

# ENERGISING MINDS

ABERDEEN 4-9 SEP 2012

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

**FESTIVAL PROGRAMME**



**TECHFEST-SETPOINT**  
Powering Science, Technology, Engineering and Enterprise

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# ENERGISING MINDS

ABERDEEN 4–9 SEP 2012

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)



## WELCOME TO THE BRITISH SCIENCE FESTIVAL 2012



The British Science Festival visits a different city each year. This year we are delighted to be visiting Aberdeen, a vibrant modern city, with striking granite architecture and a rich and inspiring history, as well as innovative industry.

The last time the Festival was in Aberdeen was 1963, so a lot has changed since then! The Festival has grown into a real celebration of science, engineering and technology and its impact on our lives.

The theme of this year's Festival is '**Energising minds**' and we certainly hope to bring some energy and fun to your minds and your lives as we explore a range of topical issues, discover the very latest in new research and have some fun with the family at Techfest, Aberdeen's annual science festival.

In the following pages you will find details of a range of events and activities, for all ages and interests.

**We look forward to seeing you.**

### Audience Level:

1 – Families

2 – Everyone

3 – All adults

4 – Adults with some knowledge of the topic

5 – Professionals

### Contents

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#bsf2012



/BritishScienceFestival



@BritishSciFest



# FAMOUS FACES

Keep your eyes peeled for a whole host of celebrated scientists and leading thinkers.



**PAUL  
NURSE**

TUES 4 SEP, 18.00 – 19.00  
GREAT IDEAS OF BIOLOGY

P24



**JOHN  
KREBS**

THURS 6 SEP, 17.00 – 18.00  
DOING THE RIGHT THING

P26



**IAIN  
STEWART**

SAT 8 SEP, 18.00 – 19.00  
THE STORY OF THE CONTINENTS

P28



**SUSAN  
GREENFIELD**

WED 5 SEP, 18.00 – 19.00  
THE 21ST CENTURY MIND

P25



**BRIAN  
COX**

THURS 6 SEP, 18.15 – 19.15  
THE QUANTUM UNIVERSE

P26



**RICHARD  
WISEMAN**

SAT 8 SEP, 20.00 – 21.00  
SWEET DREAMS

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**MAGGIE  
ADERIN-  
POCOCK**

WED 5 SEP, 19.00 – 21.00  
ARE WE ALONE AND  
WHEN WILL WE KNOW?

P25



**BILL  
BRYSON**

FRI 7 SEP, 20.00 – 21.00  
AN AUDIENCE WITH  
BILL BRYSON

P27



**GEORGE  
MCGAVIN**

SUN 9 SEP, 14.00 – 15.00  
BBC SCOTLAND PRESENTS  
SCIENCE...WITH GEORGE MCGAVIN

P20

We advise that you pre-book your tickets, even where events are free.  
Visit the website to book [www.britishtsciencefestival.org](http://www.britishtsciencefestival.org)

Susan Greenfield photo from the series *First Women* by Anita Corbin



# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.



New frontiers in the search for black gold



New medicines from nature



Genes and health: Is a little knowledge a good or dangerous thing?

**TUES 4 SEP**

## NEW TECHNOLOGIES DAY

TUES 4 SEP, 10.00 – 11.00

### NEW PLATFORM TRANSFORMS NORTH SEA'S FUTURE

Find out how business economics combined with innovative engineering delivered the world's largest self-installing platform, the F3-FA. Join hosts Centrica Energy, with guest speakers from SPT Offshore, IV Oil and Gas and Heerema to hear how, from initial design concept to platform installation, we can now successfully exploit gas fields which were once thought uneconomic.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** Centrica Energy, SPT Offshore, Heerema and I-V Oil and Gas

**AUDIENCE LEVEL:** 4

**FREE**

TUES 4 SEP, 11.15 – 12.15

### THE HALSTEAD LECTURE: NEW FRONTIERS IN THE SEARCH FOR BLACK GOLD

There are two key challenges facing the oil industry today. Firstly, most of the Earth's 'easy' hydrocarbons have already been found and secondly, the imminent loss of experienced explorationists retiring. Learn about the history of oil exploration and some of the key current and future exploration techniques.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** Geology Section, British Science Association and Geologists' Association

**AUDIENCE LEVEL:** 3

**FREE**

TUES 4 SEP, 10.00 – 12.00

### HOW THE BODY SHAPES THE MIND

Embodiment is a new framework that has changed our recent research in psychology and neuroscience. Hear **Stefano Cappa** on how the brain embodies the mind; **Gabriella Vigliocco** and **Gun Semin** on how abstract thoughts and social norms are bodily based; and **Arthur Glenberg** on how embodiment can guide education programmes.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen <sup>2</sup>

**Organised by:** University College London

**AUDIENCE LEVEL:** 2

**FREE**

TUES 4 SEP, 10.00 – 14.00

### NEW MEDICINES FROM NATURE

We have known about natural remedies derived from plants and animals for a long time, even if the reasons for their success were unknown. Plants, fungi and marine organisms continue to provide a rich harvest of chemicals with important medicinal properties. In this event, speakers describe how nature can inspire the isolation and identification of new molecules used to fight disease.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen <sup>2</sup>

**Organised by:** Chemistry Section, British Science Association

**Supported by:** Royal Society of Chemistry

**AUDIENCE LEVEL:** 4

**FREE**

TUES 4 SEP, 10.00 – 11.30

### MAKING SENSE: SPECKLED COMPUTING

Imagine a world in which tiny devices (specks) on your person can sense conditions such as abnormal breathing, and share this information wirelessly with doctors and carers who can offer timely help and support. Join **D K Arvind** to explore innovations in speckled computing which are making this possible.

**Venue:** Meston Building, Lecture Theatre 2, University of Aberdeen <sup>3</sup>

**Organised by:** University of Aberdeen, School of Engineering

**Supported by:** University of Edinburgh, School of Informatics

**AUDIENCE LEVEL:** 3

**FREE**



Simon Watt: Dissections uncut

## TUES 4 SEP

TUES 4 SEP, 10.00 - 12.00

### GENES AND HEALTH: IS A LITTLE KNOWLEDGE A GOOD OR DANGEROUS THING?

The Generation Scotland project aims to identify how much our genes contribute to the development of common diseases. But what are the social and ethical implications? Share your views about the benefits and concerns surrounding advances in genetics knowledge and health, question experts, and find out the latest results from Generation Scotland.

**Venue:** Linklater Rooms, University of Aberdeen **5**

**Organised by:** University of Aberdeen, ESRC Centre for Economic and Social Aspects of Genomics and Wales Gene Park

**AUDIENCE LEVEL:** 3

**FREE**

TUES 4 SEP, 12.00 - 13.00

### ANCIENT INSECTS IN TECHNICOLLOUR: SQUASHING BUGS TO UNDERSTAND FOSSIL COLOURS

Insects today display a dazzling spectrum of colours and visual effects, but did you know that fossil insects do the same? Join **Maria McNamara** to find out how palaeontologists are using bizarre new experiments to work out what the original colours of insects were millions of years ago and about the tiny microscopic clues that show how fossil insects communicated with other ancient creatures.

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen **6**

**Organised by:** Yale University and University College Dublin

**AUDIENCE LEVEL:** 2

**FREE**

TUES 4 SEP, 13.00 - 14.00

### DISSECTIONS UNCUT

On Channel 4's Inside Nature's Giants, scientists went under the skin of some massive animals to figure out what made them tick. Join presenter **Simon Watt** as we look at some of the fascinating science that didn't make the final cut.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen **3**

**Organised by:** Simon Watt

**AUDIENCE LEVEL:** 2

**FREE**

TUES 4 - FRI 7 SEP, 13.30 - 14.45  
AND SAT 8 SEP, 12.00 - 13.00

### THE X-CHANGE

Part talk show, part science cabaret, presented by **Richard Hollingham**. The x-change brings together the best of the Fest. Relax, grab a drink and discuss science with famous names and special invited guests from the day's events and forthcoming attractions. If you can't make it you can always listen to the podcast.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** British Science Association

**AUDIENCE LEVEL:** 2

**FREE**

SEE PAGE NINE FOR MORE INFORMATION

TUES 4 SEP, 14.00 - 15.00

### FROM THE LAB BENCH TO GLOBAL MARKETS

Join **Eleanor Mitchell**, Director of Commercialisation at Scottish Enterprise, to hear how science is at the core of developing new products and services. See how Scottish Enterprise supports ambitious entrepreneurs to grow companies which will take those products to global markets and deliver significant economic impact in Scotland.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen **2**

**Organised by:** Scottish Enterprise

**AUDIENCE LEVEL:** 3

**FREE**

TUES 4 SEP, 14.00 - 15.00

### OMEGA 3: MAKING THE HEALTHY CHOICE

Omega 3s are part of a balanced diet, but where should we be getting them from? Fish stocks are dwindling but we are told to eat more fish! Find out how to get the right balance between health and sustainability.

