than from seven? Are bananas really slippery, radioactive and loaded with potassium? These are just some of the questions that you can expect to be answered at Dr Karl's one-off science event at the World Science Festival Brisbane.

Join Australia's science legend Dr Karl for a hilarious whirlwind tour of scientific explanations and bizarre facts.

Find out how photos of eyes make you honest, why the phrase 'sinister buttocks' gets into students' essays, and what the 'big cover up' is on kissing.

**Karl Kruszelnicki** is a well-known Australian science communicator, author and science commentator on Australian radio and television. He holds a Bachelor of Science degree in Physics and Mathematics, a Master of Biomedical Engineering, and a Bachelor of Medicine and Surgery. He has studied Computer Science as well as reading for a Master of Science (Qualifying) degree in Astrophysics.

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#### Event information:

**When:** Friday, 11 March 2016

**Where:** Plaza Auditorium, Brisbane Convention and Exhibition Centre, Grey Street South Brisbane

**Duration:** 5-6pm

**Tickets and bookings:** Adult \$20 | Concession \$18 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Where Worlds Collide: Science, Values and Ethics

Science knows no boundaries. The scientific interventions that are now being discussed with the human condition from cradle to grave cause our value systems to bend and flex like never before.

From the possibilities of human reproductive cloning to a human life expectancy of 150 or more years, the boundaries of whether we 'can' become confused with whether we 'should'. Should we allow chemically enhanced performance on the sporting field and in the classroom? Should we use deep brain stimulation to treat intractable depression, obesity and addiction? These are the quandaries of intersecting issues in science, values and ethics.

Join our panel of experts as they ponder some of these big questions:

- **Dimity Dornan** - Over 40 years' clinical and research experience in the hearing industry. She is the founder and Executive Director of Hear and Say and has played a significant role in raising the profile of hearing health across Australia
- **Wayne Hall** - Professorial Fellow in addiction neuroethics at the University of Queensland. He has advised the World Health Organisation on the contribution of illicit drug use to the global burden of disease and the ethical implications of genetic and neuroscience research on addiction
- **Rod Lamberts** - Deputy Director of the Australian National Centre for the Public Awareness of Science and has had a strong presence in national and international science communication research and practice for more than 12 years
- **Natasha Mitchell (Moderator)** - Host of the national daily morning radio program *Life Matters* on ABC Radio National. Her broadcast work has received accolades internationally, including the overall Grand Prize and 4 Gold World Medals at the New York Radio Festivals
- **Margaret Somerville** - Samuel Gale Professor of Law at McGill University and professor in the university's faculty of medicine. She is also the founding director of the law faculty's Centre for Medicine, Ethics and Law
- **Rob Sparrow** - Professor in the Philosophy program; Chief investigator in the Australian Research Council Centre of Excellence for Electromaterials Science; and an adjunct professor in the Centre for Human Bioethics at Monash University, where he works on ethical issues raised by new technologies

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#### Event information:

**When:** Saturday, 12 March, 2016

**Where:** Griffith University Conservatorium Theatre, Grey Street South Brisbane

**Duration:** 12-1.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Science and Story – Getting it Write

The World Science Festival's 'Science and Story' series gathers foremost writers and thinkers to discuss how they craft stories that bring the vitality and wonder of science to life - on the page, on the stage and on the screen.

At the WSF Brisbane, Science and Story - Getting it Write examines the changing impact of technology on science writing, at a time when anyone can publish and everyone can claim to be an expert.

Whether it's literature or reporting, writing about science makes for a compelling narrative, these six authors of science fiction and science fact explore the range of challenges and techniques they use to get their story heard; and how storytelling might just save science.

- **James Bradley** - Australian Novelist and critic. His books have won a number of major Australian and international literary awards and have been widely translated. As a critic and reviewer he is interested in science fiction and literary works that incorporate science through technology, environment and process
- **Simon Groth** - A writer and editor whose work has been published in Australia and the United States. With a background in health sciences and assistive technology, Simon heads up *if:book* Australia, a project of Queensland Writers Centre that experiments with and explores the technologies of writing and reading
- **George Musser** - Contributing editor at *Scientific American* magazine, a Knight Science Journalism Fellow at MIT for 2014–2015, and the author of *Spooky Action at a Distance* (2015) and *The Complete Idiot's Guide to String Theory* (2008)
- **Niamh Shaw** - Former full-time academic and regular contributor to popular science and tech related topics on national TV and radio, including TV3's *Late Lunch Live* for Science Foundation Ireland, as well as speaking publicly at events including TEDxUCD, Trailblazery, Space Expo and the Festival of Curiosity
- **Ashley Hay** – A writer whose most recent novel, *The Railwayman's Wife*, was long-listed for the Miles Franklin Literary Award and received both the Colin Roderick Award from the Foundation for Australian Literary Studies and the People's Choice Prize in the NSW Premier's Literary Awards
- **John Hockenberry (Moderator)** - Three-time Peabody Award winner, four-time Emmy Award winner, and Dateline NBC correspondent. He is the anchor of the public radio show *The Takeaway* on WNYC and PRI and has reported from all over the world, in virtually every medium

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**email:** [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

#### Event information:

**When:** Saturday 12 March, 2016

**Where:** Auditorium, State Library of Queensland, Stanley Place South Brisbane

**Duration:** 6-7.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Going with the Floe: The Changing Shape of Sea Ice

The Antarctic is one of the coldest places on the planet yet is central to one of the hottest topics in climate research. Paradoxically, the sea ice in the Antarctic is increasing in size despite its northern counterpart the Arctic which is experiencing dramatic decreases.

It's not just the size of the sea ice that's changing each year but the increasing seasonal unpredictability of the thickness and importantly, the arrival of the ice that is of concern.

With only 36 years of satellite data to study, glaciologists have turned to drones and torpedoes to map the ice from above and below.

Combined with ancient ice core research, what they have discovered shows there is more to climate change than temperature alone.

Join our panel of scientists to learn about these amazing discoveries:

- **Dave Schoeman** - quantitative ecologist with a research focus on identifying and quantifying ecological consequences of climate change
- **Guy Williams** - observational polar oceanographer, focusing on dense shelf water formation in East Antarctica, and currently developing a new unmanned aerial vehicle to work in concert with the underwater vehicles to map Antarctic sea ice from above and below
- **Rob Massom** - with a research focus on sea ice and snow physics, Rob has 35 years' experience in sea ice research, both in the Arctic and Antarctic and on 14 international marine science cruises following a three-year postdoctoral fellowship with NASA
- **Julienne Stroeve** - studies the decline of the Arctic Sea ice cover with the goal of understanding how a seasonally ice-free Arctic will impact climate in the Northern Hemisphere. She is a research scientist with the National Snow and Ice Data Center in Colorado and specialises in reading data gathered by satellite and other remote measuring tools
- **Bernie Hobbs** - Award-winning science writer and broadcaster with ABC Science

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**email:** [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

#### Event information:

**When:** Saturday, 12 March, 2016

**Where:** Griffith University Conservatorium Theatre, Grey St South Brisbane

**Duration:** 4-5.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

## **The Thomas Conservation Oration 2016**

### **Speaker: The Honorable Robert Hill AC**

In 2010 philanthropist David Thomas established the Thomas Foundation Conservation Oration to raise awareness of international findings important to the conservation of biodiversity.

This annual event brings a renowned international conservation expert to Australia for the Thomas Foundation Conservation Oration – an engaging 60 minute address that presents a critical environmental issue affecting our natural landscape and ways we as society can make a difference.

This year's speaker is one of Australia's leaders in ocean conservation. Robert Hill was the longest serving Australian Environment Minister, and UN Ambassador, and put in place fundamental improvements in the management and conservation of Australia's seas.

Little known is that for many years Australia has led the world on many aspects of marine conservation and management. But a new generation of laws and policies is needed if we are to protect special seascapes such as the Great Barrier Reef and all our marine life, in the next decades and century to come.

He will detail the new approaches needed for Australians and their governments to conserve the blue parts of our world.

The 2016 Thomas Conservation Oration will be proudly presented as part of the World Science Festival Brisbane in partnership with the Pew Environmental Trust and QPAC.

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### **Event information:**

**When:** Saturday, 12 March

**Where:** Festival Lab, Cultural Forecourt

**Duration:** 8-9.30pm

**Tickets and bookings:** Adult \$15 | Concession \$13.50 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### The Martian – Film screening and expert talk

Have you ever wondered if space movies are realistic or whether they cheat to make it more exciting?

This is a once in a lifetime opportunity to hear an astronaut and a NASA scientist discuss whether the blockbuster movie *The Martian* gets the science right.

They'll talk about their own experiences and space travel as depicted in the film: the representations of gravity; dust storms on Mars; Mark Watney's Rover; and the truth about how comfortable space suits really are.

Discuss the science then settle in for the film.

Featuring:

- **Andy Thomas** - Australian-born American, Andrew is an aerospace engineer and a NASA astronaut. He became a U.S. citizen in 1986, in order to gain entry into NASA's astronaut program. Andrew has a Bachelor of Engineering Degree in Mechanical Engineering and a Doctorate in Mechanical Engineering and has logged more than 177 days in space
- **Pamela Conrad** - Pam is an astrobiologist and planetary scientist working in the planetary environments laboratory at NASA Goddard Space Flight Centre where her research focuses on planetary habitability on Earth and on other planets, especially Mars
- **Maxine Williamson (Moderator)** - Director Asia-Pacific Screen Awards and Brisbane Asia-Pacific Film Festival moderator

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**Christine Robertson** +61 7 3840 7789 | 0417 741 710

**email:** [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

#### Event information:

**When:** Sunday, 13 March, 2016

**Where:** Playhouse, QPAC, Cnr Melbourne and Grey Streets, South Brisbane

**Duration:** 3-6.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Keeping up with the Jetsons: Cities in 2050

We assume more complex human societies began living together in close proximity as a means of protection against marauding armies. It was quickly determined, though, that denser populations meant greater access to all kinds of other economic and social benefits.

