CAMBRIDGE SCIENCE FESTIVAL

Mon 12 Mar –
Sun 25 Mar 2018
To pre-book, visit: www.sciencefestival.cam.ac.uk or call: 01223 766766

There is no need to pre-book events unless specifically stated in the programme

**Bookings open:**
Mon 12 Feb 2018

**Lines open:**
11AM - 3PM
Mon - Fri

**Useful information**

Please contact us if you would like all or part of this publication in large font. An audio programme is available on request.

→ Children under the age of 16 must be accompanied by an adult at all times.
→ You may be refused entry if you arrive after an event has started even if you have booked.
→ Limited tickets will be available on the door for all pre-book events.

Your attendance at the Festival signifies your agreement to comply with the Guidance for Attending Cambridge Science Festival: www.sciencefestival.cam.ac.uk/attending
Welcome to the 2018 Cambridge Science Festival
Making sense of the world
Featuring events ranging from astronomy to zoology, the 2018 Cambridge Science Festival welcomes everyone to explore, discuss and discover science through talks, hands-on activities, performances, films and exhibitions. This year we are aiming to ‘make sense of the world’ by looking at our senses, new sensor technologies and whether what we do is sensible!

**Please tell us what you think of the Festival**

[sciencefestival.cam.ac.uk/feedback](http://sciencefestival.cam.ac.uk/feedback)

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**Accessibility**
The Science Festival takes place over many different venues with differing levels of accessibility. Everyone is welcome at the Festival and if you require specific access arrangements, please call: 01223 766766 or email: csf@admin.cam.ac.uk

- **T** Toilet, wheelchair accessible
- **S** Step free
- **Li** Lift to all floors
- **PA** Partial access: phone or email to discuss your requirements

The University of Cambridge Disability Access Guide is available at: [www.cam.ac.uk/disability](http://www.cam.ac.uk/disability)
Exhibitions

SciArt collaborations, hitchhikers, forgotten selves and empire interpreted through installations, paintings, photographs and objects.

Feature Image
Liberty in Print John Locke, Thomas Hollis, and the Christ’s College Two Treatises of Government credit: Christ’s College
**BRILLIANT BRAINS: SEEING SCIENCE THROUGH ART**
An exploration of consciousness, including neuroscience research by Dr Srivas Chennu, Department of Clinical Neuroscience.

11AM - 4PM
→ MON 12 MAR TO SUN 18 MAR
   Gallery 9, 9 Norfolk Street, CB1 2LD

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**INDIA UNBOXED: TAKE-HOLD**
Experience this new interactive work by artist group non zero one and independent artist Sheila Ghelani at the Museum of Archaeology and Anthropology. Drawing on the Museum's Indian collections, the artists have created an experience that playfully interrogates our relationship with museums.

10.30AM - 4.30PM
→ MON 12 MAR TO SUN 25 MAR
   Museum of Archaeology and Anthropology, Downing Street, CB2 3DZ

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**ASTRONOMY AND EMPIRE: LATE OPENING**
In support of our panel discussion, the Whipple Museum and our special exhibition Astronomy and Empire will be open late. Grab a free glass of wine and peruse our main gallery before sampling our new special exhibition guides.

5.30PM - 8PM
→ WED 14 MAR
   Whipple Museum of the History of Science, Free School Lane, CB2 3RH

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**SCIART AT THE CAVENDISH LABORATORY**
SciArt in Cambridge is excited to present the first Cambridge SciArt Exhibition at the Cavendish Laboratory. Explore art inspired by science and mathematics with the theme of making sense of the world.

10AM - 4PM
→ MON 19 MAR TO FRI 23 MAR
1.30PM - 4.30PM
→ SAT 24 MAR
   Cavendish Laboratory, Department of Physics, JJ Thomson Avenue, CB3 0HE

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**DOUGLAS ADAMS: LIFE IN THE UNIVERSE**
Celebrating the cataloguing of Douglas Adams’s papers and artefacts in the beautiful surroundings of his college’s Old Library, this exhibition follows his life and career from Brentwood School to Hollywood, from a bachelor’s degree to Doctor Who, from aye-ayes to IT, and from hitchhiking in Europe to The Hitchhiker’s Guide to the Galaxy.

11AM - 5PM
→ SAT 24 MAR
   The Old Library, St John’s College, St John’s College, CB2 1TP

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**LIBERTY IN PRINT: JOHN LOCKE, THOMAS HOLLIS AND THE CHRIST’S COLLEGE ‘TWO TREATISES OF GOVERNMENT’**
Christ’s College Old Library showcases one of the most important books on political science in existence: John Locke’s annotated copy of his own Two Treatises of Government (1689).

10AM - 4PM
→ FRI 23 MAR TO SAT 24 MAR
   Christ’s College Old Library, St Andrew’s Street, CB2 3BU

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**THE MUSEUM OF OUR FORGOTTEN SELVES**
A thought-provoking interactive installation and audio-adventure exploring the experience of being aged 0–3. Immerse yourself in sense-bending activities simulating the experience of who we all once were. Presented with Anglia Ruskin University.

2PM - 6PM
→ SAT 24 MAR
   Anglia Ruskin University, East Road, CB1 1PT

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“I love the science festival. It enables you to get a brief insight into a whole range of ideas and topics which challenge and inspire.”
MON 12 MAR

I'M NOT MAD: I ONLY BEND REALITY SO THAT I CAN SEE AROUND THE CORNERS
Cambridge Neuroscience Public Lecture

Psychosis refers to the altered perceptions and beliefs that seem to signal a loss of contact with objective reality. It has many forms and possible causes and can be profoundly frightening. Yet some features may occur in people who are not ill or under the influence of drugs. Professor Paul Fletcher examines the experiences of psychosis to consider how they might arise out of the normal functioning of the mind.

6PM - 7PM
→ MON 12 MAR
Robinson College, Grange Road, CB3 9AN

MAPS, MONSTERS AND MAZES IN THE FIGHT AGAINST DEMENTIA
How can a game help to defeat dementia? Join Alzheimer's Research UK to hear about Sea Hero Quest, one of the world's largest citizen science projects. Dr Saber Sami and Professor Michael Hornberger discuss how the project is providing new insights into human spatial navigation and how this could help in diagnosing dementia.

6PM - 7.30PM
→ MON 12 MAR
Wolfson Lecture Theatre, Department of Chemistry, CB2 1EW
• Pre-book

SMALL BUT MIGHTY DATA: WHAT MOBILE DEVICES CAN TELL ABOUT US
Mobile devices are with us 24/7. Intuitively, we understand these mobile companions know about our interests and friends but embedded sensors also offer an incredibly rich window into the lives of individuals and society as a whole. Professor Cecilia Mascolo, Computer Laboratory, discusses the challenges and opportunities of a technology which is revolutionising healthcare to how cities function.

6PM - 7PM
→ MON 12 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

HOW SCIENCE REALLY WORKS: THE SECRET LIFE OF SCIENCE
Science advances onwards, but how does it really work? Professor Jeremy Baumberg, Cavendish Laboratory, takes a provocative look at global science, asking who controls science and what you hear about it.

7.30PM - 8.30PM
→ MON 12 MAR
Frankopan Hall, West Court, Jesus College, Jesus Lane, CB5 8BL
• Pre-book

Festival talks - for adults, teenagers and families - discuss the big questions in science today.
WHEN EVERYDAY MATERIALS ARE AUGMENTED WITH SENSING AND COMPUTATION
Materials and manufacturing processes can be made to adapt to the way in which objects are used by imbuing materials with sensing and computation elements. These elements interact with the physical world by making the algorithms that they implement aware of the physics of the objects in which they are embedded. Dr Phillip Stanley-Marbell highlights research that exploits these observations.

7.30PM - 8.30PM
→ MON 12 MAR
   Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
   • Pre-book

UNDERSTANDING THE EVOLUTION OF INFECTIOUS DISEASES AND ANTIMICROBIAL RESISTANCE: JUST HOW VULNERABLE OR READY FOR THE FUTURE ARE WE?
Presented with Science AAAS
From The Walking Dead to Contagion, we see glimpses of a dystopian future that could become a reality. And while zombies and containing virus spread by dropping bombs are fiction (for now), there’s another kind of nightmare that’s worryingly close. Superbugs. Oh wait, and the next pandemic. Our Cambridge Infectious Diseases Interdisciplinary Centre panel includes Professor Derek Smith, Department of Zoology and Professor Andres Floto and Dr Estée Török, Department of Medicine.

7.30PM - 9PM
→ MON 12 MAR
   McGrath Centre, St Catharine’s College, Trumpington Street, CB2 1RL
   • Pre-book

MATTER OF FACT OR MATTER OF FAITH?
Tony Bell FRS, Professor of Physics at the University of Oxford, argues that science is incomplete as a description of reality, and that faith is the engagement with a further reality beyond science-like certainty or human rationality. Part of the Science meets Faith Series at Wesley Methodist Church.

7.45PM - 9.15PM
→ MON 12 MAR
   Wesley Methodist Church, Christ’s Pieces, CB1 1LG

TUE 13 MAR

UNRAVELLING THE MYSTERY OF ART WITH SCIENCE
In this event, chaired by Tom Feilden, Science Editor for BBC Radio 4 Today programme, we explore why art has such a profound impact on our minds and wellbeing. We also investigate how we can use modern science, both in the revelation of new discoveries of old masters, and in understanding how art can enhance our lives. Participating in the discussion are Dame Barbara Stocking, Professor Caroline van Eck, Dr Carola-Bibiane Schollieb and Professor Barbara Sahakian.

6PM - 7.30PM
→ TUE 13 MAR
   Kettle’s Yard, Castle Street, CB3 0AQ
   • Pre-book

“The hands on experiments were great and the quality of explanations by the scientists were brilliant at both adult and child level.”
GOD AND EPILEPSY
Very rarely, people with epilepsy have mystical experiences during their seizures. This may be why the ancients called epilepsy the Sacred Disease. Dostoyevsky had such seizures and wrote about them in *The Idiot*. Professor Alasdair Coles (Department of Clinical Neurosciences) and Dr Joseph Tennant (Faraday Institute) describe modern-day examples of people who experience these unusual seizures, and what they can teach neuroscience, psychology and theology.

6PM - 7PM
→ **TUE 13 MAR**
   Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
   • Pre-book

SENSING PLANT HORMONES IN ACTION
Hormones influence virtually all aspects of physiology and development. Discover how new technologies are helping us visualise these fascinating chemicals in living plants with Dr Alexander Jones, Sainsbury Laboratory, Cambridge.

7PM - 8PM
→ **TUE 13 MAR**
   Sainsbury Laboratory, 47 Bateman Street, CB2 1LR
   • Pre-book

SCIBAR TALK
SciBar talks are monthly events organised by the British Science Association Cambridge Branch at the Cambridge YHA. Talks are varied and a great opportunity to find out more about science while enjoying a cup of tea or coffee or a drink.

7PM - 8.30PM
→ **TUE 13 MAR**
   YHA Cambridge, 97 Tenison Road, CB1 2DN
   • Pre-book

VIRTUAL AUTOPSY
Discover what happens in an autopsy and learn about human health and disease with the Department of Pathology. Afterwards, have a chat with pathologists and scientists about their work in our Path Caf. Warning: images of pathological specimens.

6.30PM - 7.30PM
→ **TUE 13 MAR**
   Department of Pathology, Tennis Court Road, CB2 1QP
   • Pre-book

WOOFING IT DOWN: LESSONS ON OBESITY FROM MAN’S BEST FRIEND
We love dogs for their companionship and work but they can also help humans by teaching us about human genetic diseases. Dr Eleanor Raffan, Institute of Metabolic Science, explains how studying inherited diseases in dogs can benefit humans too, including examples from her own work studying the genetics of obesity.

7.30PM - 8.30PM
→ **TUE 13 MAR**
   Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
   • Pre-book

HOT TOPICS IN BIOSCIENCE I WISH I KNEW MORE ABOUT
What is gene editing and why should I care? Can we cure Alzheimer’s disease? What can I do with a stem cell? I’ve got the obesity gene, does this mean I’m going to be obese? Nine crucial months: how does our health begin in the womb? Hear our expert panel answer these questions and more.

7.30PM - 9PM
→ **TUE 13 MAR**
   Frankopan Hall, West Court, Jesus College, Jesus Lane, CB5 8BL
   • Pre-book

GENOME EDITING: HOW FAR SHOULD WE GO?
Genome editing technologies such as CRISPR/Cas9 are revolutionising scientific research. From bacteria to crops and animals, including human cells and embryos, scientists can nowadays edit almost any DNA sequence. Join scientists from the Babraham Institute to discuss how far science should go using this powerful tool.

7PM - 10PM
→ **TUE 13 MAR**
   Espresso Library, 210 East Road, CB1 1BG
   • Pre-book
Dr Hugh Matthews  
Reader in Sensory Physiology, Department of Physiology, Development & Neuroscience, University of Cambridge

The human visual system works over an astronomical range of illuminating intensities: a white sheet of paper would be a billion times brighter in outdoor sunlight than on a starry moonless night. We are still able to see the sheet of paper in both cases, although much less detail is visible in near-darkness. The process of light adaptation is a sort of automatic gain control which matches the performance of the rod and cone photoreceptors in the eye (the subject of my own research) and the neural circuits processing their signals in the retina to the intensity of light they are receiving at any particular moment. Consequently, the visual system is principally interested in contrast: differences in brightness, colour and movement within the visual scene.

In my talk at this year’s Science Festival I will explain how the visual system achieves this wide operating intensity range, and how and why it uses contrast to visualise objects. I will also demonstrate how this strategy allows it to be tricked to produce visual illusions.

Following my talk I will be joined by my colleagues Professor Simon Laughlin and Dr David Williams for a panel discussion about the performance and limits of vision in humans and animals.

SEE HUGH’S EVENTS:  
IS SEEING BELIEVING  
11AM - NOON  
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VISION IN NATURE: PERFORMANCE AND SENSITIVITY  
3.15PM - 4.15PM  
⇒ SAT 17 MAR  
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COASTS, CURRENTS, CONFLICTS AND KINGS
We live on a blue planet, and yet most of us rarely touch that blue. But it matters to our lives more than many realise. Dr Helen Czerski looks at how Earth’s oceans work, how different cultures relate to oceans, and what the future holds for the blue of our planet.

5.30PM - 6.30PM
WED 14 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book
• Ideal for teenagers

LIFE IN A NETWORK: MOLECULAR ORGANISATION TO SOCIAL NETWORKS
Nearly all aspects of human life can be structured as a network. These networks hold information concerning how complex systems function/fail, and what changes are needed to improve our quality of life. Dr Goylette Chami, Department of Pathology, highlights one application – the treatment of human intestinal worms in Uganda.

6PM - 7PM
WED 14 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

FROM COLONS TO CONSERVATION: APPLYING IMAGE ANALYSIS TO REAL-WORLD PROBLEMS
Advances in sensors mean that we have so much information about the world but making sense of this remains a challenge. Fortunately, a common set of image analysis techniques can be applied to spatial information collected by sensors. Mathematician Dr Carola Bibiane Schönlieb explains these approaches and forest ecologist Dr David Coomes shows how they are applied to tropical forest conservation.

8PM - 9PM
TUE 13 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

GOING TO THE ENDS OF THE EARTH AS A WOMAN IN SCIENCE
Annual WiSETI Lecture
Professor Dame Jane Francis is a geologist, specialising in the reconstruction of environments on Earth millions of years ago. Her research interests include ancient climates and fossil plants, particularly in the polar regions; the regions most sensitive to climate change. Her research has led to many adventures in the awesome landscapes of the Arctic and Antarctica.

5.30PM - 6.30PM
WED 14 MAR
The Wolfson Hall, Churchill College, Storeys Way, CB3 0DS
• Pre-book

SCIENCE AND EMPIRE: A PANEL DISCUSSION
Historians have presented mounting evidence that science played a crucial role in the conquest and maintenance of the British Empire. Join five Cambridge historians, Mary Brazelton, Joshua Nall, Simon Schaffer, Charu Singh, and Sujit Sivasundaram for a lively discussion of the implications of this claim, and a glass of wine.

6PM - 7PM
WED 14 MAR
Whipple Museum of the History of Science, Free School Lane, CB2 3RH
• Pre-book
100,000 GENOMES PROJECT: TRANSFORMING PRECISION HEALTHCARE

A technology breakthrough that started in Cambridge has brought us to the point where we are able to decode the entire DNA sequence of 100,000 genomes to determine mutations that cause rare genetic diseases and cancer. Dr David Bentley, Chief Scientist at Illumina, and Professor Mark Caulfield, Chief Scientist at Genomics England, discuss how this promises to revolutionise the way we practise medicine.

7PM - 8PM  →  WED 14 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book

HOW DO WE MAKE SENSE OF THE WORLD IN TIMES OF ADVERSITY?

Ever wondered what we do in times of adversity? Why do disasters strike? Why are some people more resilient than others? How do we make sense of it all? Interviews and Q&A with researchers in a range of fields dealing with disasters, health and scientific advances. Presented by the Faraday Institute for Science and Religion.

7PM - 8.30PM  →  WED 14 MAR
St John’s College Old Divinity School, All Saints Passage, CB2 1TP
• Pre-book

CAFÉ SCIENTIFIQUE CAMBRIDGE

Café Scientifique is relaunching in Cambridge in 2018! Join us for an evening exploring health data sensors with Dr Heather Morgan from the University of Aberdeen.