**Venue:** Meston Building, Lecture Theatre 2, University of Aberdeen **3**

**Organised by:** University of Stirling, Institute of Aquaculture, Essential Health Clinic, Glasgow and University of Southampton

**Supported by:** University of Stirling

**AUDIENCE LEVEL:** 3

**FREE**

TUES 4 SEP, 14.00 - 15.00

### THE NATURAL GAS REVOLUTION

Between now and 2050, our world is headed towards a 'zone of uncertainty', a period of significant stress between energy supply and demand. While we expect gas to play a larger role in meeting the world's future energy needs, it's not entirely clear how. How are major international projects like Shell's Pearl GTL plant and Prelude floating liquid natural gas terminal helping to meet the growing demand for energy?

**Venue:** King's Quad, Lecture Theatre 8, King's College, University of Aberdeen **7**

**Organised by:** Shell

**AUDIENCE LEVEL:** 4

**FREE**

TUES 4 SEP, 14.30 - 16.00

### COWS AND CARS

There continues to be a healthy debate around how wheat ethanol is produced, with a particular focus on food versus fuel. What impact do biofuels have on the UK food supply? Do we really have to make the stark choice between food or fuel? Enjoy a thought-provoking film as TV celeb Austin Healey goes in search of the truth; followed by a Q and A session with **Oly Macé** from BP Biofuels.

**Venue:** Belmont Cinema, Belmont Street, AB10 1JS **8**

**Organised by:** BP

**AUDIENCE LEVEL:** 2

**FREE**

TO BOOK CALL 0871 9025721

# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.

## TUES 4 SEP

TUES 4 SEP, 15.30 - 17.30

### A NOAH'S ARK FOR THE 21ST CENTURY: THE FIGHT TO CONSERVE AGRICULTURAL BIODIVERSITY

Modern farming cultivates an ever-shrinking range of crop and livestock varieties. The genetic diversity in our agriculture is being eroded, just when we need it most. Climate change is increasing the exposure of farmland to drought and floods and raising the threat from pests and diseases. What steps are being taken to conserve agricultural biodiversity?

**Venue:** Meston Building, Lecture Theatre 2, University of Aberdeen <sup>3</sup>

**Organised by:** Agriculture and Food Section, British Science Association

AUDIENCE LEVEL: 3

FREE

TUES 4 SEP, 15.30 - 17.30

### THE FUTURE OF OUR POLAR REGIONS: WHAT MUST WE DO AND HOW CAN SCIENCE HELP?

Join leading UK polar scientists in an interactive debate about whether future research should be directed towards the north (the Arctic) or the south (the Antarctic). Help shape opinion on priorities by asking questions and voting on the major issues raised. Visit our exhibition of polar fieldwork clothing, science equipment and field video diaries.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen <sup>2</sup>

**Organised by:** University of Aberdeen Cryosphere and Climate Change Group, in association with UK Polar Network

AUDIENCE LEVEL: 2

FREE

#### Audience Level:

1 – Families

2 – Everyone

3 – All adults

TUES 4 SEP, 16.00 - 17.30

### ENERGISING MINDS THROUGH THINKING SKILLS IN SCIENCE EDUCATION

**John Crossland**, former science adviser in North Yorkshire, has worked with a group of science advanced skills teachers from primary and secondary schools to research the relevance to education of recent neuroscience research. Find out the outcome from this small-scale project to improve teaching in the classroom and see some dynamic models for learning.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen <sup>2</sup>

**Organised by:** Education Section, British Science Association

AUDIENCE LEVEL: 5

FREE

TUES 4 SEP, 16.30 - 17.30

### SPERM WARFARE

So you've found a healthy, fertile mate, you've fought off your rivals and you've convinced them that you are what they were looking for. Sorted! But the reproductive race is far from over, my friend. We have entered the realms of sperm warfare. Come and learn about the devious tricks used by cells, organs and bodies to win the race to fertilisation.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen <sup>3</sup>

**Organised by:** Simon Watt

AUDIENCE LEVEL: 3

FREE



Sperm warfare

Don't miss our evening events from page 24 featuring lots more talks and debates



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/BritishScienceFestival

**Booking Line:**  
**08456 807 207**

or visit

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

You can book in person at Aberdeen Box Office, Music Hall.

For more information  
and to book visit  
[www.britishsciencefestival.org](http://www.britishsciencefestival.org)



## WED 5 SEP

### FOSSIL FUELS DAY

WED 5 SEP, 10.00 – 12.00

#### OUR FOSSIL-FUELLED FUTURE

Who cares about fossils? What role do they have to play in everyday life? And what do palaeontologists do? Find out the answers to these questions and more as we investigate the past, present and future of fossils and fossil fuels. Join **Liam Herringshaw** and experts from a variety of fields as they reveal the extraordinary array of techniques being used to understand how ancient lives affect modern ones, and show why fossils really do matter.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** Palaeontological Association

AUDIENCE LEVEL: 2

FREE

WED 5 SEP, 13.00 – 15.00

#### THE LIMITS OF OIL AND GAS

Oil and gas in the 21st century is moving into ever more challenging environments; geographical, technical and social. Join us to explore some of the issues.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** University of Aberdeen

AUDIENCE LEVEL: 3

FREE

WED 5 SEP, 18.00 – 20.00

#### ENERGY: PAST AND FUTURE

Discover why the UK uses such a range of fuels and resources, and debate how energy should be supplied in the future. How has demand radically changed over the past few centuries? What are our current and future challenges? Join expert presenters **Nick Pidgeon**, **Brian Drysdale**, **Lorraine Whitmarsh**, **Karen Parkhill** and **Leucha Veneer** to find out more.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** Cardiff University and Manchester University

AUDIENCE LEVEL: 2

FREE

WED 5 SEP, 10.00 – 15.30

#### SCIENCE AND HERITAGE IN SCOTLAND

What is the role of science in understanding and preserving the past? Our national heritage science output is vital and involves close and productive work between heritage institutions, specialist university research groups, science, archaeology, museums and conservators. Come and explore using science to understand the past, the science of historic structures and science and the museum.

**Venue:** King's Quad, Lecture Theatre 7, King's College, University of Aberdeen <sup>7</sup>

**Organised by:** Historic Scotland

**Supported by:** The Scottish Government

AUDIENCE LEVEL: 4     £10.00 (STUDENTS £7.00)

INCLUDES LUNCH AND REFRESHMENTS

WED 5 SEP, 10.00 – 12.00

#### FORENSIC CHEMISTRY AND AIR SECURITY

Join our three expert speakers **Eva Krupp**, **Johannes Laube** and **Roy Harrison** as they explore how modern forensic chemistry is being applied to issues of air security. What is the impact of airborne particulate matter on public health, and the health consequences of releasing new chemical compounds into the atmosphere?

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen <sup>2</sup>

**Organised by:** Chemistry Section, British Science Association

**Supported by:** Royal Society of Chemistry

AUDIENCE LEVEL: 4

FREE

WED 5 SEP, 10.00 – 12.00

#### FOOD ADDICTION: FACT OR FICTION?

There are many complex factors which lead to people being overweight or obese, but the basic question is why do some people eat too much? Are they addicted to food? Join our international panel of psychiatrists and scientists to explore whether eating food can be so rewarding that it leads to a state of addiction similar to that seen with alcohol and drugs.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen <sup>3</sup>

**Organised by:** Rowett Institute of Nutrition and Health, University of Aberdeen and University of Essen, Germany

AUDIENCE LEVEL: 2

FREE



# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.

## WED 5 SEP

WED 5 SEP, 10.00 – 12.00

### PARASITES AND ME

Join scientists from Glasgow's world-renowned parasite research centre for a series of expert talks featuring cunning parasites that invade our bodies and cause fatal infections. The talks will show the deadly mission of parasites and highlight the role that Scottish researchers are playing in trying to control parasitic diseases.

**Venue:** Meston Building, Lecture Theatre 2, University of Aberdeen **3**

**Organised by:** Wellcome Trust Centre for Molecular Parasitology

**Supported by:** Wellcome Trust

**AUDIENCE LEVEL: 3**

**FREE**

WED 5 SEP, 10.00 – 12.00

### YOUR LIFE STORY IN OUR HANDS

From conception to death, each encounter with healthcare generates information. Each piece of information is held to manage your care but, in the background, it plays a crucial role through research in improving our understanding of health and disease. Scotland's Chief Scientist, **Andrew Morris**, plus experts, invite you to explore ethical dilemmas and challenge how your data are kept safe.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen **2**

**Organised by:** University of Aberdeen

**AUDIENCE LEVEL: 3**

**FREE**

## Booking Line:

**08456 807 207**

or visit

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

You can book in person at Aberdeen Box Office, Music Hall.

## Audience Level:

**1 – Families**

**2 – Everyone**

**3 – All adults**

WED 5 SEP, 12.00 – 13.00

### ISAMBARD KINGDOM BRUNEL AWARD LECTURE: THE ETHICS AND TECHNOLOGY OF SEEING THROUGH CLOTHES

This exploration of vision will tell you what other animals see that we can't. What is the truth and what is the hype with terahertz and x-ray vision? How well can machines really see through clothes? What sort of images do they take and how are they used? What does this mean for society?