The scale of cities proved that bigger, was indeed, better. Have we reached a tipping point in the 21st Century – an era of megacities and world cities – where the disadvantages of huge, sprawling, land-based metropolises are starting to outweigh the advantages?

In this discussion, scientists, urban planners, futurists and technology entrepreneurs consider the future of the city and identify possible alternatives, once thought the domain of science fiction and cartoons.

Featuring:

- **Cheryl Desha** - Senior Lecturer in Sustainable Development and Discipline Leader for Environmental Sciences at QUT Science and Engineering Faculty. Her research focuses on methods and technologies for developing transformational solutions for thriving, resilient and liveable cities
- **Stefan Hajkowicz** - Senior principal scientist working in the field of strategic foresight at CSIRO, he assists governments, companies and communities comprehend patterns of change so they can make wiser choices and secure better futures
- **Chris Luebke** - Global Director for Arup Foresight, where he formed the Foresight, Innovation and Incubation team. His passion for the built environment led him to study engineering, before completing a Doctorate in Architecture from ETH in Zurich. Chris Luebke appears with thanks to ARUP
- **Gerfried Stocker** - Media artist and telecommunications engineer. He founded x-space, a team formed to carry out interdisciplinary projects, which produced numerous installations and performances featuring elements of interaction, robotics and telecommunications. He has been artistic director of Ars Electronica since 1995
- **Antony Funnell (Moderator)** - Walkley award-winning broadcaster and the author of The Future and Related Nonsense. He presents Future Tense on Radio National

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#### Event information:

**When:** Sunday, 13 March, 2016

**Where:** Griffith University Conservatorium Theatre, Grey Street South Brisbane

**Duration:** 4-5.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)



### Discovering the Deep

Part art - part science - this unique and intriguing session featuring presentations on submarines, deep oceans and cave diving, marine acoustics and Blue Whale songs and poetics, space and composition.

Featuring:

- **Ron Allum** - Submarine designer, cave diver and inventor and one of the world's most experienced and accomplished cave divers
- **Brian Miller** - Marine mammal acoustician
- **Jayne Fenton-Keane** - Contemporary Australian poet

James Cameron, Director of the film Titanic dubbed Ron Allum a 'genius' for designing the Deepsea Challenger that enabled him to reach the deepest known point on Earth.

Session will include film footage from the deepest and most mysterious parts of this planet, rare blue whale songs, images of Antarctica and an opportunity to hear recordings from scientists dating back to the 1920s. This will be followed by Q&A session.

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### Event information:

**When:** Thursday 10 March, 2016

**Where:** Cinema B, GOMA, Stanley Place, South Brisbane

**Duration:** 6-7.30pm

**Tickets and bookings:** Adult \$19 | Concession \$16 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Salon: Robots: The New Eco-Warriors

Scientists and researchers spend countless hours, days, months and years in some of the world's most inhospitable environments surveying and collecting data. This can be a slow and sometimes dangerous, expensive and time consuming process.

Now more than ever the world requires this crucial research to address species conservation, environmental changes, and the ever-increasing impact of humans. Could robots, drones and other autonomous vehicles together with big data provide the answers?

Join environmental scientists for this World Science Festival Brisbane salon, and find out how they have adopted robots and other revolutionary technology to go beyond the limits of researchers alone.

Featuring:

- **Guy Williams** - observational polar oceanographer, focusing on dense shelf water formation in East Antarctica, and currently developing a new unmanned aerial vehicle to work in concert with the underwater vehicles to map Antarctic sea ice from above and below
- **Matt Dunabin** - Principal Research Fellow at Queensland University of Technology, specialising in environmental robots and their use in marine habitats and greenhouse gas monitoring
- **Kerrie Mengersen** - Chair in Statistics at Queensland University of Technology investigating modern methods for statistical modelling and computation
- **Grant Hamilton** - Invasive species and pest modelling and management, studying pests of concern to farmers and growers
- **Lyndon Llewellyn** - Research Program Leader, Data and Innovation for the Australian Institute of Marine Science.

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#### Event information:

**When:** Friday, 11 March 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 8-9.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Salon: Shining New Light on Dark Matter

As the search for clues about Dark Energy continues, physicists are learning more about Dark Matter than ever before.

Various studies - from Fermilab's Dark Energy Survey to OzDES in Australia - are mapping dark matter in the universe in unprecedented detail, leading to new theories on the nature and effects of the mysterious substance that binds the universe.

Featuring:

- **Priya Natarajan** – Professor of Astronomy and Physics at Yale University. Natarajan's research is focused on exotica in the universe dark matter, dark energy, and black holes
- **Tamara Davis** - Cosmologist interested in investigating new fundamental physics, such as the properties of dark energy and dark matter and the mass of the neutrino
- **Sean Carroll** - Theoretical physicist at the California Institute of Technology with research in cosmology, field theory, dark energy, particle physics, and gravitation. He is the author of *The Particle at the End of the Universe*, an explanation of the search for the Higgs boson
- **Josh Frieman** - Senior staff scientist at the Fermi National Accelerator Laboratory and Professor of Astronomy & Astrophysics. With a research focus on cosmology, including the study of dark energy and dark matter, the large-scale structure of the Universe, supernovae, and gravitational lensing
- **Richard Easther (moderator)** - Professor and Head of the Department of Physics at the University of Auckland. His work focuses on the physics of the very early universe, exploring the cosmological implications of string theory and the inflationary epoch

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### Event information:

**When:** Friday 11 March, 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 4-5.30pm

**Tickets and bookings:** Adult \$20 | Concession \$15 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Salon: Alzheimer's: Don't Forget Your Genes

The majority of Australian's today can expect to celebrate the milestone of their 80<sup>th</sup> birthday, but a long lifespan, though, may not be synonymous with a *meaningful* lifespan.

If cognitive function becomes impaired by age related brain diseases such as Alzheimer's, do the benefits of a long life become relatively meaningless? Recent discoveries around neurotoxic amyloid plaques that result in memory loss and cognitive decline, and the protective variant in the APP (amyloid precursor protein) gene on chromosome 21, have had dramatic implications for the fight against Alzheimer's disease.

Join the conversation about the most recent discoveries and a number of exciting trials in development.

Featuring:

- **Kári Stefánsson** -Icelandic Professor of Neurology, Neuropathology and Neuroscience. He was chosen by Newsweek as one of the 10 most important biologists of the 21st century
- **Jürgen Götz** - Foundation Chair of Dementia Research and Director of the Clem Jones Centre for Ageing Dementia Research at the Queensland Brain Institute. He studied biochemistry at the University of Basel, and earned his PhD in immunology in the laboratory of Nobel Laureate Georges Köhler at the Max-Planck-Institute in Freiburg, Germany
- **Ashley Bush** – Director, Oxidation Biology Unit at the Florey Institute of Neuroscience and Mental Health

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#### Event information:

**When:** Friday 11 March, 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 6.30-8pm

**Tickets and bookings:** Adult \$20 | Concession \$15 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Salon: Rosetta Rendezvous

The European Space Agency's Rosetta mission captured the imagination of the world in 2014, as it rendezvoused with Comet 67P/Churyumov-Gerasimenko and deployed a lander Philae, to its surface.

Join the European Space Agency's Professor Mark McCaughrean as he gives a behind-the-scenes view of the mission, its history, the 10 year journey to reach the comet, and the exciting events that have been taking place there.

Explore the challenges and risks involved in the mission and discover what scientists are finding as they unlock this treasure chest of information about the formation of our solar system, the origins of water and perhaps even life on Earth.

Featuring:

- **Mark McCaughrean** - Senior Science Advisor in the Directorate of Science and Robotic Exploration at the European Space Agency (ESA). Following the completion of his PhD in astronomy from the University of Edinburgh, Mark has worked at the NASA Goddard Space Flight Centre, and then at astronomical research institutes in Tucson, Heidelberg, Bonn, and Potsda. His personal scientific research involves observational studies of the formation of stars and their planetary systems using state-of-the-art ground and space based telescopes

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### Salon: 1.5 Degrees of Separation

The Paris Climate Conference in December 2015 saw 195 countries adopt the first-ever universal, legally binding global climate deal. The Salon 1.5 Degrees of Separation looks at what we can expect of the Paris agreement.

Negative emissions, carbon capture, geo-engineering and the future of coal are worthy considerations but what of the biodiversity impacts of simply containing a 1.5 degree temperature rise? And how will developing countries leapfrog the fossil fuel age to join the race to control our warming planet? Join leading scientists and thinkers as they explore the implications and challenges of this new world order.

