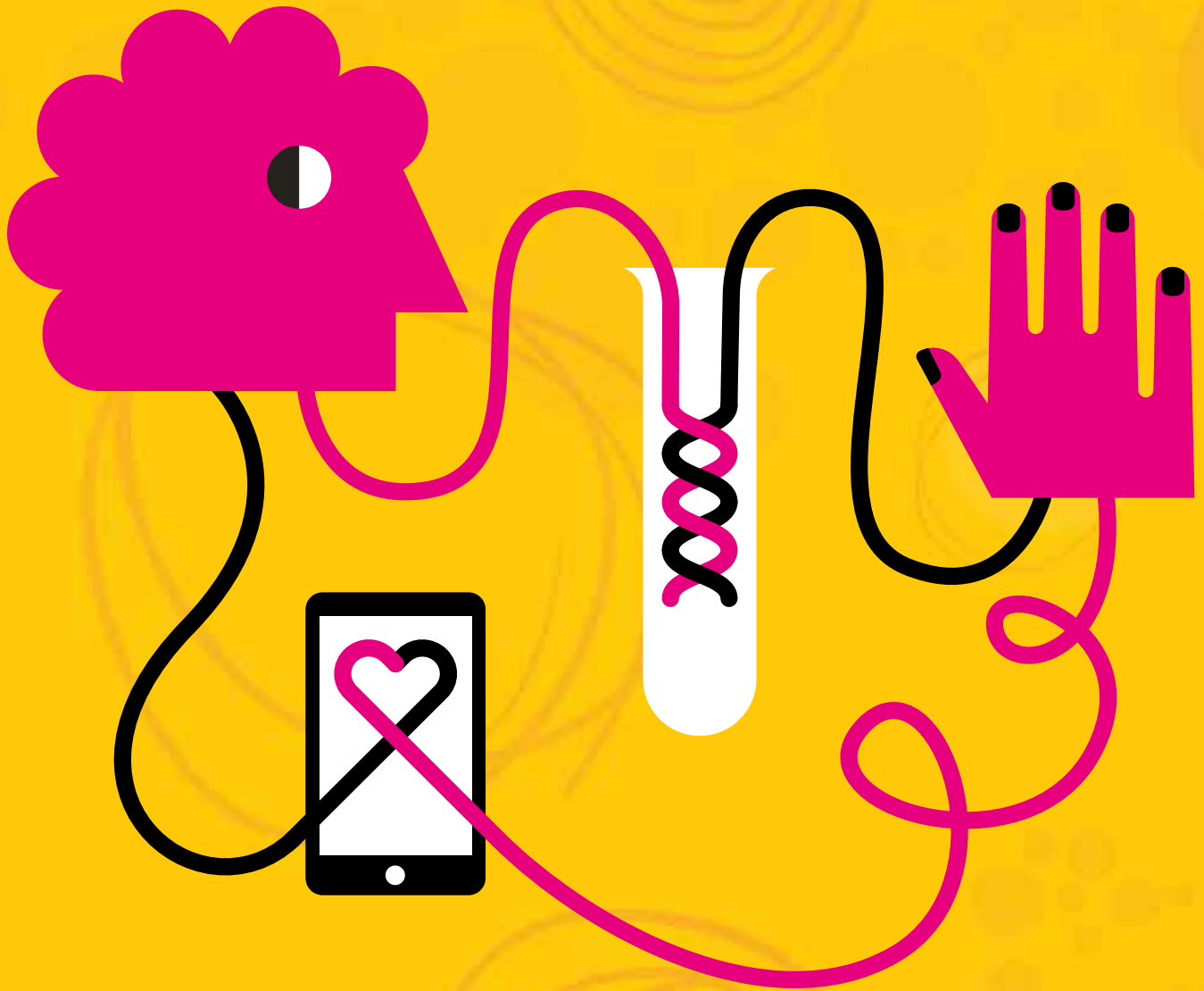




# OXFORD SCIENCE + IDEAS FESTIVAL

12–22 October  
2018

Events all  
around Oxford



[www.if-oxford.com](http://www.if-oxford.com)

# Welcome to the science and ideas Festival

Please contact the Festival team if you would like all or part of this publication in an alternative format, or if you have any specific access requirements for our events.



## **IF Oxford is experimenting with Pay What You Decide (PWYD).**

You can pre-book events without paying for a ticket. After you have attended an event, you decide to pay what you want to, or can afford. There may be tickets available on the door – spaces may be reallocated if ticket holders are late.



*IF Oxford is a collection of one hundred events, here are some of the Director's picks:*

*Get hands-on in the interactive zones  
→ 7, 12, 48, 52, 54, 55*

*Celebrate Black History Month  
→ 10, 44, 49, 45, 53, 54*

*Watch choreography of the sun and mind  
→ 20, 22, 34*

*Sample local heritage gin or savour a splendid Festival dinner → 23, 31, 42*

*Discuss the ethics of data → 26, 36, 43, 45*

*Explore sex, relationships and gender  
→ 35 - 37, 41*



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**For more information and for general conditions, please visit: [if-oxford.com](http://if-oxford.com)**



## Big Data, Big Future!

10 October - 10 November  
**Dawn to dusk**

---

*Frideswide Square,  
OX1 1HP*

---

*Unticketed, Free*

---

*Adults*

---

*Exhibition*

Whether it is about our health, social media habits, or shopping obsessions, almost every action we take leaves a digital footprint. The unprecedented availability of this vast amount of information is revolutionising the way we do science. This outdoor exhibition interprets how clinicians, computer and social scientists at the Big Data Institute and other departments of Oxford University analyse large and complex sets of data. Explore how Big Data science could help advance our societies and improve our lives.



## J'aime ta Ville, J'aime ma Ville. Dialogue in Images

Friday 12 - Mon 22 October  
**Mon - Thurs 9am - 8pm;**  
**Fri - Sat 9am - 5.30pm**  
**closed Sun**

---

*Oxfordshire County  
Library, Queen Street,  
Westgate, OX1 1DJ*

---

*Unticketed, Free*

---

*Adults, Family, Teenagers*

---

*Exhibition*

Primary schools in Grenoble and Oxford have been communicating via photography of their cities. Pupils have explored imagery and the meaning of Twin Cities through workshops with professional photographers and subsequently selected the top three images from their partner school for you to see. J'aime ta ville, j'aime ma ville. I love your city, I love my city.





## Reciprocal Space

Friday 12 - Mon 22 October  
**Mon - Sat 9.30am - 5pm;**  
**Sun 1 - 5pm**

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*University Church,  
 High Street, OX1 4BJ*

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*Unticketed, Free*

---

*Adults, Teenagers, Family*

---

*Exhibition*

This new artwork from Meg Rahaim considers the relationship between seeing and knowing in the context of genetics research using the visual languages of printmaking and handmade textiles. Blind-embossed prints of hand-crocheted objects, highly detailed yet shallow impressions, suggest both the absence of the subject and the presence of things unseen, asking what is knowable about the world through science, art, and other forms of enquiry that employ visual language.



## Uncomfortable Oxford?

Fri 12- Mon 22 October  
**2.30 - 4.30pm**

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*Start Location:  
 Oxford Castle*

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*Unticketed, Free*

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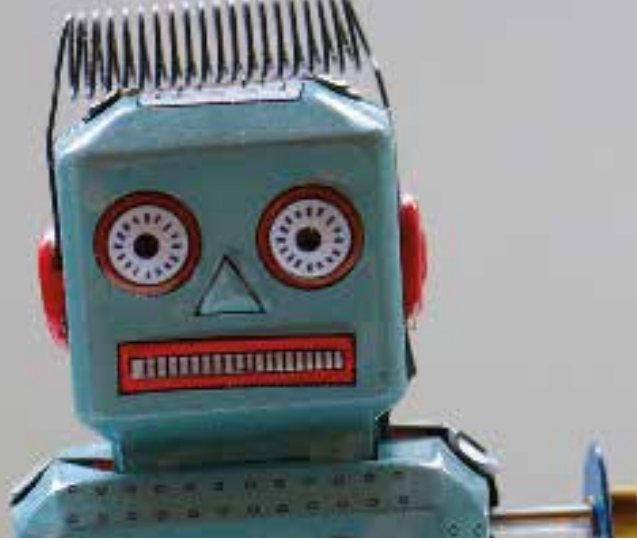
*Adults*

---

*Walk*

Join us for a 2-hour walking tour that exposes the uncomfortable truths of Oxford's past, highlighting the lasting legacies of privilege, imperialism, and colonialism within the ancient city. The tour runs every day of the festival at 2.30pm, meeting at the main entrance to Oxford Castle.

***Access: the tour is open to all capabilities but navigates Oxford's streets that include uneven pavements and cobblestones. The tour is in English.***



## Rhymetime: songs and rhymes for under-5s

Various dates: see list opposite  
**11 - 11.30am**

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*Oxfordshire County  
Library, Queen Street,  
Westgate, OX1 1DJ*

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*Unticketed, Free*

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*Family / Storytelling*

### **Space**

**Fri 12 October**

Space, a cosmic theme

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### **Animals**

**Mon 15 October**

Animals, explore the animal kingdom

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### **Robots**

**Weds 17 October**

Robots and machines

---

### **Nature**

**Fri 19 October**

Nature and the natural world

---

### **Weather**

**Mon 22 October**

Weather, from rain to sunshine

## **AUTUMN 2018**

**5 OCTOBER** OXFORD PLAYHOUSE

**SUMMITING THE  
SCIENCE OF EVEREST** AGE 14+

**13 OCTOBER** OCFI, OXFORD

**MAKER CLUB JUNIORS:  
WORLD SPACE WEEK SPECIAL** AGE 9-12

**15 OCTOBER** NEW ROAD BAPTIST CHURCH

**CSI OXFORD: FORENSIC CHALLENGE** AGE 18+

**18 OCTOBER** WIG & PEN, OXFORD

**SCIENCE CABARET** AGE 18+

**20 OCTOBER** OCFI, OXFORD

**MAKER CLUB** AGE 12-17

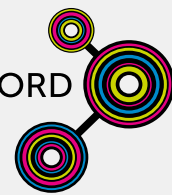
**30 OCT - 4 DEC** OCFI, OXFORD

**INTRODUCTION TO PROGRAMMING** AGE 18+

**FOR OUR FULL PROGRAMME VISIT**

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CLUBS  
& MORE**

## Big Ideas on Broad Street

Friday 12 October  
12 - 6pm

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Broad Street, OX1 3AS

---

*Unticketed, Free*

---

*Adults, Teenagers, Families*

---

*Hands-on*



Science takes to the street with a selection of hands-on activities to suit all ages. Challenge your memory and dexterity, see the invisible and find out how medicines work.

### **From chocolate to drug discovery: amazing crystals**

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*Department of Biochemistry,  
University of Oxford*

### **What confuses epidemiologists?**

---

*National Perinatal Epidemiology  
Unit, University of Oxford*

### **Cognitive games – how do we learn?**

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*Department of Experimental  
Psychology, University of Oxford*

### **Seeing invisible particles, the building blocks of the universe.**

---

*Department of Physics,  
University of Oxford*

### **Understanding dementia and the brain**

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*Cognitive Neurology Group,  
University of Oxford*

### **Meat my Planet - what goes into making a sausage?**

---

*Livestock, Environment and  
People, University of Oxford*

### **How medicines work - create your own!**

---

*Department of Pharmacology,  
University of Oxford*

### **Science busking: Big Data, Big Future!**

---

*British Science Association, Oxford  
Branch / The Curiosity Box*

# 200 years of Frankenstein: it's alive!

Friday 12 October

**6.30 - 9.30pm**

*Museum of the History  
of Science, OX1 3AZ*

**7 - 10pm**

*Weston Library, OX1 3BG*

---

*Adults, Teenagers*

---

*Various events*

Splice cutting-edge science with the Gothic literary sensation of 1818. Tonight you can rewind and fast-forward time by 200 years to explore creation and the building blocks of life.

