

World Science Festival Brisbane

Program Highlights

The World Science Festival Brisbane has announced some of the first program highlights for the inaugural event in March 2016.

A full schedule of the current program can be found on the World Science Festival Brisbane website at www.worldsciencefestival.com.au

Tickets are now on sale on the website, with major participants and events continuing to be announced over the coming months.

The World Science Festival Brisbane will take place across the Cultural Precinct and beyond from 9-13 March 2016 with venues including Queensland Museum; Queensland Performing Arts Centre; QAGOMA; Brisbane Convention and Exhibition Centre's Plaza Auditorium; Griffith University's Conservatorium Theatre; South Bank's Cultural Forecourt and Parklands and numerous other science hubs across the city.

Newsletter

Register to receive the World Science Festival Brisbane newsletter at www.worldsciencefestival.com.au

Media

Register to receive World Science Festival Brisbane media releases at www.worldsciencefestival.com.au/about/media

Media contact:

Including images and highlight reels

media@worldsciencefestival.com.au

+61 7 3842 9388

STRATEGIC
PARTNERS



brisbane
australia's new world city



PRESENTED BY





A snapshot of World Science Festival Brisbane

For a the full program, event details, and ticket sales go to www.worldsciencefestival.com.au

SIGNATURE EVENTS

Multi-media mainstage programs will showcase scientists, researchers, philosophers, artists, authors, inventors and more, exploring and debating questions about the universe, our changing world, the universal language of maths, sources of creativity, and the role science plays in some of the most urgent debates of our time.

Included in the full line-up are six Signature Events produced by the World Science Festival in New York. Provocative, entertaining and accessible, these fast-paced programs explore ground-breaking discoveries and the latest technological innovation, guided by leading thinkers from around the world.

For those wanting to delve deeper into these topics, there will be a number of breakout Salons offering in-depth conversations with some of science's greatest minds, in smaller, more intimate settings.

SCIENCE THEATRE

World Science Festival Brisbane celebrates the intersection of science and the arts with the Asia-Pacific premieres of two theatrical works produced by the World Science Festival, *Light Falls: Space, Time and an Obsession of Einstein*, by Brian Greene, and *Dear Albert*, written by Alan Alda.

Continuing to explore this nexus of science and art, World Science Festival Brisbane will present films, photography, design, theatre and music – inspired by science – for children, students and adults throughout the Festival.

STREET SCIENCE!

Saturday 12–Sunday 13 March

This free, two-day extravaganza will showcase the pure fun of science through a non-stop program of hands-on, full-on science in action. Science-inspired culinary demonstrations will explain the chemical reactions on your plate while you mingle with robots and admire art inspired by bioluminescent bacteria. *Street Science!* will be loud, messy, high energy, delicious, interactive and... unforgettable.

COOL JOBS

Meet people with Cool Jobs and explore the science behind their work.

The 'office' may be anywhere from a fossil dig, unearthing creatures unseen for millions of years, to a pyrotechnic movie set or even a kitchen at a zoo preparing lunch for lemurs.

World Science Festival Brisbane introduces you to people behind some of the coolest jobs – to hear their stories, ask them questions and inspire the next generation of scientists.

APPRENTICE PROGRAMS

Work side-by-side with scientists, technologist and innovators in these one-hour apprentice programs to experience what it's like to be a scientist. Curious minds learn the workings and wonders of their chosen fields including palaeontology; quantum physics; marine biology; sports engineering; art conservation; robotics and gaming... to name a few.

REGIONAL PROGRAM

The World Science Festival Brisbane, Regional Program in Chinchilla and Townsville provide communities the opportunity to explore and marvel at scientific research, processes and discoveries with scientists from across a number of disciplines with expert talks, hands-on learning activities and discovery programs.

Chinchilla

Saturday 13 February 2016

9.30am – 4pm

Chinchilla Cultural Centre

Townsville

Saturday 20 February 2016

9.30am – 4.00pm

Museum of Tropical Queensland

Calendar Highlights

WEDNESDAY 9 MARCH 2016

Light Falls: Space, Time and an Obsession of Einstein

Ticketed event

Celebrating the 100th anniversary of Einstein's discovery of the general theory of relativity, this original work weaves together dramatic portrayals, state-of-the-art animation and innovative projection techniques to trace Einstein's electrifying journey toward one of the most beautiful ideas ever conceived. Brian Greene and an ensemble cast tell the dramatic story of the breakthrough moments, near misses, agonising frustrations, and emergence into the light, as one intrepid mind took on the universe... and won.