Featuring:

- **Stefan Hajkowicz** - Senior principal scientist working in the field of strategic foresight at CSIRO – Australia's national science agency. He has devoted his career to helping governments, companies and communities comprehend patterns of change so they can make wiser choices and secure better futures.
- **Ove Hoegh-Guldberg** - Internationally recognised for his work on the impact of climate change on oceans, particularly the Great Barrier Reef. He is UQ's Professor of Marine Studies and Director of the UQ Global Change Institute.
- **Ruth Gates** - World renowned coral expert who works with the biological mechanisms and traits that dictate the environmental threshold of marine organisms. She is focused on defining attributes in corals that underpin differences in their sensitivity to thermal stress, ocean acidification and pollutants.
- **Julienne Stroeve** - Studies the decline of the Arctic Sea ice cover with the goal of understanding how a seasonally ice-free Arctic will impact climate in the Northern Hemisphere. She is a research scientist with the National Snow and Ice Data Center in Colorado and specializes in reading data gathered by satellite and other remote measuring tools.
- **Will Steffen** - Councillor on the Climate Council of Australia that delivers independent expert information about climate change, and an Emeritus Professor at the Australian National University and is a member of the ACT Climate Change Council.
- **Susannah Elliott (Moderator)** - CEO of the Australian Science Media Centre, an independent not for profit organisation that works with the news media to inject more evidence-based science into public discourse.

*1.5 Degrees of Separation* is a World Science Festival Brisbane Salon event. Salon events dive deeper into the science of specific topics with informal discussions challenging participants to consider their shared passions from a fresh perspective.

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#### Event information:

**When:** Saturday, 12 March 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$20 | Concession \$15 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Salon: Winning Ways: The Use and Abuse of Performance Enhancing Technologies

A topical discussion surrounding the use and abuse of performance enhancing technologies.

Ethical considerations surrounding enhancing technologies are an integral part of current regulations in sporting competitions; numerous sporting codes have suffered adverse media and public attention due to the illegal and unethical use of banned substances.

Advances in sports science and drug technology abound in the lucrative world of elite sport. Where do these advancements intersect with current sporting codes of ethics? Why do we accept the enhancement of equipment but not of the athletes themselves? How has the belief scale of athletes altered, especially in relation to fairness?

Featuring:

- **Richard Ings** - Former head of the Australian Sport Anti-Doping Authority (ASADA). Australia's foremost media commentator on drugs in sport.
- **Aaron Smith** - Highly respected academic in the field. He argues that while the war on drugs in sport is well meaning, in its current form cannot be won – this is the controversial view that will generate much debate.
- **Daryl Adair** - Associate Professor of Sport Management at University of Technology Sydney. His field is policies and programs associated with both performance enhancing and illicit drugs in sport, and is a frequent media commentator on both issues.
- **Caroline Riot (Moderator)** - Lecturer with the Griffith Business School, she was a recipient of an International Olympic Committee (IOC) research award for her doctoral thesis titled "Needs of elite athletes in contemporary sport" where she travelled to eight countries to investigate elite sport systems. She worked with the Queensland Government International Sport Unit in the lead-up to Sydney 2000. She has presented her work internationally and nationally.

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#### Event information:

**When:** Saturday, 12 March 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 12.30-1.30pm

**Tickets and bookings:** Adult \$20 | Concession \$15 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Salon: Wired for Genius: The Roots of Creativity in Artists and Machines

Can the passion that fuels a work of art be mimicked by machines? Inspired by the terror inflicted during a World War II bombing, Picasso painted the Weeping Woman, one of his most famous works of art.

Now computer scientists are trying to harness that creative spark, developing computers that can paint, compose music and design complex puzzles and games. Critics argue these smart machines aren't creative; they're merely extensions of their programmers.

But what if the machine is taught to rewrite its own code, becoming better—and more distinct—from its original program? At what point does the machine own its creativity?

Joined by leading experts in psychology, neuroscience and computational creativity, this program explores the roots of creativity in humans and computers, what artificial creativity can teach us about our own imaginations, and the promise of systems that build on the capabilities of both.

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#### Event information:

**When:** Saturday, 12 March, 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 3-4.30pm

**Tickets and bookings:** Adult \$20 | Concession \$15 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)



### Salon: Intelligent Alien Life: Little Green Men or Machines

Even scientists are fascinated by the possible existence of alien life.

In 2015, the Kepler Space Telescope spotted a star system emitting light patterns so bizarre, even serious scientists hypothesised they could be evidence of an “alien megastructure.”

But a growing chorus of physicists and astrobiologists - from NASA and the Royal Society, London to the Breakthrough Listen project and beyond - argue this image of aliens as a biological lifeform is all wrong.

They say intelligent life beyond Earth is more likely to be robotic. But if, in fact, alien life has transitioned to machine intelligence, what does it mean for our ongoing search for extraterrestrials?

And what does it say about humankind’s fate here on Earth? A multidisciplinary team of astronomers, roboticists and philosophers ponder the implications of the existence of - and possible contact with - an artificial alien intelligence so vastly superior to our own.

Featuring:

- **Matthias Scheutz** - Professor at Tufts University and Director of the Human-Robot Interaction Laboratory. His current research focuses on robots with natural language capabilities for human-robot interaction
- **Janet Wiles** - Researcher of bio-inspired computation and biorobotics. Janet formed the Complex and Intelligent Systems research group at the University of Queensland
- **Charles Lineweaver** - Astrophysicist and associate professor at the Australian National University’s Planetary Science Institute His research areas include cosmology, exoplanetology, astrobiology, and cancer. His research has been published in an array of well-regarded scientific publications

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#### Event information:

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**Duration:** 5.30-7pm

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### Salon: Earth's Evolution: Lessons from the Cosmos

In 1968, NASA released a photo that forever changed how we view planet Earth. Taken by the astronauts of Apollo 8 "Earthrise" captured our world as viewed from the moon – a beautiful sphere brimming with life seemingly alone in the universe.

This glimpse from space helped spark an environmental movement as millions around the globe grasped just how small and fragile Earth is. Today, as we contemplate the Dawn of the Human Age, our exploration of space might hold new lessons - and solutions – for sustaining life on Earth.

How does our environment compare to other planets in the solar system? What can the climates of Mars, Venus and the exoplanets tell us about changes we're experiencing here at home? And how can we better manage our own planet to make sure it remains "Earth-like?"

*Earth's Evolution: Lessons from the Cosmos* is a World Science Festival Brisbane Salon event. Salon events dive deeper into the science of specific topics with informal discussions challenging participants to consider their shared passions from a fresh perspective.

In this salon, a multidisciplinary group of astrobiologists, astronomers, climatologists and oceanographers take an extraterrestrial look at our "pale blue dot" of a planet, plumbing our knowledge of other worlds to rethink the environmental challenges faced here at home.

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**Christine Robertson** +61 7 3840 7789 | 0417 741 710

**email:** [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

#### Event information:

**When:** Saturday, 12 March, 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 8-9.30pm

**Tickets and bookings:** Adult \$20 | Concession \$15 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Salon: Make Way for Warbots

Lethal autonomous weapons systems that can target opponents do not yet exist—and human rights groups hope they never will. As argued at the 2015 Convention on Conventional Weapons in Geneva, killer robots only make war more likely.

But proponents say robots may actually save lives. Not only are they more precise, they would eliminate the emotional decision-making that often arises in the fog of war.

With development of warbots now underway, this Salon spotlights an important debate on the moral benefits and costs of these killer machines.

Featuring:

- **Ron Arkin** - Regents' professor at the College of Computing at Georgia Tech. His research interests include human-robot interaction and robot ethics
- **Rob Sparrow** - Professor in the Philosophy program; Chief investigator in the Australian Research Council Centre of Excellence for Electromaterials Science; and an adjunct professor in the Centre for Human Bioethics at Monash University, where he works on ethical issues raised by new technologies
- **Graham Phillips** - With 20 years' experience as a journalist and commentator, Graham is one of the most accomplished science communicators in Australia. Prior to joining *Catalyst*, Graham was a reporter on a number of ABC TV's science and technology programs. Graham has a PhD in astrophysics.

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### Event information:

**When:** Sunday 13 March, 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 3-4.30pm

**Tickets and bookings:** Adult \$20 | Concession \$15 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Salon: From Simplicity to Complexity: Complex Systems across Science

From black holes to our brains and bodies and the convoluted networks we create, researchers are increasingly turning to complexity science to crack the code of our most inscrutable systems.

Beginning with the universe itself, these astounding complex systems are composed of intricate, interacting parts.

How did this complexity arise? Will it continue increasing over time? And what are the common principles underlying complex systems across the multitude of scientific disciplines? With ever faster and more powerful technology, today's scientists are gaining insight into everything from infectious diseases and climate science to quantum physics.

In this Salon, leading thinkers from a wide variety of backgrounds grapple with the complexity of the universe, forever mindful of Einstein's advice: "Everything should be as simple as possible, but not simpler".

*From Simplicity to Complexity: Complex Systems across Science* is a World Science Festival Brisbane Salon event. Salon events dive deeper into the science of specific topics with informal discussions challenging participants to consider their shared passions from a fresh perspective.

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# WORLD SCIENCE FESTIVAL BRISBANE

## MEDIA BACKGROUNDER

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### Street Science!

World Science Festival Brisbane is fun for the entire family – from budding scientists to Mums and Dads looking for something fun AND educational for the kids.

Enjoy a huge family program a weekend of full-on and free activity with Street Science! – a free two-day extravaganza for the whole family featuring everything from live turtle hatching, drones, coding workshops and robots to science demonstrations, taxidermy and science-adventure storytelling.

Drop by the Festival Lab (our huge red inflatable venue on the Cultural Forecourt!) and catch a show, enjoy the free family film festival or just sit by the river, eat, drink and watch this loud, messy, high energy, delicious celebration of science unfold.