Start from Mary Shelley's handwritten draft of *Frankenstein*, or a modern performance inspired by the novel, then manipulate life in a virtual reality embryonic experiment. Grind up ancient genetic modifications with archaeologists or learn how to stitch a repair in sheepskin parchment. See the real components of life on the nanoscale, make pages of a collaborative Frankenzine, or start a conversation with a real life book in the Living Library. Discover 1818 + 200: it's alive!

## The Museum of the History of Science is open late

Friday 12 October

**6 - 9.30pm**

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*Unticketed, Free*

---

*Talks, Performances*

Open access to the entrance gallery.

Two performances of *Frankenstein Reconstructed* in the basement gallery (see separate listing.)

Science and the Enlightenment: ten-minute flash talks touching on 18th-century science and the early history of the Old Ashmolean building: **7.45** and **8pm**.

## Frankenstein Reconstructed

Friday 12 October

**6.30 - 7.10pm;**

**8.30 - 9.10pm**

---

*Museum of the History  
of Science, OX1 3AZ*

---

*Pre-book, Free*

---

*Performance*

*Frankenstein* is revived in a contemporary performance adaptation of this classic novel: 200 years after the publication of Mary Shelley's book, a researcher travels to the frozen south, where the ice is thawing and science is still grappling with the problem of death.

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## The Weston Library is open late

Friday 12 October  
**7 - 10pm**

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*Pre-book, Free*

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*Hands-on, Talks, Exhibition, a Living Library of friendly experts*

Visualise how synthetic biologists engineer life, meet the Nanoimager and see how embryos develop.

Frankenbooks: learn to stitch a repair in sheepskin parchment.

Make a page of a Frankenzine.

View a page from Mary Shelley's handwritten draft of *Frankenstein* in the exhibition *Sappho to Suffrage: Women who Dared*.

Discover how farming and humans have shaped each other.

## Why Read Frankenstein in 2018?

Friday 12 October  
**7.30 - 8.30pm**

---

*Weston Library, OX1 3BG*

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*Unticketed, Free*

---

*Talk*

Two hundred years after it was first published, Nick Groom explains the abiding appeal and extraordinary contemporary relevance of Mary Shelley's novel *Frankenstein*. Far from being a supernatural Gothic fiction, he will show how deeply concerned the novel is with the most pressing scientific issues of its time, and how these continue to challenge us today in fields from artificial intelligence to medical ethics, challenging the very definition of what it is to be human.





## Lovelace's Labyrinth

Saturday 13 October  
**12 - 4pm**

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*Museum of the History  
of Science, Broad Street,  
OX1 3AZ*

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*Unticketed, Free*

---

*Family*

---

*Hands-on*

Join Ada Lovelace and friends at the museum for a day of mathematical puzzles, activities and problem-solving from geometry to code-breaking.



## Timbuktu: celebrating Black scientists

Saturday 13 October  
**12.15 - 2.15pm**

---

*Oxford Town Hall,  
St Aldate's, OX1 1BX*

---

*Pre-book, PWYD*

---

*Adults, Teenagers*

---

*Workshop*

Discover the stories of African, African-American and Caribbean scientists, past and present, at this interactive workshop with Natty Mark Samuels from the African School.



## Meet the Scientist:

**Paula Rocktäschel**

*Clarendon Scholar and DPhil Student, Nuffield Department of Clinical Neuroscience, University of Oxford*



*Starting my career working with patients in a hospital, I never thought I would end up doing science research. But I was lucky and am currently working with stem cells in a neuroscience laboratory to understand more about epilepsy in the human brain. The ultimate goal of my science is to improve quality of life for patients and their families.*

*The human brain is one of the most fascinating organs in the human body. It consists of 100 billion nerve cells, known as neurons, and also ten times more other types of cells. Fifteen years ago, scientists did not know about the functions of these other cells in our brains.*

*The more we learn about them, the better we understand the human brain and its diseases. This understanding does not only help neuroscientists and doctors to find better treatments for brain disorders but also influences other scientific areas, for example the way we are currently exploring artificial intelligence in computer science.*

*For me, our world and especially the human body is fascinating, and I believe that science is one way to better recognise and enjoy that. If my career as a researcher has already seen big changes to how we understand our own minds, what can we imagine in the next 15 years?*

## Related events

Brain cell ball pond

→ **See page 17**

Sat 13 & Sun 14 October

Big Data: curse or cure?

→ **See page 26**

Mon 15 October

The Consciousness Field

→ **See page 33**

Wed 17 – Mon 22 October

Augmented Humanity

→ **See page 43**

Fri 19 October



# Explorazone

Sat 13 and Sun 14 October  
**12 - 5pm**

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*Oxford Town Hall,  
St Aldate's, OX1 1BX*

---

*Unticketed, PWYD*

---

*All ages*

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*Hands-on*

See some of the most exciting science in town for free this weekend. Visit Oxford Town Hall to try out dozens of interactive exhibits suitable for all ages. Explorazone reopens with music and a bar for adults only on Saturday night.

→ **See page 23**

## **Ultra fast battery charging – Zap&Go!**

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Who doesn't want a fast charging battery? Today's lithium batteries have to be charged slowly or they risk bursting into flames. They fade with repeated recharging and they're bad for the environment, with most dead lithium batteries ending up in landfill. Zap&Go has a fast, clean, safe solution!

**Saturday only**

*ZapGo Ltd*

## **Cut and paste – how can genome editing improve human health?**

---

Is it really possible to edit the human genome? From tackling rare blood diseases and cancer to understanding how the body responds to viruses, genome editing is a new frontier in medicine. Explore the techniques being used to understand the human body and find treatments for disease.

**Saturday only**

*Radcliffe Department of Medicine /  
MRC WIMM, University of Oxford*

## Diamond: more than just a gemstone

When you think of a diamond you probably think of glittering jewellery. But have you ever considered the other incredible properties of diamond? From computing to waste water treatment, diamond impacts our everyday life in surprising ways. Find out why this amazing material is so much more than a gemstone.

*Element Six*

## Microscopic industrial factories

Bacteria can make chemicals that we use everyday as part of their natural growth. These 'bio-based' chemicals offer an alternative to those derived from fossil fuels. Additionally using modern techniques we can adapt or modify these bacteria. Get hands on and try this for yourself. What new pathways can you engineer into our giant microbes?

*Green Biologics / University of Exeter*

## Making a sun on Earth

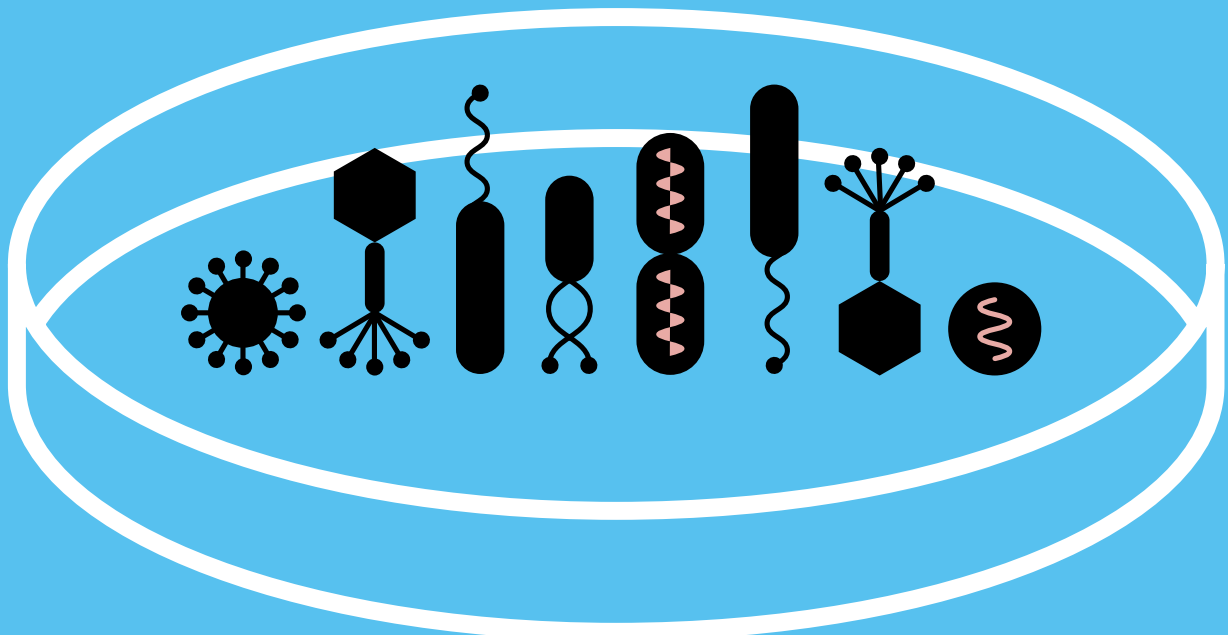
Is it possible to re-create a star in a lab, and then harness the energy to power the world? Find out with games and activities about nuclear fusion – see and manipulate a plasma, play with magnetic fluids and challenge yourself to our robot game!

*United Kingdom Atomic Energy Authority*

## Oxford's history of superconducting magnets

Did you know that one in three MRI systems worldwide contains a superconducting magnet that was made in Oxford? Discover more about low temperature technology and magnetism with fun hands-on activities with the team from Siemens Healthineers Magnet Technology.

*Siemens Healthineers Magnet Technology*



## How do mother & fetus communicate?

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We have all been attached to one at some point, but what did our placenta actually do for us? How does the placenta send its message to the mother, and what happens if communication is disrupted? Explore the way the placenta acts as mediator between mum and baby.

### **Sunday only**

*Nuffield Department of Women's & Reproductive Health  
University of Oxford*

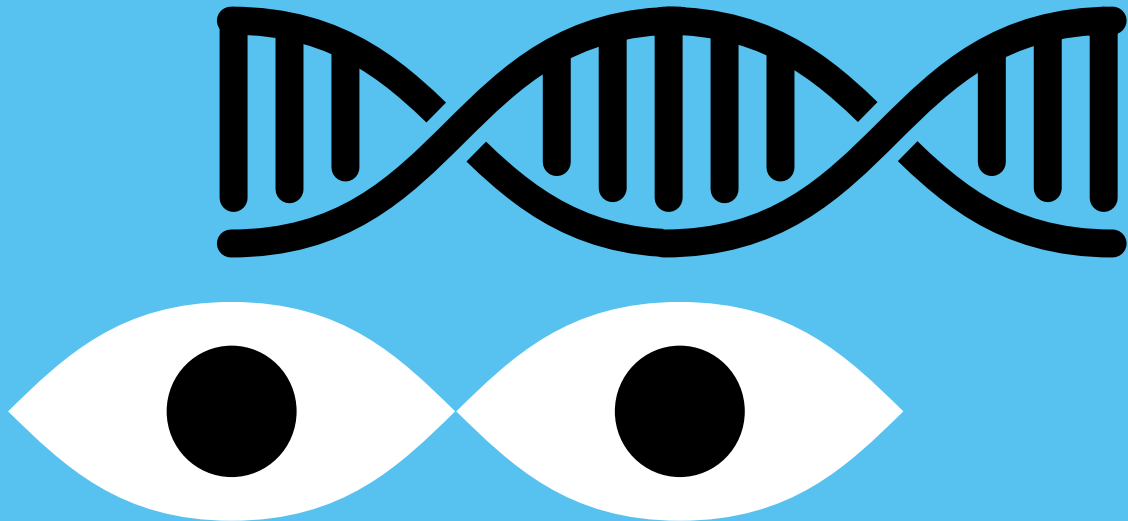
## Bioremediation: Uncovering the hidden power of bacteria

---

Since the industrial revolution, natural habitats have been destroyed and environments polluted by man-made activities. Don't despair! Scientists have a solution. Find out how bacteria can clean-up contaminated soils, and how we can test if the soil has been de-toxified.