Awarded to **Tim Drysdale** by the British Science Association

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen **6**

**AUDIENCE LEVEL: 2**

**FREE**

WED 5 SEP, 13.00 – 15.00

### MAY THE FORCE BE WITH US: WHAT DOES THE EARTH'S MAGNETIC FIELD DO FOR US?

While they may seem like fixed points, the North and South poles are constantly 'wandering'. Join **Kathy Whaler** to explore how the Earth's magnetic field is generated. **Jenny Tait** explains how the magnetic field has helped uncover some of the most fundamental principles of Earth science. Finally, **Ciaran Beggan** considers when the next reversal could be, and what its effects might be on the Earth.

**Venue:** Meston Building Lecture Theatre 1, University of Aberdeen **3**

**Organised by:** The Geological Society of London

**AUDIENCE LEVEL: 3**

**FREE**

WED 5 SEP, 13.00 – 15.00

### SCOTLAND'S MAPPING

Maps fascinate, illustrate - and deceive - and these talks tell you why and how. Hear from experts in the history and contemporary development of mapping and in new mapping technologies. Scotland revealed in maps and charts; battle plans; Aberdeen's urban history as a mapped history and talking maps. Join us for talks that capture the delight, richness - and dangers - of mapping.

**Venue:** Linklater Rooms, University of Aberdeen **5**

**Organised by:** Geography Section, British Science Association, Royal Geographical Society and National Library of Scotland

**AUDIENCE LEVEL: 3**

**FREE**

WED 5 SEP, 13.00 – 15.00

### FISHY FIGURES

How do statistical methods improve our understanding of the sea and how we use it? How do these methods improve our knowledge of the numbers of whales, protecting humans from shellfish toxins, and the interaction between cod and seals? Find out how statistics are used to understand the world around us.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen **2**

**Organised by:** RSS Highland Local Group, University of St. Andrews, Biomathematics and Statistics Scotland, Food Standards Agency and Marine Science Scotland

**AUDIENCE LEVEL: 2**

**FREE**

WED 5 SEP, 15.30 – 16.30

### A WORLD FIRST FOR OFFSHORE PLATFORM POWER SUPPLY

Find out how BP is using safe, reliable and economical power transmission technology to help deliver energy to the world whilst reducing carbon emissions and optimising current resources.

**Venue:** King's Quad, Lecture Theatre 8, King's College, University of Aberdeen **7**

**Organised by:** BP

**AUDIENCE LEVEL: 5**

**FREE**



For more information  
and to book visit  
[www.britisheciencefestival.org](http://www.britisheciencefestival.org)

## WED 5 SEP

WED 5 SEP, 15.30 – 16.30

### FROM QUANTUM GRAVITY IN THE EARLY UNIVERSE TO QUANTUM ENGINEERING DEEP SUBSEA

General relativity and quantum mechanics are the two pillars of modern physics. They were in joint action at the spectacular start of the Universe. This talk explores how today's new quantum technology of gravity sensing is being applied to increase our horizons and make new discoveries deep subsea.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen ②

**Organised by:** University of Aberdeen

**Supported by:** Rutherford Appleton Laboratory

AUDIENCE LEVEL: 3

FREE

WED 5 SEP, 15.30 – 16.30

### THE SCOTTISH TEN

The Scottish Ten is an ambitious five year project using cutting-edge technology to create exceptionally accurate digital models of Scotland's five UNESCO designated World Heritage Sites and five international ones, in order to better conserve and manage them. Come and see the stunning results we have so far and experience what it is like to be scanned.

**Venue:** King's Quad, Lecture Theatre 7, King's College, University of Aberdeen. ⑦

**Organised by:** Historic Scotland

**Supported by:** The Scottish Government

AUDIENCE LEVEL: 2

FREE



Performance science in Olympic and Paralympic sport

WED 5 SEP, 15.30 – 17.30

### SPACE WEATHER: A NEW HAZARD FOR A MODERN WORLD

With the Sun reaching it's 11 year peak of activity, come along and discuss what's happening to the Sun, what effects this has in space and what can we expect to happen on Earth. Will we be able to see the Northern Lights more clearly or will the lights go out?

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen ③

**Organised by:** British Geological Survey and Lancaster University, UCL & University of York

**Supported by:** Geology Section, British Science Association

AUDIENCE LEVEL: 2

FREE

WED 5 SEP, 15.30 – 17.30

### CONVERSATIONS WITH HUMANS AND NON-HUMANS

Do humans, animals and plants belong to separate worlds - society and nature? In many places, people do not see a clear-cut distinction between them. Like humans, some non-humans respond to each other in sentient ways. Explore how anthropologists are re-defining the world around us and re-thinking our place in nature.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen ②

**Organised by:** University of Aberdeen and Anthropology and Archaeology Section, British Science Association

AUDIENCE LEVEL: 4

FREE

WED 5 SEP, 19.00 – 21.00

### PERFORMANCE SCIENCE IN OLYMPIC AND PARALYMPIC SPORT

Join **Scott Drawer**, Head of Research and Innovation at UK Sport, to explore the approach, process and type of projects which have capitalised on British excellence in academia and industry to support performance; learn how these concepts apply and cross into numerous other industries and applications.

**Venue:** Seminar Room, Aberdeen Sports Village, AB24 5RU

**Organised by:** Aberdeen Sports Village and University of Aberdeen

AUDIENCE LEVEL: 3

FREE

**theXchange** 🎙️

**The x-change:  
Your Festival  
highlights show**

Join us **live** in the  
Spiegel tent  
(Kings Lawn, University of  
Aberdeen):

Tues-Fri: 13.30 – 14.45  
Sat: 12.00 – 13.00

Can't make it?  
Catch up online:

[thexchange.podbean.com](http://thexchange.podbean.com)  
podcast, blog and more!

#thexchange  
@TheSiSTeam

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# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.



**THURS 6 SEP**

## ALTERNATIVE ENERGY DAY

THURS 6 SEP, 10.00 - 11.00

### CAN SOLAR ENERGY SAVE THE WORLD?

From making a whoosh bottle whistle to constructing a fully functioning solar cell, this talk will be full of exciting demonstrations. See the electricity that can be generated from a solar panel, and discover new solar cell technologies and how they are being used. Finally, you can decide if solar energy can save the world.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** The Solar Spark

AUDIENCE LEVEL: 2

FREE

THURS 6 SEP, 11.15 - 12.45

### THE HEAT BENEATH OUR FEET

Did you know that there is the potential to heat your home using the Earth's thermal store? Our ground source heat event will explain how the type of geology your house or business sits on can influence the systems required to harness this store. We will also be challenging you to cycle your way to a hot bath! From 12.45 there will be an opportunity to visit the 3D visualisation suite. Spaces are limited.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** British Geological Survey

**Supported by:** Geology Section, British Science Association

AUDIENCE LEVEL: 2

FREE

THURS 6 SEP, 13.00 - 14.00

### LEVERAGING THE FULL POWER OF INNOVATION

Global energy demand could double by mid-century due to improving living standards and population growth. To deliver the energy that is needed in the most socially, environmentally and economically responsible way, we must do things differently. Shell's innovative approach also helps reduce our impact on the environment and operate safely. Join us to discover more.

**Venue:** King's Quad, Lecture Theatre 8, King's College, University of Aberdeen <sup>7</sup>

**Organised by:** Shell

AUDIENCE LEVEL: 4

FREE

THURS 6 SEP, 14.00 - 16.30

### SCOTLAND'S ENERGY FUTURE: THE ROLE OF CHEMISTRY

The Scottish Government has identified wind and wave power as its preferred options for future energy supply. We will focus on technologies which have a chemistry component to them, including solar hydrogen generation, photovoltaic technology and fuel cells. Our panel of experts will explore these technologies and debate their respective merits in a Scottish context.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** Chemistry Section, British Science Association

**Supported by:** Royal Society of Chemistry

AUDIENCE LEVEL: 4

FREE



Uncovering the secrets of the LHC

THURS 6 SEP, 10.00 - 12.00

### I'D GO OUTDOORS IF I COULD, WOULDN'T YOU?

In celebration of the European Year for Active Ageing and Age Scotland's Ending Isolation campaign, this event will launch a suite of design guides on how streets and neighbourhoods can be made more user-friendly for people of all ages and abilities. The guides are based on research by Inclusive Design for Getting Outdoors (I'DGO), involving over 4,350 UK residents aged 65 plus.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen <sup>3</sup>

**Organised by:** Inclusive Design for Getting Outdoors, Universities of Edinburgh, Salford and Warwick and Age Scotland

AUDIENCE LEVEL: 5

FREE

THURS 6 SEP, 10.00 - 12.00

### MICROBES IN CONTACT LENSES

Explore the living biosphere that can populate our contact lenses without us even knowing it. Look at Acanthamoeba which eats bacteria on the lens to survive and then, once transferred to our eyes, it can cause severe eye disease called Acanthamoeba keratitis. Learn how to avoid Acanthamoeba infection and how to diagnose disease.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen <sup>2</sup>

**Organised by:** University of the West of Scotland and University of Strathclyde

AUDIENCE LEVEL: 3

FREE

## THURS 6 SEP

THURS 6 SEP, 10.00 – 12.00

### THE HOLY GRAIL OF DIETING: CAN WE EAT LESS AND NOT FEEL HUNGRY?

Join this interactive lecture involving scientists and food industry professionals working on the EU grant SATIN, Satiety Innovation project.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen **2**

**Organised by:** Rowett Institute of Nutrition and Health and University of Liverpool

**AUDIENCE LEVEL:** 2

**FREE**

THURS 6 SEP, 10.30 - 11.30

### DEVELOPING SCIENCE TALENT IN THE UK

Without human talent there can be no industry. Much has been said and debated around STEM talent in the UK with many arguing that UK scientific talent is in decline and there is a need to rethink our education strategy and do more to encourage careers in STEM-related sectors. What is the current state of STEM talent in the UK and why is science talent critical to our economic success as a country?