7PM - 9PM  →  WED 14 MAR
The Locker Cafe, 54 King Street, CB1 1LN

WHEN THE OBJECT OF YOUR ACTIONS ESCAPES YOU

Dr David Belin discusses the psychological and neural basis of impulsive/compulsive disorders. He offers a framework to understand how goal-directed behaviour, aimed at experiencing euphoria, pleasure or performing better at exams, in the context of drug use, or relieving distress in obsessive compulsive disorder becomes, in some vulnerable individuals, a compulsive habit.

7.30PM - 8.30PM  →  WED 14 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

THU 15 MAR

DEBATES OVER VACCINATION: THE VIEW FROM CHINA

Public conflicts over mandatory vaccination measures have a much longer history than one might imagine. Anti-vaccination movements are fairly well studied in the Western world; what does the history of immunisation policy in modern China add to our understanding?

5.30PM - 6.30PM  →  THU 15 MAR
Whipple Museum of the History of Science, Free School Lane, CB2 3RH
• Pre-book

MATHS VS SPORT

How do you take the perfect penalty kick? Where is the best place in the world to attempt a world record? What is the limit of human endurance? Maths has all of the answers, and Dr Tom Crawford tells you how you can use it to be better at sports (results may vary!).

5.30PM - 6.30PM  →  THU 15 MAR
Lady Mitchell Hall, Sidgwick Site, Sidgwick Avenue, CB3 9DA
• Pre-book
• Ideal for teenagers
MAKING SENSE OF A HEALTHY LIFESTYLE: HOW SHOULD WE EAT AND EXERCISE?
Nutrition and exercise are paramount for improving health and preventing disease. However, controversy exists over what constitutes a healthy diet. Chocolate is good, butter is back... Alexander Mok, MRC Epidemiology Unit, aims to demystify the research and evidence base underpinning public health recommendations for a healthy lifestyle.

6PM - 7PM
➔ THU 15 MAR
Mill Lane Lecture Rooms,
8 Mill Lane, CB2 1RW
• Pre-book

THE RISE OF THE HUMANS
Dave Coplin, Chief Envisioning Officer at The Envisioners, author, broadcaster and alchemist will inspire, enthuse and entertain in his mission to help you think differently and unlock future success.

6PM - 7PM
➔ THU 15 MAR
Wood-Legh Room, Lucy Cavendish College, Lady Margaret Road, CB3 0BU
• Pre-book

THE SIXTH SENSE OF THE ONCOLOGIST: HOW DOCTORS CAN FIND CANCER EARLIER AND WHY YOU MAY NOT NECESSARILY WANT TO KNOW
How far in advance can we detect cancer and how useful is early diagnosis? This event is organised by the Cambridge Early detection programme, and we invite you to join our panel of experts to discuss the exciting opportunities and hidden challenges of early cancer detection.

6PM - 7.30PM
➔ THU 15 MAR
St Edmund’s College,
Mount Pleasant, CB3 0BN
• Pre-book

MAKING SENSE OF GENES
in partnership with Cambridge University Press

What are genes? What do genes do? Dr Kostas Kampourakis, University of Geneva, explains the origins and evolution of the gene concept, how it has been used, misused and misunderstood, and provides a current view of what genes are (and are not) and what genes do (and do not do).

6PM - 7PM
➔ THU 15 MAR
Mill Lane Lecture Rooms,
8 Mill Lane, CB2 1RW
• Pre-book

SENSE THE PATIENT IN ANCIENT MEDICINE
Without the technological armory available to modern medicine, ancient physicians used all their senses to discover what was wrong with those who came to consult them. Sight and touch were the most developed forms, but Dr Rebecca Flemming explores all the ways that the senses were put to work in Greek and Roman medicine.

6.30PM - 7.30PM
➔ THU 15 MAR
Museum of Classical Archaeology, Sidgwick Avenue, CB3 9DA
• Pre-book

“...A really interesting talk from people who were really at the edge of research and clinical practice.”
BRECKLAND, BIRDS AND CONSERVATION
Cambridge Natural History Society welcomes Robert Hawkes to discuss the research behind one of the UK’s largest replicated field experiments and whether management focused towards two avian figureheads, Stone-curlew and Woodlark, benefits other regionally important species.

6.45PM - 7.45PM
→ THU 15 MAR
David Attenborough Building, New Museums Site, CB2 3QZ

BREWING A TASTE FOR STEM CELLS
Explore the science of beer. Cambridge brewers Moonshine discuss the parallels with life in the laboratory in this interactive talk and beer tasting, as part of the “Regenerator on tour” series at the Cambridge Stem Cell Institute.

7PM - 9PM
→ THU 15 MAR
University Social Club, Mill Lane, CB2 1RX
• Pre-book

METIS FUTURE SCENARIOS: IN CONVERSATION WITH THE NATURAL WORLD
Time is running out for us to deal with climate change effectively. Cambridge Junction hosts a research-in-public event with three natural scientists who address the question “What is the best alternative economic structure for responding to climate change? And what would the impact of such a change be on the natural world?”

7PM – 9PM
→ THU 15 MAR
Cambridge Junction, Clifton Way, CB1 7GX
• Pre-book

THE CIRCULAR ECONOMY: COMING TO OUR SENSES AND TACKLING CLIMATE CHANGE
The idea of the circular economy, a strategy for reducing waste and carbon emissions, is gaining momentum. But what is it? Could it work? And if so, how can you be part of it? Join Cambridge Carbon Footprint to find out more.

7PM - 9PM
→ THU 15 MAR
St Barnabas Church, Mill Road, CB1 2BD
• Pre-book

TRUST AND TRANSPARENCY IN AI SYSTEMS
Research Horizons Public Talk
As AI systems are widely deployed in real-world settings, it is critical for us to understand the mechanisms by which they take decisions. Dr Adrian Weller, Department of Engineering, discusses how processes are being developed to ensure AI systems are transparent, reliable and trustworthy.

7.30PM - 8.30PM
→ THU 15 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

CLIMATE CHANGE IS NOW
With climate impacts affecting many parts of both the developed and developing world, the Cambridge Climate Lecture Series focuses on what action is taking place now and how that is going to shape the world for future generations.

7.30PM - 9PM
→ THU 15 MAR
Lady Mitchell Hall, Sidgwick Site, Sidgwick Avenue, CB3 9DA
• Pre-book
FRI 16 MAR

MAKING SENSE OF OUR UNHEALTHY BEHAVIOUR
Join Professor Theresa Marteau, Behaviour and Health Research Unit, as she explores the question “Why do we persist in engaging in unhealthy behaviour despite valuing our health highly?” and discusses whether a better public understanding of the non-conscious nature of much of human behaviour is key to closing this gap.

5.30PM - 6.30PM
→ FRI 16 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book

FAMELAB CAMBRIDGE FINAL
Presented with TTP Group

Cambridge Science Festival and Cambridge Science Centre are this year’s joint hosts for our FameLab Cambridge final. Join our finalists as they talk about their research in just three minutes. No presentations and limited props, just enlightening, fascinating and sometimes unpredictable snippets of science.

7PM - 9.30PM
→ FRI 16 MAR
Cambridge Science Centre, Unit 44, Clifton Road, CB1 7ED
• Pre-book

SAT 17 MAR

WHY ARE THERE NO DRAGONS?
Have you ever wondered why dragons, unicorns, giants and vampires don’t exist? If so, then this is the event for you, as zoologist Dr Matt Wilkinson takes you on an expedition beyond life as we know it, to learn why evolution just can’t make some things.

10AM - 11AM
→ SAT 17 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book
• Great for families

DYSLEXIA, RHYTHM AND THE BRAIN
Professor Usha Goswami, Department of Psychology, presents an overview of how brain rhythms encode speech rhythms and why this neural process may be atypical in dyslexia.

10AM - 11.30AM
→ SAT 17 MAR
Psychology Lecture Theatre, Department of Psychology, Downing site, CB2 3EB

TALKS AT CRASH, BANG, SQUELCH!
Discover all sorts of weird and wonderful science with our CHaOS student volunteers.

10.15AM - 10.45AM
What is the Universe made out of? with Jan B Mieszczak

11.15AM - 11.45AM
Record-breaking plants! with Sonja Dunbar and Sarah Wiseman

12.15PM - 12.45PM
Sparks, power and crisp packets, with Dave Ansell

1.15PM - 1.45PM
Who wants to be a mathematician? The maths of TV game shows, with Tom Webster

2.15PM - 2.45PM
Life at the extremes, with Matt Worsam and Jiali Gao

3.15PM - 3.45PM
Where are all the aliens? with Andrew Sellek

4.15PM - 4.45PM
Extreme veg: plants on the edge, with Nick Doddrell

10AM - 5PM
→ SAT 17 MAR
Department of Zoology, Downing Street, CB2 3EJ
• Pre-book
• Limited tickets also available on the day
• Great for families

IS SEEING BELIEVING?
An important strategy used by the visual system is to look for differences in brightness, colour and movement in the external world. Dr Hugh Matthews investigates how and why the visual system does this, and how it can be tricked to produce visual illusions.

11AM - NOON
→ SAT 17 MAR
Physiological Laboratory, Department of Physiology, Development and Neuroscience, Downing Site, CB2 3EG
“Excellent lively speaker who was able to explain complex concepts with ease and humour.”

IT’S A GAS!
Supported by the Walters Kundert Charitable Trust

This demonstration lecture at the Department of Chemistry investigates the gases in our atmosphere in Dr Peter Wother’s usual, explosive fashion. Warning: LOUD BANGS!

11AM - NOON
1.30PM - 2.30PM
4PM - 5PM
→ SAT 17 MAR
2PM - 3PM
→ SUN 18 MAR
7PM - 8PM
→ MON 19 MAR

BMS Lecture Theatre,
Department of Chemistry,
Lensfield Road, CB2 1EW
• Pre-book
• Great for families

FASHION AND THE CIRCULAR ECONOMY: ENGINEERING BIOLOGY FOR TEXTILE DYEING
The textile industry is a global environmental disaster, pumping chemicals and other waste into the environment. We explore how science can work with the fashion and textile industries to develop innovative processes that allow us to eliminate the toxic chemicals and waste that feature in the current process.

11AM - 12.30PM
→ SAT 17 MAR
Frankopan Hall, West Court, Jesus College,
Jesus Lane, CB5 8BL
• Pre-book

BITS AND PIECES: SECRETS OF A DIGITAL WORLD
How does a film studio know if you are sharing movies illegally? How are messages transmitted from space without mistakes? How can a scratched CD keep playing? Dr James Grime takes a look at the hidden maths behind the digital world, from WWII to Wi-Fi.

11.45AM - 12.45PM
→ SAT 17 MAR
Babbage Lecture Theatre,
New Museums Site,
Downing Street, CB2 3RS
• Pre-book
• Ideal for teenagers

SENSORY PERCEPTION IN AUTISM: FROM THE CLINIC TO THE LABORATORY
Many people with autism experience increased or decreased sensitivity to sights, sounds, touch, smell and taste. Dr Susanna Mierau discusses how people on the autism spectrum perceive the world differently and how the altered sensation can affect their lives.

12.45PM - 1.45PM
→ SAT 17 MAR
Physiological Laboratory,
Department of Physiology,
Development and Neuroscience, Downing Site, CB2 3EG

BUILDING LIFE FROM STEM CELLS TO UNDERSTAND IT
What do we know about the beginnings of human life? Professor Magda Zernicka-Goetz, Department of Physiology, Development and Neuroscience, talks about the remarkable properties of embryos and the new techniques developed to study their early stages.

2PM - 3PM
→ SAT 17 MAR
Physiological Laboratory,
Department of Physiology,
Development and Neuroscience, Downing Site, CB2 3EG

LIES, DAMNED LIES AND NEWSPAPERS: THE USE AND ABUSE OF STATISTICS IN THE MEDIA
Can we believe everything we read in the papers? Dr Emily Grossman is an internationally acclaimed science broadcaster, writer and TV personality. She discusses how newspapers use and abuse statistics.

11AM - NOON
→ SAT 17 MAR
Isaac Newton Institute for Mathematical Sciences,
20 Clarkson Road,
CB3 0EH
• Pre-book

“Excellent lively speaker who was able to explain complex concepts with ease and humour.”
THE SEDUCTION OF CURVES: THE LINES OF BEAUTY THAT CONNECT MATHEMATICS, ART AND THE NUDE

There is a connection between the stability of oil rigs, the bending of light during gravitational lensing and life drawing. To understand each, we must understand curved surfaces. Allan McRobie, Department of Engineering, discusses how the best place to learn the language of curves is, perhaps, in a life drawing class.

2PM - 3.30PM
→ SAT 17 MAR
Psychology Lecture Theatre, Department of Psychology, Downing Site, CB2 3EB

DISTINGUISHING SELF FROM OTHERS: HOW DO WE DO IT?
Successful social interactions are based on our ability to not only connect or identify with others, but also to differentiate our own thoughts and feelings from those of our interaction partners. Dr Idalmis Santiesteban, Department of Psychology, shows how current research contributes to our understanding of self-other processes using a range of behavioural and social neuroscience methods.

2PM - 4PM
→ SAT 17 MAR
Craik-Marshall Building, Department of Psychology, Downing Site, CB2 3EB

FROM HEART TO EMOTION
Dr Philippe Gilchrist, Department of Psychology, discusses some of the relationships between day-to-day cardiovascular functioning and our thoughts, feelings and behaviours, and shows that certain types of stress are more physiologically taxing than others.

2PM - 3.30PM
→ SAT 17 MAR
Psychology Lecture Theatre, Department of Psychology, Downing Site, CB2 3EB

VISION IN NATURE: PERFORMANCE AND SENSITIVITY
Join Dr Hugh Matthews, Dr David Williams and Professor Simon Laughlin to discover more about the performance and limits of vision in humans and animals from basic mechanisms to evolutionary adaptations.

3.15PM - 4.15PM
→ SAT 17 MAR
Physiological Laboratory, Department of Physiology, Development and Neuroscience, Downing Site, CB2 3EG

DID THE VICTORIANS RUIN THE WORLD?
What would life be like now if the Victorians had engineered things differently? If the internal combustion engine and water-flushing toilets hadn’t taken off during Queen Victoria’s reign, would we all be driving around in electric cars and spending our pennies in hi-tech biogas-producing waterless earth closets today? Join Helen Arney, Festival of the Spoken Nerd, Kat Arney, Naked Scientists, and Dr Hugh Hunt, Department of Engineering, to discover whether the Victorians ruined the world, and vote on whether you would change it back. NB: voting restricted to male land-owning gentry registered before 1819.

2PM - 3PM
→ SAT 17 MAR
Department of Engineering, Trumpington Street, CB2 1PZ
• Pre-book
• Ideal for teenagers

SOMETHING FISHY
Take a deep breath and jump into the incredible world of fish, with marine biologist Dr Helen Scales (goggles and snorkels optional). Find out how fish can live for 500 years, how their beards can glow in the dark and how sometimes they talk to each other with farts.

2PM - 3PM
→ SAT 17 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book
• Ideal for teenagers
HOW TO BE A BADASS SCIENTIST
Steve Mould, author of How to be a Scientist, made the biggest discovery of all time at the age of 35 (The Mould Effect) despite being a disaster in the lab at school. Through shocking experiments, discover the science around you. And through mind-bending illusions, see why you can’t trust your own senses. But remember, knowledge is power: Steve will show you how to prank your friends with the power of science.

4PM - 5PM
SAT 17 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book
• Great for families

BIRD THERAPY AND MENTAL HEALTH
Bird Therapy is the pseudonym of Joe Harkness, a Norfolk-based birdwatcher who explores the therapeutic benefits of birdwatching for people who are experiencing difficulties with their mental health. Focusing on his own issues, Joe shows how engaging with nature can provide a positive focus when managing our own mental health.

5PM - 6.15PM
SAT 17 MAR
David Attenborough Building, New Museums Site, CB2 3QZ
• Pre-book

THE SENSE: AN INTERACTIVE FANTASCIENTIFIC MAGIC SHOW
Have you ever wondered what an illusionist manipulates when they misdirect our attention? Are the five senses the only ones that are magically tricked? Join the Academy of Magic and Science on a journey through the mechanisms that control how we experience the world, experimenting on 21 elements of our sensory system... and misdirecting them all!

10.30AM - 11.30AM
SUN 18 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book
• Great for families

SCIENCE ON SUNDAY TALK: FRENEMIES – DO PLANT VIRUSES PAY BACK THEIR HOSTS?
Science on Sunday is a programme of informal, monthly drop-in talks at the Botanic Garden from March to August. The series launches with a talk by Dr John Carr, Department of Plant Sciences.

11AM - 11.30AM
2PM - 2.30PM
SUN 18 MAR
Classroom, Botanic Garden, 1 Brookside, CB2 1JE
• Normal garden admission charges apply

THE MATHEMATICS OF PAPER
The humble sheet of paper has almost infinite mathematical potential. Join mathematician Dr Katie Steckles as she demonstrates some of her favourite mathematical concepts and shares some puzzles using both real and imaginary pieces of paper. This event includes plenty of opportunities to participate, as Katie reveals the mathematical secrets hiding in household stationery.

2.30PM - 3.30PM
SUN 18 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book
• Ideal for teenagers
Dr Eleanor Raffan
Wellcome Trust Clinical Research Career Development Fellow, Institute of Metabolic Science, University of Cambridge

Dogs became man’s best friend through the work and companionship they offer, but recently a new way that dogs help humans has emerged – by teaching us about the ways genes link to disease. That’s because human interference in dog breeding has meant modern dogs have very unusual genetics.