### **Saturday only**

*Cranfield University*



## A neuroimaging box of tricks

---

The brain is our most complex organ and to understand it, we use a vast range of methods, like MRI, MEG and EEG to help us look inside it. Discover the advantages and limitations of each tool, technique and method through hands-on activities and meet the researchers who use them every day.

*Wellcome Centre for Integrative Neuroimaging, University of Oxford*

## How do babies feel pain?

---

What happens in a baby's brain when it experiences pain? Discover the dramatic structural changes that occur in the human brain through early development. Handle life-sized models of human infant and adult brains and use augmented reality to see how our brains respond to events in our external environment.

### **Saturday only**

*Department of Paediatrics  
University of Oxford*

## **From chocolate to drug discovery: amazing crystals**

---

Crystals are everywhere; salt, sugar and diamonds are all crystals, but did you know that chocolate is a crystal? Find out why crystals make chocolate taste good and how we can also use them to understand human health and disease.

*Department of Biochemistry  
University of Oxford*

## **Super surgeons**

---

Could you be a surgeon? Using a camera and other surgical equipment designed for the task, try your hand at keyhole surgery on our knee model. Find out more about how we can use surgical trials to discover the most effective surgical treatments.

*Nuffield Department of  
Orthopaedics, Rheumatology and  
Musculoskeletal Sciences  
University of Oxford*

## **10,000 years of farming**

---

Who were the first farmers? Where and when did farming begin? How has farming shaped human history? Discover how archaeologists learn about ancient farming. Handle some traditional agricultural tools from around the world and try out ancient methods of crop-processing for yourself!

**Saturday evening  
and Sunday only**

*Department of Archaeology  
University of Oxford*

## **Mice, fish, chicks and me! How embryos develop**

---

How did your body form when you were a baby? Learn how embryos form in the womb and how the heart first starts to beat. Play with 3D printed embryos and use our microscopes to watch zebrafish embryos develop and embryonic heart cells beat in a dish!

*Department of Physiology,  
Anatomy and Genetics  
University of Oxford*

## **Welcome to Quantum City**

---

Quantum technologies will change our everyday lives. Discover life in a quantum city where quantum computers will transform health care, and lead to new materials for construction and energy storage; where quantum sensors will see the invisible – underground pipes and gas leaks; where communications will be unhackable. Welcome to Quantum City!

*Department of Physics  
University of Oxford*

## **Look a little deeper: MRI but not as you know it**

---

Magnetic resonance imaging allows us to view slices of a three dimensional object, without having to cut or damage it. This imaging technique is almost like 3D printing in reverse! MRI is used to help doctors diagnose or confirm cancer. Can you identify our MRI scans of different fruits and vegetables?

**Sunday only**

*Cancer Research UK*



## Cancer genetics

---

Try out a range of hands-on games, puzzles and activities to discover how your genetic code influences cancer risk, and how researchers are trying to turn these insights into new treatments.

### Sunday only

*Ludwig Cancer Research and Wellcome Centre for Human Genetics, University of Oxford*

## Hands on, minds on

---

Enjoy a sneak preview of the exhibits coming to Science Oxford's new science education centre in 2019. Meet the staff and find out how we're planning to inspire the next generation of scientists while having a go at some challenges and hands-on activities for both kids and the kids-at-heart.

*Science Oxford*

## Look through the eyes of a modern paramedic

---

Modern paramedics perform a wide and varied healthcare role, and use various interactive simulation tools in their training to equip and enable them to perform effectively. Come and see the simulation and clinical equipment used in their education and preparation for clinical practice.

*Oxford Brookes University*

## The PsychScience booth: a window into psychological research

---

All is not what it seems! Enter the fascinating world of psychological research. Our visual illusions, writing challenges, Stroop test and brain quizzes may have you questioning your perception, and challenging mind myths.

*Oxford Brookes University*

## How we can all help health research

---

Everyone can play their part to help health research. Find out how NHS research has helped to develop new treatments and ways to care for people. Play a game to help you understand how clinical trials work, and take away some useful information

### Sunday only

*NIHR Clinical Research Network Thames Valley and South Midlands*

## Discovering the surface of everything

---

What did Albert Einstein discover that made him the winner of Nobel Prize in 1921? Take part in games and quizzes to discover how light interacts with different surfaces, and what this can tell us about materials.

*HarwellXPS*

## Play computer games for science

---

How do we behave in a virtual world? Can computer games affect children's social behaviour? How would you judge the behaviour of another gamer? Take part in a computer-based experiment to find out more, and learn about our studies using Minecraft.

*Oxford Brookes University*

## The power of research

---

Find out how sight loss can affect your everyday life. Find your blind spot and experience what it's like having a sight loss condition. Chat to our scientists and hear how we're changing the future, so everyone can see.

*Fight for Sight*



## Decision game

---

How do children and adolescents learn and make decisions? Figuring out how to choose the best option isn't always easy, particularly when there are many potentially valuable choices. Our researchers are trying to find out whether adults and children make choices in different ways and whether they use different parts of their brain when making decisions.

*Department of Experimental Psychology University of Oxford*

## Delving into dementia

---

Your brain is the most complex structure in the universe, responsible for everything you think, feel, say and do. But what happens if it goes wrong? Explore this incredible organ and find out how it is affected in dementia, with a range of creative activities, virtual reality experiences and brain games.

*Alzheimer's Research UK*

## Brain cell ball pond

---

Jump into a giant ball pond to explore our most fascinating organ. The human brain consists of 100 billion nerve cells, known as neurons, and also ten times more other types of cells. Rise to the challenge and compete with other glial cells, now identified as important for proper brain function and the regulation of neurological disorders.

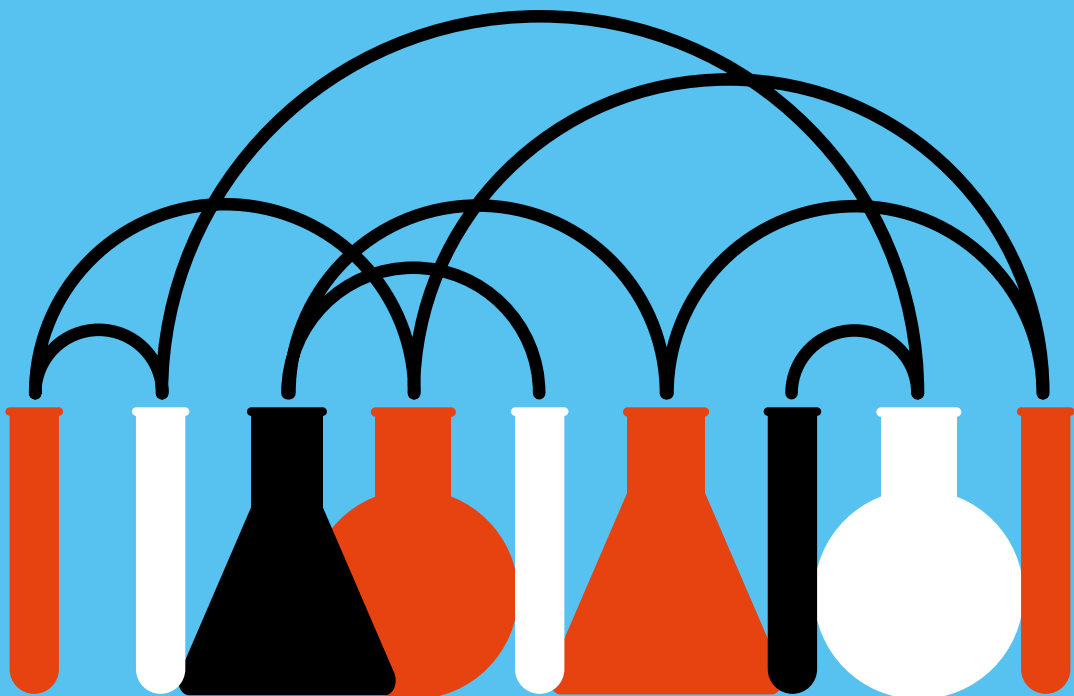
*Nuffield Department of Clinical Neurosciences, University of Oxford*

## Inside fusion

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JET (the Joint European Torus), based at the Culham Science Centre, is the largest fusion device on the planet, and part of the global roadmap to produce electricity from fusion. Using VR technology we can take you inside the machine to discover more about how we're trying to make fusion power a reality.

**Saturday only**  
*United Kingdom Atomic Energy Authority*



## Bioremediation: uncovering the hidden power of bacteria

---

Since the industrial revolution, natural habitats have been destroyed and environments polluted by man-made activities. Don't despair! Scientists have a solution. Find out how bacteria can clean-up contaminated soils, and how we can test if the soil has been de-toxified.

**Saturday only**  
Cranfield University

## VR Choral Evensong

---

What happens to your mind and body when you listen to music? Why is sacred choral music so often experienced as transcendent? Try out our 'VR choral evensong', a real service recorded in an Oxford College in spatialised sound and immersive video, and learn how new technologies are helping us to find out.

*Faculty of Music,  
University of Oxford*

## Molecular dynamics in virtual reality

---

Through the power of virtual reality, shrink to a microscopic level and interact with molecules! Find out how this technology is being used to enhance our understanding of everything from how medicines affect our bodies to how chemicals react in our atmosphere.

*Theory and Modelling in Chemical Sciences, Universities of Bristol and Oxford*

## Fascinating fossils

---

Delve into the past and discover the world of geoscience as you handle fossils, microfossils and other geological specimens dating back millions of years. Find out where studying this fascinating subject can take you as a career path.

*Greene's Tutorial College*

## Can worms help cure Alzheimer's?

---

Find out how the tiny worm *C. elegans* is helping us to find new cures for human neurodegenerative diseases like Alzheimer's and Parkinson's. We have engineered worms that show symptoms of these diseases and we use them to find new drugs that might work in humans. Come and meet them and see what we do.

*Department of Biochemistry /  
Chronos Therapeutics*

## VR skulls - understanding a genetic disease

---

Approximately 350 children are born in the UK every year with a condition that makes the bones of the skull fuse prematurely, restricting brain growth. Talk to our researchers about how they are trying to understand the genetics behind this disease using VR.

**Saturday only**  
*Radcliffe Department of Medicine /  
MRC WIMM, University of Oxford*

## Fatbergs: the beasts beneath

---

Ever wondered what happens when you flush wet wipes down the toilet, pour cooking oils down the drain or even wash your hair in the morning? Find out about fatbergs, the beasts beneath, and how we are fighting them back!

**Saturday only**  
Cranfield University

## Transformational science that transforms lives

---

Immunocore is a local biotech company developing a new type of therapy to treat cancer, infectious diseases and autoimmune diseases, using the body's own immune system. Play games to discover how these therapies work and how they are developed.

*Immunocore*



## Poetry of Science

Saturday 13 October  
**12.30 - 1.30pm**

*Oxford Town Hall,  
St Aldate's, OX1 1BX*

*Pre-book, PWYD*

*All ages*

*Performance*

From acrostic and shape poems to sonnets and free verse, there are endless forms of poetry to suit the myriad topics in science. Join Erica McAlpine from the University of Oxford and Niall Munro from The Oxford Brookes Poetry Centre and several young finalists from the IF Oxford Poetry of Science Competition to hear their poems.