**Venue:** King's Quad, Lecture Theatre 8, King's College, University of Aberdeen **7**

**Organised by:** BP

**AUDIENCE LEVEL:** 5

**FREE**

THURS 6 SEP, 12.00 - 13.00

### JOSEPH LISTER AWARD LECTURE: WHY DO SOME PEOPLE BECOME PSYCHOPATHS?

Psychopaths have callous and unemotional personality traits, and often engage in criminal and antisocial activities. They lack empathy and emotion about their antisocial behaviour. We can see similar traits in children who are at risk of developing psychopathy. This talk reviews antisocial behaviour in children, in terms of genetics, brain structure and behavioural development.

Awarded to **Essi Viding** by the British Science Association

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen **6**

**Supported by:** Robert Gordon University

**AUDIENCE LEVEL:** 2

**FREE**

THURS 6 SEP, 13.00 - 15.00

### THE NEXT WAR WILL BE FOUGHT OVER WATER

The rapidly increasing world population and improved living standards in developing countries are placing increased demand on an already scarce resource. The possibility of a war over water somewhere in the world seems increasingly likely. Join Chair **Chris Spray** and an illustrious panel of speakers from academia, government and industry to debate the fight over water.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen **3**

**Organised by:** Scottish Water, UNESCO IHP-HELP Centre for Water Law, Policy and Science and University of Dundee

**Supported by:** Scottish Water

**AUDIENCE LEVEL:** 3

**FREE**



The next war will be fought over water

THURS 6 SEP, 13.00 - 15.00

### IN THE BLINK OF AN EYE: ATTENTION AND THE MIND

We don't always see the world the way it is, what we actually perceive is the mind's interpretation of the senses. Join four researchers to hear their latest work on vision and attention, demonstrating the surprising consequences of the way the mind fills in information about the world.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen **2**

**Organised by:** Lancaster University and Psychology Section, British Science Association

**Sponsored by:** Experimental Psychology Society

**AUDIENCE LEVEL:** 2

**FREE**

THURS 6 SEP, 13.00 - 15.00

### UNCOVERING THE SECRETS OF THE LHC

The LHC, the world's largest particle accelerator, is designed to help answer fundamental questions about the sub-atomic world and the fundamental building blocks of our universe. Join physicists **Jon Butterworth** and **Tara Shears** who will bring you tantalising tidbits about the Higgs boson, how anti-matter works and perhaps even some tales of the unexpected!

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen **2**

**Organised by:** Physics and Astronomy Section, British Science Association

**AUDIENCE LEVEL:** 2

**FREE**

THURS 6 SEP, 14.00 - 15.00

### ALL AT SEA: A HISTORY OF MARITIME COMMUNICATIONS

Today's mariners benefit from two-way voice and data communication from almost anywhere on the planet, thanks to the application of science and technology. Yet the basic physics behind radio communication, electromagnetic wave theory, was formulated by James Clerk Maxwell less than 150 years ago. Join **Tom Stevenson** as he reviews the underlying developments in technology, from semaphore to satellites.

**Venue:** Meston Building, Lecture Theatre 2, University of Aberdeen **3**

**Organised by:** Edinburgh & SE Scotland Branch, British Science Association, Museum of Communication, Fife and History of Science Section, British Science Association

**AUDIENCE LEVEL:** 2

**FREE**



@BritishSciFest



/BritishScienceFestival



# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.

## THURS 6 SEP

THURS 6 SEP, 14.30 - 15.30

### MAKING THE MOST OF UK SCIENCE: AN ENERGY INDUSTRY VIEW

Are we realising the true value and commercial worth of the UK's science and R&D leadership? What relationship model works best for the UK and what additional steps are required to ensure the UK maintains and develops its competitive position? Our expert panel, led by BP's **Bob Sorrell** will identify how UK science can foster and encourage further collaboration and retain subsequent value in the UK for society's benefit.

**Venue:** King's Quad, Lecture Theatre 8, King's College, University of Aberdeen 7

**Organised by:** BP and Shell

AUDIENCE LEVEL: 5

FREE

THURS 6 SEP, 15.30 - 16.30

### BUBBLES, BEYOND THE BATH

Bubbles in liquids are a fascinating and important part of our everyday world but we still associate them mostly with having baths. Join **Helen Czerski** for a tour around the amazing ways that bubbles matter in oceanography, medicine and the natural world. You'll never see a bubble in the same way ever again!

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Helen Czerski

AUDIENCE LEVEL: 2

FREE

#### Audience Level:

- 1 – Families
- 2 – Everyone
- 3 – All adults
- 4 – Adults with some knowledge of the topic
- 5 – Professionals

THURS 6 SEP, 15.30 - 16.30

### TITANIC ENGINEERING

Building Titanic and her sister ship Olympic was an incredible undertaking. But where does history end and myth begin? Find out about techniques used to build Titanic from two people who recreated them as part of Channel 4's series *We Built the Titanic* and hear from a Titanic historian why some of the myths about Titanic are just that, myths.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen 2

**Organised by:** Engineering Section, British Science Association

AUDIENCE LEVEL: 2

FREE

THURS 6 SEP, 16.00 - 17.30

### ACTIVE LEARNING IN SCIENCE

There is a global movement to ensure that inquiry is at the heart of science education with active pupils progressively developing their understanding of the scientific aspects of the world, through investigation using processes employed by scientists. Join us to consider how this approach prepares young people for their future and what it means for all concerned with science education.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen 2

**Organised by:** Education Section, British Science Association

AUDIENCE LEVEL: 4

FREE

#### Booking Line:

**08456 807 207**

or visit

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

You can book in person at Aberdeen Box Office, Music Hall.

## British Science Association Sections

### The minds behind the Festival

You may have noticed that many events in the programme are organised by our Sections.

The Sections have been at the heart of the British Science Association since our inception in 1831.

We recognise the time and commitment given by members of the Sections to the Festival.

Join us to say thank you at our Sections Reception and to find out more about what they do. (see page 24)





## FRI 7 SEP

### THE HUMAN STORY OF OIL

FRI 7 SEP, 10.00 - 11.00

#### OFFSHORE EMERGENCIES: MEDICINE IN EXTREME CONDITIONS

How do the emergency services cope with an offshore crisis? What is life like for the medics who have to tend emergencies on one of the many oil rigs off the shore of Aberdeen? **Mark Bloch** from Bond Offshore Helicopters discusses the work of its paramedics, the challenges they face and the drama of saving lives in extreme conditions.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen 9

**Organised by:** Medical Sciences Section, British Science Association

AUDIENCE LEVEL: 2

FREE

FRI 7 SEP, 11.00 - 12.00

#### THE PIPER ALPHA DISASTER: LESSONS LEARNED OR FORGOTTEN

Throughout history, human experience has been painfully punctuated by major adversities, military, natural and 'man-made'. The crucial question is whether we learn from the extensive suffering of victims or whether it has been in vain. The Piper Alpha oil platform disaster was an extraordinary event in the annals of 'man-made' disasters. Join **David Alexander** to explore his own personal experience of this tragedy, what lessons have been learned and which have been forgotten.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen 9

**Organised by:** British Science Association

AUDIENCE LEVEL: 3

FREE

FRI 7 SEP, 13.00 - 14.00

#### RIG LIVES: INSIGHTS INTO THE LIVES OF PEOPLE IN THE OIL INDUSTRY

Oil platforms are scattered through the North Sea, toiling constantly to bring energy to the UK. Meet anthropologist and filmmaker **Ed Owles**, and watch his four short films about offshore life. Also meet artist **Sue Jane Taylor**, who will talk about her artwork *Black Gold*, and discuss with rig workers whether art and film portray the reality of rig lives.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen 9

**Organised by:** Anthropology and Archaeology Section, British Science Association

AUDIENCE LEVEL: 2

FREE

FRI 7 SEP, 14.00 - 15.00

#### FROM CRADLE TO GRAVE: EFFECTS OF OIL DEVELOPMENT ON INDIGENOUS PEOPLE

We often take oil and its by-products for granted. But what is the history of oil exploitation around the world and how has it impacted on indigenous communities? What environmental and social legacies have been left by the oil industry? Join us to explore this cradle to grave story about the oil industry and the people who live alongside it.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen 9

**Organised by:** University of Aberdeen and Anthropology and Archaeology Section, British Science Association

AUDIENCE LEVEL: 2

FREE

FRI 7 SEP, 15.30 - 17.30

#### CRUDE BRITANNIA FILM AND DISCUSSION

After watching part two of the series looking at North Sea oil and gas over the past 40 years we will examine the oil industry during the 1980s. Under Thatcher, dozens of new platforms were built in the North Sea, bringing in billions of pounds of taxes to the Treasury. However, by the end of the decade, the global price of oil collapsed and the industry was hit by a series of tragedies.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen 9

**Organised by:** Archaeology and Anthropology Section, British Science Association and the Royal Anthropological Institute

AUDIENCE LEVEL: 3

FREE

FRI 7 SEP, 10.00 - 12.00

#### LIFE DOWN BELOW: THE SEARCH FOR A DEEP BIOSPHERE ON EARTH AND BEYOND

Much simple life on Earth lives in the subsurface. Indeed, some scientists believe that the majority of life is below ground. In a series of talks, find out about investigations of the deep biosphere today, and in the geological record. How is this reshaping our thoughts on the limits of life on Earth, and elsewhere in the Universe?