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### COOL JOBS

Explore the science behind the work of some people with pretty cool jobs. From a palaeontologist to a forensic scientist, a zookeeper and a NASA scientist – find out all about their cool jobs and get inspired!

**When:** Thursday, 10 March

**Where:** Plaza Auditorium, Brisbane Convention & Exhibition Centre, Grey Street, South Brisbane

**Duration:** 10-11am and 1-2pm

**Tickets and bookings:** \$10 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### ATOMIC KIDS

Anyone can learn atomic theory and this fun hands-on workshop opens up a world of atoms and molecules with some explosive chemical reactions thrown in. Suitable for ages 9-12.

**When:** Saturday 12 March and Sunday 13 March, 2016

**Where:** Queensland Museum Theatre, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 10.30am-12pm and 1-2.30pm

**Tickets and bookings:** \$10 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

# WORLD SCIENCE FESTIVAL BRISBANE

## FAMILY AND KIDS PROGRAM

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### KID'S FILM FESTIVAL

Head to Playasaurus Place at the Queensland Museum to view some great kids movies. Bring a packed lunch to enjoy during the screening.

**When:** Wednesday 9 March - Sunday 13 March

**Where:** Playasaurus Place, Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 10am-2pm

**Free Event**

### OUTDOOR FAMILY CINEMA

#### Friday, March 11

**Fern Gully: The Last Rainforest** 6:30pm

**Racing Extinction** 8:30pm

#### Saturday, March 12

**Wall-e** 6:30pm

**The Man Who Fell to Earth** 8:30pm

**When:** Friday, 11 March & Saturday, 12 March

**Where:** Cultural Forecourt, South Bank

**Duration:** 6.30-10.30pm

**Free Event**

### MIGHTY MAKERS

In teams of four, students from Prep to Years 6 will help solve the problem of pollution in our oceans, and its threat to sea life. Students will be asked to produce a plan for their campaign prior to their visit and then create a 3D prototype or presentation using mystery materials during the festival.

**When:** Thursday, 10 March and Friday, 11 March

**Where:** Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 10-10.45am, 11am-12pm, 12.30-1.30pm

### GREEN HEART SCHOOLS

Young inventors are needed to help secure Brisbane's water future. Green Heart Schools invites Brisbane's Year 7 students to the Future BNE event to battle other Brisbane schools as they channel their best innovative ideas, critically evaluate water use and discover how science, technology and art can work to build a better future. Science communicator Dr Karl Kruszelnicki will welcome students to the program.

**When:** Friday 11 March 2016

**Where:** King George Square, Brisbane City

**Duration:** 8am-3pm

**Free Event** - pre-registration required at [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### ON A WING

Throughout the World Science Festival Brisbane there will be a display of birds from the Queensland Museum collections. This includes taxidermy demonstrations and an exhibition of paintings by Queensland artist, Emma Lindsay, of extinct Australian bird species and sub-species held in natural history museums around the world.

**When:** Wednesday 9 March - Sunday 13 March 2016

**Where:** Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 9.30am-5pm

**Free Event**

# WORLD SCIENCE FESTIVAL BRISBANE

## FAMILY AND KIDS PROGRAM

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### TURTLE HATCHING

See Loggerhead Turtle eggs hatch and Flatback Turtle hatchlings explore their first days of life.

These remarkable creatures will be at the Queensland Museum during the World Science Festival Brisbane. Learn all about the breeding and migration cycles of these fascinating marine animals from Reptile Curator Patrick Couper, who will be on hand to answer questions and share his knowledge. The project has been designed and supervised by internationally renowned turtle biologist Dr Colin Limpus.

Following the festival, most of the hatchlings will be transported to Yeppoon and released offshore. The remaining hatchlings will be taken to Underwater World, on the Sunshine Coast, where they will be fitted with transmitters.

This will enable scientists to track their movements when they are later released.

This project is approved by the QM Animal Ethics Committee.

**When:** Thursday 10 March - Sunday 13 March

**Where:** Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 9.30am-5pm

**Free Event**

### BIOLUMINATION

For a fresh look at germs and bacteria, take one artist and add a cotton swab, glowing bacteria and giant Petri dishes. The result is a masterpiece of Biolumination.

Dr Siouxsie Wiles challenges Queensland artists and illustrators to translate their designs into masterpieces with a simple bio-palette of harmless bacteria.

**When:** Wednesday 9 March - Sunday 13 March

**Where:** Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 9.30am-5pm

**Free Event**

### ARS ELECTRONICA FUTURELAB'S SHARED SPACE BOTS

Take a glimpse into the future when self-driving cars are the norm with the ARS Electronica's Shared Space Bots.

This interactive installation has been developed to educate the public on the transformations required to our public spaces with the advent of autonomous vehicles.

Witness research in action as the specially developed robots in Shared Space Bots are the protagonists of experiments in human-automobile interaction.

Presented by QUT in association with World Science Festival Brisbane

#### Event information:

**When:** Wednesday, 10 March and Thursday, 11 March 2016

**Where:** Theatre Foyer, QUT Gardens, QUT Gardens Point

**Duration:** 30 minute performances held at 3.30pm and 4.40pm and 11.30am, 1.30pm and 3.30pm

**Free event**

# WORLD SCIENCE FESTIVAL BRISBANE

## MEDIA BACKGROUNDER

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### FameLab

Fancy a free night of surprises, laughs, drama, genius and science like you've never seen it before? Head to the FameLab Queensland Semi-Final at the Queensland Museum!

Presented by the British Council, FameLab is an international science communication competition that aims to find the most charismatic up-and-coming scientists from around the world.

12 of Queensland's top early career researchers will battle it out for their place in the National Final.

They'll have just three minutes to present their scientific concept on stage in front of a live audience and panel of judges – with no PowerPoint and no jargon!

The question is – who will be able to handle the heat?

Come along to find out for yourself!

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### Event Information:

**When:** Wednesday 9 March, 2016

**Where:** Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 6.30-8.30pm

**Free Event**



### Street Science!

Science is set to be served up on the banks of the Brisbane River in one big, high energy, delicious celebration when Street Science! takes over the Cultural Forecourt as part of the World Science Festival Brisbane.

The free two-day spectacle of science on March 12-13 is a family-friendly event showcasing science like you've never seen it before – it's going to get loud, it's going to get messy, and it's going to be fun!

This weekend of full-on and free activity features everything from turtle hatching, giant drones, dancing robots and big messy science experiments to humungous bubbles, bionic hands, magic mud, taxidermy, and science-adventure storytelling.

Learn all about the science behind computer coding, solar power, autonomous cars and 3D printing, race a wind powered animal and even dig for fossils and hunt for spiders.

Get messy making slime, snow and sherbet, learn about the science behind the food on your plate and admire art inspired by bioluminescent bacteria.

People can also take it down a notch, and relax with a bite from one of the many food vans and coffee stalls on site during Street Science! Or watch the world go by with a long cool drink served up at the huge red inflatable Festival Lab.

Street Science! is two-days of spectacular science not to be missed!

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### Event information:

**When:** March 12-13, 2016

**Where:** Cultural Forecourt, Queensland Museum, Festival Lab

**Duration:** 10am-4pm

**Free event**

# WORLD SCIENCE FESTIVAL BRISBANE

## STREET SCIENCE! FREE ACTIVITIES

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### CULTURAL FORECOURT

#### **3D Printing and Fabrication: The Future is Hear**

Learn more about QUT's work with 3D printers and their use in modern medicine, including 3D ear prosthesis. Presented by Biofabrication and Tissue Morphology Research Group, QUT

**Age:** All Ages

#### **Alternative Energy**

Learn more about alternative energy resources including a solar powered sunflower, tesla solar battery storage and alternative energy vehicles. Presented by Anthony Broese

**Age:** All Ages

#### **Augmented Reality**

Augmented Reality – also known as AR – is an emerging form of technology that allows digital information to be overlaid on real world settings. Come along to not only see AR used in different ways but to find out more about this exciting technology and try it out for yourself! Presented by Monash University

**Age:** All Ages

#### **Bionic Me**

Human Bionics is one of the rapid high growth industries of the twenty-first century. Build a bionic hand that will be provided to amputees in need through the Healing Hands Project. Presented by the Human Bionics Student Association

**Age:** Recommended 8+

#### **Bubble-ology**

Join in an experiment of grand proportions, creating gigantic bubbles using special wands and a perfectly-prepared potion. Marvel at the scale and movement of these wonderful forms as they are set free over the festival. Learn more about the chemistry of bubbles...and maybe have a turn creating one yourself!

Presented by the Scale Free Network: art-science collaborative

**Age:** All Ages

#### **Building our environment - be an engineer for the day!**

Ever wondered how a bridge stays up? What's under the road? How a train stays on the tracks? How sky scrapers are built? How a lift works? Or how cities are planned? Engineers, designers and planners are all responsible for answering these questions and designing the built environment that we live in. They use science, technology, engineering and maths every day to find solutions to complex problems such as how we travel, where we live and work, how we stay healthy, how we connect with each other and how we protect the environment.

Would you like to be an engineer, designer or planner for the day? Come and see what engineering is all about!