## Science in a Cemetery

Various dates, see below  
**1.30 – 2.30pm**

*Pre-book, free*

*Adults, Family, Teenagers*

*Walk*

**Sat 13 October**

Holywell Cemetery, OX1 3TP

**Sun 14 October**

St Sepulchre's Cemetery, OX1 2HD

**Sat 20 October**

Headington Cemetery, OX3 9BY

**Sun 21 October**

St Mary and St John  
Churchyard, OX4 1QT

The wide range of rock types used for gravestones means that cemeteries can be geological treasure-troves. They are also great places to study local history and environmental science. Join geologists Nina Morgan and Philip Powell on a guided geological cemetery walk.

***Be prepared to walk on rough ground so please wear comfortable walking shoes. This event may not be suitable for wheelchair users.***

→ **Also today, see page 23:**

Explorazone: adults only  
Oxford Town Hall



## 8 Minutes

Saturday 13 October  
**3pm and 7.30pm**

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*Oxford Playhouse,  
11 - 12 Beaumont  
Street, OX1 2LW*

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*Pre-book, £10 - £20  
via Oxford Playhouse*

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*Adults, Teenagers*

---

*Performance*

It takes just 8 minutes for sunlight to travel 93 million miles to Earth. In this unique collaboration with scientists from STFC RAL Space, choreographer Alexander Whitley takes inspiration from the stunning imagery of solar research. Dance, film and music take us on a journey through the universe, revealing the drama of the burning ball of plasma that illuminates our planet and exploring our relationship with the star that gives us light.

You can join the choreographer, Alexander Whitley, and scientist, Hugh Mortimer, for an informal discussion with Louise Chantal after the 7.30pm show.



## Breaking the Rules in Research Writing (and Dance)

Saturday 13 October  
2.45 - 3.30pm

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*Oxford Town Hall,  
St Aldate's, OX1 1BX*

---

*Pre-book, PWYD*

---

*Adults, Teenagers*

---

*Performance*

How do you describe your work? How do you share your insights? What if you did it differently? When it comes to research writing, we have to follow established norms and styles – or do we? Rules are made to be broken and change is a constant. Join Juliet Henderson from Oxford Brookes University to explore the changing nature of writing and dance through spoken word, image, and a performance of *Random Variable* by Cafe Reason Butoh Dance Theatre.



## Story Time: water, water everywhere...

Saturday 13 October  
3 - 4pm

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*Oxfordshire County  
Library, Queen Street,  
Westgate, OX1 1DJ*

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*Unticketed, free*

---

*Family*

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*Storytelling*

Join storyteller Sarah Law to hear sciencey stories about different aspects of water. Whether it's the water cycle, watery habitats, saving water or drinking water, there's something to quench your thirst! Best suited to children aged 5 - 9 years. Children must be accompanied by an adult.





## Planetarium

Saturday 13 October  
**4 - 5pm**

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*Oxford Town Hall,  
St Aldate's, OX1 1BX*

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*Pre-book, PWYD*

---

*Family*

---

*Talk*

Take an intergalactic journey through the solar system towards the most distant galaxies with Raman Prinja, Professor of Astrophysics at University College London, and renowned illustrator Chris Wormell. Join the creators of the children's book *Planetarium* for an interactive event with live drawing where you can learn about everything from exploding stars and black holes to asteroids and galaxy collisions. It will be a voyage of discovery that is truly out of this world!

***Suitable for age 8+***



## Getting in the neural groove

Saturday 13 October  
**5.30 - 6.30pm**

---

*Oxford Town Hall,  
St Aldate's, OX1 1BX*

---

*Pre-book, PWYD*

---

*Adults, Teenagers, Family*

---

*Talk*

Choreographer Ivar Hagendoorn remarked that "the limbs move, but it is the brain that dances". In this interactive event, Emily Cross explores how the latest neuroscience research is revealing what's going on inside our heads as we watch dancers who inspire us to get out of our seats and feel the groove.

This talk was awarded the annual Jacob Bronowski Award Lecture by the British Science Association.





## Explorazone: adults only

Saturday 13 October  
6.30 - 9pm

---

*Oxford Town Hall  
St Aldate's, OX1 1BX*

---

*Unticketed, PWYD*

---

*Adults*

---

*Hands-on*

The Explorazone will be open in the evening for adults only with a special selection of exhibits, a cash bar and sci-fi theremin sounds. Curious adults can have a go at keyhole surgery, find out why chocolate tastes so good, and discover the incredible properties of diamonds. Bring your friends and ID!



## Waiting for Pavlov

Saturday 13 October  
7 - 8pm

---

*St Aldates Tavern,  
108 St Aldate's, OX1 1BU*

---

*Pre-book, PWYD*

---

*Adults*

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*Performance*

Seamus & Gerry meet for a pint in their local pub to put the world to rights. Inspired by a newspaper article, they embark on a discussion of big ideas in psychology and neuroscience with a large splash of humour and banter. Drawing on real-life examples, they explore the relevance of psychology research within their own lives, ultimately realising that science is everywhere around them.

Martin O'Neill, from the University of Oxford Department of Experimental Psychology, uses humour to highlight developments in psychology and neuroscience in this short play.



## hertz

Sunday 14 October

**12.30 - 1.45pm,**

**2 - 3.15pm and 3.30 - 4.45pm**

---

*Oxford Town Hall,  
St Aldate's, OX1 1BX*

---

*Pre-book, PWYD*

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*Family, Adults, Teenagers*

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### *Performance*

Everything vibrates – from the smallest atom on Earth to the furthest star in space. *hertz* glimpses into this hidden universe, making inaudible sound tangible, visible and real. Immerse yourself in the imperceptible soundtrack of the city in real-time. Listen to the secret songs of stars and harness their harmonics to generate beautiful visual patterns.

*hertz* is an artwork by artist Juliet Robson. Meet Juliet and her collaborators - academics from the fields of astrophysics, meteorology and mathematics.



## The Spouting Club

Sunday 14 October

**7.30 - 9.30pm**

---

*St Aldates Tavern, 108 St  
Aldate's, Oxford, OX1 1BU*

---

*Pre-book, PWYD*

---

*Adults*

---

### *Discussion*

Ever heard of a Spouting Club? Spouting was a kind of eighteenth-century karaoke, with Shakespeare instead of songs. People met in pubs to read or recite parts of their favourite plays. Join us for an evening of beer, banter and the Bard as we explore how eighteenth-century pub-goers experienced Spouting.

---

### **Also today,**

→ **see page 12:**

Explorazone  
Oxford Town Hall  
OX1 1BX

→ **and see page 19:**

Science in a Cemetery  
St Sepulchre's Cemetery,  
OX1 2HD



## Animal Behaviour: a Very Short Introduction

Monday 15 October  
**12.15 - 1pm**

---

*Waterstones Bookshop,  
Broad Street, OX1 3AF*

---

*Pre-book, PWYD*

---

*Adults*

---

*Talk*

Animal behaviour is a central topic of zoology, and ideas concerning the role of genes as well as environment have transformed the subject. Tristram Wyatt gives a modern view, including a sense of the power of gene knock-outs, computing, and image analysis to enable detailed experiments and observations of behaviour.



## Everyday Science

Monday 15 October  
**6 - 7pm**

---

*Oxfordshire County  
Library, Queen Street,  
Westgate, OX1 1DJ*

---

*Pre-book, PWYD*

---

*Adults, Teenagers*

---

*Talk*

Which foods should you eat to trick your brain into thinking that you are full? How hairy are you really? How can we use science to make better tasting wine? Find out all this and more from the Naked Mathematician, Tom Crawford.

---

→ **Also today, see page 6:**  
Rhymetime: Animals  
*Oxfordshire County Library*



## Where are the Dementia Treatments?

Monday 15 October  
**6.30 - 7.30pm**

---

*St Aldates Tavern,  
108 St Aldate's, OX1 1BU*

---

*Pre-book, PWYD*

---

*Adults*

---

*Talk*

It's been over a decade since a new drug came on the market for dementia, but that's not due to a lack of trying. Hear from Dr John Davis about the challenges involved with discovering new dementia medicines and innovative ways that scientists are working to overcome them.

Dr John Davis is Chief Scientific Officer at the Alzheimer's Research UK Oxford Drug Discovery Institute, which focuses on novel targets in the dementia therapeutic area.



## Big Data: curse or cure?

Monday 15 October  
**7 - 8.30pm**

---

*Sheldonian Theatre,  
Broad Street, OX1 3AZ*

---

*Pre-book, PWYD*

---

*Adults*

---

*Discussion*

Big Data has the potential to save the world. Scientists can use it to develop targeted treatments for devastating medical conditions. But can we trust that our precious information is being safeguarded? Broadcaster and writer, Timandra Harkness, chairs this discussion featuring neuroscientist, Simon Lovestone, from the University of Oxford Department of Psychiatry, Nina Hallowell from the Wellcome Centre for Ethics and Humanities, and Daniel Kaute from the NIHR Oxford Health Biomedical Research Centre.

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## CSI Oxford: forensic challenge

Monday 15 October

**Arrive at 7pm, 7.45pm or 8.30pm**

---

*New Road Baptist Church,  
Bonn Square, OX1 1LQ*

---

*Pre-book, £13,  
(£10 concessions)*

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*Adults*

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*Immersive activity*

The site renovator of the New Road Baptist Church has been shot dead – but why? The crime-scene is still fresh, so join the forensic team, collect physical and digital evidence, unravel alibis and establish whodunit. Grab your magnifying glass and dusting powder to be a super-sleuth with Science Oxford and see what secrets science can unearth. This challenge includes blood splatter analysis, chemical testing for gun residues, and digital forensics.



## Oxford Past and Present

Monday 15 October

**7.30 - 8.30pm**

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*Wig and Pen,  
9-13 George St, OX1 2AU*

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*Pre-book, PWYD*

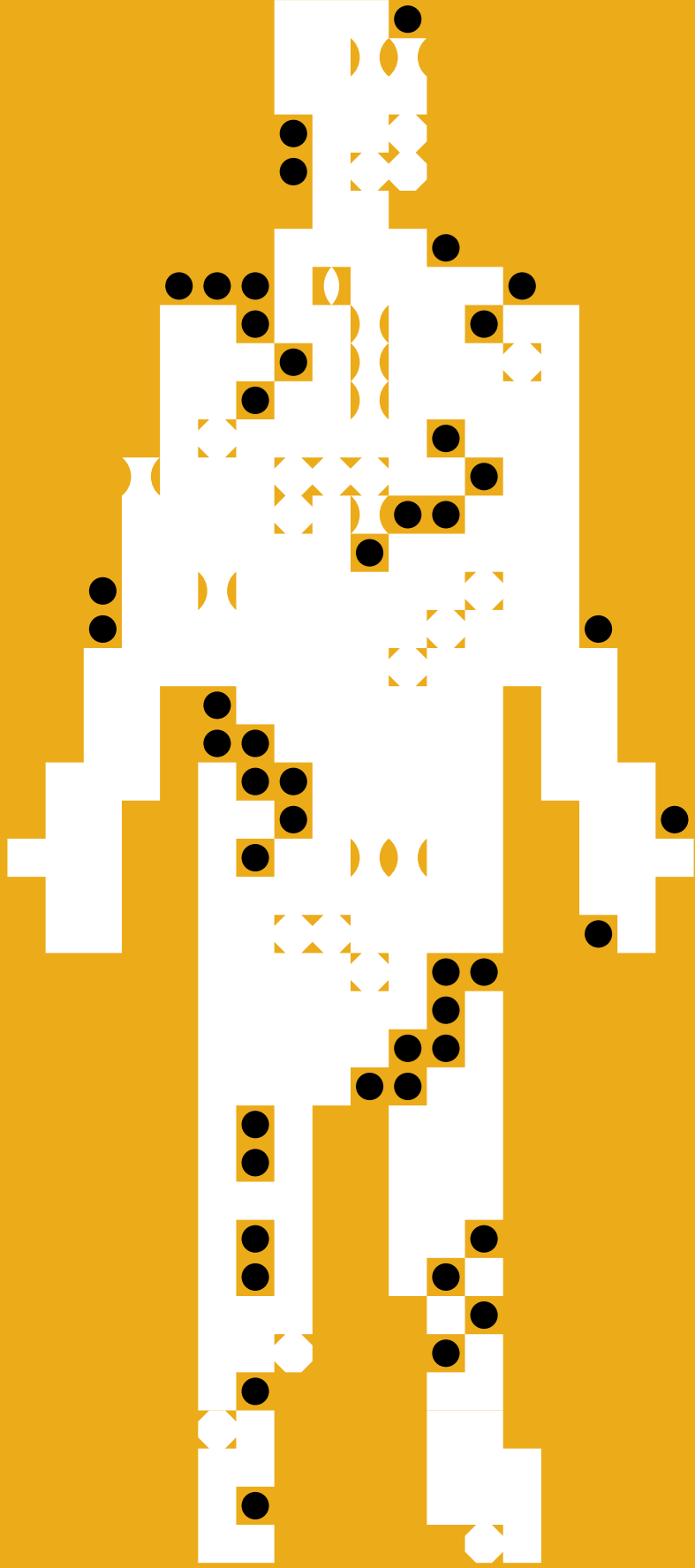
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*Adults, Teenagers*