People have long tinkered with dog breeding, since the friendliest descendants of wolves were encouraged to stay in human settlements, and dogs with expertise in their particular ‘trades’ – herding, rat-catching, retrieving – were preferentially bred. But the big change came when Victorian dog fanciers set rules to define breeds, naming suitable specimens in stud books so that modern breeds often descend from a very small number of founder dogs.

As a vet I got interested in genetics because I saw lots of breed-related disease in my patients. I learnt the small gene pool from which modern breeds were formed both makes them prone to genetic disease and means we have a chance of finding the genes to blame. In fact, it is commonly easier to track down disease genes in dogs than in humans.

My work focusses on obesity, a condition largely determined by our genes. In this talk I will give examples of the lessons dogs have taught us about human biology, including why finding a mutation that makes Labradors greedy sheds light on how genes regulate hunger in people.

www.godogs.org.uk

SEE ELEANOR’S EVENT:
WOOFING IT DOWN: LESSONS ON OBESITY FROM MAN’S BEST FRIEND

7.30PM - 8.30PM
→ TUE 13 MAR
PAGE 9
SUNDAY PAPERS LIVE
AT CAMBRIDGE SCIENCE FESTIVAL
Presented with TTP Group

Imagine the perfect social Sunday: great food, newspapers, Bloody Marys and add a healthy dose of science! This year we’re delighted that Sunday Papers Live is popping up at the Festival. Sunday Papers Live, established in London in 2013, brings the broadsheets to life, section by section, performance by performance, through high-profile speakers, entertainers, creative activities and food and drink. Our special science edition, produced with My Little Festival, aims to offer a thought-provoking and enjoyable Sunday, where you can relax (bring your slippers!) and be engaged with current issues. Speakers include: Dr Giles Yeo, Dr David Bainbridge, Dr Amanda Prorok, Dr Sander van der Linden, Adrian Hillier and poet John Osbourne.

NOON - 4PM
→ **SUN 18 MAR**
Cambridge Wine Merchants Bar, University Centre, Granta Place, Mill Lane, CB2 1RU
- Pre-book
- £10 / children free

MAKIN’ LIGHT
Using sparks, fire, microwave ovens and many more demos, Dave Ansell shows the science and engineering that have allowed humans to shine light into the darkness from the Stone Age to the present day.

4.30PM - 5.30PM
→ **SUN 18 MAR**
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
- Pre-book
- Great for families

SCIENCE FESTIVAL EVENSONG
A service of Choral Evensong celebrating the Science Festival, sung by the Choir of Great St Mary’s, featuring music by Cambridge composers Herbert Howells and Oliver Rudland, and a Festival address by The Right Reverend Dr Richard Cheetham, Bishop of Kingston.

5.30PM - 6.30PM
→ **SUN 18 MAR**
University Church, Great St Mary’s, Senate House Hill, CB2 3PQ
- Retiring collection
MON 19 MAR

SO YOU WANT TO BE A SCIENTIST?
Presented with GE Healthcare

What does it take to become a scientist? Meet scientists and find out about their jobs, what inspired them and what qualifications they needed. Expect amazing demonstrations and lots of time for questions.

9.30AM - 1PM
→ MON 19 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book
• For secondary school pupils

MAKING SENSE OF MODERN FAMILIES
Presented with Cambridge University Press

Professor Susan Golombok, Centre for Family Research, examines the psychological wellbeing of children in new family forms, arguing that the quality of family relationships and the wider social environment are more influential in children's development than are the number, gender, sexual orientation or biological relatedness of their parents.

6PM - 7PM
→ MON 19 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

THE FUTURE OF ORGAN TRANSPLANTATION: SCIENCE, TECHNOLOGY, ETHICS AND LAW
Dr Kourosh Saeb Parsy, Department of Surgery, reviews how organ transplantation is being transformed by innovations in organ donation, stem cell technology, bio-engineered tissues, machine perfusion of organs and other biomedical advances – including a discussion of the ensuing ethical and legal dilemmas.

6PM - 7PM
→ MON 19 MAR
Cambridge Academy for Science and Technology, Robinson Way, CB2 0SZ
• Pre-book

IMMUNOSENSING: HOW DO CELLS COMMUNICATE?
Have you ever wondered how your cells communicate? What happens when they become active? What happens when the immune system hits the wrong target? Our Cambridge Immunology Network panel discuss how our immune system works to keep us healthy and what can happen when things go wrong.

6PM - 7.30PM
→ MON 19 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

SCIART AT THE CAVENDISH LABORATORY: OPEN EVENING
As part of the SciArt at the Cavendish Laboratory exhibition, explore art inspired by science and mathematics with the theme of making sense of the world. This event offers the chance to hear the artists talk about their work.

6PM - 9PM
→ MON 19 MAR
Cavendish Laboratory, Department of Physics, JJ Thomson Avenue, CB3 0FS

HOW TO SPOT DODGY DATA IN THE NEWS
Whether it's about the risks of eating burnt toast or changes in sexual habits, numbers are used to give weight to a media story. But statistics are frequently abused, disguised by the illusion of hard facts. Professor David Spiegelhalter shows how to identify the naughty numbers and the shabby stats, and how some basic mathematics can take apart scare stories.

7.30PM - 8.30PM
→ MON 19 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

• Pre-book
**METAMATERIALS AND THE SCIENCE OF INVISIBILITY**

Presented with Cambridge Society for the Application of Research

Professor Sir John Pendry describes new metamaterials with the ability to control the trajectory of light, which promise improved stealth, telecommunications, solar energy harvesting, biological sensing and medical diagnostics.

**7.30PM - 9PM**

→ **MON 19 MAR**
Wolfson Lecture Theatre, Churchill College, Storey's Way, CB3 0DS
- £5 / £2 students
- CSAR members free, includes refreshments

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**TUE 20 MAR**

**MAKING SENSE OF THE SCIENCE IN YOUR GARDEN**

Ecologist, gardener and author Ken Thompson lifts the lid on your garden, taking a fresh look at simple questions that turn out to have anything but simple answers. Your garden is one big scientific experiment, so come along and find out how it works. You may even go away a better gardener, or at least a more thoughtful one.

**2PM - 3PM**

→ **TUE 20 MAR**
Botanic Garden, 1 Brookside, CB2 1JE
- Pre-book
- Talk free, normal garden admission charges apply

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**CAMBRIDGE GRAVITY LECTURE**

Geneticist, Director of the Francis Crick Institute and Nobel Laureate Sir Paul Nurse presents the first Gravity Lecture. This inaugural event honours inspirational individuals who have contributed to the transformation of society through the pursuit or promotion of science.

**5.30PM - 6.30PM**

→ **TUE 20 MAR**
St John’s College Fisher Building, St John’s Street, CB2 1TP
- Pre-book

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**REVEALING THE WONDERS OF THE MOLECULAR WORLD**

Dr Richard Henderson, researcher at the MRC Laboratory of Molecular Biology and joint winner of the 2017 Nobel Prize in Chemistry, shares the story of how scientists are uncovering the structures of tiny molecular machines within living things in incredible detail.

**6PM - 7PM**

→ **TUE 20 MAR**
Cambridge Academy for Science and Technology, Robinson Way, CB2 0SZ
- Pre-book
- Ideal for teenagers

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**HOW CAN WE MAKE SENSE OF THE INCREASINGLY POLARISED DEBATE ABOUT THE HARMS AND BENEFITS OF BREAST CANCER SCREENING?**

Dr Sian Taylor-Phillips, Dr Fiona Gilbert, Professor David Spiegelhalter and Dr Stuart Hogarth discuss how the breast cancer screening debate has developed since the 1970s, examine the challenges of interpreting the evidence base and communicating complex risk information, and describe how new technological options might address concerns about overdiagnosis.

**6PM - 7.30PM**

→ **TUE 20 MAR**
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
- Pre-book

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**SENSING THE CLIMATE: HOW DO WE MEASURE OUR CHANGING PLANET?**

How do you take the temperature of the entire Earth? Join a panel discussion with local Cambridge scientists as we explore the variety of instruments and methods used to measure and understand Earth’s changing climate system.

**6PM - 7.30PM**

→ **TUE 20 MAR**
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
- Pre-book
ASTRONOMY AND EMPIRE: CURATOR TALK
Whipple Museum Curator Dr Joshua Nall speaks about our special exhibition, Astronomy and Empire. Gain an understanding of the realities of science in the field and an insight into how field science was employed to legitimise key aspects of British colonisation.

1PM - 2PM
→ WED 21 MAR
Whipple Museum of the History of Science, Free School Lane, CB2 3RH

THE SCIENCE OF SLEEP
Professor Richard Wiseman is on a mission to put the world to sleep. For the past few years, he has explored sleep and dreaming, conducted experiments into sleep-learning and assembled the world’s largest archive of dream reports. Join him as he uncovers the power of the sleeping mind, revealing how to get the perfect night’s sleep, decode your dreams and improve your life without moving a muscle.

7PM - 8PM
→ TUE 20 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book

THE SCIENCE OF FAT
For three decades, Professor Stephen O’Rahilly, Metabolic Research Laboratories, has been studying why some people are predisposed to developing obesity and/or type 2 diabetes when others are not, and how this information can help guide treatment and prevention of disease.

6.30PM - 9PM
→ TUE 20 MAR
Peterhouse Theatre, Trumpington Street, CB2 1RD
• Pre-book

CREATING THE COOLEST OBJECTS IN THE UNIVERSE
How cold can you make things in a lab? And how would you do it? Does something interesting happen? And why should we care? Dr Ulrich Schneider explores how you can make things colder than anything in outer space using, surprisingly, lasers.

7.30PM - 9PM
→ TUE 20 MAR
Frankopan Hall, Jesus College, Jesus Lane, CB5 8BL
• Pre-book

THE EFFICACY OF TOUCHING DETERRENTS
Helena Rodwell, Fitzwilliam Museum, shares our research on the deterrents used to prevent visitors touching the collections on display, which range from ‘Do Not Touch’ signs to barriers. Can we successfully provide access without compromising preservation principles?

1.15PM - 2PM
→ WED 21 MAR
Seminar Room, Fitzwilliam Museum, Trumpington Street, CB2 1RB
• Admission by token, available from 12.45PM on the day

SCIART AT THE CAVENDISH LABORATORY: ARTIST’S EVENING
As part of the SciArt at the Cavendish Laboratory exhibition, explore art inspired by science and mathematics with the theme of Making Sense of the World. This artist’s evening event includes presentations by exhibiting artists and talks about the science behind their work.

6PM - 9PM
→ TUE 20 MAR
Cavendish Laboratory, Department of Physics, JJ Thomson Avenue, CB3 0FS
• Pre-book
LETS TALK ABOUT THE SENSE OF SYMPTOMS!
Combining psychoanalytic theory with clinical cases, Iro Zoubopoulou introduces us to the sense of principal psychoanalytical notions from both a Freudian and a Lacanian perspective.

2PM - 3PM
→ WED 21 MAR
Alliance Française
Cambridge, 60 Hills Road,
CB2 1LA

SENSING THE INNER SELF
We are all familiar with the five senses but less so with the sixth sense of our inner body. Dr Jane Aspell, Anglia Ruskin University, discusses the surprising links between sensing one’s heartbeat and generosity, stock market success and emotions.

4PM - 5PM
→ WED 21 MAR
Anglia Ruskin University,
East Road, CB1 1PT
• Pre-book

THE AMAZING WORLD OF BEES
Much of the food we eat is thanks to pollinators like bees. A panel of experts discuss how bees make sense of the world around them and what affects their ability to do so. Organised by Cambridge Global Food Security Initiative and Cambridge EIT Food programme.

5.30PM - 6.45PM
→ WED 21 MAR
Department of Plant Sciences, Downing Site,
CB2 3EA
• Pre-book

“Brilliant presentations. I travelled 30 miles to be there. Definitely worth it. Thank you.”

THIS DOES NOT MAKE ANY SENSE: SIX WORDS THAT ROCKED MOLECULAR SCIENCE
The most interesting events and discoveries in molecular science and nanotechnology went from “this does not make any sense” to Eureka! Dr Ljiljana Fruk, Department of Chemical Engineering and Biotechnology, highlights discoveries and molecules that initially did not make any sense, but have nevertheless rocked our world and changed the way we live.

6PM - 7PM
→ WED 21 MAR
Mill Lane Lecture Rooms,
8 Mill Lane, CB2 1RW
• Pre-book

WHAT’S THE POINT OF PAIN?
Pain is a sense that evolved early in life, and occurs in all multicellular organisms. Professor Geoff Woods (Cambridge Institute for Medical Research) discusses, in today’s safer, modern world, why we have it, and what happens if you are born unable to feel pain – is it a panacea or a curse?

6PM - 7PM
→ WED 21 MAR
Cambridge Academy for Science and Technology,
Robinson Way, CB2 0SZ
• Pre-book

WIKI, PLEASE EXPLAIN!
Unlike most of us, computers are very good at quickly absorbing huge amounts of information. Unfortunately, they are less good at sharing their knowledge with us. Humans learn best through conversation and conversations are not something that comes naturally to computers. So, how do we teach computers to talk? Dr Milica Gašic explains how researchers in machine learning approach this challenge today.

6PM - 7PM
→ WED 21 MAR
Mill Lane Lecture Rooms,
8 Mill Lane, CB2 1RW
• Pre-book

A SENSE OF SEDGWICK
He mixed in high circles, and had a lion, a ship, numerous fossils and the Sedgwick Museum of Earth Sciences named in his honour. It is now 200 years since Adam Sedgwick became Woodwardian Professor. Get to know more about the man, his life and the fruits of his labour in the Museum gallery after hours with a glass of wine.

6PM - 7.30PM
→ WED 21 MAR
Sedgwick Museum of Earth Sciences,
Department of Earth Sciences, Downing Street,
CB2 3EQ
• Pre-book
We’re in the middle of a revolution. Thanks to genomics, we can know the entire DNA sequence of organisms, which has huge implications for personalised medicine, disease screening, new vaccines, gene editing, and more. Where will the genome revolution take medical science, and what does it mean for patients? With Professors Jane Dacre, President of the Royal College of Physicians; Dame Sally Davies, Chief Medical Officer for England; Mary Dixon-Woods, THIS Institute; Tim Eisen, AstraZeneca; and Simon Gregory, Health Education England.

**6.30PM - 8PM**
→ **WED 21 MAR**
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
- Pre-book

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**OUT THINKERS**
Just like white light is made by all the colours of the rainbow, so science is made by the contributions of a cast of thousands. Meet some of these researchers for laughs and a lot of science! Out Thinkers serves to showcase the talent of LGBT+ researchers, providing a platform where people can talk about their scientific work while truly being themselves.

**7PM - 10PM**
→ **WED 21 MAR**
The Panton Arms, 43 Panton Street, CB2 1HL
- Pre-book

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**THU 22 MAR**

**SMALL STEPS TO CHANGE THE WORLD**
The Global Sustainability team at Anglia Ruskin University discuss what we mean by sustainability, why it matters and what we can do to address its central themes: from global research to steps we can all make.

**1PM - 2PM**
→ **THU 22 MAR**
Anglia Ruskin University, East Road, CB1 1PT
- Pre-book

**ARE FOOD MILES WORTH WORRYING ABOUT?**
For the environmentally and socially conscious consumer, trying to make sensible food choices can be confusing. What key issues should we be considering when we do the weekly shop? Organised by Cambridge Global Food Security Initiative and Cambridge EIT Food programme.

**5.30PM - 6.45PM**
→ **THU 22 MAR**
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
- Pre-book

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**ANNUAL DISABILITY LECTURE: DISABLED ACADEMICS IN THE 21ST CENTURY**
Professor Nigel Lockett and Dr Hameid Haroon discuss their career highlights within the context of having a disability. What do they wish they had known earlier? What support or information has been effective in helping them push forward in their careers? Discover the secrets of their success.

**5.30PM - 7PM**
→ **THU 22 MAR**
St John’s College Fisher Building, St John’s Street, CB2 1TP
- Pre-book

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**OLIVER GAVE HIS HEART TO AMELIA... AND HIS LUNGS TO CHLOE**
Oliver is an organ donor. Mr Pedro Catarino, Clinical Lead for Transplantation, Royal Papworth Hospital NHS Foundation Trust, discusses the mechanics behind Oliver’s legacy to Amelia and Chloe. Cardiopulmonary transplantation, a transformative therapy in every sense.

**6PM - 7PM**
→ **THU 22 MAR**
Cambridge Academy for Science and Technology, Robinson Way, CB2 0SZ
- Pre-book
Over 1 billion people worldwide suffer from infections with parasitic worms. These individuals are amongst the poorest of the poor within low-income countries. Treating these individuals is a challenging task. It requires an understanding of how networks shape our everyday lives.

Many aspects of human life can be viewed as a network, i.e. a set of connections. The pattern of these connections, for example, for neurons, electricity grids, and people give us insight into how our brain functions, how to avoid blackouts, and why infectious disease outbreaks occur. We are able to use networks to improve our quality of life because many real-world networks irrespective of the type or geographical location are remarkably similar. These similarities manifest in the pattern of connections. For example, in a friendship network, there will be only a few ‘popular’ people with many friends whilst most people have only a few friends. This uneven distribution of connections also is a common feature of molecular networks.