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen. Lab demo in Meston Building Visualisation suite 2

**Organised by:** University of Aberdeen

**Supported by:** Astrobiology Society of Britain

AUDIENCE LEVEL: 2

FREE

# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.

## FRI 7 SEP

FRI 7 SEP, 10.00 - 12.00

### MYTH BUSTERS: WHAT'S UP WITH YOUR GUT?

Microorganisms play an important role in maintaining a healthy gastrointestinal system, but in certain circumstances can also cause illness and disease. Diseases involving microorganisms include gastric cancer, inflammatory bowel disease and also colorectal cancer. Hear talks by experts to give you an overview before we open it up to your questions.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen <sup>3</sup>

**Organised by:** University of Aberdeen

**AUDIENCE LEVEL:** 2

**FREE**

FRI 7 SEP, 10.00 - 12.00

### WHO ARE YOU? THE PSYCHOLOGY OF CONSCIOUSNESS

In everyday language we use 'conscious' in many ways, from basic registering of what is going on around us through to a sense that there is an 'us' inside our bodies willing and causing things to happen. Consider how cutting-edge coma studies, anaesthesia/sleep research, neuropsychology and experimental psychology are investigating these various aspects of consciousness.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen <sup>2</sup>

**Organised by:** Psychology Section, British Science Association

**AUDIENCE LEVEL:** 3

**FREE**



What do dwarf elephants have to do with climate change?

FRI 7 SEP, 12.00 - 13.00

### CHARLES LYLELL AWARD LECTURE: WHAT DO DWARF ELEPHANTS HAVE TO DO WITH CLIMATE CHANGE?

If you are thinking about climate change, it's unlikely you're also thinking about dwarf elephants. Tiny elephants once lived on islands all over the world, evolving again and again at many different times in the last million years. Could the climate changes of the past be an important factor in their evolution and extinction and help us understand the impact of future climate change?

Awarded to **Victoria Herridge** by the British Science Association

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen <sup>6</sup>

**Supported by:** Senergy

**AUDIENCE LEVEL:** 2

**FREE**

FRI 7 SEP, 12.00 - 15.00

### BRITISH SCIENCE ASSOCIATION OPEN FORUM

Join British Science Association staff for the Chief Executive's report on our activities for the past year and plans for the year ahead.

**Venue:** Linklater Rooms, University of Aberdeen <sup>5</sup>

**Organised by:** British Science Association

**AUDIENCE LEVEL:** 2

**FREE**

**NO BOOKING REQUIRED**

FRI 7 SEP, 13.00 - 15.00

### CANNABIS: WEEDING OUT THE HIGHS AND LOWS

A panel of experts including **Roger Pertwee** and **Ruth Ross** from the University of Aberdeen present interactive talks describing the history of cannabis use, the body's own cannabinoid system and recent research on how cannabis affects the body. These talks will be followed by a panel debate involving research experts and a representative from Barnardos.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen <sup>2</sup>

**Organised by:** University of Aberdeen

**AUDIENCE LEVEL:** 3

**FREE**

FRI 7 SEP, 13.00 - 15.00

### HELPING THE DEVELOPING WORLD TO HELP ITSELF THROUGH SCIENCE

Many problems faced by the developing world, from communicable diseases to food security, can only be effectively tackled with the help of science and technology. This requires building a capacity in these countries to develop the relevant science, as well as the technology required to put it to use. Explore the types of partnership that work and how scientists (and students) can get involved.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen <sup>3</sup>

**Organised by:** General Section, British Science Association and SciDev.Net (Science and Development Network)

**AUDIENCE LEVEL:** 3

**FREE**

FRI 7 SEP, 13.00 - 15.00

### WISH YOU WERE HERE? SEARCHING FOR EXOPLANETS

In Scotland, there are many scientists who devote their research to the field of exoplanets, planets outside our Solar System that orbit stars other than our Sun. See two short documentary films by Edinburgh College of Art students looking at the work they do and what inspires them.

**Venue:** Meston Lecture Theatre 2, University of Aberdeen <sup>3</sup>

**Organised by:** Royal Observatory Edinburgh, University of St Andrews and University of Edinburgh

**Supported by:** STFC

**AUDIENCE LEVEL:** 2

**FREE**



#bsf2012



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For more information  
and to book visit  
[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

## FRI 7 SEP

FRI 7 SEP, 14.00 - 15.00

### LIVING IN A MATERIAL WORLD

Making trains levitate; harnessing your body heat to charge your mobile phone and ensuring that cars packed with rocket fuel don't end up somewhere in orbit. Join materials chemist **Jamie Gallagher** for a look at the successes and failures of the new materials that will power tomorrow's world.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen **2**

**Organised by:** Jamie Gallagher

**Supported by:** University of Glasgow and Royal Academy of Engineering

AUDIENCE LEVEL: 2

FREE

FRI 7 SEP, 14.30 - 15.30

### ENERGY SUSTAINABILITY BEYOND CLIMATE CHANGE

The energy landscape is changing rapidly and revealing some difficult choices. We expect a growth in demand for energy but need a more efficient and sustainable way of producing and consuming it. Join **Ellen Williams**, Chief Scientist at BP and **Julian M Allwood** from Cambridge University, to discuss the challenges and opportunities around energy and natural resources.

**Venue:** King's Quad, Lecture Theatre 8, King's College, University of Aberdeen **7**

**Organised by:** BP

AUDIENCE LEVEL: 5

FREE

**Booking Line:**  
**08456 807 207**

or visit

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

You can book in person at Aberdeen  
Box Office, Music Hall.

FRI 7 SEP, 15.30 - 16.30

### EXPANDING MINDS AND UNIVERSES

Join **John Barrow** to hear about how Einstein made it possible for cosmologists to study whole universes. Find out how expanding universes, rotating universes, chaotic universes, inflationary universes, accelerating universes and multiverses were all discovered. What is the current best description of the Universe and what problems still remain to be solved by mathematical physicists?

**Venue:** King's Quad, Lecture Theatre 7, King's College, University of Aberdeen **7**

**Organised by:** Mathematical Sciences Section, British Science Association

**Supported by:** Edinburgh Mathematical Society

AUDIENCE LEVEL: 3

FREE

FOLLOWED BY A DRINKS RECEPTION

FRI 7 SEP, 15.30 - 17.30

### THE REAL DOOMSDAY 2012: CATACLYSMIC EVENTS AND HUMAN EXTINCTION

2012 has been widely predicted to herald the end of the world, based on interpretations of ancient Mayan sources. But doomsday myths aside, will Homo sapiens still be thriving on earth in a million years from now? And what of the Earth and the Universe itself? Join **Richard Fortey**, **Jon Turney**, **Alok Jha**, and **Jocelyn Bell-Burnell** on a journey to the end of the world.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen **3**

**Organised by:** Physics and Astronomy Section and General Section, British Science Association

AUDIENCE LEVEL: 2

FREE

FRI 7 SEP, 15.30 - 17.30

### IS ACCESS TO WATER A HUMAN RIGHT?

Join in this broad-ranging discussion on water as a human right. Hear four international experts speak about the international water sustainability challenge, the philosophy and ethics of the concept of water as a human right, the science of water purity and contamination and engineering solutions to water sustainability. Following these short presentations you get to have your say.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen **2**

**Organised by:** Robert Gordon University

AUDIENCE LEVEL: 3

FREE

FRI 7 SEP, 16.30 - 17.30

### SELF-MANAGING CHRONIC PAIN

Explore the process taken by a group of older people and academics in identifying grey literature (literature available to the general public). The older people will discuss their experiences of self-managing chronic pain.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen **2**

**Organised by:** University of Aberdeen

**Supported by:** MRC / LLHW (EOPIC Study)

AUDIENCE LEVEL: 3

FREE

FRI 7 SEP, 16.30 - 17.30

### BREAD, BRIE AND BOOZE: OUR USE OF MICROBES AND MOLECULES IN THE KITCHEN

Discover the science behind three of our most ancient foodstuffs with presenter **Sarah Castor-Perry**. In this fun, fact-filled show, find out why salt is so important for great bread, what gives some wines a buttery smell while others smell of berries and how accidentally leaving cheese in a French cave led to the discovery of one of the most famous (and stinky) types of cheese.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Sarah Castor-Perry

AUDIENCE LEVEL: 3

FREE

Don't miss our evening  
events from page 24  
featuring lots more  
talks and debates

# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.