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*Talk*

Imagine how Oxford has changed over time. View the city through the eyes of photographers from the 19th and early 20th centuries. Historic images, many unseen for over 70 years, have been digitised by the Historic Environment Image Resource, based at the University of Oxford's Institute of Archaeology. Add your memories to new photographs and develop Oxford's rich and varied story.







## The God of Evolution? Animal Suffering in Nature

Monday 15 October  
**7.45 - 9pm**

---

*Clore Old Library,  
University Church,  
High Street, OX1 4BJ*

---

*Unticketed, Free*

---

*Adults*

---

*Discussion*

In 1859, Charles Darwin proposed a radical new idea for how life evolves through natural selection. The natural world is competitive, violent and careless of the suffering it produces, apparently at odds with the Christian idea of an omnipotent, good God. In this group discussion, Bethany Sollereeder will explore the problem of animal suffering in nature and how the implications of evolution can be reconciled with a theological understanding of God as creator.



## Clinical Psychology: a Very Short Introduction

Tuesday 16 October  
**12.15 - 1pm**

---

*Waterstones Bookshop,  
Broad Street, OX1 3AF*

---

*Pre-book, PWYD*

---

*Adults*

---

*Talk*

Clinical psychology treats people who are facing difficulties or changes in their lives, approaching personal distress as an unhappy outcome of certain ways of thinking, behaving and relating to the world. Susan Llewelyn will summarise how practitioners work with people experiencing challenging circumstances, to try and help change what is distressing or concerning them.



## Language Cafe Special

Tuesday 16 October  
6 - 8pm

---

*Oxfordshire County Library, Queen Street, Westgate, OX1 1DJ*

---

*Unticketed, Free*

---

*Adults, Teenagers*

---

*Workshop*

Cześć! 你好 Bonjour! Olá! بياو

How many languages can you speak? Would you like to learn another language? Are you one of the 16% of Oxford residents whose first language isn't English? Come along to this open session to share your knowledge and experience of language sharing and multilingualism.

## The Pursuit of Speed

Tuesday 16 October  
6.15 - 7.15pm

---

*Wig and Pen, 9-13 George St, OX1 2AU*

---

*Pre-book, PWYD*

---

*Adults*

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*Discussion*

Football, cycling, rowing, wrestling...it doesn't matter what sport we choose, we all just want to be higher, faster, stronger. Join us for a discussion to explore sports and our bodies. Find out more about anabolic steroids through a conversation with an endocrinology professor, an athlete and a filmmaker.



## From Grain to Glass: The Science of Distilling

Tuesday 16 October  
**6.30 - 8.30pm**

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*The Oxford Artisan Distillery,  
Old Depot, South Park,  
Cheney Lane, OX3 7QJ*

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*Pre-book, £15  
(under 18s free)*

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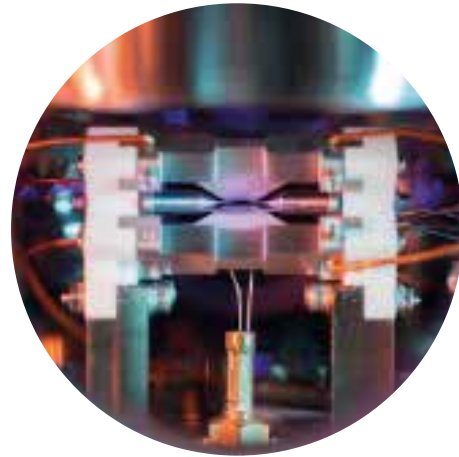
*Adults, Families*

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*Tour*

Visit The Oxford Artisan Distillery for a scientific tour of its 'grain to glass' distillery. Discover how vodka, gin, absinthe and rye whisky are made, following every step from grain to bottle. Gain a real appreciation of local provenance and the extra mile it takes to make TOAD a true craft distillery.

**Ticket includes  
a complimentary G&T  
for over 18s.**



## Physics: From the Lab into your Life

Tuesday 16 October  
**6.30 - 9pm**

---

*Clarendon Laboratory,  
Parks Road, OX1 3PU*

---

*Pre-book, Free*

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*Adults, Teenagers*

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*Tour, Talk, Hands-on*

How does lab research become a technology that affects your everyday life? Come and find out how Oxford Physics researchers working on cutting-edge physics are creating innovative products that could improve lives around the world. This evening event includes talks, tours of laboratories and hands-on activities.

Photo credit:  
David Nadlinger



## Rice's Language of Buildings

Tuesday 16 October  
7 - 8pm

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*Waterstones Bookshop,  
Broad Street, OX1 3AF*

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*Pre-book, PWYD*

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*Adults, Teenagers*

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*Talk*

Matthew Rice discusses the grammar and vocabulary of British buildings, explaining the evolution of styles from Norman castles to Norman Foster. He will help you recognise, understand and date any British building. Fluent in the world of volutes, hood moulds, lobed architraves and bucrania, you will be able to leave a cathedral or country house with as much to talk about as a film or play.



## Placebo and Surgery

Tuesday 16 October  
7.15 - 8.15pm

---

*St Aldates Tavern,  
108 St Aldate's, OX1 1BU*

---

*Pre-book, PWYD*

---

*Adults, Teenagers*

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*Talk*

Many of us are familiar with the idea of placebos in drugs trials, but how can we use placebos in surgical trials? Professor Andy Carr will talk about why we do surgical trials, the unexpected use of placebo surgery and some of his recent findings from surgical trials using placebos.

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## Protein and Performance

Tuesday 16 October  
**7.45 - 9pm**

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*Buzz Gym, Westgate Shopping Centre, OX1 1NZ*

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*Pre-book, PWYD*

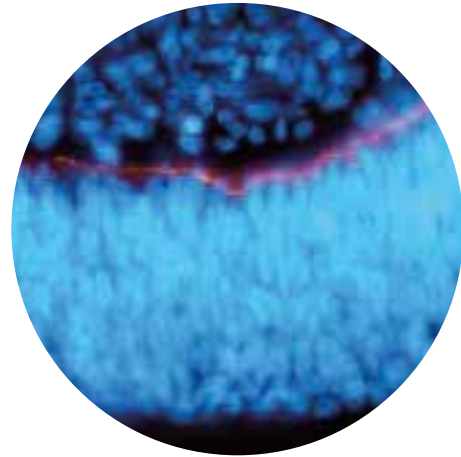
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*Adults, Teenagers*

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*Discussion*

Do you have to eat meat to maintain strength and mass? Join Personal Trainers and athletes from Buzz Gym, and Susan Jebb, Professor of Diet and Population Health at the University of Oxford, to explore the relationship between protein and sporting performance.



## The Consciousness Field

Wed 17 - Mon 22 October  
**11am - 7pm**

---

*The Barn, St John's College, St Giles, OX1 3JP*

---

*Unticketed, Free*

---

*Adults, Teenagers*

---

*Exhibition*

Experience an interactive art installation that explores the human brain. This version of The Consciousness Field is a collaboration between Colin Blakemore, Irina Bystron and Zoltan Molnar from the Department of Physiology, Anatomy & Genetics, and anthropologist and artist Maria Lopes. Expect an immersive environment that will take you on a journey through the mammalian brain.



# Unkindest Cut: Harm and Harmony in your Head

Wednesday 17 - Sunday  
21 October  
**11am, 12.30pm, 2pm, 6pm**

---

*Bonn Square, OX1 1LQ*

---

*Pre-book, Free*

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*Adults, Teenagers*

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*Performance (30 minutes)*

Outside it seems to be a shipping container much like any other. Inside though, it's a fortress of ideas – intimate and intense, alluring but alarming, contained yet spilling over.

*Unkindest Cut* confines and entwines dance, performance, text, film and an intricate light installation to explore how our own minds cope – and sometimes don't – with modern life, confronting audiences at close quarters with complex issues around young people and mental health.

***In addition to the timed dance performances, the shipping container will be open to visitors between 10am and 8pm each day for you to experience the sound and light installation.***

# Unkindest Cut: meet the creators

Wednesday 17 October  
**6.30 – 8pm**

---

*Oxfordshire County Library,  
Queen Street, Westgate,  
OX1 1DJ*

---

*Pre-book, Free*

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*Adults, Teenagers*

---

*Discussion*

What has been going on in the shipping container opposite the Westgate Centre? Find out at this discussion with the artist and the clinical psychiatrist who created it.





## Universities and Colleges: a Very Short Introduction

Wednesday 17 October  
12.15 - 1pm

---

*Waterstones Bookshop,  
Broad Street, OX1 3AF*

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*Pre-book, PWYD*

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*Adults*

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*Talk*

Examine the role of the university in a social and economic context, not just a repository of knowledge or a site for instruction. David Palfreyman considers how universities are founded, funded, governed, lead, and managed. Review how increased fees have affected their relationship with students and judge the futures for higher education.

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→ **Also today, see page 6:**  
Rhymetime, Robots  
*Oxfordshire County Library*



## Rosie Wilby - Is Monogamy Dead?

Wednesday 17 October  
7 - 8pm

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*The Bullingdon,  
162 Cowley Rd, OX4 1UE*

---

*Pre-book, PWYD*

---

*Adults*

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*Talk*

Comedian and broadcaster Rosie Wilby presents a mixture of talk, discussion and highlights from her standup show *Is Monogamy Dead?* which eventually became her award-shortlisted book of the same name. Through the results of her online survey asking *What counts as 'cheating'?*, Rosie reveals how diverse our definitions of infidelity are.

---

→ **Also today, see page 37**  
*The Prism of Gender*  
*The Bullingdon*



## How the Internet is Changing our Lives: from dating to politics

Wednesday 17 October  
**7 - 8.30pm**

---

*St Aldates Tavern,  
108 St Aldate's, OX1 1BU*

---

*Unticketed, Free*

---

*Adults*

---

*Discussion*

With the emergence and penetration of Internet based technologies, different aspects of our private and collective lives and how our societies function at different levels have changed. In this talk by Taha Yasseri from the Oxford Internet Institute, we'll discuss examples from dating and politics, seemingly unrelated, but fundamentally connected!