I am leading a study with the Ugandan Ministry of Health to investigate how networks can improve the treatment of humans with intestinal worms. We are utilising networks to track/stop the spread of infectious diseases and to develop new treatment strategies.

In this talk, I will discuss how networks form a key part of the fabric of our lives and how this information may be used to improve the lives of the world’s poorest of the poor.

https://wt-globalhealth.cam.ac.uk

SEE GOYLETTE’S EVENT:
LIFE IN A NETWORK: MOLECULAR ORGANISATION TO SOCIAL NETWORKS, AND THE APPLICATION TO INTESTINAL WORMS

6PM - 7PM
→ WED 14 MAR
HOW DO BRAINS LEARN ABOUT THE WORLD AROUND US?
How does the brain piece together information from the senses to interact with a rapidly changing world? How does the brain learn and how does experience re-organise its functions? Does the brain need a personal trainer? Can you get an old brain to learn new tricks? Can we re-wire our brain through training? Join Dr Zoe Kourtzi, Department of Psychology, to find out.

6PM - 7PM
→ THU 22 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

REFREEZING THE ARCTIC
Presented with Cambridge Physics Centre

We may want to cool the planet if (when) we fail to meet our CO₂ emissions targets. There are technologies almost ready to go but some sound quite scary. Dr Hugh Hunt asks, is it safe to meddle with the climate when we only have one Earth?

6PM - 7PM
→ THU 22 MAR
Pippard Lecture Theatre, Department of Physics, Cavendish Laboratory, 19 JJ Thomson Avenue, CB3 0HE

THE FUTURE OF ORGAN TRANSPLANTATION: A YOUNG RESEARCHER’S PERSPECTIVE
Organ transplants save lives and improve quality of life for recipients but demand still outstrips supply. Professor Mike Nicholson introduces some of the young scientists in his team to talk about their research and the developments in organ transplantation that they hope to see in the future.

6PM - 7PM
→ THU 22 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

LIFE IN A DISH
Join the Cambridge Stem Cell Institute and the Department of Sociology to see how society connects to and manipulates living matter. What relationship exists between researchers and the living materials they study and how can we explore this through film and virtual games?

6PM - 8PM
→ THU 22 MAR
St Barnabas Centre, St Barnabas Church, Mill Road, CB1 2BD
• Pre-book

LAND OF EAGLES: FROM CLOSED NATION TO WILDLIFE PARADISE
Conservationist Kevin Hand presents the Cambridge Natural History Society Presidential Address on his work to find the last strongholds of vultures and birds of prey in Albania, so these magnificent birds can be protected and thrive again in a country known as the Land of Eagles.

6.45PM - 7.45PM
→ THU 22 MAR
David Attenborough Building, New Museums Site, CB2 3QZ

GENOMICS IN A JIFFY
Chat with scientists from the Wellcome Genome Campus about the field of genomics and how studying DNA is revolutionising how we see ourselves, our species and our planet.

7PM - 9PM
→ THU 22 MAR
The Michaelhouse Café, St Michael’s Church, Trinity Street, CB2 1SU
• Pre-book

“Great experience to attend talks in real lecture theatres. The Festival is an excellent initiative by the University.”
MOVEMENT MATTERS: REGENERATIVE STRATEGIES IN ORTHOPAEDIC SURGERY
Professor Andrew McCaskie, Department of Surgery, considers key advances in orthopaedic surgery that aim to repair or regenerate bone and joint tissues, and the progression from familiar materials used today to advanced materials, molecules and cells that encourage repair in the body.

7.30PM - 8.30PM
→ THU 22 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

SHIPS, ICE AND SATELLITES: KEEPING POLAR SCIENCE MOVING
The Antarctic is a difficult place to do science. Keeping a research ship moving, safe and efficient while executing research projects is tricky in a vast expanse of frozen ocean. Ranging from ice charts, to satellite imagery, sea ice forecasts and even surveillance by small drones, Andrew Fleming, British Antarctic Survey, describes how space-borne technologies help reveal the past?

7.30PM - 8.30PM
→ THU 22 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book

FRI 23 MAR
WHAT WE DON’T KNOW ABOUT THE UNIVERSE: FROM THE VERY SMALL TO THE VERY BIG
Join the Cambridge Philosophical Society for a one-day meeting covering the challenges faced by particle physicists and cosmologists in understanding how the Universe works. Discussion topics range from the early Universe, through the Standard Model to quantum gravity and gravitational waves, and what’s happening at the Large Hadron Collider.

9AM - 5.15PM
→ FRI 23 MAR
Lady Mitchell Hall, Sidgwick Site, Sidgwick Avenue, CB3 9DA

TOUCHING THE PAST FROM AFAR
How can new technologies help reveal the past? Using visually colourful case studies, two archaeologists from Cambridge’s Computational and Digital Archaeology Laboratory discuss archaeological satellite remote sensing. They ask if and how such technologies and modern approaches can allow us to reach beyond what we normally see from the ground to ‘touch’ the past from afar.

1PM - 2PM
→ FRI 23 MAR
McDonald Institute for Archaeological Research, Downing Street, CB2 3ER

ALEX HOPKINS LECTURE: HOW TO MAKE A DWARF MAMMOTH
Is there anything more oxymoronic than a dwarf mammoth? Yet they, and other dwarf elephant species, evolved many, many times during the Ice Age. Dr Tori Herridge takes a tour through the weird world of ice age islands, exploring how and why dwarf elephants evolved, and how evolution can be both simpler and more predictable than often thought.

5PM - 6PM
→ FRI 23 MAR
Bristol Meyers Squibb Lecture Theatre, Department of Chemistry, Lensfield Road, CB2 1EW
• Pre-book
• Ideal for teenagers

INSECTS: THE WORLD’S WEIRDEST FOOD?
BBC Gastronaut Stefan Gates uses rockets, flatulence, honey and sweets to take you on a rip-roaring adventure through the world of edible insects. Meet live locusts, crickets and mealworms as you discover the strangest and most exciting food on the planet. With guests Dr Edgar Turner and Charlotte Payne, Department of Zoology.

5.30PM - 6.30PM
→ FRI 23 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book
• Great for families
# SIERRA LEONE, EBOLA AND BEYOND

In 2014 Sierra Leone was hit by an Ebola outbreak. Responding to a Public Health England call, Professor Ian Goodfellow established and ran the diagnostic facilities at Makeni and maintains a commitment to the country. Teacher Ian Harvey joined the team in 2017 to deliver science education to teachers and pupils. They talk about the challenges and successes, and their future plans.

### 6PM - 7.30PM

- **FRI 23 MAR**
  - Cambridge Academy for Science and Technology
  - Robinson Way, CB2 0SZ

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# FOOD FOR THOUGHT: AWAKENING NEURAL STEM CELLS IN THE BRAIN

Stem cells in the brain can generate new neurons throughout an animal’s life in response to stimuli such as exercise, nutrition and injury. Professor Andrea Brand, Gurdon Institute, aims to understand the signals that instruct stem cells to produce new neurons at will. The ability to reactivate neural stem cells from a dormant state raises the prospect of future therapies for brain repair after damage or neurodegenerative disease.

### 6.30PM - 7.30PM

- **FRI 23 MAR**
  - St John’s College Old Divinity School, All Saints Passage, CB2 1TP
  - Pre-book

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# SAT 24 MAR

## POCKET POWER PLANT

There is a growing demand for electronic devices that are wireless, portable, wearable and/or implantable. Researchers in the Department of Materials Science and Metallurgy discuss how they develop highly efficient nanomaterials for energy harvesting and how these can be incorporated into devices that convert motion and heat into electricity.

### 10AM - 11AM

- **SAT 24 MAR**
  - Department of Materials Science and Metallurgy, 27 Charles Babbage Road, CB3 0FS

## A BALLROOM DANCE OF ELECTRON PAIRS: A BRIEF INTRODUCTION TO SUPERCONDUCTIVITY

Over a hundred years after its discovery in 1911, superconductivity remains one of the most intriguing topics in physics. Researchers from the Department of Materials Science and Metallurgy show how breakthroughs in fields including medical resonance imaging, railway transportation and particle detection have been made possible thanks to the unconventional properties of superconductors.

### 10.30AM - 11.30AM

- **SAT 24 MAR**
  - The Maxwell Centre, JJ Thomson Avenue, CB3 0HE
  - Pre-book

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## COME FLY WITH US! A TOUR OF JET ENGINE MATERIALS

The jet engine is a tough engineering environment utilising the very best of what materials science has to offer. Efficiency requires engines to run hotter and faster, yet remain light. Researchers from the Department of Materials Science and Metallurgy focus on the key materials used at different stages throughout the history of the jet engine and look to what the future holds.

### 11.15AM - 12.15PM

- **SAT 24 MAR**
  - Department of Materials Science and Metallurgy, 27 Charles Babbage Road, CB3 0FS

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## THE SCIENCE OF ICE CREAM

Investigate the incredible material properties of ice cream, and find out about industrial ice cream manufacture. Discover the science behind why ice cream tastes so good with researchers from the Department of Materials Science and Metallurgy, and taste our homemade ice cream, which is created using the ultra-fast cooling power of liquid nitrogen.

### NOON - 1PM

### 1.30PM - 2.30PM

- **SAT 24 MAR**
  - The Maxwell Centre, JJ Thomson Avenue, CB3 0HE
  - Pre-book

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**BETTER THAN BIONIC: BUILDING BETTER MEDICAL IMPLANTS**
Have you ever wondered which materials are currently used in implants for regenerative medicine? Want to know about the current technology being used to produce more natural and functional prostheses and implants? Join us for a talk that takes you through the current applications of materials in medicine and showcases the cutting-edge work done every day in the Cambridge Centre for Medical Materials.

**12.30PM - 1.30PM → SAT 24 MAR**
Department of Materials Science and Metallurgy, 27 Charles Babbage Road, CB3 0FS

**HOW SCIENCE REALLY WORKS**
Science advances onwards, but how does it really work? Professor Jeremy Baumberg, Department of Physics, takes a provocative look at global science, asking who controls it and what you hear about.

**1PM - 1.45PM → SAT 24 MAR**
Cavendish Laboratory, Department of Physics, JJ Thomson Avenue, CB3 0HE

**DIGITAL MANUFACTURING: HOW ENGINEERS ARE MERGING THE PHYSICAL AND DIGITAL TO MAKE A BETTER WORLD**
What happens when you bring together people who understand digital technologies with people who understand how to make physical things? Professor Tim Minshall and colleagues from the Institute for Manufacturing explore how incredible new things are being made using extraordinary new manufacturing techniques.

**1.30PM - 2.30PM**
**3.30PM - 4.30PM → SAT 24 MAR**
Institute for Manufacturing, 17 Charles Babbage Road, CB3 0FS

**THE ATOMIC GRAMOPHONE**
Modern technology, from mobile phones to Mars landers, relies on electronic devices so small that they are beyond the resolution of any light microscope. Researchers from the Department of Materials Sciences and Metallurgy discuss the development of tools, such as the atomic force microscope, that allow us to access these extremely small scales.

**1.45PM - 2.45PM → SAT 24 MAR**
Department of Materials Science and Metallurgy, 27 Charles Babbage Road, CB3 0FS

**BURGERS, BACTERIA AND HEART DISEASE: THE PROCESSED FOOD DEBATE**
Dr Clett Erridge, Anglia Ruskin University, presents a thought-provoking examination of some of the latest scientific discoveries making unexpected connections between bacteria, processed foods and our risk of developing heart disease and type 2 diabetes.

**2PM - 3PM → SAT 24 MAR**
Anglia Ruskin University, East Road, CB1 1PT

**MAKING SENSE OF THE EARLY YEARS**
Responding to audience questions submitted in advance, Dr Sarah Kuppen, Anglia Ruskin University, tackles the most controversial parenting topics head on, including sleep training, breast feeding and smacking, and the biggest parenting dilemmas as identified by you.

**2PM - 3PM → SAT 24 MAR**
Anglia Ruskin University, East Road, CB1 1PT
SOMETHING FISHY

Dr Helen Scales
Writer, marine biologist and broadcaster

Among all the animals alive today, fish get a bit of a raw deal. A lot of people think of them simply as food, which is no great surprise, really, seeing as the closest many of us come to fish is a tuna sandwich or a plate of fish fingers. And yet, down beneath the waves, fish lead amazing lives and get up to all sorts of surprising things.

For my talk in this year’s festival I’ll be revealing many of the great wonders of fish. I’ll bust a few myths (goldfish definitely have more than a 7-second memory) and show how fish lead colourful, noisy, thoughtful lives. They send messages to each other by drawing secret graffiti on their bodies; they sing songs, use tools, build elaborate sand castles on the seabed, and much more besides.

And I hope to convince as many of my audience as possible to become fish watchers. Whether you put on a pair of wellies and visit a beach at low tide, peer into ponds and rivers, or pull on a pair of goggles and jump in, there are loads of ways to explore the incredible world of fish and find out for yourself just how fascinating these animals can be.

www.helenscales.com

SEE HELEN’S EVENT:
SOMETHING FISHY

2PM - 3PM
SAT 17 MAR
PAGE 17
SOUNDS OF SPACE
Radio emissions are produced naturally on Earth, and by bodies throughout the solar system and beyond. These cannot be heard directly, but conversion to sound reveals the mesmerising and data-rich sounds of space – a solar flare, space storms, neutron stars and merging black holes. Join us on a science-inspired journey of off-world sounds; includes a presentation and experiential artwork in a darkened space.

2PM - 3PM
SAT 24 MAR
Anglia Ruskin University, East Road, CB1 1PT
• Pre-book

PECHA KUCHA CHALLENGE
Graduate engineering students take on the challenge of sharing their research with you in just 6 min 40 sec. Will they succeed? Join us for just one talk or stay for as many as you like (they can be addictive!).

2PM - 4PM
SAT 24 MAR
Institute for Manufacturing, 17 Charles Babbage Road, CB3 0FS
• Pre-book

VACUUM BAZOOKAS AND CUSTARD FIREBALLS
A brief trip around the science of gasses – what happens if you squash them, stretch them, heat them and cool them? Involving liquid nitrogen and our infamous repeating vacuum bazookas.

2.30PM - 3.15PM
SAT 24 MAR
Cavendish Laboratory, Department of Physics, JJ Thomson Avenue, CB3 0HE
• Pre-book

WHY PHYSICS: HOW CAN I HELP MY CHILD? PARENTS’ EVENT
Not sure what a physics degree might lead to for your child? Want to help them get to university but not sure how? Join the team from Isaac Physics, an online physics resource aimed at the transition from A-level physics to university level, to find answers to these questions.

2.30PM - 3.15PM
SAT 24 MAR
Cavendish Laboratory, Department of Physics, JJ Thomson Avenue, CB3 0HE
• Pre-book

CONNECTING PLANETARY MAGNETIC RECORDS TO ATOMIC STRUCTURES
Over the Earth’s 4.5 billion year lifetime, its magnetic field has changed. The use of advanced scientific techniques allows researchers from the Department of Materials Science and Metallurgy to study magnetic rocks from Earth’s earliest era. This information may be able to tell us how planets and asteroids formed and evolved over time.

3PM - 4PM
SAT 24 MAR
Department of Materials Science and Metallurgy, 27 Charles Babbage Road, CB3 0FS

MATHS EXPLORERS
Mathematicians are not only good at answering questions, they are good at asking questions too. Join Charlie Gilderdale on a journey of discovery as he encourages you to unleash your curiosity, ask interesting questions and set off to explore the unknown. Come to this highly interactive talk prepared to explore, discuss, investigate, take risks and try something new!

3PM - 4PM
SAT 24 MAR
Centre for Mathematical Sciences, Wilberforce Road, CB3 0WA
• Pre-book
“It’s been a fascinating and busy two weeks, thank you!”

TALES OF BEING AN ALIEN IN SPORT: IMPAIRING COMMON SENSE(S)
Allow yourself to be drawn into Thomas's story of life as a deaf athlete, and reflect on how the use of different senses should be encouraged in disability sport. Presented by Anglia Ruskin University.

3.30PM - 4.30PM
→ SAT 24 MAR
  Anglia Ruskin University, East Road, CB1 1PT
  • Pre-book

DOCTOR WHO: WHONIVERSAL RECORDS
Dr Marek Kukula, Public Astronomer at the Royal Observatory Greenwich, presents a lively, surprising and fun look at the real-life science of Doctor Who. Presented with Anglia Ruskin University.

3.30PM - 4.30PM
→ SAT 24 MAR
  Anglia Ruskin University, East Road, CB1 1PT
  • Pre-book

SCIENCE FESTIVAL DINNER
Join us for our Cambridge Science Festival dinner at Leckhampton House, Corpus Christi College’s postgraduate accommodation set in beautiful gardens just off Grange Road. Our evening starts with a pre-dinner drink followed by a three-course dinner and coffee.

We’ll be eating local, trying to make sense of food miles and considering how to create a future-proof and effective food sector that provides sufficient, safe and nutritious food for all.

Grilled sprouting broccoli, Hazelnut, cured hens yolk and nettle puree

Dingley Dell glazed pork shoulder with loin, fine green beans, carrot and pomme galette
Or
Risotto of morels, confit leeks, ossolano, rocket and truffle

Apple, salted caramel and crème fraiche sable Breton

7PM PRE-DINNER DRINKS
7.30PM - 10PM DINNER
→ SAT 24 MAR
  Leckhampton House, 37 Grange Road, CB3 9BJ
  • Pre-book
  • £39
  • Adults only, dress to impress
LISTENING TO LIGHT
Michal Tomaszewski, Department of Physics, explores the various ways we can look inside the human body without touching it, and how different imaging technologies can be used to visualise different aspects of the organism and its function. He focuses on optoacoustic imaging which may help to differentiate benign tumours from aggressive cancer tumours.