Presented by Arup

**Age:** All Ages

#### **Earth, Wind, Water, Fire**

An elemental show presented by the Young Scientists of Australia

**Age:** All Ages

#### **Evolution of the Electric Vehicle**

Find out more about vehicles and have a look up close at a solar powered vehicle and two electric production vehicles. Presented by Clenergy TeamArrow and QUT Motorsport

**Age:** All Ages

# WORLD SCIENCE FESTIVAL BRISBANE

## STREET SCIENCE! FREE ACTIVITIES

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### **Explosive Science**

Queensland's 'Seriously FUN Science Educators' Street Science, bring their all new STEM LAB to World Science Festival with a mix of wicked hands-on activities for kids of all ages and mind-blowing science demonstrations. Can you make a ball levitate.... Create a HUMAN CIRCUIT.... or shoot sweet smoke rings into space? Want to mix chemicals to make your own mad concoctions? Visit the Street Science team to do all this and MUCH more whilst learning how COOL and IMPORTANT science really is! Presented by Steve Liddell and Street Science Brisbane

**Age:** All Ages

### **FIRST Robotics Display**

Using remote control devices, control a large number of robots from small LEGO built robots right through to a life sized robot. Presented by FIRST® Australia supported by Grace Lutheran College and the Southport School

**Age:** Recommended 8+

### **Indigenous Science and Food**

Engage all your senses as celebrated Aboriginal chef Dale Chapman takes you on a cultural journey explaining the scientific thinking behind bush tucker. Dale is passionate about her culture and believes that traditional food is an effective weapon in the fight against heart disease and diabetes. Join Dale as she demonstrates how to use Australian native berries, leaves, nuts and spices to create eclectic fusion cuisine that can transform a simple and quick meal into a gourmet experience. Presented by Queensland Museum

**Age:** All Ages

### **Giant Racing Drone**

The best people in drone racing from around the world have designed a giant racing drone!

With a power to weight ratio higher than that of a Formula One car, and over 3x the thrust to weight ratio of the Space Shuttle, this is the new king of the skies. At 2m wide, this machine can achieve speeds of over 200kmph.

Get ready to be amazed when a giant drone is unveiled to the public for the first time. Presented by Freedom Class

**Age:** All Ages

### **Google Expedition**

An immersive 3D exploration of the Great Barrier Reef using Google Cardboard.

Session times 10:30am, 11:30am, 12:30pm, 1:30pm and 2:30pm. 30 min sessions. Presented by Google

**Age:** Recommended 7+

### **Indigenous Weaving**

Learn all about Indigenous weaving through demonstrations and hands-on activities

**Age:** All Ages

### **Magic Mud**

Get ready for some good, messy fun with a giant pool of "magic mud" to squelch across! Try to cross this pit of mysterious liquid without sinking! Presented by Young Scientists of Australia

**Age:** All Ages

### **Mosquitos: Know thine enemy**

Citizen scientists bring in your mozzies to be checked for dengue fever. There will be live mozzie specimens and larvae to look at up close through microscopes and entomologists on hand to help and answer questions. Presented by QIMR Berghoffer Medical Research Institute and Mosquito Control Laboratory

**Age:** All Ages

# WORLD SCIENCE FESTIVAL BRISBANE

## STREET SCIENCE! FREE ACTIVITIES

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### **Parasites in Focus**

Spy on the mysterious world of the tiniest predators on the planet. They feed off people, pets and other living creatures and these mini-monsters make a meal of us all. This exhibition includes real microscopes, giant photographs, interactive games. Presented by Queensland Museum

**Age:** All Ages

### **Reef Turtle HQ – Where Turtles Raine**

It's a turtle's eye view of Raine Island's vibrant and diverse reef ecosystem, critical to the survival of the endangered green turtle as well as home to more than 80 seabird species, apex predators and a host of colourful marine life.

Presented by the Great Barrier Reef Foundation

**Age:** All ages

### **River Listening App and Soundwalk**

Listen to the underwater soundscapes of the Brisbane River through a free app and talk to the scientists behind this amazing technology as they discuss how to use the app and provide guided walks along the river. Presented by The Australian Rivers Institute and Queensland Conservatorium, Griffith University

**Age:** All Ages

### **Robogals**

Hands-on engineering fun with Robogals! Meet and interact with robots and take part in some fun activities such as programming LEGO robots to electrical circuit challenges and building paddle pop bridges.

(Different challenges with varying degrees of difficulty will be available). Presented by Robogals UQ

**Age:** Recommended 8+

### **Science Olympians**

Do you have what it takes to be a Science Olympian? Test your speed, precision and hand-eye coordination in a series of tasks designed to see if you have what it takes to be Australia's next Science Olympian. Talk to former Science Olympians - and learn what it takes to win a medal. Presented by Australian Science Olympiads

**Age:** Recommended 10+

### **Science on the Go**

Hands-on science demonstrations and games showcasing STEM-tastic activities. Challenge yourself in the ultimate Periodic Table Battle! See if a STEM career is for you! Run riots with robots! Shoot smoke and sound! Hold milky bubbles in your hands! Learn about the science behind the fun

Presented by Griffith University Science Education Alliance with support from Griffith University, Department of Education and Training and the Queensland STEM Education Network

**Age:** Recommended 5+

### **Spiders in the City**

Dig through leaf debris for spiders and insects and help world arachnid expert, Dr Robert Raven, identify new species that are totally new to science and still have no name – find out all about these amazing arachnids. Presented by Queensland Museum

**Age:** Recommended 5+

### **Star Gazing**

The Brisbane Astronomical Society will provide telescopes for members of the public to observe the night sky (weather permitting). The instruments will filter the sunlight in various wavelengths, from visible light to hydrogen alpha light, revealing surface details rarely seen. Presented by the Brisbane Astronomical Society

**Age:** Recommended 5+

# WORLD SCIENCE FESTIVAL BRISBANE

## STREET SCIENCE! FREE ACTIVITIES

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### **Stone and Brick App and Guided Tour**

Stone and brick walking tours presented by Department of Natural Resources and Mines

**Age:** All Ages

### **The Future is NAO**

NAO robot demonstrations at various times around the Cultural Forecourt. Presented by The Brainary and State Library of Queensland

**Age:** All Ages

### **Strandbeest Racing**

Make a windpowered 'animal' from a kit and test your speedway skills in a race against others. Presented by HSBNE

**Age:** Recommended 10+

### **Ultimate Frisbee**

Discover the science of flight and aerodynamics with Ultimate Frisbee demonstrations and have-a-go clinics.

Presented by Queensland Ultimate

**Age:** Recommended 8+

### **Unearthed**

Get up close with life-size Megafauna, find and identify real fossils in Unearthed, hear from Queensland Museum palaeontologists on their recent finds, and collect a junior palaeontology activity pack that includes your very own bag of Darling Downs soil, guaranteed to contain a real megafauna fossil. It's larger than life fun for the whole family!

Presented by Cobb+Co Museum

**Age:** All ages

### **UQ Science Demo Troupe**

Ever thought about channelling a million volts of lightning? What about putting your hand in liquid nitrogen at 200 degrees below zero? Or maybe taking a nap on the infamous Bed of Nails?! These are just some of the science stunts you'll see from the nationally acclaimed UQ Demo Troupe! From the science of smashing bananas to firing rockets, these shows are guaranteed to be exciting, entertaining AND informative! Presented by the University of Queensland

**Age:** All ages

### **Science Photobooth**

Dress up as your favourite scientist for a fun science inspired photo you can upload to social media. Learn more about the Young Scientists of Australia and National Youth Science Forum

**Age:** Recommended 6+

# WORLD SCIENCE FESTIVAL BRISBANE

## STREET SCIENCE! FREE ACTIVITIES

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### FESTIVAL LAB

#### **A Letter to my Teenage Self: What I've learned about a career in science**

Dr Seuss said it best: "You have brains in your head. You have feet in your shoes. You can steer yourself any direction you choose." Meet four very successful, unique individuals who all chose to pursue a career in STEM. Get hold of their tips and tricks and see where their study and career decisions took them. Presented by the National Youth Science Forum and Women in Technology

**Age:** Recommended 13+

#### **Astrophysics in the Kitchen**

Learn more about the concepts of astrophysics through cooking. Presented by QUT

**Age:** Recommended 13+

#### **Big Bang Science**

It's science at its explosive best. Presented by Griffith University Science Education Alliance with support from Griffith University, Department of Education and Training and the Queensland STEM Education Network

**Age:** All ages

#### **Dr Karl for Kids**

Join renowned science personality Dr Karl Kruszelnicki as we investigate the real science behind some of the mysteries of life.

How do Aeroplanes stay up? Why do I look the same as my family – but different? What makes the sky blue?

Hosted by Scope presenter and mad scientist Dr Rob this is the chance for kids and parents to get the real answers to their burning questions. Be it medical, chemical, physical, technological, astrophysical or astronomical!

Bring along your questions and Dr Karl will provide the science to explain them in a language your kids (and you!) will understand.