## People Power: changing the course of research

Wednesday 17 October  
**7.30 - 8.30pm**

---

*New Road Baptist Church,  
Bonn Square, OX1 1LQ*

---

*Pre-book, PWYD*

---

*Adults, Teenagers*

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*Discussion*

When there was no treatment for 4-year-old Tommy Salisbury's degenerative eye condition, his mother Emma raised £300,000 with family and friends for research. The resulting gene therapy is now in its clinical trials. Join Emma Salisbury, Michele Acton from Fight for Sight and Dr Alun Barnard to hear how one family's determination will change the lives of many people.



## Understanding Social Media: young people, identity and change

Wednesday 17 October  
7.30 - 9pm

---

*Clore Old Library,  
University Church,  
High Street, OX1 4BJ*

---

*Unticketed, Free*

---

*Adults, Teenagers*

---

*Discussion*

Social media has become a key communication tool for many people. Hear the results of an interdisciplinary study from Dr Finola Kerrigan and Dr Lisa Thomas that examined social media use and online-offline balance in the context of a significant life transition: that of young people transitioning to life at university.



## The Prism of Gender

Wednesday 17 October  
8.45 - 10pm

---

*The Bullingdon,  
162 Cowley Rd, OX4 1UE*

---

*Pre-book, PWYD*

---

*Adults*

---

*Discussion*

What happens when a professor and a Drag Queen look at identities, and notions of masculinity and femininity? Look through our prism and view the gender spectrum. Get rid of that shade with Tina Miller, Professor of Sociology at Oxford Brookes University, and the iconic Victoria Sin to explore whether gender binaries still make sense – did they ever?

Photo credit:  
Tess Mickleburgh

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→ **Also today, see page 35:**

Rosie Wilby  
- Is Monogamy Dead?  
*The Bullingdon*



## Meet the Choreographer:

**Alexander Whitley**  
*Artistic Director and  
Choreographer of Alexander  
Whitley Dance Company*

---

*Since my early childhood, dance has been the centre of my universe. Over the course of my career I've taken great pleasure in uncovering what our human body is capable of and the riches it has to offer as a means of asking questions about what it is to be a thinking, feeling, communicating being. I've often turned to philosophy and science as a way of deepening my appreciation of these human qualities and the environment in which they exist.*

*When I was approached by STFC RAL Space to work with them on a production exploring solar physics I jumped at the opportunity, eager to expand my understanding of this fascinating subject and curious about how dance and the other elements of theatre might give expression to these ideas. For me, the parallels are obvious: dance and physics are both enquiries into movement, they just look in different places to learn about it.*

*Making 8 Minutes has been a fascinating adventure, having the privilege to learn from scientists working at the forefront of modern physics and take on these ideas with a stellar team of collaborating artists. It has been a journey of discovery for the dancers and myself as we've explored how scientific theories can be understood by the human body, testing the limits of their physical capabilities as we attempt to get a little closer to the immense forces at work in our awesome sun.*

## Related events

8 Minutes

→ **See page 20**

Sat 13 October; **3.00 and 7.30pm**

Getting in the neural groove

→ **See page 22**

Sat 13 October; **5.30pm**

Unkindest Cut: harm and harmony in your head

→ **See page 34**

Wed 17 – Sun 21 October  
**10am – 8pm**

Dancin' Oxford is programming some participatory opportunities linked to Alexander Whitley's 8 Minutes, as part of Family Dance Week, see:  
[www.dancinoxford.co.uk](http://www.dancinoxford.co.uk)





## Development: a Very Short Introduction

Thursday 18 October  
**12.15 - 1pm**

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*Waterstones Bookshop,  
Broad Street, OX1 3AF*

---

*Pre-book, PWYD*

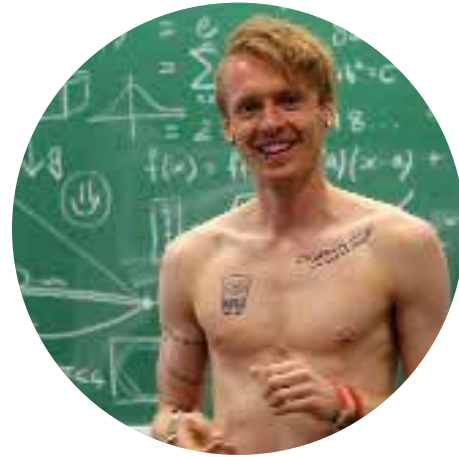
---

*Adults*

---

*Talk*

How do nations escape poverty and achieve economic and social progress? Ian Goldin, a former vice-president of the World Bank, explains what development means in its broadest sense - encompassing education, health, and gender equality as well as economic growth. He discusses the shift from state-led strategies, to ones driven by market forces.



## Maths v Sport

Thursday 18 October  
**6 - 7pm**

---

*New Road Baptist Church,  
Bonn Square, OX1 1LQ*

---

*Pre-book, PWYD*

---

*Adults, Family, Teenagers*

---

*Workshop*

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 the Naked Mathematician, Tom Crawford will be telling you how you can use it to be better at sport... (results may vary).



## Introduction to coding

Thursday 18 October  
**6 - 8pm**

---

*Oxfordshire County Library,  
Queen Street, Westgate,  
OX1 1DJ*

---

*Unticketed, Free*

---

*Adults, Family, Teenagers*

---

*Workshop*

Want to learn computer coding but don't know where to start? Find out how to get started and have fun trying out a micro:bit or Raspberry Pi. Bring your own laptop. For adults and children over 8. Children must be accompanied by an adult.



## Victorian Speed: the long history of fast living

Thursday 18 October  
**6 - 7.30pm and 7.30 - 9pm**

---

*Museum of the History  
of Science, Broad Street,  
OX1 3AZ*

---

*Unticketed, Free*

---

*Adults, Teenagers*

---

*Hands-on*

Does the modern world move too fast? We are not the first to ask this question. The Victorians also feared that their lives had been accelerated by new technologies like the railway and telegraph. This interactive exhibit showcases the long history of feeling stressed about the pace of modernity.

Photo credit:  
Wellcome Collection CC BY 4.0



## The Science of Sin

Thursday 18 October  
7 - 8pm

---

*Waterstones Bookshop,  
Broad Street, OX1 3AF*

---

*Pre-bok, PWYD*

---

*Adults*

---

*Talk*

Dr Jack Lewis combines the latest neuroscience research and the seven deadly sins to look at the science behind why we are constantly tempted to do the things we know aren't good for us. Jack suggests strategies to help us better manage our impulses in order to improve our health, our happiness and our productivity – helping us to say 'no!' more often, especially when it really counts.



## Science Cabaret: a little knowledge is...

Thursday 18 October  
7.30 - 9.30pm

---

*Wig and Pen,  
9-13 George St, OX1 2AU*

---

*Pre-book, PWYD*

---

*Adults*

---

*Performance*

Grab a pint and join us for a cabaret with a difference as six stellar sci-performers riff on the theme 'A little knowledge is... a dangerous thing?' If you dared to think the Internet has made everyone an expert, our performers are poised to reveal universal blunders, perilous encryption errors, and the dangers of sex in the animal kingdom. Featuring Chris Lintott from BBC Sky at Night, Alison Woollard a Royal Institution Christmas Lecturer and Lucy Rogers from Robot Wars.



## Festival Dinner

Thursday 18 October  
7 - 10pm

---

*Hertford College Hall  
Enter via the lodge  
on Catte Street, OX1 3BW*

---

*Pre-book, £50*

---

*Adults*

---

*Dinner*

---

Whether you have something to celebrate, or just fancy a splendid meal, join us at Hertford College, home of the Bridge of Sighs, to mark the first ever science and ideas festival in Oxford.

The delicious three-course meat-free meal will be followed by a short talk while coffee and petit fours are served.

No entrance exams, but dress to impress.

## Menu

### **Starter:**

Twice-baked Oxford Blue cheese soufflé with poached pear & watercress and a pickled walnut dressing (V)

---

### **Mains:**

Chick pea & puy lentil bon bons with hazelnut crumb, caramelised fennel purée, swiss chard & baby turnips (V)

**or**

Wild mushroom & spinach roulade, cavolo nero & piccolo parsnips, and roasted shallot & truffle sauce (V)

---

### **Dessert:**

Apple tart Tatin, apple sorbet, frozen Calvados crème fraiche and mixed seed florentine (V)

---

Coffee & petit fours (V)

---

*Bottles of red and white wine are available for cash purchase on the night, or you are welcome to bring your own.*



## Waves: a Very Short Introduction

Friday 19 October  
12.15 - 1pm

---

*Waterstones Bookshop,  
Broad Street, OX1 3AF*

---

*Pre-book, PWYD*

---

*Adults*

---

*Talk*

From sound waves to gravitational waves, and from waves of light to crashing rollers on the ocean, Mike Goldsmith explores the fundamental features shared by all waves in the natural world. Consider the range of phenomena from reflection, diffraction, and polarisation in light to beats and echoes in sound.

---

→ **Also today, see page 6:**  
Rhymetime, Nature  
*Oxfordshire County Library*



## Augmented Humanity: how can cutting-edge IT benefit people?

Friday 19 October  
2 - 3.30pm

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*New Road Baptist Church,  
Bonn Square, OX1 1LQ*

---

*Pre-book, PWYD*

---

*Adults*

---

*Discussion*

Whether it's companies getting rich on our data, or Big Brother governments monitoring and managing populations, IT is often seen as a tool that helps organisations rather than people. Brian McKenna from Computer Weekly will talk with AI Professor, Nigel Shadbolt, and Marina Jirotko, Professor of Human Centred Computing about how computing can also make our lives healthier, more expressive and productive as individuals, family members, and social beings.





## What IF...

Friday 19 October  
**5 - 6.30pm**

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*Oxford Playhouse, 11 - 12  
Beaumont Street, OX1 2LW*

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*Pre-book £5  
(£3 concessions)  
via Oxford Playhouse*

---

*Adults, Teenagers*

---

*Performance*

The world premiere of a collection of rap and hip hop music, spoken word and short stories about what it's like growing up today. Hear the rhythm of life, touching on hopes and dreams, fears and frustrations, with music performed by radio and TV personality Rodney P, artists from Inner Peace Records and new talent from Oxfordshire. See what happened when the Godfather of British Hip Hop worked with a group of exceptional young people.



## Antisocial Media

Friday 19 October  
6 - 7pm

---

*New Road Baptist Church,  
Bonn Square, OX1 1LQ*

---

*Pre-book, PWYD*

---

*Adults, Teenagers*

---

*Discussion*

Is Facebook a surveillance and propaganda machine capable of destabilising society or is it just a convenient tool for communicating with your friends and family? Social media has been weaponised and automated by political actors in countries around the world. Join Vidya Narayanan from the Oxford Internet Institute and Siva Vaidhyanathan, author of *Antisocial Media* as they discuss the effects that Facebook has had on our world and how we can tackle the problems social media poses to our society.



## Reciprocal Space: meet the artist

Friday 19 October  
6 - 8pm

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*University Church,  
High Street, OX1 4BJ*

---

*Pre-book, PWYD*

---

*Adults*

---

*Exhibition, Talk*

An opportunity to view the exhibition *Reciprocal Space* and meet the artist, Meg Rahaim. Meg will speak about the experience of being embedded in a scientific research centre and how interactions with scientists caused her to re-evaluate the way she understands the practice of image-making.



## Late Night: Uncultured

Friday 19 October  
**7 - 10pm**

---

*Oxford University  
Museum of Natural  
History, Parks Rd, OX1 3PW*

---

*Pre-book, Free*

---

*Adults*

---

*Hands-on,  
Performance, Talk*

A Late Night event with a bacterial twist to celebrate the opening of the *Bacterial World* exhibition. Delve into the private lives of bacteria and their wilder relatives, and discover how these tiny organisms run the world through an evening of performances, talks, workshops, and games.