## SAT 8 SEP

FRI 7 SEP – SUN 9 SEP

### THE BRITISH ASTRONOMICAL WEEKEND EVENT

Join us to explore our Sun and some of its effects that we can observe. On Sunday take a walking tour which will include seeing the exhibition of historical astronomy books, a guided visit to the Cromwell tower observatory and a walk between the High Street and St Machar's Cathedral. The distance of the walking tour is less than one mile

FRI 7 SEP

- 19.30 Registration and refreshments  
20.00 **Stuart Clark** - Isaac Newton and the sensorium of God (See p27)

SAT 8 SEP

- 10.30 Registration and refreshments  
10.50 Official welcome by BAA President, William Leatherbarrow  
11.00 **Dave Gavine** - Aurora  
12.00 **Alan Hood** - Our Sun's magnetic personality  
13.00 Lunch  
14.30 **Torcuill Torrance** - Local astronomy  
15.00 **Ken Kennedy** - Noctilucent clouds  
16.00 Refreshments  
16.30 **Denis Buczynski** - North by Northwest (or Inverness and Beyond)

- 17.30 Raffle and close  
19.30 Registration and refreshments  
20.00 **John Mason** - Eclipses

SUN 9 SEP

- 10.30 **John S Reid** - Astronomical tour (2 hours)

**Venue:** King's College Conference Centre, University of Aberdeen 6

**Organised by:** British Astronomical Society and Aberdeen Astronomical Society

**AUDIENCE LEVEL:** 2

**COSTS** BAA MEMBERS £15.00 FOR THE FULL WEEKEND INCLUDING REFRESHMENTS ON FRIDAY NIGHT AND SATURDAY PLUS A £5.00 FOOD VOUCHER OR £20.00 NON-BAA MEMBERS. ACCOMPANIED CHILDREN UNDER 16 £8.00

**FOR SATURDAY ONLY, BAA MEMBERS £10.00 & NON-BAA MEMBERS £12.50 ACCOMPANIED CHILDREN UNDER 16 £5.00**

**YOU CAN PAY ON THE DOOR ON THE DAY FOR INDIVIDUAL TALKS £2.00 PER EVENT**



It wasn't me, it was my neurons

SAT 8 SEP, 10.00 - 12.00

### IT WASN'T ME, IT WAS MY NEURONS

As we learn in more detail how our brains work, some scientists argue that, ultimately, humans are just biological machines, programmed to do as our brain tells us. Where does that leave ideas such as love, freewill and responsibility for our actions? Join **Alasdair Coles** and **Barry Smith** to debate these and other related issues.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen 2

**Organised by:** Church of Scotland, Society, Religion and Technology Project

**AUDIENCE LEVEL:** 2

FREE

SAT 8 SEP, 10.00 - 12.00

### SAVIOUR SIBLING VS SPIT REGISTRY

Join a panel of speakers including **Bronwen Shaw** and **Mark Vickers**. Hear the arguments for and against the Bone Marrow Registry and the potential need for saviour siblings in the fight against blood cancers. Consider what you would do to save your child. Could you rely on strangers or would you create a life to save a life?

**Venue:** Robertson Trust Lecture Theatre, Suttie Centre for Teaching and Learning in Healthcare, AB25 2ZD

**Organised by:** University of Aberdeen, Division of Medical and Dental Education, Aberdeen Marrow and Anthony Nolan

**AUDIENCE LEVEL:** 2

FREE

SAT 8 SEP, 10.00 - 12.00

### DEADLY DIVISIONS

Join a panel of experts to hear the evidence on the relationship between social deprivation, income inequalities and health. How feasible is it to prevent ill health and improve well-being in communities in challenging circumstances by cultivating 'social assets'?

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen 3

**Organised by:** Sociology and Social Policy Section, British Science Association

**AUDIENCE LEVEL:** 3

FREE

SAT 8 SEP, 10.00 - 12.30 AND 14.00 - 16.30

### CSI: FACT OR FICTION

Internationally renowned forensic scientist **David Barclay** has over 30 years' experience and has worked on some of the highest profile cases in the UK and abroad. Discover how science played a key part in investigating these crimes and how scientific evidence is evaluated in the overall context of the investigation. Supplementary workshops at RGU will allow you to see first-hand some of the forensic techniques used.

**Venue:** Robert Gordon University, St Andrew Street, Aberdeen, AB25 1HG 9

**Organised by:** Robert Gordon University

**AUDIENCE LEVEL:** 2

FREE





## SAT 8 SEP

SAT 8 SEP, 11.00 - 12.00

### FORGOTTEN KNOWLEDGE: THE DISCOVERY AND LOSS OF A CURE FOR SCURVY

Nine out of ten members of a ship's crew used to succumb to scurvy. The results of James Lind's work on the HMS Salisbury in 1747, which led to a cure, without doubt saved innumerable lives. There was little scurvy in Nelson's days; but the reason is not clear, since, according to modern research, lime-juice only helps to prevent it. So why did Lind's results get forgotten?

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen 2

**Organised by:** MRC Laboratory of Molecular Biology

AUDIENCE LEVEL: 2

FREE

SAT 8 SEP, 12.00 - 13.00

### CHARLES DARWIN AWARD LECTURE: THE SURPRISING SECRETS OF GIANT LAND ANIMALS

How does the weight of giant land animals change the way they stand and move? Can an elephant jump, or gallop? Do elephants really have six toes? How fast was a T. rex? Could you outrun it, or an elephant? Take part in an interactive presentation of a simulated dinosaur environment, inspect bones for clues about large animals, and get ready for a visit from a giant, two-legged, scaly animal whose name starts with "T".

Awarded to **John Hutchinson** by the British Science Association

**Venue:** Fraser Noble Building, Lecture Theatre 1, University of Aberdeen 2

AUDIENCE LEVEL: 2

FREE

SAT 8 SEP, 13.00 - 14.00

### FEEDING THE NINE BILLION

Explore the complex topic of food security in the company of high-profile life scientists and economists and our Chair, **James Withers**, CEO of Scotland Food and Drink. Hear the views of local children and adults in a short film and join in the discussion on the future of our food supply.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen 3

**Organised by:** University of Aberdeen Rowett Institute of Nutrition and Health and Moredun Research Institute and SAC

**Supported by:** The Scottish Government

AUDIENCE LEVEL: 3

FREE

SAT 8 SEP, 13.00 - 14.00

### THE ELECTRIC BODY: HOW ELECTRICITY HELPS THE BODY REPAIR ITSELF

Explore the controversial concept of electrical healing from Victorian era quackery to modern medicine. How is electricity made by the body? How is it used naturally to assist healing? What are the consequences when it goes awry? Can we use electricity in the clinic to assist in wound repair, tissue regeneration and nervous system repair, or is the whole concept merely Frankenstein revisited?

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen 2

**Organised by:** University of Aberdeen

AUDIENCE LEVEL: 2

FREE

SAT 8 SEP, 13.00 - 15.00

### ANIMAL MIND, HUMAN MIND

Four enthusiastic experts compare animal and human minds. **Katie Slocombe** on communication between mothers and infants, chimpanzees and humans; **Amanda Seed** on the evolutionary origins of crows, chimpanzees and children; **Sue Healy** on bird brains, memory and building in hummingbirds and weaverbirds and **Andy Whiten** on culture in the worlds of children and chimpanzees.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen 2

**Organised by:** University of St Andrews and University of York

AUDIENCE LEVEL: 2

FREE



Charles Darwin Award Lecture:  
The surprising secrets of giant  
land animals



Animal mind, human mind

# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.