**Age:** All Ages

#### **Everybody Dance NAO**

Let's dance with the NAO dancing robots! Presented by The Brainary

**Age:** All Ages

#### **Explosive Science!**

Queensland's favourite Science Entertainer 'Science Steve' hits the stage right here at World Science Festival Brisbane with a whirlwind of wild science demonstrations that are sure to have you on the edge of your seat and cheering for more! From massive coloured fireballs to amazing liquid nitrogen demonstrations, this is one show not to miss! It's perfect for scientists of all ages (5years to 85years) and explains the science behind every day phenomena, in an engaging, fun and interactive live stage show. Presented by Steve Liddell and Street Science Brisbane

**Age:** Recommended 5+

#### **Food Science**

The science behind the perfect steak and how to brew beer. Presented by Joel Gilmore

**Age:** All Ages

#### **River Listening Live**

Find out about aquatic bioacoustics with interactive listening labs, sound maps, immersive performances and augmented reality sound installations as well as new approaches in the conservation of global river systems. Join internationally renowned artists and scientists Dr Leah Barclay, Dr Simon Linke and Dr Toby Gifford. Presented by The Australian Rivers Institute and Queensland Conservatorium, Griffith University

**Age:** All Ages

# WORLD SCIENCE FESTIVAL BRISBANE

## STREET SCIENCE! FREE ACTIVITIES

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### **Zobi and the Zoox**

Meet Dr Gregory Crocetti and Ailsa Wild, the co-author of *Zobi and the Zoox* for storytelling with projection. *Zobi and the Zoox* tells the story of the microscopic friends living in a tiny coral polyp. With her home under threat from a warming ocean, Zobi, a brave Rhizobia bacterium, teams up with a family of slow but steady Zoox (zooxanthellae). The coral becomes gravely ill and bacteria around them begin to starve. Can Zobi and the Zoox work together to save the day? Presented by Scale Free Network

**Age:** Recommended 2+

## QUEENSLAND MUSEUM

### **Australian Museum**

Learn about what goes on at the Australian Museum. Get hands on with interactive displays; extract strawberry DNA, learn about anatomy as you help with live dissections, find out the science of glue and borax as you make your own bouncy balls, and find out what it means to work in wildlife forensics! Presented by the Australian Museum and Australian Museum Research Institute

**Age:** All Ages

### **Biolumination**

Discover the wonder of bioluminescent bacteria with artworks created by local artists. Presented by Queensland Museum with Siouxsie Wiles and Sophia Carroll

**Age:** All Ages

### **Coderdojo**

Learn how to code, develop websites, apps, programs, games and explore technology. Presented by Brisbane Marketing

**Age:** Recommended 7+

### **Google Intergenerational Coding**

Come along to a Google coding workshop to introduce parents, grandparents and children to simple coding to support a shared language across the generations. Presented by Google

**Age:** Recommended 10+

### **Natrasha**

Litter is a serious pollution issue that affects our waterways, coastline and ocean - impacting on wildlife, human health and the marine environment. The Plastic Pollution Revolution icon Natrasha by Brisbane artist Tony Rice, made using reused plastic bottles and bags will be on display. Presented by Healthy Waterways

**Age:** All Ages

### **On a Wing**

A display of native birds from the Queensland Museum collection. This exhibition also features taxidermy demonstrations and an exhibition of paintings by Queensland artist, Emma Lindsay, of extinct Australian bird species and sub-species held in natural history museums around the world. Presented by Queensland Museum and Emma Lindsay

**Age:** All Ages

### **Pop-up Library Lab**

Visit our pop-up library to scope some science books, program an Ozobot and get up to scratch on coding. Presented by State Library of Queensland and Digital Careers

**Age:** All Ages

# WORLD SCIENCE FESTIVAL BRISBANE

## STREET SCIENCE! FREE ACTIVITIES

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### **Augmented Reality Sandbox**

Create mountains and valleys, and rivers and lakes in your own landscape with the augmented reality sandbox. You can mould the sand into your own catchment and watch how the water moves through the system when you make it rain. Presented by Griffith University

**Age:** Recommended 8+

### **Tower of Strength!**

As part of a LEGO Education initiative there will be 30 minute workshops, encouraging kids to work with parents. The LEGO facilitator will walk them through designing and engineering the tallest and strongest tower. At the end there will be a test to see who built the best with a prize given to the winner of each group. Presented by LEGO Education. \*Please note this event requires pre-registration (on the day) and the purchase of LEGO bag of blocks for \$5 per pair. Participants keep their LEGO blocks.

**Age:** Recommended 5+

### **Turtle Hatching**

See Loggerhead Turtle eggs hatch and Flatback Turtle hatchlings explore their first days of life.

These remarkable creatures will be at the Queensland Museum during the World Science Festival Brisbane. Learn all about the breeding and migration cycles of these fascinating marine animals from Reptile Curator Patrick Couper, who will be on hand to answer questions and share his knowledge. The project has been designed and supervised by internationally renowned turtle biologist Dr Colin Limpus.

Following the festival, most of the hatchlings will be transported to Yeppoon and released offshore. The remaining hatchlings will be taken to Underwater World, on the Sunshine Coast, where they will be fitted with transmitters. This will enable scientists to track their movements when they are later released.

This project is a collaboration between Department of Environment and Heritage Protection, Underwaterworld and the Queensland Museum. Supported by Aqua One Australia. This project is approved by the QM Animal Ethics Committee.

**Age:** All Ages



# WORLD SCIENCE FESTIVAL BRISBANE

## EVENINGS AT FESTIVAL LAB

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Drop by the Festival Lab (our huge red inflatable venue!) and catch a show, or just sit by the river, eat, drink and watch the world go by.

### COSMIC NOMAD

Physicist, comedian, astronaut candidate and general troublemaker **Josh Richards** knows his days on Earth are numbered: Josh found his true calling in late 2012 when he discovered the Mars One project. Selected from over 200,000 initial applicants, Josh is now one of 100 worldwide astronaut candidates short-listed to leave Earth forever and become the first to colonise Mars in 2025.

So if YOU were leaving the planet in 10 years' time, what would you do before you left?

Bringing "Cosmic Nomad" to Queensland on his 7-month global tour, Josh uses his uniquely warped blend of science, comedy and storytelling to answer the big questions for our species in a way Brian Cox wouldn't dare...

Who are we? Where have we come from and where are we going? Are we alone? Why does it burn when I pee? How can I use astronomy to get laid? And what kind of idiot volunteers to die on a cold, dead rock 350 million kilometres away?

#### Event information:

**When:** Thursday, 10 March 2016

**Where:** Festival Lab, Cultural Forecourt

**Duration:** 8.30-9.20pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### LET'S GET QUIZZICAL WITH DR KARL

An evening of scintillating science trivia with the ultimate Quizmaster, Dr Karl Kruszelnicki.

Topics include chemistry, astronomy, biology, physics, as well as Scientific Inventions, Science Fiction, and Science Celebrities.

Grab a group of friends and turn your inner geek into glory..... This is where knowledge really is power.

Register a team of up to nine people, or purchase a single ticket to join a team.

#### Event information:

**When:** Friday 11 March, 2016

**Where:** Festival Lab, Cultural Forecourt

**Duration:** 7-9pm

**Tickets and bookings:** \$10 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

# WORLD SCIENCE FESTIVAL BRISBANE

## FESTIVAL LAB

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### BUCKING THE SYSTEM: THE MYTH OF MERIT

The women who have excelled in the field of Science, Technology, Engineering and Maths (STEM) will be celebrated in this exclusive invite-only event, Bucking the sySTEM.

Combining a moderated discussion, the Queensland Women in STEM Research Awards and a networking function, this event will explore the challenges and strategies to building a successful career in research roles and STEM industries.

The discussion will focus on merit based career progression, specifically addressing the factors influencing gender equality in senior STEM roles

#### **Event information:**

**When:** Friday 11 March, 2016

**Where:** Festival Lab, Cultural Forecourt

**Duration:** 1-5pm

**Invitation only event**

# WORLD SCIENCE FESTIVAL BRISBANE

## APPRENTICE PROGRAM

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Ever wondered what it would be like to work in a lab finding a cure for cancer? Or maybe unearthing secrets from the past as a palaeontologist? The World Science Festival Brisbane Apprentice Program gives you a chance to work alongside leaders in the field as an apprentice.

On Saturday 12 March, the Apprentice Program will be held across Brisbane with 16 sessions across the day covering a wide array of fields from genetics to art, the environment, quantum physics, game design and more.

World Science Festival Brisbane is five action-packed days of science at its best, featuring more than a hundred public events and big thinkers from across the globe.

The World Science Festival was founded in New York in 2008 and exclusive rights have been granted to the Queensland Museum to present the event in the Asia-Pacific region.

Stakeholders from private and public industries are partnering with the Queensland Museum to support the World Science Festival Brisbane in its inaugural year including Queensland Government, Tourism and Events Queensland, Brisbane Marketing, Griffith University, QUT, The University of Queensland, BHP Billiton, Department of Science, Information Technology and Innovation, ABC and ABC Radio National, QGC, Arup, Google, Department of Environment and Heritage Protection, Inspiring Australia, QAGOMA, QPAC, if:Book Australia, South Bank Parklands, State Library of Queensland, Accor, Black and White Cabs, Singapore Airlines, Virgin Australia and Sirromet.

### Media contacts:

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**Christine Robertson** +61 7 3840 7789 | 0417 741 710

**email:** [media@worldsciencefestival.com.au](mailto:media@worldsciencefestival.com.au)

### GENETICIST'S APPRENTICE

QIMR Berghofer Medical researchers study the genetic and environmental causes of disease, and explore their prevention, diagnosis and treatment. Through molecular biology testing you, as the Apprentice of Dr Eva Baxter, will learn how to use isolated human DNA to conduct human identity tests. You'll also discover how DNA analysis is a great tool to predict illness and health

Participants must be aged 15+ Workshop capacity: 18 people

**When:** Saturday 12 March, 2016

**Where:** QIMR Berghofer Medical Research Institute, Herston

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### ART CONSERVATOR'S APPRENTICE

The Conservation Lab at QAGOMA is the place to unpack the science of artwork preservation and restoration. You won't exactly be let loose on a Picasso or a Van Gogh but you will get close to the chemistry of restoring an artwork to its former glory. You'll learn about the scientific techniques and technologies necessary to conserve our past history and culture and get to see what goes on behind the exhibition spaces of a major gallery.