The *Bacterial World* exhibition tells the hidden story of the smallest life forms and their influence on the past, present and future of our planet.

**The exhibition will run until  
28 May 2019.**

Photo credit:  
Soonhee Moon



## Exploring Squeeze's Spot the Difference Album (2010)

Friday 19 October  
7 - 8.30pm

---

*Wig and Pen,*  
9-13 George St, OX1 2AU

---

*Pre-book, PWYD*

---

*Adults, Teenagers*

---

*Workshop, Talk*

Why would a band attempt a perfect re-recording of their greatest hits? And what can we find out when they did? Come and join the Oxford Brookes Popular Music Research Unit to *Spot the Difference* between Squeeze tracks as they shift across audio formats, record companies and publishers over time.



## Science in the Field

Friday 19 October  
6.30 - 8.30pm

---

*St Aldates Tavern,*  
108 St Aldate's, OX1 1BU

---

*Pre-book, PWYD*

---

*Adults, Teenagers*

---

*Discussion*

A special live recording of the Oxford Sparks Big Questions podcast. This storytelling night features scientists sharing their favourite memories of their work out in the big wide world; with thrills, spills and laughs along the way. Come along for inspiring and informative stories, straight from the scientists' mouths.

# Science at the Shops

Saturday 20 October

9am – 5pm

---

*Templars Square Shopping  
Centre, Pound Way,  
Cowley, OX4 3XH*

---

*Unticketed, Free*

---

*Adults, Family, Teenagers*

---

*Hands-on*

## **Build a medicine catapult and decode a DNA message**

---

*Department of Physiology  
Anatomy & Genetics,  
University of Oxford*

## **Breathing and the brain**

---

*Nuffield Department  
of Clinical Neurosciences,  
University of Oxford*

## **Test your senses, feeling temperature, touch, vibration or pain**

---

*Nuffield Department  
of Clinical Neurosciences,  
University of Oxford*

## **See the stars and explore the night sky in the Planetarium dome**

---

*STFC RAL Space and Science  
Oxford*

## **Learn from our lung experts about how we breathe and delve into a box of snot**

---

*Respiratory Medicine Unit Oxford  
Respiratory Trials Unit, University  
of Oxford*

Investigate yourself, your planet and the Universe as IF Oxford comes to Templars Square. Look inside your body and mind, find out how medicines work, take care of planet Earth and meet its neighbours in space, or help to write a science song. Don't forget to drop into our Planetarium!

## **Operation Earth with a life-size earth and air-sampling experiment**

---

*Museum of Natural History*

## **Lower your carbon footprint and find out how to save on your fuel bills**

---

*Rose Hill and Iffley Low Carbon*

## **Understanding the brain and how it controls muscles**

---

*Department of Experimental  
Psychology, University of Oxford*

## **Seeing invisible particles, the building blocks of the universe**

---

*Department of Physics, University  
of Oxford*

## **Write and perform a song with Science Troubadour, Jonny Berliner**

---





## Izibongo: African and Black Diasporic art

Saturday 20 October  
**12.30 - 2.30pm**

---

*Oxfordshire County Library  
Queen Street, Westgate,  
OX1 1DJ*

---

*Pre-book, Free*

---

*Adults, Teenagers*

---

### *Workshop*

Art from Africa and Black Diaspora has had a huge historical and cultural influence on modern life. Join Natty Mark Samuels of African School for this interactive, multi-generational workshop to find out more.



## Story Time: walk on the wild side

Saturday 20 October  
**3 - 4pm**

---

*Oxfordshire County  
Library, Queen Street,  
Westgate, OX1 1DJ*

---

*Unticketed, Free*

---

*Family*

---

### *Storytelling*

Join storyteller Sarah Law to hear sciencey stories about animals. Along the way you'll meet all sorts of resourceful and beautiful creatures and discover life cycles, food chains and adaptations. Best suited to children aged 5 - 9 years. Children under 8 must be accompanied by an adult.



## My Normal: accessible instruments

Saturday 20 October  
**6 - 7pm**

---

*The Arc T Centre, Crowell  
Rd, Oxford, OX4 3LN*

---

*Pre-book, PWYD*

---

*Family, Teenager, Adult*

---

*Discussion*

An engineer and a musician came together with a desire to give a voice to those underrepresented in the music industry. They sought to give disabled individuals high quality music and technology opportunities. This discussion will tell a story about limits, about how we define ourselves, and how we define others. It will reveal what we believe to be impossible; from turning bananas into pianos to singing without a voice. After the discussion, the project participants will demonstrate their instruments.



## A Little More Veg?

Sunday 21 October  
**1 - 2.30pm and 3 - 4.30pm**

---

*The Oxford Academy, Sandy  
Lane West, Littlemore,  
OX4 6JZ*

---

*Pre-book, Free*

---

*Adults, Teenagers*

---

*Workshop*

Veg Power: power up your cooking with the latest vegetable-based dishes, learning hands-on with Oxford University researchers and Good Food Oxford. Protein-rich and good for your health, planet and wallet. During the session you will create a dish to share and one to take home.

## Meet the engineer:

**Gladys C Ngetich**

*Rhodes Scholar and DPhil Student,  
Oxford Thermofluids Institute*



*My PhD research looks at advanced cooling schemes for jet engines that are used to power aircraft. They run at very high temperatures and require continuous cooling to prevent their vital components from melting. My research is developing an advanced cooling scheme that will not only deliver more efficient jet engine cooling, but also reduce emissions that are harmful to the planet.*

*I was born and raised in a family of nine in a tiny village of Amalo in Rift Valley Kenya. I studied in a local primary school then joined Mercy Girls Secondary School for my high school education and graduated with the Kenya Certificate of Secondary Education (KCSE) in 2008. Support and encouragement from my parents and 2 of my brothers, who are engineers, combined with the passion I had developed for maths and physics in school influenced my decision to delve into engineering. I pursued a BSc in Mechanical Engineering and later specialised in Thermofluids. In 2015, I joined Oxford through the Rhodes Scholarship.*

*I love the challenges of engineering and when I escape from the lab, my other passion is sport, either playing football or competing as an Oxford Blue Athlete in the 400m hurdles.*

## Related events

Timbuktu: Celebrating  
Black Scientists

→ **See page 10**  
Sat 13 October

Maths v Sport

→ **See page 39**  
Thu 18 October

Black Panther

→ **See page 54**  
Mon 22 October

From Structural Failure  
to Engineering Innovation

→ **See page 56**  
Mon 22 October



## Littlemore Life Lab

Sunday 21 October  
**12 - 5pm**

---

*The Oxford Academy,  
Sandy Lane West,  
Littlemore, OX4 6JZ*

---

*Unticketed, Free*

---

*Family, Teenagers, Adults*

---

*Hands-on activities, talks,  
performances*

Play computer games for science and judge how well others compete or explore *Mind Boggling Medical History* to see where truth may be stranger than fiction.

Decipher the science behind the hype surrounding fats and sugar, then meet an epidemiologist and find out what confuses them.

Look through the eyes of a modern paramedic and learn some life-saving techniques. See a machine that helps organs heal outside the body.

Learn from lung experts about breathing and delve into a box of snot before taking your own (vegetable) biopsy, or use imaging science to peer beneath your skin.

Get to know your blood type and help make pints of the red stuff from slimy beads or become part of the immune system and attack an invader. Discover how medicines and vaccines work and how new life-saving drugs are developed.

Find out about an exciting initiative to equip Africa's science labs and learn how everyday household items can be used to build low cost and very useful equipment and gadgets.

*Activities provided by  
University of Oxford: St  
Anne's College; Radcliffe  
Department of Medicine; MRC  
WIMM; National Perinatal  
Epidemiology Unit; Nuffield  
Department of Surgical  
Science; Oxford Nottingham  
Biomedical Imaging;  
Respiratory Medicine Unit;  
Oxford Respiratory Trials  
Unit; Structural Genomics  
Consortium; Department of  
Computer Science.  
Oxford Brookes University:  
Department of Psychology;  
Paramedic Science  
NHS Blood and Transplant*



## The Immune System: a Very Short Introduction

Sunday 21 October  
4 - 4.45pm

---

*The Oxford Academy,  
Sandy Lane West,  
Littlemore, OX4 6JZ*

---

*Pre-book, Free*

---

*Adults, Teenagers*

---

*Talk*

The immune system is central to human health and the focus of much medical research. Growing understanding of this crucial system in the body has led to major breakthroughs in medicine. Paul Klenerman describes the immune system, and how it works in health and disease.



## What IF...

Sunday 21 October  
6.30 - 8pm

---

*Blackbird Leys Community Centre, Blackbird Leys Road, OX4 6HW*

---

*Pre-book, Free*

---

*Adults, Teenagers*

---

*Performance*

Experience the collection of rap and hip hop music, spoken word and short stories about what it's like growing up today, in the place where it was all created. Hear the voices of radio and TV personality Rodney P and new talent from Oxfordshire: see what happened when the Godfather of British Hip Hop worked with a group of exceptional young people.





## Black Panther: Blackbird Leys

Monday 22 October  
**11am - 4pm**

---

*Blackbird Leys Community  
Centre, Blackbird Leys Road,  
OX4 6HW*

---

*Unticketed, Free*

---

*Family, Teenagers, Adults*

---

*Hands-on activities,  
talks, performances*

If you enjoyed the movie, come and enter the world of Wakanda to explore the science and ideas from the blockbuster film *Black Panther*.

Explore technologies of tissue engineering or test out jet engines and space shuttles at the Wakandan International Outreach Centre in Blackbird Leys.

Jump into a green screen studio with T'Challa and Shuri to create your own mini movie.

Discover *Black Panther* science and African heritage with University of Oxford researchers and local heroes.



## Today's skills and tomorrow's technology

Monday 22 October  
**12-5pm**

---

*City of Oxford College,  
Technology Campus,  
Blackbird Leys, Cuddesdon  
Way, OX4 6HN*

---

*Unticketed, Free*

---

*Family, Teenagers, Adults*

---

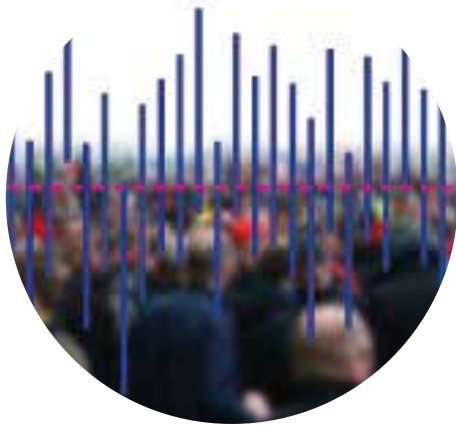
*Hands-on activities,  
workshops, talks*

This special half-term event is for you and your family to try out some practical new skills together. Whether it's fixing a bike or making a paper sculpture, there is plenty to do and lots of interesting people to meet – test out some of tomorrow's technologies today.

In a city of cyclists, how much do you really know about your bike? Discover some of the latest developments in lightweight and sustainable material or simply learn how to fix your wheels or brakes when they're not in good shape.

The construction industry is booming and buildings in Oxford are recognised across the globe. Try laying some foundations and install some home electric circuits or see if you can take the pressure of skilled plumber.

Have you got what it takes to be a computer game designer or control a team of robots? Challenge your parents and friends to some 'easy' MicroBit programming and see what you can achieve in just 20 minutes.



## Demography: a Very Short Introduction

Monday 22 October  
**12.15 - 1pm**

---

*Waterstones Bookshop,  
Broad Street, OX1 3AF*

---

*Pre-book, PWYD*

---

*Adults*

---

*Talk*

Demography is the study of the study of population size, distribution, composition and density. Sarah Harper discusses the key theories and methods involved in studying population trends and movements, considers how our current global population came about, and addresses some of the future population challenges of the 21st century.