DO YOU WANT TO BE A DOCTOR?
Join Dr Kinnary Martin and see if you can help her make a diagnosis in her on-stage GP surgery! You’ll see real-life ‘patients’ and real-life signs of illness. Decide what to do and see if you can work out what’s wrong. Free stethoscopes for the most promising new GPs!

THAT’S NON-SENSE: THE SURPRISING SCIENCE OF YOUR SENSES
Think you see with your eyes and taste with your tongue? Join Ginny Smith and prepare to be amazed, confounded and confused in this demo-packed tour of your brain as you find out your senses aren’t as simple as they seem... and even discover some senses you never knew you had!

MAN-MADE OR NATURAL? WHICH IS BETTER?
Science and engineering often take inspiration from natural solutions to solve many of the world’s problems. The world is now awash with superior materials, intelligent machines and bionic parts, but how much better are they than the real thing, or do we still have a long way to go? In the tradition of Dr Ewen Kellar’s previous talks, expect live experiments and noisy demonstrations.

READING ONSCREEN AND UNDERSTANDING EVERYDAY DIGITAL DISTRACTION
We are increasingly accessing information online and reading digital texts. Does the rise of electronic reading affect our attention spans and add distractions? Tyler Shores debates whether the medium, print or digital, changes the reading experience.

ATTRACTION EXPLAINED: THE SCIENCE OF HOW WE FORM RELATIONSHIPS
Can science explain how we form relationships? Professor Viren Swami, Anglia Ruskin University, looks at how geography, appearance, personality and similarity affect who we fall for and why.

THAT’S NON-SENSE: THE SURPRISING SCIENCE OF YOUR SENSES
Think you see with your eyes and taste with your tongue? Join Ginny Smith and prepare to be amazed, confounded and confused in this demo-packed tour of your brain as you find out your senses aren’t as simple as they seem... and even discover some senses you never knew you had!

SCIART AT THE CAVENDISH LABORATORY: OPEN EVENING
Explore art inspired by science and mathematics with the theme of making sense of the world. This event offers the chance to hear the artists talk about their work.

MAN-MADE OR NATURAL? WHICH IS BETTER?
Science and engineering often take inspiration from natural solutions to solve many of the world’s problems. The world is now awash with superior materials, intelligent machines and bionic parts, but how much better are they than the real thing, or do we still have a long way to go? In the tradition of Dr Ewen Kellar’s previous talks, expect live experiments and noisy demonstrations.

1PM - 2PM
→ SUN 25 MAR
Cambridge Academy for Science and Technology, Robinson Way, CB2 0SZ
• Pre-book
• Great for families

2.30PM - 4.30PM
→ SAT 24 MAR
Anglia Ruskin University, East Road, CB1 1PT
• Pre-book

DO YOU WANT TO BE A DOCTOR?
Join Dr Kinnary Martin and see if you can help her make a diagnosis in her on-stage GP surgery! You’ll see real-life ‘patients’ and real-life signs of illness. Decide what to do and see if you can work out what’s wrong. Free stethoscopes for the most promising new GPs!

11.15AM - NOON
→ SUN 25 MAR
Cancer Research UK Cambridge Institute, Li Ka Shing Centre, Robinson Way, CB2 0RE
• Pre-book

THAT’S NON-SENSE: THE SURPRISING SCIENCE OF YOUR SENSES
Think you see with your eyes and taste with your tongue? Join Ginny Smith and prepare to be amazed, confounded and confused in this demo-packed tour of your brain as you find out your senses aren’t as simple as they seem... and even discover some senses you never knew you had!

11.15AM - 12.15PM
→ SUN 25 MAR
Cambridge Academy for Science and Technology, Robinson Way, CB2 0SZ
• Pre-book
• Great for families

5PM - 6.30PM
→ SAT 24 MAR
Anglia Ruskin University, East Road, CB1 1PT
• Pre-book
READING THE GENOME: AN EVOLUTIONARY PERSPECTIVE
Genomes are the instruction manuals of life, and genes can be thought of as individual instructions. Many genetic changes that give rise to disease, or that drive evolution, occur not within the genes themselves, but rather change how the gene is read. Join Dr Ericca Stamper, Cancer Research UK Cambridge Institute, to find out more.

1.45PM - 2.30PM
→ SUN 25 MAR
Cancer Research UK Cambridge Institute, Li Ka Shing Centre, Robinson Way, CB2 0RE
• Pre-book

WANT TO BE HEALTHIER? LET US CHANGE YOUR ENVIRONMENT...
From designing age-friendly cities for our ageing population, to nudging us into healthier behaviours, to implementing policies that influence our food and alcohol choices, environmental interventions can be used as tools to encourage us to lead healthier lives. Join Cambridge Public Health researchers to discuss the pros, cons, ethics and impacts of these interventions.

3PM - 3.45PM
→ SUN 25 MAR
Cancer Research UK Cambridge Institute, Li Ka Shing Centre, Robinson Way, CB2 0RE
• Pre-book

“...We all thoroughly enjoyed the talk including my teenager who though it was only going to be of interest to dad. Thank you for making science so accessible to the public.”
Performances and films

Feature Image
Voyager Golden Record Cover
credit: NASA Jet Propulsion Laboratory
Laughs and serious science through comedy, quizzes, opera, film, song, stories and performances.

PERFORMANCES

MON 12 MAR

QFLY
Join us for the Museum of Zoology's take on a popular game show. Over the course of the evening, a team of researchers is pitted against a team of students to answer baffling biological brainteasers. Get ready for a mix of laughs and learning as we find out who really knows more about science and the natural world.

6PM - 7.30PM
→ MON 12 MAR
Museum of Zoology, New Museums Site, Downing Street, CB2 3EJ
• Pre-book

WED 14 MAR

WHAT REALLY KILLED THE DINOSAURS?
Join Matthew Kemp and Roberta Wilkinson on a musical adventure through time! Sixty-five million years ago a huge meteorite collided with the Earth and the dinosaurs became extinct. But is that the whole story? This immersive show from Geologise and the Sedgwick Museum is packed with science, songs and a spot of mild peril!

5PM - 6PM
→ WED 14 MAR
Physiology Laboratory, Department of Physiology, Development and Neuroscience, Downing Site, CB2 3EG
• Pre-book
• Great for families

PHYSICS FAN FICTION
What do theoretical physicists do all day and is there any point to it? What really goes on at the Large Hadron Collider? Could the Higgs boson kill us all? Theoretical physicist Dr Fran Day takes an irreverent and occasionally surreal look at the cutting edge of particle physics.

7.30PM - 9PM
→ WED 14 MAR
The Portland Arms, 129 Chesterton Road, CB4 3BA
• Pre-book
• £5

STORY COLLIDER: REGENERATION
Spring is a season of revival and growth. The Cambridge Stem Cell Institute and Cambridge Junction bring you Story Collider, the hit international storytelling show, with a ‘regenerative’ twist. Join us for drinks, laughs and more.

7.30PM - 9PM
→ WED 14 MAR
Cambridge Junction, Clifton Way, CB1 7GX
• Pre-book
• £8
IS ED ACZEL INFINITE?
Ed Aczel is the ultimate anti-comic, but is he infinite? Have you ever thought: Who am I? Is time constant or variable? Is it only possible to imagine the infinite? No, me neither. Anyway, we live in uncertain times and Ed’s house is built on shifting sand. So it calls for some navel-gazing. It’ll probably be fine – it might even work… and there’ll definitely be jokes.

7.45PM - 8.45PM
THU 15 MAR
CB2 Café, 5/7 Norfolk Street, CB1 2LD
• Pre-book
• £6.60

THE Z-LIST DEAD LIST
A show about obscure scientists from history. How have they helped us make sense of the world? Join BBC Radio 4’s Iszi Lawrence, engineer Phill Brown, and Bright Club stars Andrew Holding and Michael Conterio for an hour of historical giggles.

9PM - 10PM
THU 15 MAR
CB2 Café, 5/7 Norfolk Street, CB1 2LD
• Pre-book
• £7.70

THE BARRINGTON HIPPO
Cambridge City Opera and the Sedgwick Museum present the story of one of the Museum’s most charismatic residents – the Barrington Hippo. For all lovers of geology, zoology and natural history, with music and theatre thrown in for good measure!

11AM - 11.30AM
2PM - 2.30PM
SAT 17 MAR
Tilley Lecture Theatre, Department of Earth Sciences, Downing Street, CB2 3EQ
• Pre-book
• Great for families
• £8 / £5 children

ANOTHER EVENING OF UNNECESSARY DETAIL
The team behind Festival of the Spoken Nerd are back with Another Evening of Unnecessary Detail. As well as being an event where 80% of the words in the title start with a vowel, it’s also an evening where – of the 16 unique letters in that title – 31.25% of them are used more than once. It’s also hosted by Spoken Nerd’s geek songstress Helen Arney and experiments guy Steve Mould, along with some of Cambridge’s enthusiasts, scientists, miscellaneous experts and comedians.

7PM - 9.30PM
SAT 17 MAR
Babbage Lecture Theatre, New Museums Site, Downing Street, CB2 3RS
• Pre-book
• £10
**SUN 18 MAR**

**CAMBRIDGE JUNCTION PRESENTS: ME AND MY BEE**
Climate change is massive. Bees aren’t. Our fuzzy little friends need our help and so we’re launching a political party disguised as a show. Multi-award-winning theatre company ThisEgg invites you to save the world – one bee at a time. A new comedy for children and adults alike. Plant the seed for change, join the Bee Party. Before it’s too late...

11.30AM - 12.30PM
2.30PM - 3.30PM
→ SUN 18 MAR
Cambridge Junction, Clifton Way, CB1 7GX
• Pre-book
• Great for families
• £10 / £6 children

**LIFE AND MUSIC IN EXTREME ENVIRONMENTS**
Cambridge Graduate Orchestra invites you on a musical journey from the ocean floor to mountain peaks and beyond into space as Dr Andrew Murray explains how life has adapted to these extreme environments.

8PM - 10PM
→ SUN 18 MAR
West Road Concert Hall, 11 West Road, CB3 9DP
• Pre-book
• £12 / £8 concessions / £6 students and children

**THU 22 MAR**

**THE VARIABLES PRESENT: AN EVENING OF SCIENCE VARIETY**
Come prepared to laugh out loud as experienced science comedians and Cambridge’s top new talent explore how they got into research, what they spend all day doing and why they do it all.

7.30PM - 10.30PM
→ THU 22 MAR
The Portland Arms, 129 Chesterton Road, CB4 3BA
• Pre-book
• £5

**SAT 24 MAR**

**TALES OF DISCOVERY: STORIES INSPIRED BY CAMBRIDGE RESEARCH**
Join Marion Leeper for a morning of storytelling, making sense of the University’s research with unique tales from the treasure-trove of new and exciting discoveries emerging from the University’s labs, offices and libraries.

10AM - 1PM
→ SAT 24 MAR
Milstein Room, Cambridge University Library, West Road, CB3 9DR

**SO YOU THINK YOU KNOW ABOUT DINOSAURS?**
So You Think You Know About Dinosaurs is the hit stage show starring dinosaur aficionado Dr Ben Garrod. Get ready to go on an exciting prehistoric adventure as Ben talks you through the deadliest predators that ever roamed the planet.

2PM - 4PM
→ SAT 24 MAR
Anglia Ruskin University, East Road, CB1 1PT
• Pre-book
• Great for families
• £15 / £10 students / £7.50 children
SUN 25 MAR

CAMBRIDGE JUNCTION PRESENTS: THE STAR SEEKERS
Have you ever dreamt of flying to the moon? Visiting a space station? Becoming an astronaut? Join The Wardrobe Ensemble on a journey through the stars where you take the steering wheel. For families and children aged 3–8 years.

11.30AM - 12.25PM
2.30PM - 3.25PM
→ SUN 25 MAR
Cambridge Junction,
Clifton Way, CB1 7GX
• Pre-book
• Great for families
• £10 / £6 children

STEM IN SONG
STEM in Song is a presentation of songs and science. Performed by the Girls’ Choir of St Catharine’s College, coupled with scientific demonstrations and tours at the MRC Laboratory of Molecular Biology and with topics ranging from DDT to Darwin, this is a science lesson like no other!

11.30AM - 12.30PM
1.30PM - 2.30PM
→ SUN 25 MAR
MRC Laboratory of Molecular Biology, Francis Crick Avenue, Cambridge Biomedical Campus, CB2 0QH
• Pre-book
• Great for families

FILMS

CINEMA UNDER THE WHALE
We are proud to present an evening of cinema with our friends The Star & Mouse Picture show as we come together to discover the weird and wonderful world of animals living beneath the ocean waves in documentaries shown in the unique setting of the Whale Hall of the Museum of Zoology.

6.30PM - 9PM
→ TUE 13 MAR
→ WED 14 MAR
Museum of Zoology,
Downing Street, CB2 3EJ
• Pre-book

SCISCREEN: INSIDE OUT
SciScreen is a film festival at the Cambridge Arts Picturehouse organised by the British Science Association Cambridgeshire branch. The aim of SciScreen is to raise public awareness of the real science behind the science portrayed in cinema.

3PM - 5.30PM
→ SUN 18 MAR
Arts Picturehouse, 38–39 St Andrew’s Street, CB2 3AR
• Pre-book
• Normal ticket prices apply
Sensors are fundamental to life. The cells in our bodies sense the amount of oxygen available to them. Bacteria perceive their chemical environment and react to it by moving towards or away from what they have detected. We use our own senses to protect us from danger; whether it is smell and taste to alert us to harmful chemicals in the air or in our food, or our hearing to warn us of an approaching animal or car. Numerous animals have developed sensors specific to their environment, e.g. fish able to detect electricity in the deep sea.

Humans have invented an abundance of artificial sensors over millennia, e.g. measuring temperature, telling the time with sun dials and atomic clocks, imaging the very small and the very large with microscopes and telescopes.

Metrology, the science of measurement, has developed alongside these scientific and technological advances. More accurate, faster and cheaper measurements have enabled technological progress.

Today we are witnessing a paradigm shift in sensor technologies and applications. Sensors have become pervasive as an increasing number of products and services include or rely on sensors. The Internet of Things, smart devices and artificial intelligence are recent developments which have been made possible through the miniaturisation and mass production of sensors. Personalised health care and driverless cars are prominent examples.

The societal changes we are likely to experience as a result of these advances in sensor technology are slowly emerging. Social scientists, policy makers and sensor developers are asking: "Who owns the data which is collected by all the sensors, how do we protect our privacy?"
Hands-on

Feature Image
Making data fun
credit: Anne Presanis, MRC Biostatistics Unit
BEFORE THE FESTIVAL

COME TO YOUR SENSES
Our brains take information from all of our senses and combine it to understand the world around us. Hear, touch, see and smell your way through some of the senses you are familiar with and discover more about lesser-known ones in this hands-on activity for all with British Science Association Cambridge Branch members.

NOON - 4PM
→ SAT 10 MAR
Grafton Centre, CB1 1PS
• Great for families

A TASTE OF THE POLAR REGIONS
Ever wondered what there is to eat at the South Pole? Find out how polar explorers survived on rations and try some yourself! An evening of pop-up talks, tastings and activities including the first official tasting of a 100-year-old sample of Sandow's Cocoa.

6PM - 8PM
→ MON 12 MAR
Scott Polar Research Institute, The Polar Museum, Lensfield Road, CB2 1ER
• Pre-book

SENSE SAFARI
Look, listen, imagine and sniff your way around the Botanic Garden with our new Sense Safari Challenges. Pick up your challenges at the ticket office to start your adventure into a hidden world of amazing plants and animals.

10AM - 4PM
→ MON 12 MAR TO SUN 25 MAR
Botanic Garden, 1 Brookside, CB2 1JE
• Normal garden admission charges apply for accompanying adults

MON 12 MAR

LITTLE EXPLORERS: VOLCANOES!
Join us for an explosive story of volcanoes in Antarctica! Touch and feel volcanic rocks and other natural objects in this sensory story session for the under 5s with storyteller Marion Leeper.

10AM - 11AM
11.15AM - 12.15PM
→ MON 12 MAR
Scott Polar Research Institute, The Polar Museum, Lensfield Road, CB2 1ER
• Pre-book
• Great for families with children under five

From senses and sensors to neurons and robots, explore science through activities, tours and workshops.
NEURAL KNITWORKS: CRAFT A HEALTHY BRAIN
Join the award-winning Neural Knitworks team and get crafty to discover more about Cambridge Neuroscience. Learn to knit, crochet or bind a neuron using scientifically informed patterns, contribute to an international collaborative art/science project and improve your own brain health. Your handmade creations can become part of our huge woolly brain sculpture, made from neurons donated by volunteers from around the world. Yarn, needles, patterns (including a no-knit version) and helpful support from volunteers will be provided.

DROP-IN SESSIONS FOR COMMUNITY GROUPS

10AM - NOON
→ TUE 13 MAR
→ FRI 16 MAR
→ TUE 20 MAR
→ FRI 23 MAR
Cambridge Central Library, 7 Lion Yard, Grand Arcade, CB2 3QD

CRAFT A HEALTHY BRAIN AT THE GUILDHALL
Spend the afternoon crafting a neuron and exploring neuroscience and brain health with Cambridge neuroscientists and the Neural Knitworks team.