Recommended for ages 16+

**When:** Saturday 12 March, 2016

**Where:** QAGOMA, Stanley Place, South Brisbane

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

# WORLD SCIENCE FESTIVAL BRISBANE

## APPRENTICE PROGRAM

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### BIOENGINEER'S APPRENTICE

Ever wondered about how you could use 3D printing to repair broken bones? Here's your chance to find out, working inside a PC2 classified laboratory at the Translational Research Institute alongside Dr Mike Doran. He knows all about stem cells, regenerative medicine and cancer models. As an Apprentice you will learn about bone marrow-derived mesenchymal stem/stromal cells (MSC) and their use in tissue repair. You will stain differentiated stem cells, and learn how to use a 3D printer to make scaffolds for bone repair.

Recommended for ages 14+

**When:** Saturday 12 March, 2016

**Where:** Translational Research Institute, Woolloongabba

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### CANCER BIOLOGIST'S APPRENTICE

Are you interested in finding a cure for cancer? As an Apprentice you'll have access to one of the PC2 classified laboratories at the Translational Research Institute, under the guidance of Professor Brian Gabrielli and his team. You will be put to work analysing time-lapse movies of treated cells and be called upon to assess the effects. You will also use fluorescence microscopy to analyse the effects that the drug has on the morphology and viability of certain cancer cells.

Recommended for ages 14+

**When:** Saturday 12 March, 2016

**Where:** Translational Research Institute, Woolloongabba

**Duration:** 2-3.30pm

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### ENVIRONMENTAL SCIENTIST'S APPRENTICE

There's a beach, water park and lush bushlands at South Bank Parklands but did you ever wonder where all the water comes from - apprentices get privileged access to the secret world underneath the Parklands. You'll be called upon to monitor the workings of the Rain Bank Stormwater Harvesting System, the Water Treatment Plant and the Pool Reticulation Systems. You'll use Palintest Photometers – to analyse the chlorine, alkalinity and pH in the pools, and test the water quality of the Brisbane River.

Recommended for ages 15+

**When:** Saturday 12 March, 2016

**Where:** South Bank Parklands

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

# WORLD SCIENCE FESTIVAL BRISBANE

## APPRENTICE PROGRAM

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### FISH DOCTOR'S APPRENTICE

Know the importance of correctly identifying fishes – it is a specialised field. Apprentices will learn the techniques of fish identification and understand why it is so critical for both conservation and human health. Furthermore, inside those fishes is a hidden diversity – the parasites! You will participate in a fish necropsy to understand the anatomy of a fish and to discover the extraordinary microscopic world of their parasites.

Recommended for ages 14+

Accompanying parents are welcome, however please note space is limited

Workshop capacity: 10 people

**When:** Saturday 12 March, 2016

**Where:** Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 1.30-3pm

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### GAME DESIGNER'S APPRENTICE

Girl apprentices will have the chance to learn about game design, taught by some of our own leading women in game development. Games have become powerful tools in contemporary society and can be made for entertainment, training, cooperative play, and social change. This is an opportunity for you to gain hands on experience and imagine what it would be like to pursue a career in this increasingly diverse industry. What are you interested in creating? Whether you play all the time or not, if you're interested in how to design games, sign up!

Recommended for ages 16+ Workshop capacity: 20 people

**When:** Saturday 12 March, 2016

**Where:** QUT Gardens Point

**Duration:** 10am-12pm & 1-3pm

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### MARINE BIOLOGIST'S APPRENTICE

Who wouldn't want to be a marine biologist with the Great Barrier Reef – the largest living structure on Earth – right on our doorstep? Scientists continue to discover hundreds of new marine species from the GBR each year, the majority of new animals being invertebrates (animals without backbones). A team of Queensland Museum marine scientists will put you to work with microscopes and cameras and you'll get to see some of the remarkable collections of marine life ranging from single celled animals all the way up to whales.

Recommended for ages 14+ Accompanying parents are welcome; however please note space is limited

Workshop capacity: 10 people

**When:** Saturday 12 March, 2016

**Where:** Queensland Museum, Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

# WORLD SCIENCE FESTIVAL BRISBANE

## APPRENTICE PROGRAM

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### MARINE ZOOLOGIST'S APPRENTICE

Use hands-on techniques in genetics, botany, and zoology to examine the evidence left by a large flood event in Moreton Bay. Discover if a dead dugong is a member of a local population using genetics; explore how flood impacts the spread of mosquito-transmitted disease; the impact flood waters have on important seagrass and other aquatic plants. Examine the impact pollution has on species found in the Moreton Bay area. Use your findings to help local marine authorities to manage Queensland's marine environment for the future.

Recommended for ages 14+

Accompanying parents are welcome; however please note space is limited

Workshop capacity: 16 people

**When:** Saturday 12 March, 2016

**Where:** The University of Queensland, St Lucia

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### MICROBIOLOGIST'S APPRENTICE

This is warfare at an antimicrobial level. Alongside scientist Dr Liam St Pierre, you will test how effectively a range of natural products can kill bacteria. Combining biology, chemistry and physics, biomedical science is a fascinating field and you'll get to experience it in a world-leading medical research institute that studies cancer, infectious diseases and mental health disorders.

Participants must be aged 15+ Workshop capacity: 18 people

**When:** Saturday 12 March, 2016

**Where:** QIMR Berghofer Medical Research Institute, Herston

**Duration:** 2-3.30pm

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### PALAEONTOLOGIST'S APPRENTICE

How do we know that the Earth's climate has changed over time? Using scientific techniques with microscopes, graphing, critical thinking and ground-breaking techniques involving 3D printing to identify microfossils, you will investigate the clues left by micro-organisms in the past to predict future climate.

Recommended for ages 14+ Accompanying parents are welcome; however please note space is limited

Workshop capacity: 16 people

**When:** Saturday 12 March, 2016

**Where:** The University of Queensland, St Lucia

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

# WORLD SCIENCE FESTIVAL BRISBANE

## APPRENTICE PROGRAM

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### QUANTUM PHYSICIST'S APPRENTICE

Quantum physics – the weird world of sub-atomic particles – is promising to transform 21<sup>st</sup> century information science and industry. Scientists can now use the rules of quantum physics to send un-hackable messages and vastly improve computing power using either atoms or photons (light particles). As an apprentice, you'll learn how to study and control single quantum particles in the Centre for Quantum Dynamics, generate your own secret code using quantum photonics, and use it to encrypt and decrypt a message. You will also get to tour some of the laser labs where quantum physics research is conducted.

Recommended for ages 16+ Workshop capacity: 12 people

**When:** Saturday 12 March, 2016

**Where:** Centre for Quantum Dynamics, Griffith University, Nathan

**Duration:** 1-3pm

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### ROBOTICIST'S APPRENTICE

What if a robot could use the world we live in as a canvas to paint on? Throughout history, artists and scientists have worked together to imagine a better world. Sometimes – as in the case of Leonardo Da Vinci – artists have also been scientists, exploring the possibilities of new forms of technology. You will get an opportunity to program a one-of-a-kind CubeBot to drive around and create traces, patterns and images with light. Can you unleash your inner Leonardo?

Recommended for ages 14+ Accompanying parents are welcome; however please note space is limited

Workshop capacity: 16 people

**When:** Saturday 12 March, 2016

**Where:** QUT, Gardens Point

**Duration:** 10-12pm & 1-3pm

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### SPORTS ENGINEER'S APPRENTICE

Do you know how much energy you use in a normal day? Find out how wearable sensor technology (accelerometers and gyroscopes) works and what this means for the future of sports. SABEL Labs has developed some of Australia's leading wearable sports technologies that measure the physics of body movement. Apprentices will wear a sensor that will record their movements, download the data, calibrate it, and interpret it using a graphical user interface. On your marks, get set . . .

Recommended for ages 16+ Workshop capacity: 12 people

**When:** Saturday 12 March, 2016

**Where:** SABEL Labs, Griffith University, Nathan

**Duration:** 10-11.30am

**Tickets and bookings:** Adult \$15 | Concession \$13 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

### Science Film Festival

Science buffs will be in their element with a series of films showing across the World Science Festival Brisbane.

*Mind Vs Machine: What Makes Us Human?* Celebrates a rich subgenre of science fiction cinema that explores the intertwined relationship of humans and artificial intelligence.

It focuses on films that investigate what it means to be human in counterpoint to humanoid technologies and the moral implications of artificial consciousness.

For those who prefer fact to fiction Documentary Doubles explore the three topics of maths, space and the mind with six award-winning documentaries from France, Germany, the UK and USA.

Our Film Festival line-up also features some of the best science films from the legendary Stanford Prison Experiment to fact-checking the recent box-office hit *The Martian*.

This curated program of science fiction and science fact is presented in partnership the Australian Cinematheque.

World Science Festival Brisbane is five action-packed days of science at its best, featuring more than a hundred public events and big thinkers from across the globe.

The World Science Festival was founded in New York in 2008 and exclusive rights have been granted to the Queensland Museum to present the event in the Asia-Pacific region.