## From Structural Failure to Engineering Innovation

Monday 22 October  
**3.30 - 4.30pm**

---

*City of Oxford College  
Technology Campus,  
Blackbird Leys, Cuddesdon  
Way, OX4 6HN*

---

*Pre-book, Free*

---

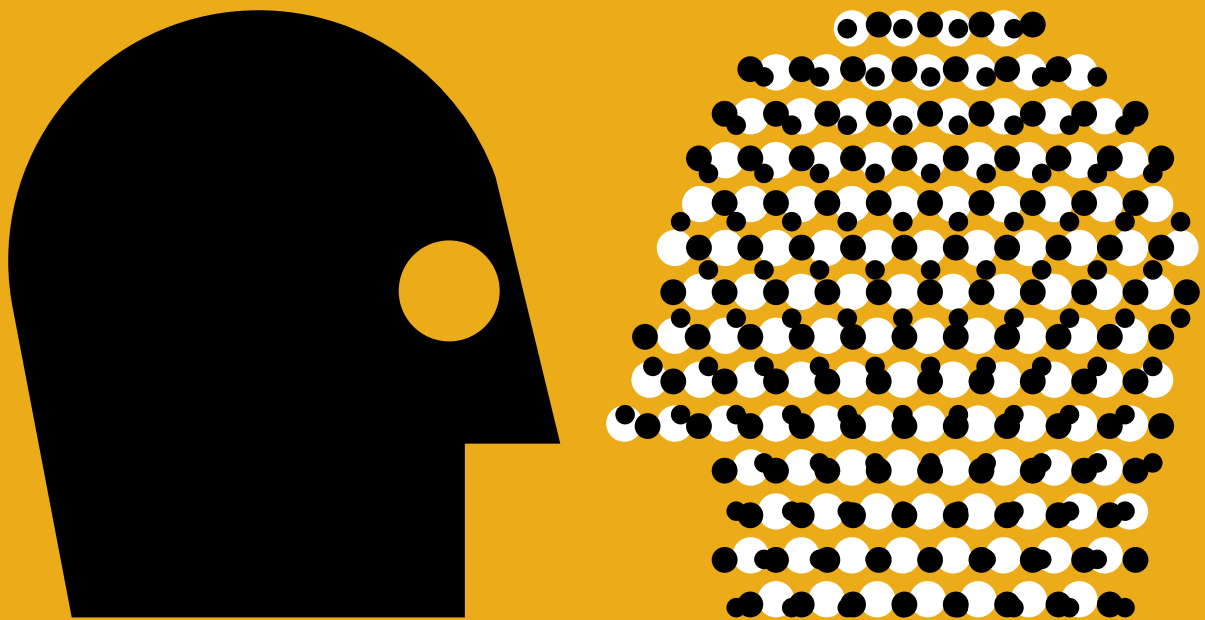
*Teenagers, Adults*

---

*Talk*

Can failure lead to something positive? Exploring how structures fail offers unique insights into the physical principles which govern our world. Martin Walker demonstrates the interesting ways in which engineering failures have inspired novel technologies. Following the talk, get your hands on some prototypes to understand how they work.

We hope you enjoy sharing your ideas with researchers, innovators and each other at this year's Festival.



**IF Oxford will return  
in October 2019**

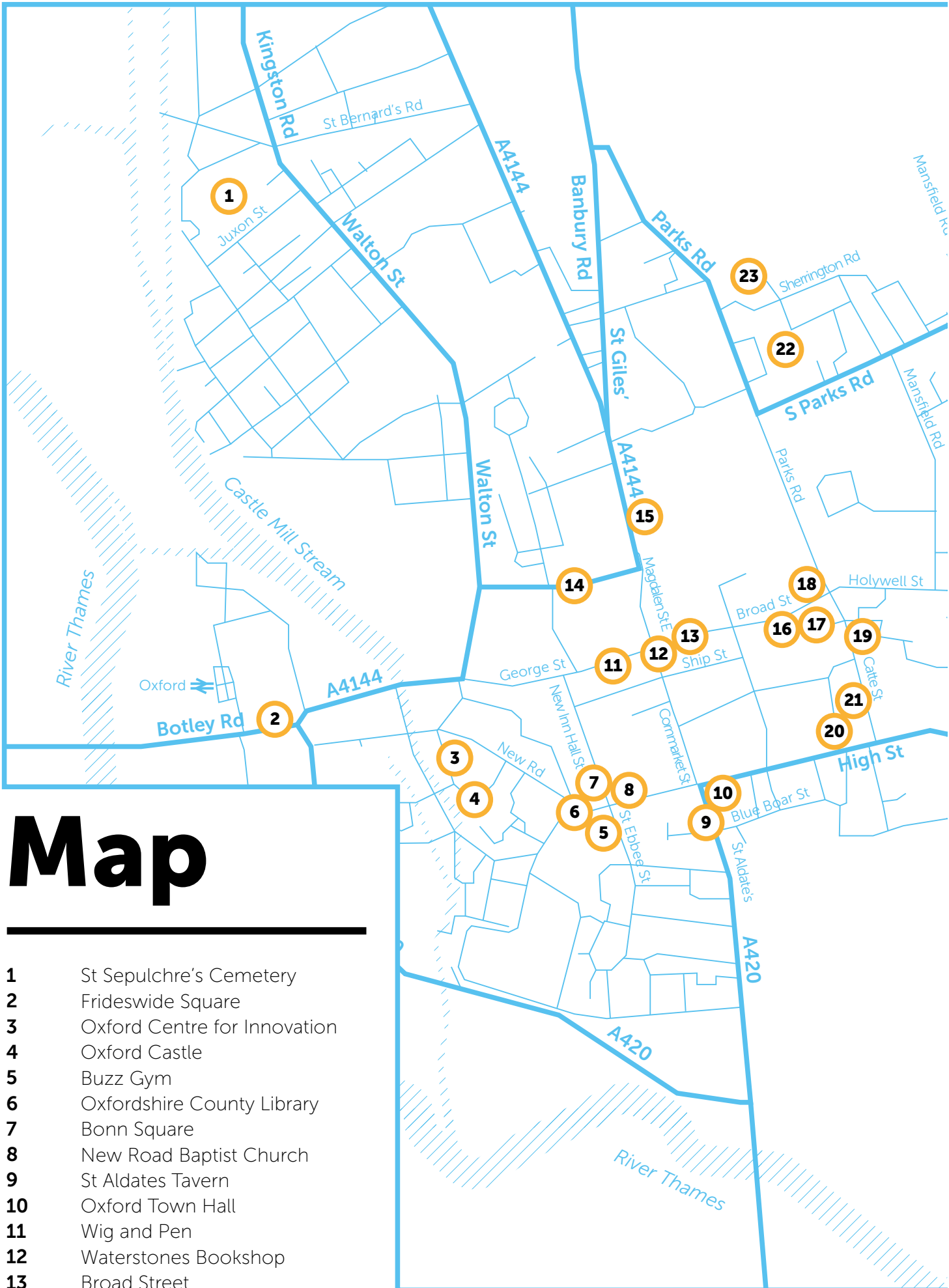
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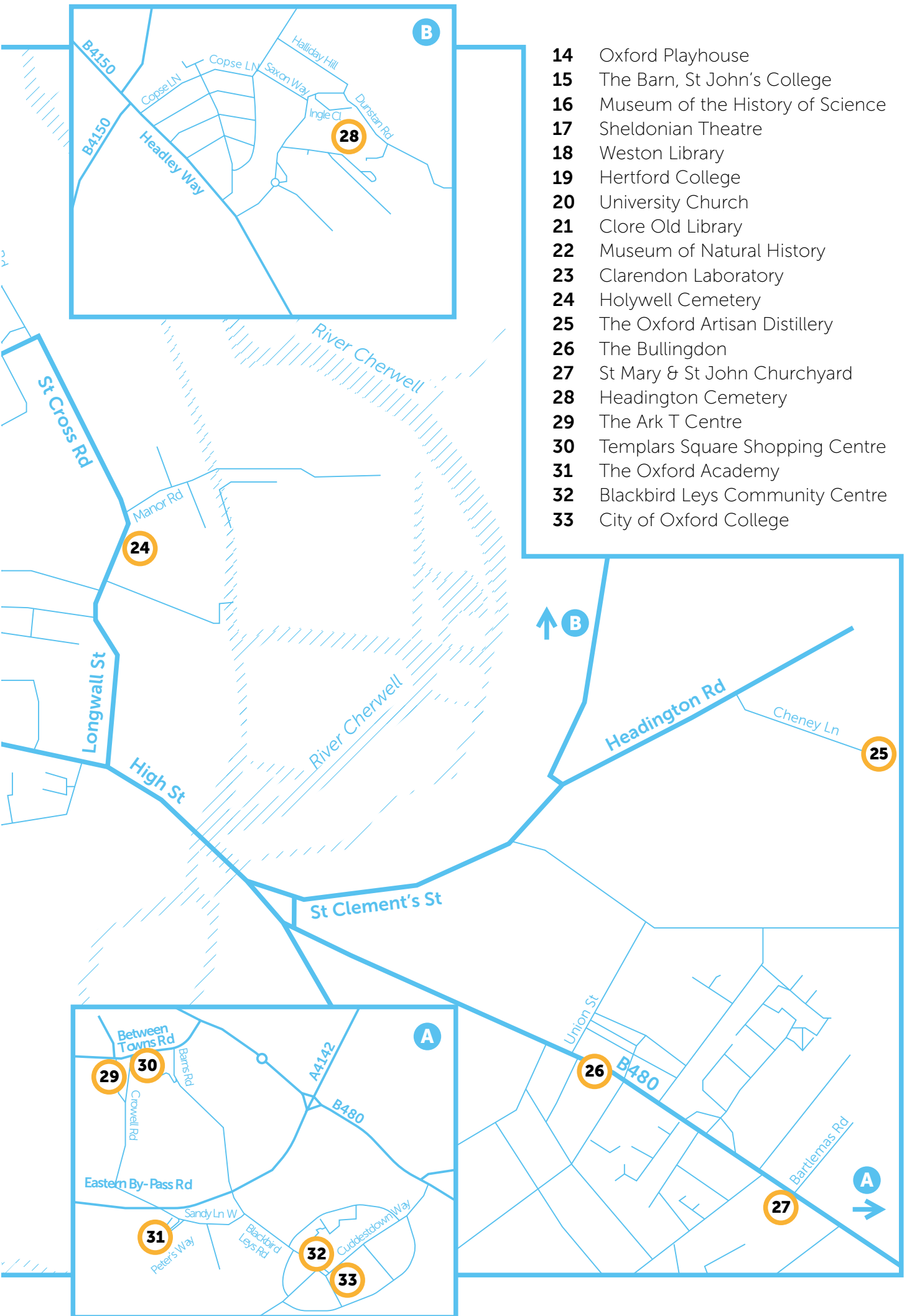


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# Thank you

The Festival sends a big thank you to its collaborators and supporters, including the many talented individuals who volunteer to make the Festival possible. It simply could not happen without their time, creativity and enthusiasm.

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Waterstones

IF Oxford is organised by Oxfordshire Science Festival, Charity number 1151361, with Trustees and a small team that work year-round to produce the events which we hope you are about to enjoy.

**Festival Director:** Dane Comerford **Events Manager:** Cathy Rose  
**Trustees:** Ian Thompson, Jennifer Bardsley, Georgina Ferry, Anne Osterrieder, Lesley Paterson, Tim Hart.





For information and  
to book events, visit:  
[www.if-oxford.com](http://www.if-oxford.com)

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