NOON - 4PM
→ SUN 18 MAR
The Guildhall, Market Square, CB2 3QJ

HANDS-ON NEURAL KNITWORKS AT THE CAMBRIDGE BIOMEDICAL CAMPUS
Spend the day knitting and nattering with neuroscientists and the Neural Knitworks team at the Cambridge Biomedical Campus.

11AM - 3PM
→ SUN 25 MAR
Cambridge Academy for Science and Technology, Robinson Way, CB2 0SZ

FAMILY WORKSHOPS

4PM - 6PM
→ TUE 13 MAR
→ FRI 16 MAR
→ TUE 20 MAR
→ FRI 23 MAR
Cambridge Central Library, 7 Lion Yard, Grand Arcade, CB2 3QD
• Pre-book

IMAGING THE BRAIN WITH PHYSICISTS FROM THE WOLFSON BRAIN IMAGING CENTRE AND NEURAL KNITWORKS
Spend the afternoon making woolly neurons with the Neural Knitworks team and learn about imaging the brain from scientists who are bringing the latest imaging research to cognitive and clinical research in Cambridge.

2PM - 4.30PM
→ SAT 24 MAR
Cavendish Laboratory, Department of Physics, J J Thomson Avenue, CB3 0HE

BIG STEM CELL KNIT WITH NEURAL KNITWORKS
Spend the day chatting with neuroscientists at the Cambridge Stem Cell Institute, while creating beautiful textile stem cells with the Neural Knitworks team.

10AM - 4PM
→ SAT 17 MAR
Cambridge Stem Cell Institute, Tennis Court Road, CB2 1QR
SCENTS AND SENSIBILITY
Join us at Cambridge Regional College for two hands-on activities in chemistry and physics and a talk. Discover how chemical structure is linked to smell and how many features of our modern world rely on sensing technology.

5PM - 8PM
→ TUE 13 MAR
Meet at reception, Cambridge Regional College, Kings Hedges Road, CB4 2QT
• Pre-book
• Great for families

WED 14 MAR
WHAT IS CONVERSATION?
This interactive event focuses on ‘Thinking Without Words’. Tango and magic are the tools Professor Nicky Clayton, Department of Psychology, and artist Clive Wilkins use to explore the subjective experience of cognition, where our imaginative powers allow us to think outside the box and generate non-verbal synergy.

5PM - 6.30PM
→ WED 14 MAR
Latimer Room, Clare College, Trinity Lane, CB2 1TL
• Pre-book
• For adults

MAKING SENSE OF THE MIND AND BRAIN
An evening at the MRC Cognition and Brain Sciences Unit exploring our research in psychology and neuroscience through hands-on activities and experiments followed by short talks.

6PM - 8.30PM
→ WED 14 MAR
MRC Cognition and Brain Sciences Unit, 15 Chaucer Road, CB2 7EF

THU 15 MAR
ROAMING ROBOTS
Arduino is a brilliantly simple device that you can use to build electronics projects easily. We show you how to connect motors and sensors to your Arduino and create the very basics of a roaming robot. It’s then over to you to program it to navigate the room cleverly!

4PM - 6PM
→ THU 15 MAR
Centre for Computing History, Rene Court, Coldhams Road, CB1 3EW
• Pre-book
• Ideal for teenagers
• £12 participants / £8 accompanying adults

WIKIPEDIA EDIT-A-THON
Learn how to edit Wikipedia by creating new entries on pollinating insects and their relationship to plants!

6PM - 8PM
→ THU 15 MAR
Betty and Gordon Moore Library, Wilberforce Road, CB3 0WD

FIVE YEARS OF MAKESPACE: A SHOWCASE
Join the fifth birthday party of Makespace, a community workshop based in the heart of Cambridge. See some of the projects made here over the years and various bits of kit including 3D printers and laser cutters in action, and find out more about maker culture.

6.30PM - 9PM
→ THU 15 MAR
Makespace, 16 Mill Lane, CB2 1RX
SAT 17 MAR
OPEN DAY AT THE DEPARTMENT OF PSYCHOLOGY

ARE YOU SMARTER THAN A BIRD?
Visit the Department of Psychology to try out cognitive tests and see how you measure up against your friends, family and the world’s smartest birds.

CAN YOU CONTROL YOUR IMPULSES?
Join researchers from the Department of Psychology, take part in tasks related to impulsivity and cognitive control, and find out how impulsive you are compared with the general population.

DARE TO PUT YOUR SOCIAL ABILITIES TO THE TEST?
Join psychology researchers as they offer a rare insight into methods used to investigate the ability to understand ourselves and other people in terms of attitudes, behaviour and emotions. Take part in experiments and observe a live demonstration of a brain stimulation study.

10AM – NOON

DON’T BELIEVE EVERYTHING YOU SEE
Our visual experience comes not only from what we look at, but also from what we have learnt about the world. Discover how the brain puts it all together!

FROM RHYTHM AND LANGUAGE: TOWARDS MATHS COGNITION
Join scientists from the Centre for Neuroscience in Education for interactive hands-on demonstrations investigating the neuroscience of learning and move a virtual box with your thoughts!

HOW PRECISE IS YOUR MEMORY?
How precise is your memory? Is what you remember real? Visit the Department of Psychology’s Memory Laboratory exhibit and find out more.

LEARN ABOUT YOUR EMOTIONS
Join researchers from the Department of Psychology and discover more about emotions using videos and stories. Find out how children feel and how watching others makes us feel, and then try it so you can be an active part of science!

OPENING A WINDOW INTO THE BRAIN
Using microscopes, get acquainted with the anatomical landscape of the brain and identify structures and neurons from individuals displaying addictive and compulsive behaviour.

THE CITY AS METAPHOR: SCULPTING TO PRESERVE THE PAST AND ANTICIPATE THE FUTURE
Using Berlin as a marker, and group activity to produce life-sized sculptures of the human form, Professor Nicky Clayton and Clive Wilkins explore the methods by which we preserve the past and anticipate our future.

10AM - 1PM
• For adults

9AM - 4PM
→ SAT 17 MAR
Department of Psychology, Downing Site, CB2 3EB
ARE YOUR HANDS REALLY CLEAN?
How well do you really wash your hands? Scientists from the Department of Biomedical and Forensic Sciences, Anglia Ruskin University, reveal how germs can be spread on items that we regularly touch, even when we wash our hands.

BUILD A CAMBRAIN
Meet with a real brain scientist, learn all about the most fascinating organ in the body and create your own neural masterpiece!

CELLS IN THE SPOTLIGHT
The trillions of cells in our bodies work together to keep us healthy, sensing and responding rapidly to changes in the environment. Join researchers from the Cambridge Institute for Medical Research to learn how we use microscopes to follow dynamic cell behaviours and how this can help us understand what goes wrong in disease.

COMMON SENSE AND SUSTAINABILITY: WHAT ARE THE OBVIOUS SOLUTIONS?
The Global Sustainability Institute, Anglia Ruskin University, brings activities to raise awareness of what sustainability is and what we can do to achieve it.

CRAFT A HEALTHY BRAIN AT THE GUILDHALL
Spend the afternoon crafting a neuron and exploring neuroscience and mental health with Cambridge neuroscientists and the Neural Knitworks team.

DOES THE PATIENT HOLD THE KEY?
A&E is packed, and the ambulance team need a trolley to unload their casualty. Another call comes through and they’ve got to brief A&E before they leave. Can you help scientists from THIS Institute improve handover between the ambulance team and A&E?

GET TO GRIPS WITH GENOMICS
Get to grips with genomics through a range of hands-on DNA activities with researchers from the Wellcome Genome Campus. Explore how studying DNA can enable us to delve into our past, present and maybe even our future.

HILLS ROAD HANDS-ON BIOLOGY
Hills Road Sixth Form College welcomes visitors to take part in hands-on biology activities that are guaranteed to engage educate and entertain.

HOW TO SENSE A DRUG
How does your body know when you’ve taken a medicine? Join scientists from the Department of Pharmacology to find out how your body senses medicines and other chemicals.

I'M A SUPERHERO!
Ever felt special? Find out about the hidden powers inside your body that turn food into useful energy. Researchers from the Cambridge Metabolic Network show how your organs work together as your very own metabolic superteam.

INSTITUTE OF ENGINEERING AND TECHNOLOGY
Do you want to become an engineer? Find out about a career in engineering from members of the IET, operate a train and build a torch to take home.

IT TAKES A VILLAGE TO BUILD A HEALTHIER FUTURE
Our communities, schools and families can shape our choices in ways we often don’t realise. Join MRC Epidemiology Unit scientists to discover what this means for our health and what we can do about it.
MAD ABOUT MALARIA
Do you travel to tropical areas where malaria drug resistance is increasing? Antibiotic resistance is an increasing problem and this can affect parasites like malaria as well as bacteria. Discover more through activities and discussions with researchers from Public Health England.

MAKING SENSE OF MUSCLES
Through the use of thermal imaging cameras, we show how the amount of energy used in the muscles is related to the amount of force being generated. Presented with Anglia Ruskin University.

MAKING SENSE OF SCIENCE
We all like to learn something new. See how the University’s Institute of Continuing Education can help enrich, enlighten and feed your inquisitive mind.

MAKING SENSE OF STATISTICS
Discover how the MRC Biostatistics Unit turns data into knowledge to help us understand what is going on in the world. Take part in our trial, find out how random you are and get involved in our game of sampling and probability.

MEET THE SCIENTISTS
Pop into our science booth and have a chat with our scientists about their research!

OPEN SCIENCE, OPEN DATA
Big data and data science are critical to helping scientists face challenges like curing cancers and making food grow. Discover how data sharing benefits scientific discovery and medical research with researchers from the Department of Genetics.

PEPTIDE MEDICINES
Peptide medicines such as insulin have been around since the early 20th century. Join MedImmune and AstraZeneca scientists to discover how these medicines can be made in two different ways and how you can test that we have made the right peptide.

RACE AGAINST THE AGEING CLOCK!
Are you as old as you feel? Recent research has uncovered an ageing clock in all our cells that reveals whether you are ageing quickly or slowly. Knowing this will reveal who is at high risk of developing age-related disease and help the search for anti-ageing interventions. Get hands-on with this exciting research with the Babraham Institute.

ROCK TEACHERS: MAKING SENSE OF WORD SENSES
Every word has many different senses. How do we select the correct sense and achieve understanding? Explore the fascinating world of words with Dr Martin Schaefer, Anglia Ruskin University.

SCIENCE DETECTIVES
Have you heard a scientific headline that you think is too good to be true? Scientists from the Cambridge Clinical Research Centre are here to sort out the real science from the fake news. Be a detective for the day and help solve these mysteries!

STABLE ISOTOPE DETECTIVES: MAKING SENSE OF HUMAN NUTRITION
How do we measure human energy expenditure, body fat or even how much breast milk infants drink? Explore how MRC Elsie Widdowson Laboratory scientists use stable isotopes to understand the human body and nutrition.

THE HEART: A SENSATIONAL PHENOMENON!
Discover how your heart, the first organ formed in gestation, develops from embryonic cells sensing and responding to complex cues, and how our cardiovascular researchers mimic this process in a dish.

WHERE DO OUR EYES GLANCE WHEN CHOOSING DRINKS AND FOOD PRODUCTS?
Have a go at wearing a pair of eye-tracking glasses and make a selection of cereal packets, soft drinks and sweets from a mock-up of a supermarket shelf. Anglia Ruskin University researchers will then track your eye movements. Where did you look? For how long? How is this related to your chosen product?
WORMS ARE CLEVERER THAN YOU THINK!
Find out how scientists at the MRC Laboratory of Molecular Biology use tiny worms to understand how our neurons work. Look at mutant worms under a microscope and move like a worm in our sweet-finding game.

→ SAT ONLY

YOUR IMMUNE ARMY: HOW DO CELLS COMMUNICATE AND SENSE?
Join Cambridge Immunology scientists to explore your immune system and discover how your body protects you from attacks by disease-causing agents such as viruses, bacteria and fungi.

→ SUN ONLY

10AM - 5PM
→ SAT 17 MAR
NOON - 4PM
→ SUN 18 MAR
The Guildhall, Market Square, CB2 3QJ

OPEN DAY AT THE DEPARTMENT OF PATHOLOGY

BEASTLY BACTERIA AND PESKY PARASITES
Discover how disease-causing bacteria and parasites deploy molecular weapons to wreak havoc in the human body, and find out how scientists from the Department of Pathology fight these tiny foes!

DISEASE DETECTIVES: OUTBREAK ALERT
Demonstrate your disease detection skills – there’s an outbreak and researchers at the Department of Pathology need your help to find the cause. Discover how to identify infections and how we beat them!
10AM - 11AM
11.30AM - 12.30PM
1PM - 2PM
2.30PM - 3.30PM
• Pre-book

HANDS-ON WITH DNA AND CELLS
Make fake blood and build cells with Cellular and Molecular Pathology scientists! Discover more about the sequence and structure of DNA it and how is packaged in a cell – includes our build-your-own-DNA activity.

MAKING SENSE OF VIRAL DISEASES
Come and discover the hidden world of viruses and learn how we try to understand them better. From exploring how different viruses spread, to growing your own protein crystals, we have activities to interest and engage all ages. Plus, meet and interact with two real-life virologists!

YOUR AMAZING IMMUNE SYSTEM
Join our immunologists to explore how our bodies seek out and destroy pathogens, and learn how vaccines work to protect us from diseases.

THE PATH CAF
Need a break from all the excitement of the Science Festival? Or looking for the opportunity to chat with scientists? Join us in the Path Caf for a cuppa!
10.30AM - 3.30PM

10AM - 4PM
→ SAT 17 MAR
Department of Pathology, Tennis Court Road, CB2 1QP

“Great opportunity to get up to the moment updates on the latest findings in science, and get to ask questions.”
PLANT AND LIFE SCIENCES MARQUEE

Take a journey through your senses with scientists from across all the biological sciences and discover more about the sensorial side of their research. Exhibits include:

- Algae, sensitive souls of the sea, with Plant Metabolism Group
- Be a biomaker: DIY sensing, with Biomakespace
- Electroreception: the hidden sense, with the Baker Lab
- Farmers in flight: agriculture for a new generation, with the Global Food Security Forum
- Fun-gi or bad guy: how do plants sense friend or foe? with NIAB
- How does the shape of a body develop from a ball of cells? with the Sanson Lab
- How plants measure the rotation of the world, with the Circadian Clock Group
- Making sense of plant science, with the Sainsbury Laboratory
- Making sense of the 3Rs of animal research, with the AWERB Committee for Replacement, Reduction and Refinement in Animal Experimentation
- Neurons feel the force, with the Franze Lab
- Olfactory cocktail party, with the Matthews Lab
- Plants feel stressed too, with the Transport Group
- Sensing nature: forest ecology and conservation, with the Forest Ecology and Conservation Group
- Sensors, bio-sensibility and no-sense experiments, with the Department of Chemical Engineering and Biotechnology
- Synthetic biology for the senses, with the SymBio Strategic Research Initiative and OpenPlant
- The many functions of the placenta, with the Centre for Trophoblast Research
- What is proprioception? with the Matthews Lab

THE BIG STEM CELL KNIT
Spend the day chatting with neuroscientists at the Cambridge Stem Cell Institute, creating beautiful textile stem cells with the Neural Knitworks team. With talks, tours and activities.

10AM - 4PM
→ SAT 17 MAR
Cambridge Stem Cell Institute, Tennis Court Road, CB2 1QR

CELLS TO SKYSCRAPERS: THE SCIENCE AND ENGINEERING OF 21ST CENTURY TIMBER
Visit the Centre for Natural Material Innovation’s hand-built wooden exhibit, and discover how we combine science and architecture to design 300-metre tall skyscrapers from timber! Find out why ‘wood is good’, what makes wood strong and how to prevent it from burning.

10AM - 4.30PM
→ SAT 17 MAR
Department of Chemistry, Lensfield Road, CB2 1EW

CHEMISTRY IN ACTION
Supported by the Walters Kundert Charitable Trust

Hands-on activities, demonstrations and games with students and researchers from the Department of Chemistry. Investigate the properties of ‘dry ice’ or piece together your own DNA bracelet.

10AM - 4.30PM
→ SAT 17 MAR
Department of Chemistry, Lensfield Road, CB2 1EW
CRASH, BANG, SQUELCH!
CHAOS AT THE SCIENCE
FESTIVAL
Get to grips with exciting, fascinating and just plain weird science that shows you how the world around us works. Enthusiastic students from CHaOS show you what goes on in our experiments, looking at lots of science that goes ‘crash’, ‘bang’ and ‘squelch’!

10AM - 5PM
→ SAT 17 MAR
Department of Zoology, Downing Street, CB2 3EJ
• Pre-book
• Tickets available in advance and some drop-in tickets available on the day
• Great for families

OPEN DAY AT THE DEPARTMENT
OF ENGINEERING

BUILD YOUR OWN ELECTRONIC SENSORS WITH
ARDUINO MICROCONTROLLERS
Ever wondered how modern sensors work? Build your own sensor from scratch and learn about the basic electronics and software behind everyday sensors.
10.30AM - 11AM
11AM - 11.30AM
11.30AM - NOON
• Pre-book
• Ideal for teenagers

FIBE CONSTRUCTIONARIUM
Join Future Infrastructure and Built Environment researchers at the FIBE Constructionarium to discover how we build structures, and how they fall down.