Stakeholders from private and public industries are partnering with the Queensland Museum to support the World Science Festival Brisbane in its inaugural year including Queensland Government, Tourism and Events Queensland, Brisbane Marketing, Griffith University, QUT, The University of Queensland, BHP Billiton, Department of Science, Information Technology and Innovation, ABC and ABC Radio National, QGC, Arup, Google, Department of Environment and Heritage Protection, Inspiring Australia, QAGOMA, QPAC, if:Book Australia, South Bank Parklands, State Library of Queensland, Accor, Black and White Cabs, Singapore Airlines, Virgin Australia and Sirromet.

#### Media contacts:

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# WORLD SCIENCE FESTIVAL BRISBANE

## MIND VS MACHINE: WHAT MAKES US HUMAN FILM FESTIVAL

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### THE MATRIX

**When:** Wednesday 9 March, 2016

**Where:** Cinema A, GOMA, Stanley Place, South Brisbane

**Duration:** 8-10pm

**Tickets and bookings:** Adults \$10.50; Concession \$8.50

### EX MACHINA

**When:** Wednesday 11 March, 2016

**Where:** Cinema A, GOMA, Stanley Place, South Brisbane

**Duration:** 6-8pm

**Tickets and bookings:** Adults \$10.50; Concession \$8.50

### EXistenZ

**When:** Friday 11 March, 2016

**Where:** Cinema A, GOMA, Stanley Place, South Brisbane

**Duration:** 6-8pm

**Tickets and bookings:** Adults \$10.50; Concession \$8.50

### HER

**When:** Friday 11 March, 2016

**Where:** Cinema A, GOMA, Stanley Place, South Brisbane

**Duration:** 7.45-9.30pm

**Tickets and bookings:** Adults \$10.50; Concession \$8.50

### BLADERUNNER

**When:** Friday 11 March, 2016

**Where:** Cinema A, GOMA, Stanley Place, South Brisbane

**Duration:** 3-5pm

**Tickets and bookings:** Adults \$10.50; Concession \$8.50

# WORLD SCIENCE FESTIVAL BRISBANE

## DOCUMENTARY DOUBLES FILM FESTIVAL

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### MATHEMATICS

These two powerful and fascinating documentaries explore the world of mathematics.

#### **Mapping the Future: The Power of Algorithms**

In the last few years, the data stream flowing through the internet has turned into a tsunami: Ninety percent of the information sitting on the world's servers was created in the last two years.

This total digitization opens up completely new possibilities. Suddenly, our entire lives can be modelled mathematically – and become predictable. We show how predictive analytics is being used today and ask how our lives will change if our future becomes computable.

#### **The Joy of Logic**

A sharp, witty, mind-expanding and exuberant foray into the world of logic with Computer Scientist Dave Cliff.

Following in the footsteps of the award-winning *The Joy of Stats* and its sequel, *Tails You Win – The Science of Chance*, *The Joy of Logic* takes viewers on a new Wingspan roller-coaster ride through philosophy, maths, science and technology all of which, under the bonnet, run on logic.

Wielding the same wit and wisdom, animation and gleeful nerdery as its predecessors, this film journeys from Aristotle to Alice in Wonderland, Sci-Fi to Supercomputers to tell the fascinating story of the quest for certainty and the fundamentals of sound reasoning itself.

**When:** Friday 11 March, 2016

**Where:** Auditorium 2, State Library of Queensland, Stanley Place, South Brisbane

**Duration:** 10am-12pm

**Tickets and bookings:** Adults \$10.50; Concession \$7.50

### SPACE

These two powerful and fascinating documentaries explore the world of space.

#### **GPS: A Global War**

Global positioning systems have transformed our way of life. We rely on them for everything from navigation to measuring changes in sea levels and tracking money. Who provides the signal? How do they do it and at what cost? Is GPS empowering us or paving the way for a 'Big Brother' state? At the moment, GPS is dependent on US satellites. If America were ever to 'switch off' the signal, it could bring down the entire economy of continents and render all our complicated weapons useless. In this documentary, we examine the wonderful world of geolocation – its future uses, those who promote it and those who are worried about its implications for society.

#### **Zero Gravity: A Mission in Space**

Zero GRAVITY is a 52' documentary following two young astronauts, German Alexander Gerst from the European Space Agency (ESA) and American Greg Reid Wiseman of NASA, during their first trip in space. Follow their training and get on board with them to discover their day to day life above us with exceptional images shot inside the International Space Station.

**When:** Friday 11 March, 2016

**Where:** Auditorium 2, State Library of Queensland, Stanley Place, South Brisbane

**Duration:** 1-4pm

**Tickets and bookings:** Adults \$10.50; Concession \$7.50

# WORLD SCIENCE FESTIVAL BRISBANE

## DOCUMENTARY DOUBLES FILM FESTIVAL

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### MIND

These two powerful and fascinating documentaries explore the mystery of the mind.

#### **Alive Inside: A Story of Music & Memory**

Alive Inside is a joyous cinematic exploration of music's capacity to reawaken our souls and uncover the deepest parts of our humanity. Filmmaker Michael Rossato-Bennett chronicles the astonishing experiences of individuals who have been revitalised through the simple experience of listening to music.

His camera reveals the uniquely human connection we find in music and how its healing power can triumph where prescription medication falls short. This stirring documentary follows social worker Dan Cohen, founder of the nonprofit organisation Music & Memory, as he fights against a broken healthcare system to demonstrate music's ability to combat memory loss and restore a deep sense of self to those suffering from it.

An uplifting cinematic exploration of music and the mind, Alive Inside's inspirational and emotional story left audiences humming, clapping and cheering at the 2014 Sundance Film Festival, where it won the Audience Award.

#### **As Soon as Weather Will Permit**

In As Soon As Weather Will Permit the Director Su Rynard's uncle shares the story of his participation in the atomic mission on August 5, 1945. It is the story of a soldier training without the knowledge of what he was training for – a story caught between an individual's recollection and collective memory.

The title refers to the edict from the US war department, stating that the first atomic bomb would be dropped as soon as weather will permit on one of four cities: Hiroshima, Kokura, Niigata, or Nagasaki. Winner of Jury Prize at Imagine Science Filmfest New York 2015.

**When:** Saturday 12 March, 2016

**Where:** Cinema A, Cinema A, GOMA, Stanley Place, South Brisbane

**Duration:** 7.45-9.30pm

**Tickets and bookings:** Adults \$10.50; Concession \$8.50

**When:** Friday 11 March, 2016

**Where:** Auditorium 2, State Library of Queensland, Stanley Place, South Brisbane

**Duration:** 2-4pm

**Tickets and bookings:** Adults \$10.50; Concession \$7.50

# WORLD SCIENCE FESTIVAL BRISBANE

## SCIENCE FILMS

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### THE STANFORD PRISON EXPERIMENT

The Stanford prison experiment was a study of the psychological effects of becoming a prisoner or prison guard. The experiment was conducted at Stanford University on August 14–20, 1971 by a team of researchers led by psychology professor Philip Zimbardo using college students.

**When:** Saturday 12 March, 2016

**Where:** Cinema A, Cinema A, GOMA, Stanley Place, South Brisbane

**Duration:** 3-5.30pm

**Tickets and bookings:** Free

### SCIENCE AND ISLAM

Physicist Jim Al-Khalili travels through Syria, Iran, Tunisia and Spain to tell the story of the great leap in scientific knowledge that took place in the Islamic world between the 8<sup>th</sup> and 14<sup>th</sup> centuries.

Its legacy is tangible, with terms like algebra, algorithm and alkali all being Arabic in origin and at the very heart of modern science – there would be no modern mathematics or physics without algebra, no computers without algorithms and no chemistry without alkalis.

For Baghdad-born Al-Khalili this is also a personal journey and on his travels he uncovers a diverse and outward-looking culture, fascinated by learning and obsessed with science. From the great mathematician Al-Khwarizmi, who did much to establish the mathematical tradition we now know as algebra, to Ibn Sina, a pioneer of early medicine whose Canon of Medicine was still in use as recently as the 19<sup>th</sup> century, he pieces together a remarkable story of the often-overlooked achievements of the early medieval Islamic scientists.

**When:** Sunday 13 March, 2016

**Where:** Cinema A, Cinema A, GOMA, Stanley Place, South Brisbane

**Duration:** 11am-2pm

**Tickets and bookings:** Free

### THE MARTIAN – SCIENCE, DO THEY GET IT RIGHT IN FILMS?

Have you ever wondered if space movies are realistic or whether they cheat to make it more exciting?

This is a once in a lifetime opportunity to hear NASA astronaut Andy Thomas and NASA scientist Pamela Conrad discuss whether the blockbuster movie *The Martian* gets the science right.

They'll talk about their own experiences and space travel as depicted in the film: the representations of gravity; dust storms on Mars; Mark Watney's Rover; and the truth about how comfortable space suits really are.

**When:** Sunday 13 March, 2016

**Where:** Playhouse, QPAC Cnr Grey and Melbourne Streets, South Brisbane

**Duration:** 3-6.30pm

**Tickets and bookings:** Adult \$30 | Concession \$25 | [www.worldsciencefestival.com.au](http://www.worldsciencefestival.com.au)

The background of the poster is a dark, star-filled night sky with a prominent view of the Milky Way galaxy stretching diagonally from the top left towards the bottom right. The text is centered in the lower half of the image.

World  
Science  
Festival  
Brisbane

9 – 13 MARCH 2016  
[worldsciencefestival.com.au](http://worldsciencefestival.com.au)