A World Science Festival Production presented by the World Science Festival Brisbane.

Written by Brian Greene
Directed by Scott Faris
Composed by Jeff Beal
Design by 59 Productions

Brian Greene is a 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'.

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.

Jeff Beal is an American composer with a genre-defying musical fluidity. Beal's score and theme for Netflix House of Cards received four prime time Emmy Award nominations, and recently won outstanding score, bringing Beal's Emmy tally to fifteen nominations and four statues.

Tracy Day co-founded the World Science Festival in 2008 with world-renowned physicist and best-selling author, Brian Greene. She serves as CEO, and oversees the creative and programmatic offerings of the Festival.

Scott Faris has directed the arena spectacular Walking with Dinosaurs, Bette Midler's The Showgirl Must Go On at Caesars Palace, Veronica – Voices at Bally's, both in Las Vegas; William Shatner's one-man show, Shatner's World on Broadway, In Perfect Harmony at 92Y, and over 20 productions of Chicago the Musical, in at least a dozen languages around the world.

59 Productions combines technology and art to tell amazing stories. Whether creating stage productions, museum installations, live music shows, large-scale events or films, 59's team generates creative and technical ideas to help realize ambitious artistic projects.

Benjamin Percy joined 59 Productions in 2011 with the Broadway production of War Horse. Ben has lit or designed projections for theater, opera, and architectural projects around the world, including projections for An American in Paris (Tony Award, Best Scenic Design of a Musical), Little Dancer, Hedwig and the Angry Inch, and Big Fish.

Carl Howell is an actor and musician whose theater 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 (Romeo), 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 is a 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's 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!

THURSDAY 10 MARCH 2016

Chasing Down the Comet

Ticketed event

In 2004, the European Space Agency launched the robotic space probe, Rosetta, on an incredible 11.4 billion kilometre journey chasing down the 67P/Churyumov–Gerasimenko comet. It travelled through space at almost 40,000 kilometres per hour and scientists compared the task of landing it on a comet to a fly trying to land on a speeding bullet. Experience the excitement, trials and tribulations of what is considered the most complex space mission ever attempted as we explore what can be learnt from this extraordinary mission.

Cool Jobs

Ticketed events

Including:

Artur B. Chmielewski

As the US Rosetta Project Manager, Jet Propulsion Laboratory, Artur has managed several flight projects including the Space Technology 8 mission; he was also a Project Element Manager on Deep Space 1 mission; and a power system engineer for Galileo, Ulysses and Cassini spacecraft.

Robert Bell

Robert has a Bachelor of Science with Honours and a PhD in materials chemistry from the University of Queensland. He works as a Science Education Officer for CSIRO, teaching students about science in the lab and at schools, and hosts the Network Ten kids science show: SCOPE.

Jimmy Christiansen

A professional stunt performer who started his career in high-risk management in the Australian Army, Jimmy has over 15 years' experience working in, and controlling, hazardous situations and environments. In the last 10 years he has focused on his work as a professional stunt performer, and stunt safety supervisor.

Scott Hocknull

A vertebrate palaeoecologist, passionate science communicator and 3-D digitisation and virtual technology advocate and practitioner in the museum community. Scott has over 20 years of experience in palaeontology having published his first paper aged 16, at the time Australia's youngest scientific author.

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

Ticketed event

Immanuel Kant, who coined the term genius in the 1700s, defined it as the rare capacity to independently understand concepts that would normally have to be taught by another person.

Since then the spectrum of abilities that we call genius has widened, but pivotal questions remain: What exactly is genius? Where do the remarkable abilities of genius come from?

Is genius something that lives within all of us, or is it a categorically different way of seeing the world bestowed upon only a few? With the emergence of new imaging technologies and a fundamental shift in the understanding of how information is spread through our brains, we're beginning to find some answers.

In this program, we're joined by neuroscientists, psychologists, renowned thinkers, and special performers as they untangle the complicated nature of genius, creativity, and exceptionalism.

A World Science Festival Production presented by the World Science Festival Brisbane.

Featuring:

Alan Alda, a 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.

Nancy C. Andreasen, M.D., Ph.D. is the Andrew H. Woods Chair of Psychiatry at the University of the Iowa Carver College of Medicine. A recipient of the President's National Medal of Science, she pioneered the use of magnetic resonance imaging (MRI) to identify brain mechanisms of normal cognitive processes such as memory and creativity, as well as mental illnesses.

She led the first extensive empirical study of creativity that demonstrated the association between creativity and mood disorders. She is currently conducting a second major study of creativity in prominent artists and scientists using neuroimaging techniques.