## SAT 8 SEP

SAT 8 SEP, 14.00 - 15.00

### HOW THE ZEBRA GOT ITS STRIPES

As a child your parents may have read you Rudyard Kipling's story about how the leopard got its spots, a tale in which a man puts the spots on a leopard's fur by using his fingers. While the story is for children, the question is a profound one and one that has been asked by generations of scientists. Join **Andrea Sella** to see how simple chemistry can result in amazing patterns.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Andrea Sella

**AUDIENCE LEVEL:** 2

**£5.00**



Dark matters

SAT 8 SEP, 15.30 - 17.30

### VICTORIAN SCIENCE SPECTACULAR

Roll up, roll up! We present an eclectic bill of science entertainment, as seen in music halls during the nineteenth century. Amazing electrical apparatus, dissolving views (magic lanterns), animal sketches, madrigals and animated photographs. Our skilled performers and engineers recreate acts seen by the public over 100 years ago, proving that these still have the power to captivate and inform.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen <sup>3</sup>

**Organised by:** History of Science Section, British Science Association

**AUDIENCE LEVEL:** 2

**FREE**

SAT 8 SEP, 15.30 - 17.30

### CAN YOU BE RELIGIOUS AND SCIENTIFIC (WITHOUT GOING CRAZY)?

The argument about the compatibility of myth (or religion) with science is not new, it goes back to ancient Greece. The rise of science as the modern way of explaining events in the world has simply raised the issue even more intensely. Our panel of speakers will debate their views on the issue.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen <sup>2</sup>

**Organised by:** University of Aberdeen

**AUDIENCE LEVEL:** 3

**FREE**

SAT 8 SEP, 15.30 - 17.30

### IN TUNE WITH MATHEMATICS

What does it mean to be musically 'in tune'? The story takes us from Pythagoras to the modern day. We'll see why the standard Western tuning of instruments is in fact out of tune and we'll see how mathematics revolutionized the music industry via software that helps singers sing in tune. Along the way we hope to solve the puzzle of the Beatles' Magical Mystery Chord. Suitable for the whole family.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen <sup>2</sup>

**Organised by:** University of Leeds

**Supported by:** Canford School, Dorset

**AUDIENCE LEVEL:** 2

**FREE**

SAT 8 SEP, 16.30 - 17.30

### DARK MATTERS

No one has ever seen dark matter, not even a single particle. So why do astronomers insist that it's all around us? Is it just a figment of their imagination? And how come particle physicists are so excited by it when they don't even know what they're looking for? Cosmologist **Andrew Pontzen** (BBC Stargazing Live) and LHC physicist **Tom Whyntie** introduce this mysterious 'stuff' and its wider implications for science.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Andrew Pontzen and Tom Whyntie

**AUDIENCE LEVEL:** 2

**FREE**



## The Spiegeltent

We are delighted to host the Spiegeltent at the British Science Festival for the first time in 2012.

Spiegel tents (Dutch for mirror tent) have been used as traveling dance halls, bars and entertainment salons since they were created in the late 19th/early 20th century. Built of wood, mirrors, canvas, leaded glass and detailed in velvet and brocade, each has its own personality and style.

Traditionally the Spiegeltent is a place for merry-making and we hope you will join us there for comedy, drama, music and cocktails. Relax during the day in the fully licensed bar or grab a coffee and a snack. In the evenings enjoy a range of entertainment and mingle with fellow Festival-goers.



## SUN 9 SEP

SUN 9 SEP, 09.30 - 10.30 AND 10.45 - 11.45

### CAFE COSMOS FESTIVAL SPECIAL

Discover one of Aberdeen's best hidden astronomical secrets as we open Aberdeen College's planetarium for a session with the stars. Join **Rick Holstein** of Aberdeen College and **Torcuill Torrance** of Aberdeen Astronomical Association for a star show and talk, including what's coming up in the night skies for budding astronomers. Booking essential as capacity is strictly limited.

**Venue:** Aberdeen College Planetarium, Gallowgate, AB25 1BN **4**

**Organised by:** University of Aberdeen and Aberdeen College

**AUDIENCE LEVEL: 2**

**FREE**

SUN 9 SEP, 10.00 - 12.00

### THE NORTHERN PAST: NEW ARCHAEOLOGICAL RESEARCH IN THE ARCTIC

How did people survive in the far North? In this Anthropology and Archaeology Section Presidential session, hear how archaeologists from the University of Aberdeen are revealing the behaviour of Arctic peoples. Based on research conducted in Alaska, explore how they survived in these extreme lands, discovering their life histories, food webs and communities.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen **2**

**Organised by:** University of Aberdeen and Anthropology and Archaeology Section, British Science Association

**AUDIENCE LEVEL: 2**

**FREE**



The northern past: New archaeological research in the Arctic

SUN 9 SEP, 11.00 - 12.00

### SUPERCOMPUTERS IN SCIENCE: FROM THE BIG BANG TO CLIMATE CHANGE

Today's supercomputers are the most powerful calculating machines ever invented, and they get faster every year. EPCC, the supercomputing centre at the University of Edinburgh, has been at the forefront of supercomputing for over 20 years. Find out what supercomputers are and how they play a key role in nanotechnology, particle physics, cosmology, engineering and climate research.

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen **3**

**Organised by:** EPCC, The University of Edinburgh and PRACE; The Partnership for Advanced Computing in Europe

**AUDIENCE LEVEL: 2**

**FREE**

SUN 9 SEP, 12.00 - 13.00

### LORD KELVIN AWARD LECTURE: EXPLORING THE INNARDS OF THE EARTH USING SEISMOLOGY

To understand how and when catastrophic events such as earthquakes and volcanoes occur, we need knowledge of the inaccessible deep Earth. Seismology helps us gain this understanding by detecting distant earthquakes as seismograms. How are seismic data from Ethiopia being used to understand how continents break up to form new oceans and what can they tell us about the Earth's past?

Awarded to **Ian Bastow** by the British Science Association

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen **6**

**AUDIENCE LEVEL: 2**

**FREE**



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SUN 9 SEP, 13.00 - 14.00

### TAXING PEOPLE FOR UNHEALTHY BEHAVIOURS OR REWARDING HEALTHY BEHAVIOURS?

Cigarettes and alcohol are being taxed heavily and a 'fat tax' is in the news. An alternative is to reward healthy behaviours. Join **Anne Ludbrook**, **Marjon van der Pol** and **Mandy Ryan** to hear recent research on taxing and paying in health promotion. What should governments do to reduce obesity, smoking and drinking too much alcohol? Increase tax on unhealthy goods or reward healthy behaviours?

**Venue:** Meston Building, Lecture Theatre 1, University of Aberdeen **3**

**Organised by:** University of Aberdeen

**AUDIENCE LEVEL: 3**

**FREE**

SUN 9 SEP, 13.00 - 14.00

### WHO DO YOU THINK YOU ARE? THE 500 MILLION YEAR-OLD EDITION

While studying insulin signalling in humans, we made an unexpected discovery that transported us back 500 million years, to a time when our ancestors were spineless creatures living on the ocean floor. Find out what happened so long ago, which still affects the life and diseases of modern humans.

**Venue:** Fraser Noble, Lecture Theatre 3, University of Aberdeen **2**

**Organised by:** College of Life Sciences, University of Dundee

**Supported by:** MRC

**AUDIENCE LEVEL: 3**

**FREE**

#### Audience Level:

- 1 – Families
- 2 – Everyone
- 3 – All adults
- 4 – Adults with some knowledge of the topic
- 5 – Professionals



# TALKS AND DEBATES

Find out fascinating facts in our series of daily talks and debates and meet our award-winning scientists and engineers with the gift of the gab.



Science of sleep



George McGavin



The Turing Project

## SUN 9 SEP

SUN 9 SEP, 13.00 - 15.00

### LOOKING FOR LEVIATHANS: WHAT DOES SCIENCE TELL US ABOUT THE HUNT FOR SEA MONSTERS?

Join in talks and demonstrations to explore what the possibilities are of unknown animals being discovered in the world's rivers, lakes and seas. What does psychology, ecology and statistics tell us about the reality of people reporting monsters?

**Venue:** Fraser Noble, Lecture Theatre 2, University of Aberdeen <sup>2</sup>

**Organised by:** CREEM, University of St Andrews and Skeptics in the Pub Aberdeen

AUDIENCE LEVEL: 3

FREE

SUN 9 SEP, 14.00 - 15.00

### SCIENCE OF SLEEP

Getting enough sleep is vital to our wellbeing. However, up to 20% of people suffer from regular sleep disruption. What effect does this have on their physical and mental health? Our expert panel will examine the key scientific issues and reveal the latest research to explore why visiting the land of nod is so important.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Society for Endocrinology

**Supported by:** Biological Sciences Section, British Science Association

AUDIENCE LEVEL: 3

FREE

SUN 9 SEP, 14.00 - 15.00

### BBC SCOTLAND PRESENTS SCIENCE... WITH GEORGE MCGAVIN

BBC Scotland explores the art of making science content appealing to television audiences, with charismatic presenter **George McGavin** and Controller of UK Factual Production at BBC, **Natalie Humphreys**. The duo will take a look at an original new series coming from BBC Scotland and the blood, sweat and collaboration that goes into making programmes which are aimed at expanding the minds of the nation.

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen <sup>6</sup>

**Organised by:** British Science Association

AUDIENCE LEVEL: 2

FREE

SUN 9 SEP, 15.30 - 17.30

### THE EXTREME UNIVERSE

Our Universe is a violent place. Explosions of star-destroying magnitude occur somewhere in the cosmos almost daily. Black holes embody regions of extraordinary extremes of gravity, distorting the very fabric of space-time. The reality of our Universe is almost stranger than we can imagine. Join us to see some of the ways we are working to probe its most extreme properties.

**Venue:** Fraser Noble Building, Lecture Theatre 2, University of Aberdeen <sup>2</sup>

**Organised by:** Physics and Astronomy Section, British Science Association

AUDIENCE LEVEL: 2

FREE

SUN 9 SEP, 15.30 - 17.30

### TURING: THE HUMAN VS THE MACHINE

Alan Turing, one of the truly original thinkers of the last century was born in 1912. We celebrate his centenary with an overview of his achievements in logic, mathematics, computing and artificial intelligence. The Turing Test asks whether you can distinguish, blindfold, a human's conversation from a computer's? Join in and cast your vote.

