

BOOKINGS OPEN 19 APRIL 2018

31 MAY 2018, 1.00pm – audience 5+



Suprising Science

Dr Matt Pritchard, Science Magic Shows

The show is packed with science tricks, stunts and puzzles. Matt challenges the audience to discover the sneaky scientific secrets behind the surprising illusions. This is not just an awe & wonder show but one that encourages scientific enquiry and critical thinking skills. Along the way the audience will be taught a host of science tricks using everyday household objects that they can go away and try later; extending the learning and providing teachers with lots of follow up opportunities. During the show Matt will share his background and love of science.

CHASING THE WAVES



15 MARCH 2018, Show Times* – audience 14+

* 11am to 12:30pm, 1:30pm to 3:00pm and 6:45pm to 8:15pm

This is a unique, award-winning show, originally funded for Glasgow Science Festival. Discover how Glasgow scientists helped make one of the biggest discoveries of the century, with this exclusive performance at DL. A charge of £3.00 per person will be applied.

BOOKINGS OPEN 18 MAY 2018

29 JUNE 2018, 7.00pm – audience 10+



Particle Accelerators don't build themselves!

Paul Aden, Thomas Jones, Ryan Cash and Niklas Templeton STFC
(Science and Technology Facilities Council)

Engineers at Daresbury Laboratory have been designing and constructing particle accelerators for over 50 years! These machines further our understanding of the universe, and improve the world we live in. Using demonstrations this talk describes some of the engineering challenges involved in the design, construction and operation of these large Science Facilities. The team will discuss how Daresbury is contributing to the Large Hadron Collider at CERN, the European Spallation Source in Sweden, our own accelerator projects on the Sci-Tech Daresbury Campus and will show you how accelerator technology applications impacts on your life.

All events take place in the Merrison lecture theatre at Daresbury Laboratory. Visit our website for travel information.

A hearing loop is installed in the lecture theatre and disabled access is available. Please let us know when you book if you require us to make any adjustments for your visit. Children under 16 must be accompanied by a responsible adult. Once your booking is made, you will receive a confirmation by email.

The programme is subject to change therefore please refer to the Daresbury Talking Science website for potential updates.

Science and Technology Facilities Council, Daresbury Laboratory,
Daresbury Science and Innovation Campus, Daresbury, Warrington,
Cheshire WA4 4AD.

Front cover image:
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Science & Technology
Facilities Council

Booking is essential:

Book online

www.stfc.ac.uk/dltalkingscience

Email dltalkingscience@stfc.ac.uk

Or call 01925 603040 (24 hour answerphone)

Graphic Design by Andy Collins STFC



Science & Technology
Facilities Council

Talking Science

Daresbury Laboratory

FREE stimulating talks on science, maths and
the Universe, for families, public and schools



Talking Science
Series 2017-18

BOOKINGS OPEN 14 SEPTEMBER 2017

29 SEPTEMBER 2017, 7.00pm – audience 15+

ITER: The Way to Fusion Energy

Dr David Campbell, Director, Science and Operations Department, ITER Organization



Fusion, the nuclear reaction that powers the Sun and the stars, is a potential source of safe, non-carbon emitting and virtually limitless energy for peaceful purposes! ITER (Latin for 'the way') is the world's largest fusion experiment, involving thirty-five nations collaborating to build and operate the most complex machine ever designed; the ITER Tokamak! This talk will look at how construction of this amazing project is progressing and explore how the ITER Tokamak holding 800 m³ of plasma, will be able to reach a temperature of 200 million degrees C, and confine it using some of the largest superconducting magnets ever constructed!

BOOKINGS OPEN 2 OCTOBER 2017

31 OCTOBER 2017, 7.00pm – audience 12+

Dark Matter – Why Is It Dark? Does It Matter?

Dr Steve Barrett, Senior Research Fellow, Department of Physics, University of Liverpool



More than 80% of all the matter in the Universe is 'dark matter'. Why is it dark? What is the evidence that makes us think that dark matter exists? What is dark matter made of? Does it matter? What are the consequences if dark matter does not exist?

BOOKINGS OPEN 13 OCTOBER 2017

24 NOVEMBER 2017, 7.00 pm – audience 14+

Eat, sleep, repeat!