KRAZY KIT KARS WITH THE DEPARTMENT OF
ENGINEERING
What makes a DIY self-propelled toy car go? What makes it go faster? Join Cambridge engineers and design, make, test and modify battery-powered toy cars. Can your car be the best in our Krazy Kar Khallenges?

NUCLEAR 2050?
Where will we get our energy from in the future? Explore the world of nuclear energy with researchers from the University of Cambridge, Imperial College London and the Open University.

SMART BUILDING, SMART CONSTRUCTION
Join researchers from the Centre for Smart Infrastructure and Construction and the Laing O’Rourke Centre for Construction Engineering and Technology to discover how fibre optics, augmented reality, virtual reality and other technologies allow engineers and structures to communicate for better, more efficient design, construction and management.
1PM - 4PM

10AM - 4PM
→ SAT 17 MAR
Department of Engineering, Trumpington Street, CB2 1PZ

ROBOTICS WORKSHOPS
AT CRASH, BANG,
SQUELCH!
Join CHaOS for robotics workshops packed with hands-on design and programming. Zero experience is required as we’ll teach you all the basics and you can start making your own robots do amazing things in no time at all.
10.15AM - 11AM
11AM - 11.30AM
11.30AM - NOON
1PM - 1.45PM
2PM - 2.45PM
3PM - 3.45PM
4PM - 4.45PM
→ SAT 17 MAR
Department of Zoology, Downing Street, CB2 3EJ
• Pre-book
• Tickets available in advance and some drop-in tickets available on the day
OPEN DAY AT THE DEPARTMENT OF GEOGRAPHY

FROM MICROSCOPIC MUD TO THE OPEN OCEAN
Delve into the microscope to marvel at the microcosm of muddy sediments and all that lives within them, before you travel into mangroves and marshes via our virtual reality goggles, or into and over the ocean water to measure tides and sea level.

SENSING SHIFTING LANDSCAPES
Discover how scientists in the Department of Geography make sense of shifting landscapes using drones, aircraft and satellites with instruments that can see things our naked eyes cannot. Try your hand at shifting sand to make your own landscape and test our technology.

SENSING THE FLOW
Discover how to go with the flow – or resist it! – by joining our geographers in the Flume Room of our Geography laboratory researching the flow of water over, around and through natural and not-so-natural obstacles.

SCIENCE AND ARCHAEOLOGY
How do we learn about the lives of ancient people? Science! See how archaeologists from the McDonald Institute for Archaeological Research use science to study past diets, languages, clothes and tools from around the world.

10.30AM - 4PM ➔ SAT 17 MAR
McDonald Institute for Archaeological Research, Downing Street, CB2 3ER

JUST BUGS!
Bugs are all around us, but how do scientists use them to understand the nitty-gritties of the human body? Enter the basement of the Department of Zoology and discover what we learn by looking at insects in the laboratory – from fruit flies to crickets to friendly burying beetles!

11AM - NOON
NOON - 1PM
1PM - 2PM
2PM - 3PM
3PM - 4PM ➔ SAT 17 MAR
Basement, Department of Zoology, Downing Street, CB2 3EJ
• Pre-book

HOW CELLS SENSE THE WORLD
The different cell types in our body and brain help us sense the world around us. Visit our Department and become a scientist for the day and discover how we and our cells see light, detect smell and make sense of the world around us. This interactive event includes hands-on experiments, informative demonstrations and plenty of fun activities for children and adults of all ages.

11AM - 3PM ➔ SAT 17 MAR
Department of Biochemistry, Hopkins Building, Building O, Downing Site, CB2 1QW

RESOURCE: GET IN TOUCH
Join artist Caroline Wendling to create your own clay sculptural forms, after viewing works on display in our Flux exhibition. This workshop is for young people aged 13–18 years old.

11AM - 1PM ➔ SAT 17 MAR
Education Studio, Fitzwilliam Museum, Trumpington Street, CB2 1RB
• Ideal for teenagers
• Pre-book
• £5 per person

HANDS-ON
SCIENTISTS WHO ASKED WHY, WHAT AND HOW
Join Society of Cambridge Tourist Guides on a walking tour around central Cambridge to discover some of our famous scientists who asked why, what and how.

11AM - 12.30PM
1.30PM - 3PM
➔ SAT 17 MAR
Meet outside St John’s College, St John’s Street, CB2 1TP
• Pre-book
• Suitable for accompanied children and wheelchair users

GAME OF DRAGONS OUTDOOR MATHS CHALLENGE
This spring, every dragon sets off with their friends on an adventure in the land of numbers and puzzles. Our maths treasure hunt is open to students in Years 7–13 in teams of three. More details and registration at: www.dragonmaths.com

12.30PM - 5.30PM
➔ SAT 17 MAR
St John’s College Playing Fields, Grange Road, CB3 0HF
• Pre-book
• Ideal for teenagers

GENES AND HEREDITY
Have you ever seen strawberry DNA? Or fruit flies under a microscope? Join scientists at the Genetics Department for activities to discover how genetics pops up in our everyday life.

11AM - 4PM
➔ SAT 17 MAR
Department of Genetics, Downing Site, CB2 3EH

MAKE! STAY IN TOUCH
Explore our Flux exhibition, then join artist Caroline Wendling to create your own clay sculptural forms inspired by the show. A workshop for young people aged 11–13 years old.

2PM - 4PM
➔ SAT 17 MAR
Education Studio, Fitzwilliam Museum, Trumpington Street, CB2 1RB
• Pre-book
• £5

LIFE UNDER THE LENS: MAKING AND USING MICROSCOPES
Join us and make your own simple microscope and observe real specimens. Test our lab microscopes and meet scientists from the Gurdon Institute for discussions about research in developmental biology, cancer and other diseases.

1PM - 4PM
➔ SAT 17 MAR
Gurdon Institute, Tennis Court Road, CB2 1QN

STARGAZERS AROUND THE WORLD
Explorers have long travelled to distant lands, only to be astounded by diverse and extraordinary scientists! This event is inspired by our exhibition Astronomy and Empire, and invites you to join Museum explorers for family hunts and activities that travel far and wide.

11AM - 4PM
➔ SAT 17 MAR
Whipple Museum of the History of Science, Free School Lane, CB2 3RH

USING MATERIALS TO THINK
What do artists and scientists have in common? Join sculptor Melissa Pierce Murray for this interactive workshop using a process of thinking with objects. The workshop includes a discussion of Murray’s collaborative work showing how her sculptures draw on the disciplines of physics, poetry and art.

2.30PM - 4PM
➔ SAT 17 MAR
Webb Library, West Court, Jesus College, Jesus Lane, CB5 8BL
• Pre-book

“Wow! So much to do and learn. Ran out of time, many thanks!”
HANDS-ON AT THE GUILDHALL: AUTISM-FRIENDLY HOUR
For one hour, our Guildhall hands-on space is open to adults and children who have an autism spectrum condition and their families. Explore and discuss Cambridge science in a quieter and less-crowded space.

11AM - NOON
→ SUN 18 MAR
The Guildhall, Market Square, CB2 3QJ
• Pre-book

HANDS-ON AT THE GUILDHALL: SUNDAY SCIENCE
Join Cambridge Science Festival at the Guildhall for another packed day of activities. See Saturday's entry for all the events taking place.

NOON - 4PM
→ SUN 18 MAR
The Guildhall, Market Square, CB2 3QJ

FAMILY GAMING NIGHT
An evening of video gaming for all the family! Includes games that everyone can play, from retro classics like Pac-Man, Space Invaders and Tetris, through to modern examples like Wii, PS3, Xbox 360 and Xbox One.

6PM - 10PM
→ SAT 17 MAR
Centre for Computing History, Rene Court, Coldhams Road, CB1 3EW
• Pre-book
• Great for families
• £8 / £7 concessions / £6 children

SUN 18 MAR
SUNDAY SCIENCE AT CAMBRIDGE SCIENCE CENTRE
Cambridge Science Centre goes all-out science crazy for the Cambridge Science Festival, offering a fun-filled day of hands-on, non-stop workshops for all the family. Join us to make and take away some amazing bits of science and engineering.

10AM - 4PM
→ SUN 18 MAR
Unit 44, Clifton Road Industrial Estate, CB1 7EP
• Great for families
• Normal Centre admission charges apply

MON 19 MAR
PRIMARY ROCKET LAUNCHPAD AT THE DEPARTMENT OF ENGINEERING
Primary school groups from Years 5 and 6 are invited to the Department of Engineering to explore 3D geometry. As a finale, we make paper rockets and launch them using compressed air. Well-made rockets will go as high as our roof!

10AM - NOON
1PM - 2.45PM
→ MON 19 MAR TO FRI 23 MAR
Department of Engineering, Trumpington Street, CB2 1PZ
• Pre-book
• For school groups of up to 30 pupils

SCIENTISTS WHO ASKED WHY, WHAT AND HOW
Join Society of Cambridge Tourist Guides on a walking tour around central Cambridge to discover some of our famous scientists who asked why, what and how.

11AM - 12.30PM
→ MON 19 MAR
→ WED 21 MAR
→ FRI 23 MAR
Meet outside St John’s College, St John’s Street, CB2 1TP
• Pre-book
• Suitable for accompanied children and wheelchair users
TUE 20 MAR

LISTENING TO PICTURES
Join musicians from the Academy of Ancient Music as we try to imagine what our pictures might sound like. Be inspired by our galleries to create your own art and then listen as the musicians play your drawings!

10AM - 11AM
1.30PM - 2.30PM
→ TUE 20 MAR
Meet at the Courtyard Entrance, Fitzwilliam Museum, Trumpington Street, CB2 1RB
• Pre-book

THE SCIENCE OF PERFUMERY
Embark on an olfactory journey uncovering how our sense of smell works and the role artisan scents can play in enhancing our wellbeing with Mohammed Jamal, of Jamal Perfumers London.

10AM - NOON
1.30PM - 3.30PM
→ TUE 20 MAR
Cambridge Judge Business School, Trumpington Street, CB2 1AG
• Pre-book
• For adults

WED 20 MAR

MUSICAL CODE
Music-making and computing come together in this great workshop at the Centre for Computing History! Whether pop, classical, jazz or anything else is your jam, by the end of the session you’ll be able to make it with Sonic Pi.

4PM - 6PM
→ WED 21 MAR
Centre for Computing History, Rene Court, Coldhams Road, CB1 3EW
• Pre-book
• Ideal for teenagers
• £12 participants / £8 accompanying adults

THU 22 MAR

MINDFUL WALK AT THE BOTANIC GARDEN
Explore the relationship between mindfulness, yourself and the sights, sounds and smells of the Botanic Garden in spring. This short introduction to mindful walking is led by Chantek Mary McNeillage.

11AM - 12.15PM
→ THU 22 MAR
Botanic Garden, 1 Brookside, CB2 1JE
• Pre-book
• For adults

SCIENCE FICTION: FROM WHAT IF TO WHAT NEXT?
Links between science and science fiction have never been stronger. Join Una McCormack and Helen Marshall, Anglia Ruskin University, for writing exercises that explore how scientific developments prompt what ifs. No experience necessary!

6PM - 8PM
→ WED 21 MAR
Anglia Ruskin University, East Road, CB1 1PT
• Pre-book

PATHOGEN: A GAME OF EPIDEMIC PROPORTIONS
New infectious diseases are discovered all over the world, but only some of them become epidemics. Ebola and Zika have been in the news recently but what makes some diseases spread faster than others? Join Dr Amy Mason and take part in a live action game to try to keep a dangerous disease under control and save the world.

4.30PM - 6.30PM
→ THU 22 MAR
Mill Lane Lecture Rooms, 8 Mill Lane, CB2 1RW
• Pre-book
FRI 23 MAR

INSECTS AT THE MUSEUM OF ZOOLOGY
Join us under the whale as we explore the amazing world of insects with the Museum of Zoology. Meet the speakers from Insects: the world’s weirdest food and other insect experts. See specimens from the Museum’s collections and make your own mini-beasts to take home. And for those of you who dare, try a tasty insect morsel as well!

6.45PM - 8PM
→ FRI 23 MAR
Whale Hall, Museum of Zoology, Downing Street, CB2 3EJ
• Pre-book

SAT 24 MAR

COOL BALLOONS
What happens when you stretch a party balloon very fast? Its temperature increases! And what happens when you release the balloon after it has recovered its initial temperature? The balloon gets cold. Observe this temperature change using an infra-red camera with researchers from the Department of Materials Science and Metallurgy.

10AM - 12.30PM
→ SAT 24 MAR
Department of Materials Science and Metallurgy, 27 Charles Babbage Road, CB3 0FS

A WALK THROUGH THE 2D WORLD
Discover more about graphene, other 2D materials and the research we do at the Cambridge Graphene Centre through hands-on activities, demonstrations, talks and displays.

10AM - 3PM
→ SAT 24 MAR
Atrium, Centre for Advanced Photonics and Electronics (CAPE), Electrical Engineering Division, CAPE Building, 9 JJ Thomson Avenue, CB3 0FA

MAKING SENSE OF ANIMAL HEALTH WITH GENETICS
Why are different breeds of dogs predisposed to different diseases? How can we use genetics to guide the diagnosis and treatment of cancer? Where did the mysterious canine transmissible venereal tumour appear and how did it spread around the world? Meet our veterinary experts for a fascinating day of cutting-edge biomedical science.

10AM - 4PM
→ SAT 24 MAR
Department of Veterinary Medicine, Madingley Road, CB3 0ES
• Pre-book

MAKING SENSE
Can you experience the Fitzwilliam Museum differently with all your senses? Turn your ideas into reality by combining art, science and technology in this digital making workshop for children aged 8–12 years.

10.30AM - 12.30PM
1.30PM - 3.30PM
→ SAT 24 MAR
Education Studio, Fitzwilliam Museum, Trumpington Street, CB2 1RB
• Pre-book
• £8

A POLAR SENSORY ADVENTURE
Join us for a polar sensory adventure! Object handling, experiments and a chance to see colour in a whole different light. Featuring activities from The Colour Institute and the British Antarctic Survey.

10.30AM - 3.30PM
→ SAT 24 MAR
Scott Polar Research Institute, The Polar Museum, Lensfield Road, CB2 1ER
• Great for families
SCIENTISTS WHO ASKED WHY, WHAT AND HOW
Join Society of Cambridge Tourist Guides on a walking tour around central Cambridge to discover some of our famous scientists who asked why, what and how.

11AM - 12.30PM
1.30PM - 3PM
→ SAT 24 MAR
Meet outside St John’s College, St John’s Street, CB2 1TP
• Pre-book
• Suitable for accompanied children and wheelchair users

SCHOOLS ZONE
Students from schools and sixth form colleges are the experts today, showing what they are investigating as part of their curriculum or after-school club. Don’t miss these exciting demonstrations from the next generation of scientists, mathematicians and engineers.

11AM - 3PM
→ SAT 24 MAR
The Hauser Forum, 3 Charles Babbage Road, CB3 0GT
• Great for families

ANTARCTICA UNCOVERED
We’re lifting the lid on Antarctica by inviting the public into British Antarctic Survey and our new Aurora Innovation Centre. Join us and discover why what happens in Antarctica affects us all. Get a flavour of life on the ice – check out our science kit and models of our ships and stations, and enjoy an opportunity to chat to our people who work at the ends of the Earth.

11AM - 3PM
→ SAT 24 MAR
British Antarctic Survey, High Cross, Madingley Road, CB3 0ET
• Great for families

THE POWER OF CLAY
Explore the materiality of clay in all stages of production in this specialist workshop at Kettle’s Yard, and discuss the impact it has on our wellbeing. With artist and researcher Dena Bagi.

11AM - 4PM
→ SAT 24 MAR
Kettle’s Yard House and Gallery, Castle Street, CB3 0AQ
• Pre-book
• For adults
• £50, including lunch

THE SOMETIMES SURPRISING SCIENCE OF INK: FROM LETTERPRESS TO LASERS
A very brief introduction to the sometimes gruesome world of getting things down on paper! Learn about lasers, try your hand at printing and view some of our very old books.

11AM - 4PM
→ SAT 24 MAR
Betty and Gordon Moore Library, Wilberforce Road, CB3 0WD

GENOMIC EXPRESSIONS
Get hands-on with DNA-themed activities and experience the colours, textures and sounds of genomics at the latest exhibition on the Wellcome Genome Campus!

NOON - 2.30PM
→ SAT 24 MAR
Wellcome Genome Campus, Hinxton, CB10 1SA
• Pre-book

HANDS-ON MATHS FAIR
"A mathematician, like a poet or a painter, is a maker of patterns". Find out what patterns you can discover, explore your creative and critical-thinking skills and develop your problem-solving skills with hands-on mathematical activities and games for all ages from five to adult. Join us to explore, experiment, discover, question and enjoy!

NOON - 4PM
→ SAT 24 MAR
Centre for Mathematical Sciences, Wilberforce Road, CB3 0WA

NO-NONSENSE CLEAN ROOM
Enter our (fake!) Department of Chemical Engineering and Biotechnology clean room and get hands-on with the intricate process of advanced material design for sensor construction and pharmaceutical product assembly.