Simon Kyaga is an attending physician in psychiatry at Lidingö Affektiva Mottagning, and researcher at the Karolinska Institutet in Stockholm. After meeting several patients with exceptional creative talent, he became increasingly interested in the ancient myth of a close relationship between genius and madness.

Kyaga was part of the research group that in 2012 presented the largest study ever on the association between creativity and psychiatric disorder involving more than 1 million Swedish patients.

FRIDAY 11 MARCH 2016

Dear Albert

Ticketed event

Written by Alan Alda, *Dear Albert* 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 20th 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 ground breaking discoveries.

Featuring Alan Alda

See bio page 4.

Friday night's performance includes a post-performance talk by Alan Alda with Brian Greene.

Breakfast with the Brians

Ticketed event

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 and best-selling author, Brian Greene (think *The Elegant Universe* and *Big Bang Theory*). You'll recognise them both as favourites on the best talk shows – from Adam Hills to David Letterman – as they discuss 'life, the universe and everything' with compere Robyn Williams.

Featuring:

Brian Greene

See bio page 3.

Brian Schmidt

A Laureate Fellow and Distinguished Professor at The Australian National University. Brian was made a Companion of the Order of Australia in 2013.

Robyn Williams

Compere of this discussion, Robyn is a science journalist and broadcaster who has hosted a variety of programs on the ABC including the *Science Show* and *Ockham's Razor*.

He has conducted countless interviews with scientists on programs such as *Quantum* and *Catalyst*, narrated the *Nature of Australia* series, and appeared in *World Safari* with David Attenborough.

To Infinity and Beyond: The Accelerating Universe

Ticketed event

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. And yet, two decades after its discovery, science is still grappling for an explanation of what dark energy actually is. With today's top astrophysicists as our guides, we'll journey to the earliest moments of the universe – and far into the future – in search of clues to cosmology's most vexing puzzle

Featuring:

Josh Frieman

A senior staff scientist at the Fermi National Accelerator Laboratory and Professor of Astronomy and Astrophysics, Frieman's research focuses on cosmology, including the study of dark energy and dark matter, the large-scale structure of the universe, supernovae, and gravitational lensing.

Priyamvada Natarajan

A professor in the Departments of Astronomy and Physics at Yale University, Natarajan's research is focused on exotica in the universe—dark matter, dark energy, and black holes.

Sean Carroll

A theoretical physicist at the California Institute of Technology, Sean's research covers cosmology, field theory, dark energy, particle physics, and gravitation. A regular blogger and public speaker, Carroll has appeared on *The Colbert Report* and *Through the Wormhole* with Morgan Freeman.

Brian Schmidt

See bio left.

Great Moments in Science with Dr Karl

Ticketed event

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? Join Australia's science legend Dr Karl for a 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. Come and laugh and learn.

Featuring Dr Karl Kruszelnicki

Dr Karl is best known as an author and science commentator on Australian radio and television. He has many strings to his bow having done a degree in Physics and Mathematics, a Masters in Biomedical Engineering, and a degree in Medicine and Surgery. He has also studied Computer Science as well as reading for a Masters in Astrophysics.

SATURDAY 12 MARCH 2016

Reality since Einstein

Ticketed event

Never has a scientist captured the world's imagination like Albert Einstein. His disheveled 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 100th 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 will discuss Einstein's ten-year odyssey and the ideas and discoveries that it has generated.

A World Science Festival Production presented by the World Science Festival Brisbane.

Featuring:

Brian Greene

See bio page 3.

Apprentice Program

Ticketed events

A day of hands-on workshops in which renowned scientists, technologists, and innovators educate curious minds on the workings and wonders of their chosen fields including palaeontology; quantum physics; marine biology; sports engineering; art conservation; robotics and gaming... to name a few...

Flatback Turtle Hatching

Free event

Learn more about the amazing Flatback Turtle! Eggs of the Flatback Turtle, an endemic Australian species, will be incubated at the Queensland Museum with the hatchlings timed to emerge during the World Science Festival Brisbane. Our Reptile Curator, Patrick Couper, will be on hand to oversee this project which is designed and supervised by Dr Colin Limpus, an internationally renowned turtle biologist.

Drone Racing

Free event

The MultiGP Australia Drone Challenge is pitting Australia's best drone pilots against each other in a battle to the finish, overcoming never before seen aerial challenges to complete the gruelling circuit race.