Dr Indrayani Ghangrekar, Daphne Jackson Trust/ ScienceGrrl



Abstract: Day by day, there are certain basic things that we do - wake up, eat breakfast, start work, have lunch, continue work, have tea, go to bed. But why this pattern of behaviour? Why go to bed at night - because most people around us do it, or specifically because it's night? Why do you get hungry at the same times each day? Come hear about some of the reasons why you live each day in a cyclical way.

BOOKINGS OPEN 23 OCTOBER 2017

4 DECEMBER 2017, 7.00pm – audience 15+

The Dawn of Gravitational Wave Astronomy

Dr Chris North, Cardiff University



In 2015 the LIGO experiment detected Gravitational Waves from merging black holes, marking the Dawn of Gravitational Wave Astronomy. This marks the beginning of an exciting new era in astronomy, building on decades of effort from thousands of scientists around the world, and highlighting quite how remarkable Albert Einstein's theory of General Relativity still is after over 100 years. In this talk I'll describe what General Relativity tells us about the Universe in simple terms, and what predictions it has made. I will also outline how the unbelievably precise measurements of gravitational waves are made, using some of the most accurate experiments on Earth. Finally, I'll discuss what the future holds for this very exciting field, with the European "Advanced Virgo" detector having joined the search from Italy, and with some exciting plans afoot for the future.

BOOKINGS OPEN 13 DECEMBER 2017

25 JANUARY 2018, 7.00pm – audience 14+

How to design the James Webb Space Telescope

Alan O'Brien, UKATC, STFC



The James Webb Space Telescope (JWST) is a large 6.5 meter infrared telescope due to be launched in 2018. Astronomers will use it to observe at more distant objects in ways they have never been looked at before, using this information they will study the history of the Universe and our origins. This talk will describe the core science goals for the JWST and the engineering required to make this incredible telescope.

BOOKINGS OPEN 11 JANUARY 2018

22 FEBRUARY 2018, 1.00pm – audience 6+

Flash Bang Science Show

Lewis Owen, STFC, ISIS Neutron and Muon Source and Department of Materials Science and Metallurgy, University of Cambridge



Coloured flames, speedy reactions, liquid nitrogen and hydrogen gas! Find out how scientists use particles moving close to the speed of light to investigate the properties of materials, and discover some of the fascinating systems they study - from aeroplanes to DNA!

BOOKINGS OPEN 1 FEBRUARY 2018

15 MARCH 2018, Show Times* – audience 14+

Chasing the Waves

* 11am to 12:30pm, 1:30pm to 3:00pm and 6:45pm to 8:15pm

This is a unique, award-winning show, originally funded for Glasgow Science Festival. Discover how Glasgow scientists helped make one of the biggest discoveries of the century, with this exclusive performance at DL. A charge of £3.00 per person will be applied.

Dr Zara Gladman, Public Engagement Co-ordinator, Glasgow Science Festival, Emily Benita (actor), Ross Sommerville (actor).

"Chasing the Waves" is an award-winning show that shares the story of what has been hailed as one of the greatest scientific discoveries of the century: the detection of gravitational waves. Discover how scientists helped detect these ripples in space-time, first predicted by Albert Einstein over 100 years ago. Blending comedy, music and visuals, this is physics as you've never seen it before! Explore a new way of looking at the universe. Be entertained whilst exploring a whole new way of looking at the universe.



BOOKINGS OPEN 1 MARCH 2018

12 APRIL 2018, 1.00pm – audience 6+

Look up!

Simon Watt, Science Communicator, Writer, TV Presenter

Simon Watt explores some of the science behind space exploration. Which planet is hottest? Which would float in a swimming pool? Which is the most studied? And just how much space is in space? Join him in this live show to see what experiments you can recreate at home and learn about what you can see if you only look up!



BOOKINGS OPEN 30 MARCH 2018

11 MAY 2018, 7.00pm – audience 10+

What matters about matter: Artificial design and virtual experiments

Dr Ilian Todorov; Dr Ardita Shkurti; Dr Chin Yong; Dr Andrey Brukhno; Dr Richard Anderson; Dr Dawn Geatches, STFC (Science and Technology Facilities Council)

Did you know that computers can be used to explore the structure and composition of matter at the level of atoms and electrons? Did you know that computers can be used to design new materials and test them in virtual experiments? And did you know that chemists here at Daresbury Laboratory do that every day on materials as diverse as shampoos and cling film? Amongst other things we will be describing why and how we use computers to set-up and run our virtual experiments to help design shampoos, laundry liquid, oil and fuel additives.