NOON - 4PM
→ SAT 24 MAR
Maxwell Centre, JJ Thomson Avenue, CB3 0HE
OPEN DAY AT THE CAVENDISH LABORATORY

Physics experiments, demonstrations, our pop-up planetarium and CHaOS! Join us at the Cavendish Laboratory for Festival favourites and interactive activities for all ages. For more information, visit outreach.phy.cam.ac.uk/scifest

ESCAPE THE LAB: A PHYSICS ESCAPE ROOM GAME
An international crisis and this lab contains the only means of survival. But you’re trapped and running out of time. Can you escape the lab and save the world? Pit your team against our physics-themed puzzles. You’ll have to work together to discover the room’s secrets and overcome its challenges!

1PM - 1.45PM
2PM - 2.45PM
3PM - 3.45PM
4PM - 4.45PM
• Pre-book
• £10 per team

IMAGING THE BRAIN WITH PHYSICISTS FROM THE WOLFSON BRAIN IMAGING CENTRE AND NEURAL KNITWORKS
Spend the afternoon making woolly neurons with the Neural Knitworks team and learn about imaging the brain from scientists who are bringing the latest imaging research to cognitive and clinical research in Cambridge.

2PM - 4.30PM

PHYSICS PROBLEM SOLVING WITH ISAAC PHYSICS
Trying to understand what happens using physics is much more than just plugging numbers into an equation; you often have to think much more carefully about the situation. Join tutors from isaacphysics.org and learn how to attack physics problems that go beyond A-level, but no further knowledge is required.

USING ISAACPHYSICS.ORG IN YOUR A-LEVEL TEACHING: TEACHERS’ EVENT
Isaac Physics is a free online tool featuring a mixture of physics skills practice and problem-solving questions and aims to improve the problem-solving skills of physics A-level students. It can also help you save time marking! Find out how at this professional development session.

3.30PM - 4.30PM
• Pre-book

1PM - 4.45PM
→ SAT 24 MAR
Cavendish Laboratory, Department of Physics, JJ Thomson Avenue, CB3 0HE
OPEN DAY AT THE INSTITUTE FOR MANUFACTURING

The IfM opens its doors for the Cambridge Science Festival.

IFM VIRTUAL REALITY
Explore a digital version of the Institute for Manufacturing in virtual reality!

INKREDIBLE
Our Institute for Manufacturing inkjet experts show you the fascinating ways in which their research can influence the world around you.

LASER LAB TOURS
Get a glimpse of the latest laser technologies and find out how they are used in industry. Watch our Institute for Manufacturing experts show you the amazing things that can be done with this technical kit. Take a look into the nano world, see the manipulation of microscopic things using ‘laser tweezers’ and explore the force of light.

LASER TIN CAN ALLEY
Fire your laser at our Institute for Manufacturing tin can alley to see who can knock down the most tin cans!

STEEL #SNAP
Have your group selfie etched onto steel using one of the Institute for Manufacturing’s high-powered laser markers.

WHAT WOULD YOU USE THAT FOR?
Try some of the latest science-based products from local companies and win a prize for thinking of the most original ways to use them!

1PM - 5PM
→ SAT 24 MAR
Institute for Manufacturing,
17 Charles Babbage Road, CB3 0FS

MIND THE (NANO) GAP: HOW NANOTECHNOLOGY OPENS UP NEW ROUTES FOR BIOSENSING AND HEALTHCARE
NanoDTC researchers take you on a tour of nanoscience, seeing and manipulating objects at the tiniest of scales. Through demonstrations, discover how nano-sized gaps can help us control light, electrons or the flow of molecules to help us find out about our health and wellbeing.

1PM - 5PM
→ SAT 24 MAR
Maxwell Centre,
JJ Thomson Avenue,
CB3 0HE

VISIONS OF ALTERNATIVE WORLDS
Join Una McCormack and Justyna Deszcz-Tryhubczak for writing activities that will inspire utopian imagination and visions of alternative worlds. Hosted by Anglia Ruskin University, Centre for Science Fiction and Fantasy. The workshop is suitable for 12–15 year-olds.

2PM - 5PM
→ SAT 24 MAR
Anglia Ruskin University,
East Road, CB1 1PT
• Pre-book
• Ideal for teenagers
2017 has been a bad year for climate impacts, affecting many parts of both the developed and developing world. I am chair of the Cambridge Climate Lecture Series and the 2018 series is focussing on the action that is taking place now and how it is going to shape the world for future generations. We have put together an exciting programme of speakers leading up to the Science Festival panel event on 15 March.

The Paris agreement at COP21 formalized the concept of “Loss and Damage”. Our first speaker, on 15 February, is Saleemul Huq from Bangladesh who believes that it time to make climate polluters pay for the losses and the damage they cause. “Damage” to infrastructure can be repaired, but “Loss” of lives, habitats and species is irreversible.

Renée Karunungan , from the Philippines, is currently Climate Tracker’s Outreach Manager and was named by The Guardian as one of the “Young Climate Campaigners to Watch Before the UN Paris Summit” in 2015. She speaks on 22 February.

The European Space Agency is in a great position to view the Earth from a distance and Stephen Briggs who heads up Earth Observation at ESA speaks on 1 March about the signs of climate change visible from space.

Lisa Walker, who speaks on 8 March, has experience working in the oil and gas industry but now runs Ecosphere+ working with high-quality forest carbon projects and sustainably produced commodities to help protect our planet’s natural assets.

The panel event at the Science Festival on 15 March will be chaired by Oliver Morton, with panelists Lisa Walker and Renée Karunungan. They are joined by Sir David King, the Government’s Chief Scientific Advisor from 2000 to 2007 during which time he raised awareness of the need for governments to act on climate change and was instrumental in creating the Energy Technologies Institute.

For details of all lectures in the Cambridge Climate Lecture Series visit: www.climateseries.com

SEE HUGH’S EVENT:
CLIMATE CHANGE IS NOW

7.30PM - 9PM
THU 15 MAR
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CITIZENS AS BEHAVIOURAL BIOLOGISTS?
At the Konrad Lorenz Research Station in Austria, pupils get involved in the long-term monitoring of wild animals by collecting behavioural data. The pupils present their experience and findings in a series of hands-on activities. Presented with Anglia Ruskin University.

2PM - 6PM
→ SAT 24 MAR
Anglia Ruskin University,
East Road, CB1 1PT

OPEN AFTERNOON AT THE INSTITUTE OF ASTRONOMY
The Institute of Astronomy opens its doors for an afternoon of hands-on activities, demonstrations, talks and displays all around our lovely wooded site. Meet the scientists and the telescopes, and learn more about both astronomy and the research we do.

2PM - 6PM
→ SAT 24 MAR
Institute of Astronomy,
Madingley Road,
CB3 0HA

SUN 25 MAR
SUNDAY SCIENCE AT CAMBRIDGE SCIENCE CENTRE
Cambridge Science Centre goes all-out science crazy for the Cambridge Science Festival, offering a fun-filled day of hands-on, non-stop workshops for all the family. Join us to make and take away some amazing bits of science and engineering.

10AM - 4PM
→ SUN 25 MAR
Unit 44, Clifton Road
Industrial Estate,
CB1 7EP
• Great for families

ESCAPE THE CANCER RESEARCH UK LAB
Stuck in a fictional cancer research lab, you must work together to solve a series of scientific puzzles to unlock the three clues to escape the Cancer Research UK Lab within the 30-min time limit.

11AM - 4.30PM
→ SUN 25 MAR
Cancer Research UK
Cambridge Institute,
Li Ka Shing Centre,
Robinson Way,
CB2 0RE
• Pre-book

GOOD GERMS, BAD GERMS: HOW DO WE KNOW?
Learn how our bodies can tell which germs are good for us and which are bad, through a collection of hands-on activities for all ages.

2PM - 5PM
→ SUN 25 MAR
Institute of Continuing Education,
Madingley Hall,
Madingley, CB23 8AQ

WANDLEBURY WILDLIFE
Join us as we look into the amazing senses of bats, birds, amphibians, reptiles, invertebrates and even plants at Wandlebury. And test your own senses as we get out and explore the woods and grasslands on a sense adventure.

11AM - 3.30PM
→ SUN 25 MAR
Wandlebury Country Park,
Wandlebury Ring, Gog Magog Hills, CB22 3AE
• Great for families

MEET THE BIOMAKERS
Biomakespace is a new community laboratory for Cambridge, enabling people who have a curiosity for engineering with biology to collaborate and learn together. If you are interested in building sensors with DNA, printing cells or building microscopes, meet the biomakers and find out more!

NOON - 4PM
→ SUN 25 MAR
Biomakespace, Bay 13,
Cambridge Biomedical Campus,
Hills Road,
CB24 3BG
• Pre-book
DISCOVER HOW CAMBRIDGE HAS BECOME THE CAPITAL OF UK LIFE SCIENCES

Cambridge Academy for Science and Technology is the headquarters for the Science Festival on the Cambridge Biomedical Campus this year. Discover how life-changing research, conducted in the labs, hospitals and pharmaceutical companies on the site, is developing new treatments and medicines to benefit society. Join us for hands-on activities and talks both here and at the Cancer Research UK Cambridge Institute, and take a ride to Addenbrooke’s for theatre tours and tours of the Campus.

CAMBRIDGE ACADEMY FOR SCIENCE AND TECHNOLOGY
Cambridge Academy for Science and Technology is the headquarters for the Science Festival on the Cambridge Biomedical Campus this year. Discover how life-changing research, conducted in the labs, hospitals and pharmaceutical companies on the site, is developing new treatments and medicines to benefit society. Join us for hands-on activities and talks both here and at the Cancer Research UK Cambridge Institute, and take a ride to Addenbrooke’s for theatre tours and tours of the Campus.

CELLS IN THE SPOTLIGHT
The trillions of cells in our bodies work together to keep us healthy, by sensing and responding rapidly to changes in the environment. Join researchers from the Cambridge Institute for Medical Research to learn how we use microscopes to follow dynamic cell behaviours and how this can help us understand what goes wrong in disease.

CONNECTING WITH LIFE AT PAPWORTH HOSPITAL
As Royal Papworth Hospital NHS Foundation Trust celebrates its centenary year, we invite you to take a look at how cardiothoracic medicine has changed in the last 100 years.

DOES THE PATIENT HOLD THE KEY?
A&E is packed, and the ambulance team need a trolley to unload their casualty. Another call comes through and they’ve got to brief A&E before they leave. Can you help scientists from THIS Institute improve handover between the ambulance team and A&E?

FROM BENCH TO BEDSIDE: HOW ARE THERAPEUTIC DRUGS DEVELOPED?
Join MPhil in Translational Biomedical Research students on the journey from the lab to the clinic. Learn about the drug development process and explore the weird and wonderful microscopic world of the human body and beyond.

GENOMIC REVOLUTION: IT’S IN OUR DNA
How can we decode our entire personal genetic make-up? See how next-generation DNA sequencing combines engineering, chemistry, genetics and informatics to revolutionise the way we diagnose disease.

HIGH-TECH GIZMOS AND APPS FOR A HEALTHY BRAIN
Are you ready to challenge yourself? Join NIHR MedTech Co-operative researchers and challenge your memory, concentration and cognitive responses. Be dazzled by interactive technologies that can train your brain and prevent brain injury or other forms of cognitive impairment.

CATS: THE FIVE SIGNS
CATS focuses on educating students about the symptoms of young-adult cancers. Find out what symptoms you should be aware of, and chat to a young cancer survivor about their experience of the disease.
HOW LAB DISCOVERIES ARE LEADING TO EARLIER DETECTION AND MORE PRECISE TREATMENTS FOR CANCER PATIENTS
Meet our amazing scientists from Cancer Research UK Cambridge Institute, MRC Cancer Unit and Hutchison/MRC Research Centre to discover how cancer develops, grows and spreads. Build your own cell, identify mutations in DNA, try your hand at brain surgery and learn about the early detection and treatment of cancer.

I’M A SUPERHERO!
Ever felt special? Find out about the hidden powers inside your body that turn food into useful energy. Researchers from the Cambridge Metabolic Network show how your organs work together as your very own metabolic superteam.

INSPIRING THE NEXT GENERATION OF SCIENTISTS
Hands-on activities for children (and adults, of course!) from Abcam that bring science to life.

KNOW YOUR POISON
How do we know that our medicines are safe and contain the correct amount of drug? Analytical techniques are used by pharmaceutical chemists to check our drugs contain what they should and identify any contaminants. Join the Royal Society of Chemistry to identify some common drugs.

MAGIC MYELIN
Ever wondered what makes your nerves tick? It’s all down to their fatty myelin coats, and the stem cells which maintain them. Join Stem Cell Institute scientists and try your own electrical experiments to better understand brain stem cells and discover their true therapeutic potential.

MAKING SENSE OF MEDICINE-TAKING
What is this tablet for? When do I need to take this one? What if I forget to take it? What should I do if I’m having side effects? Sometimes, we all need help to make sense of medication-taking. Help Department of Public Health and Primary Care scientists provide the best possible support by sharing your thoughts and opinions on our telephone reminder system.

MEET THE SCIENTISTS
Pop into our science booth and have a chat with our scientists about their research!

MOVEMENT MATTERS: BONES AND JOINTS, REPAIR, REGENERATION AND REPLACEMENT
Discover what trauma and orthopaedic surgeons and scientists do, in the operating theatres and in the research laboratories, to keep your joints moving.

NEURAL KNITWORKS AT THE CAMBRIDGE BIOMEDICAL CAMPUS
Spend the day knitting and nattering with the Neural Knitworks team and neuroscientists at the Cambridge Biomedical Campus.

ORGAN TRANSPLANTATION
Can we improve the quality and quantity of organs available for transplantation in the future? That’s what NIHR Blood and Transplant Research Unit in Organ Donation and Transplantation researchers are endeavouring to do. Discover more and test your own knowledge and skills.

PAINS AND BRAINS
How do we feel pain? How do painkillers work? How are potential new painkilling medicines tested? Discover some of the answers by taking the cold pressor test with scientists from Mundipharma, Napp and Bard. Then make one of our (in)famous brain hats to wear with pride!

PEPTIDE MEDICINES
Peptide medicines such as insulin have been around since the early 20th century. Join MedImmune and AstraZeneca scientists to discover how these medicines can be made in two different ways and how you can test that we have made the right peptide.

RISING STARS
Meet our scientific stars of the future as they introduce you to their research, and be the first to try out their new hands-on activities.
SENSATIONAL FLUORESCENT FRUIT FLIES
Discover how mutations in mitochondria might lead to neurodegenerative diseases such as Parkinson’s with scientists from the MRC Mitochondrial Biology Unit. Take part in games and find out how millions of DNA sequences are assembled in the genetic diagnosis of patients with mitochondrial disease.

TAKE PART IN RESEARCH
NIHR Cambridge BioResource has over 17,000 volunteers who participate in research studies investigating the links between genes, the environment, health and disease. Find out how you can volunteer to help our researchers with their ground-breaking work.

TEDDY BEAR HOSPITAL
Do you have a poorly teddy? Does it have a broken bone, a headache or even a broken heart? Bring your teddy bear (or other special cuddly friend) for a consultation.
- Pre-book

THE RESPIRATORY STORY
Take a deep breath and prepare yourself... Find out about GSK’s respiratory story and discover how we’ve helped millions of people breathe easier and live longer.

YOUR IMMUNE ARMY: HOW DO CELLS COMMUNICATE AND SENSE?
Cambridge Immunology explores your immune system, and looks at how your body protects you from attacks by disease-causing agents such as viruses, bacteria and fungi.

11AM - 3PM
→ SUN 25 MAR
Cambridge Academy for Science and Technology, Robinson Way, CB2 0SZ

"Just loved this hugely funny and informative talk. The whole family enjoyed it, teens, pre-teens and adults.”
All Events

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Life in a network  
Making sense of the mind and brain  
Molecules to memory  
Physics Fan Fiction  
Science and Empire: a panel discussion  
Story Collider: Regeneration  
What is conversation?  
What really killed the dinosaurs  
When the object of your actions escapes you  

THURSDAY 15 MARCH

Breckland, birds and conservation  
Brewing a taste for stem cells  
Climate change is now  
Debates over vaccination  
Five years of Makespace  
Is Ed Aczel Infinite?  
Let’s talk about locative experiences and city design  
Making sense of genes  
Making sense of a healthy lifestyle  
Maths vs Sport  
METIS: Future scenarios  
P.S. We’re still here  
Roaming robots  
Sensing the patient in ancient medicine  
The Circular Economy  
The rise of the humans  
The sixth sense of the oncologist  

FRIDAY 16 MARCH

FameLab Cambridge final  
Making sense of our unhealthy behaviour  
Neural Knitworks: community workshops  
Neural Knitworks: family workshops

SATURDAY 17 MARCH

Another Evening of Unnecessary Detail  
Are you smarter than a bird?  
Are your hands really clean?  
Beasty bacteria and pesky parasites  
Bird therapy and mental health  
Bits and pieces: secrets of a digital world  
Build your own electronic sensors with Arduino microcontrollers  
Building life from stem cells to understand it  
Can you control your impulses?  
Cells in the spotlight  
Cells to skyscrapers  
Chemistry in action  
Common sense & sustainability  
Crash, Bang, Squelch! CHaOS at the Festival  
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For Downing, West Cambridge and New Museums sites, please see maps online or as separate hand-outs.
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Our cover image is a RGB composite of seasonal multi-temporal Landsat 5 enhanced vegetation indices from the ERC-funded TwoRains project directed by Dr Cameron Petrie, Department of Archaeology. The project explores the mechanisms involved in the human adaptation to, and management of, variable and changing water availability in North West India.