Dawn of the Human Age

Ticketed event

Mankind is a master of invention. For millennia, we've reshaped the land, dammed the waters, and conjured towering meccas of civilization. We've overcome the limits of Nature, reimagining the World as we'd like it to be.

In our success, some argue Man has become a force of Nature unto itself – one on par with meteor strikes or earthquakes. That's the question before an international and multidisciplinary team of scientists as they consider the dawn of a new geological epoch: the Human Age.

Declaring this new age will require a clear marker – or 'golden spike' – in the Earth's strata, one denoting the point when Man forever changed our planet.

Indelible scars caused by fossil fuel extraction, for example, or the layer of radiation that lingers in the wake of the first atomic bomb.

In this program, geologists, paleontologists, oceanographers and climatologists gather to explore evidence for the Human Age – and what the implications might be as we imagine the future of our planet.

A World Science Festival Production presented by the World Science Festival Brisbane.

SUNDAY 13 MARCH 2016

The Moral Math of Robots

Ticketed event

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 — 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 neuroscientists, roboticists, philosophers, and computer scientists take us inside the emerging field of robot morality.

A World Science Festival Production presented by the World Science Festival Brisbane.

Featuring:

Janet Wiles

Janet’s research program involves bio-inspired computation in complex systems, with applications in cognitive science and biorobotics. Janet formed the Complex and Intelligent Systems research group at the University of Queensland. Her current research focuses on robots and language.

Matthias Scheutz

A Professor at Tufts University School of Engineering’s Computer Science Department, Matthias is director of the Human-Robot Interaction Laboratory. His current research and teaching interests focus on complex cognitive and affective robots, with natural language capabilities for human-robot interaction.

Rob Sparrow

Rob is a Professor in the Philosophy program; a Chief Investigator in the Australian Research Council Centre of Excellence; and an Adjunct Professor in the Centre for Human Bioethics, at Monash University, working on ethical issues in new technologies. He is a co-chair of the IEEE Technical Committee on Robot Ethics and was one of the founding members of the International Committee for Robot Arms Control.

Ron Arkin

Ron is Regents’ Professor and associate dean for research in the College of Computing at Georgia Tech. He served as visiting professor at KTH in Stockholm; Sabbatical Chair at the Sony IDL in Tokyo; and the Robotics and AI Group at LAAS/CNRS in Toulouse. His research interests include behaviour-based control and action-oriented perception for mobile robots and unmanned aerial vehicles.

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

Ticketed event

Are we alone in the universe? Scientists haven’t found aliens yet, but they’ve shown that our galaxy harbors billions of planets, many of which may have conditions similar to those on Earth. When searching for life beyond our home planet, do we know what to look for? Learn how scientists across astronomy, physics, chemistry and astrobiology are combining their knowledge about life on Earth to search for life beyond.

A World Science Festival Production presented by the World Science Festival Brisbane.

Featuring:

Paul Davies

Paul Davies is a theoretical physicist, cosmologist, astrobiologist, and best-selling author. He is Regents’ Professor at Arizona State University, where he is Director of Beyond: Center for Fundamental Concepts in Science; co-director of the Cosmology Initiative; and principal investigator of the Center for the Convergence of Physical Science and Cancer Biology. His research focuses on the ‘big questions’, from the origin of the universe to the origin of life.

Lisa Harvey-Smith

Lisa Harvey-Smith is an accomplished 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 (ASKAP), a telescope comprising 36 large radio dishes that is currently under construction in the Western Australian outback.

Matthew Bailes

Professor Matthew Bailes is one of the world’s leading pulsar astronomers and the founding Director of the Swinburne Centre for Astrophysics and Supercomputing. Bailes’ team is currently working on designing the pulsar processor for the Square Kilometre Array telescope; re-engineering the 18,000 square metre Molonglo telescope; and searches for Fast Radio Bursts.

Charles H. Lineweaver

Astrophysicist and Associate Professor at the Australian National University’s Planetary Science Institute, Charles’ research areas include cosmology, exoplanetology, astrobiology, and cancer. Lineweaver was a member of the COBE satellite team that discovered the temperature fluctuations in the cosmic microwave background.

Pamela Conrad

An astrobiologist and planetary scientist working at the NASA Goddard Space Flight Center in Greenbelt. For 11 years, Pamela worked as an astrobiologist at the Caltech Jet Propulsion Laboratory, exploring extreme environments on the Earth and preparing for the Mars Science Laboratory mission. Her current research is on planetary habitability.

A full schedule of the current program can be found on the World Science Festival Brisbane website at www.worldsciencefestival.com.au