**Venue:** Regent Building, Regent Lecture Theatre, University of Aberdeen <sup>9</sup>

**Organised by:** London South Bank University

AUDIENCE LEVEL: 2

FREE

SUN 9 SEP, 15.30 - 17.30

### SHOWING MERCY OR A LICENCE TO KILL? ASSISTED SUICIDE

Get involved in a spirited discussion about this controversial topic. We will begin by asking you to vote and share your opinion, then you'll hear from the speakers for both sides, including **Peter Kiehlmann**, Aberdeen GP who recently worked on the Scottish National Action Plan for Palliative Care. You'll then vote again and see if hearing the arguments has caused you to change your views.

**Venue:** Robertson Trust Lecture Theatre, Suttie Centre for Teaching and Learning in Healthcare, AB25 2ZD

**Organised by:** University of Aberdeen, Division of Medical & Dental Education, Christian Medical Fellowship and Christian Union

**Supported by:** Fifth Dimension

AUDIENCE LEVEL: 3

FREE

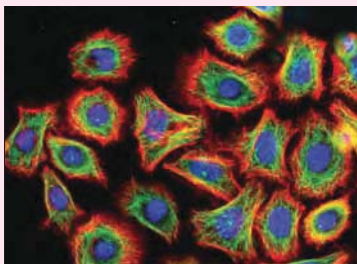


# WORKSHOPS

It's your chance to get hands-on and brains-on in our programme of practical activities.



Why don't we eat as we intend?



No head, no problem



Multi-track mixing

## TUES 4 SEP

TUES 4 SEP, 10.00 - 17.00

### 'MEET THE EXPERT' TRAINING

Researchers, have you ever wanted to feel more confident communicating your research to the public? This training course will give you advice on how to give a presentation, how to spark an interest in something yet unknown and how to create a space to encourage interest and curiosity.

**Venue:** King's College Conference Centre, Carnegie Room, University of Aberdeen 6

**Organised by:** Glasgow Science Centre Royal Observatory Edinburgh

**Supported by:** STFC

**AUDIENCE LEVEL:** 5

**FREE**

## WED 5 SEP

WED 5 SEP, 10.00 - 17.00

### DARK SKY AND DEEP SPACE

In this training workshop for science teachers and informal educators you'll have the chance to learn how to run an effective stargazing session, with lots of tips for bad weather back-up plans. You'll also be introduced to hands-on activities relating to current areas of astronomy research, like galaxies and extrasolar planets.

**Venue:** King's College Conference Centre, Carnegie Room, University of Aberdeen 6

**Organised by:** Royal Observatory Edinburgh

**Supported by:** STFC

**AUDIENCE LEVEL:** 5

**FREE**

## THURS 6 SEP

THURS 6 SEP, 10.00 - 16.00

### TRUST AND THE DIGITAL ECONOMY

The notion of trust lies at the heart of the digital economy, as our daily interactions are increasingly mediated by technology. Join academics, practitioners, and professionals of all disciplines and backgrounds to discuss the key issues surrounding trust and the digital economy, and explore methodologies, technologies, policies and tools for addressing them.

**Venue:** MacRobert Building, Room 028, University of Aberdeen

**Organised by:** dot.rural Digital Economy Research Hub, University of Aberdeen

**AUDIENCE LEVEL:** 5

**FREE**

**VISIT:** [WWW.DOTRURAL.AC.UK/TRUSTDE2012/](http://WWW.DOTRURAL.AC.UK/TRUSTDE2012/)  
**TO BOOK OR CALL** 01224 274238

### Audience Level:

- 1 – Families
- 2 – Everyone
- 3 – All adults
- 4 – Adults with some knowledge of the topic
- 5 – Professionals

We advise that you pre-book your tickets, even where events are free.  
**[www.britishtsciencefestival.org](http://www.britishtsciencefestival.org)**



#bsf2012



/BritishScienceFestival

### Booking Line:

**08456 807 207**

or visit

**[www.britishtsciencefestival.org](http://www.britishtsciencefestival.org)**

You can book in person at Aberdeen Box Office, Music Hall.

FRI 7 SEP AND SAT 8 SEP, 18.00 - 18.45  
AND 19.00 - 19.45,  
SUN 9 SEP, 18.00 - 18.45

### THE TURING PROJECT

Could you tell the difference between a man and a machine? You're a top-secret scientist guarding the emergency communication channel, keeping it open for agents to send out distress calls. When you pick up a message from a man in distress, you must decide whether he is real or a machine trying to trick you.

We regret there is no disabled access to this show.

**Venue:** New King's, University of Aberdeen 4

**Organised by:** Simply Told

**AUDIENCE LEVEL:** 3

**£3.00**

We advise that you pre-book your tickets, even where events are free. Visit [www.britisheciencefestival.org](http://www.britisheciencefestival.org)

## SAT 8 SEP

SAT 8 SEP, 10.00 - 12.00

### HOW TO SOLVE CRIMES WITH MATHEMATICS

The modern Sherlock Holmes is a mathematician. From election fraud and internet crime to murder and terrorism, mathematics has become the most acute weapon in our fight to bring criminals to justice. Learn how to use maths to solve crimes, find out how powerful computer programs uncover terrorist networks, and how mathematics can be used to predict a crime even before it's happened!

**Venue:** Linklater Rooms, University of Aberdeen **5**

**Organised by:** University of Aberdeen

**AUDIENCE LEVEL:** 2 **£3.00**

SAT 8 SEP, 10.00 - 17.00

### MULTI-TRACK MIXING

It's your chance to be a music producer. You get to record musicians and then learn how to edit and mix the audio.

**Venue:** Aberdeen College, Gallowgate, AB25 1BN **4**

**Organised by:** Aberdeen College

**AUDIENCE LEVEL:** 2 **FREE**

**DROP-IN EVENT, NO NEED TO BOOK**

SAT 8 SEP, 11.15 - 12.00 AND 14.15 - 15.00

### THE WONDER OF KNOTLESS KNOTS

Cat's cradles are kid's stuff compared to knotless knots. In this workshop you can learn to make some of the oldest games still played worldwide, from the Pacific Islands to the frozen North. You'll be amazed at the complex string structures used to teach maths in New York and you will find out how an Audi car commercial and a cathedral were designed using knotless knots.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Bubblestrings

**AUDIENCE LEVEL:** 2 **£5.00, CONC. £3.00**

SAT 8 SEP, 13.00 - 14.00

### WHY DON'T WE EAT AS WE INTEND? THE PSYCHOLOGY OF DIETARY CONTROL

We all know what we should and shouldn't eat. However, tasty high calorie foods surround us and, as a result, most of us struggle to stick to our dietary intentions. Join chartered psychologist **Julia Allan** to discuss the psychology of dietary control and take part in a range of psychological tests designed to illustrate why resisting temptation is so hard.

**Venue:** Linklater Rooms, University of Aberdeen **5**

**Organised by:** Health Psychology Group, University of Aberdeen Rowett Institute of Nutrition and Health

**Supported by:** The Scottish Government

**AUDIENCE LEVEL:** 3 **£3.00**



Why don't we eat as we intend?

SAT 8 SEP, 14.30 - 17.00

### THE SCIENCE BEHIND FOOD LABELS: WHAT THEY TELL YOU AND WHAT THEY DON'T

A workshop walk-through with market stalls where you can find out about different aspects of what food labels tell you and what they don't. Members of the Nutrition Society **Brian Ratcliffe**, **Wendy Wrieden** and **Shauna Cunningham** will share their insights into food labels and make you look twice in the supermarket next time.

**Venue:** Robert Gordon University, St Andrew Street, Aberdeen, AB25 1HG **9**

**Organised by:** Robert Gordon University

**Supported by:** Nutrition Society

**AUDIENCE LEVEL:** 2 **FREE**

**DROP-IN EVENT, NO NEED TO BOOK.**

SAT 8 SEP, 15.30 - 17.30

### NO HEAD, NO PROBLEM: CAN WE GROW MISSING BODY PARTS?

Planarian flatworms can re-grow a missing tail (or head) and newts can re-grow limbs, so why can't humans re-grow lost body parts? In this interactive drop-in event, scientist **Ann Rajnicek** uses models, movies and worms undergoing spontaneous tissue re-growth to show you this fascinating process. Find out how worms could aid future therapies to stimulate limb or tissue re-growth in humans.

**Venue:** Linklater Rooms, University of Aberdeen **5**

**Organised by:** University of Aberdeen

**AUDIENCE LEVEL:** 2 **£3.00**

SAT 8 SEP, 11.00 - 12.30

AND 14.00 - 15.30

### VISUALISING THE INVISIBLE: FIGHTING HEALTHCARE-ASSOCIATED INFECTIONS

Explore how best to visualise the pathogens that cause healthcare-associated infections. Create 3D models and let these loose in RGU's simulated hospital wards. Microbiologists will advise and encourage you and you'll get to view and vote on new digital visualisation prototypes. No prior knowledge necessary.

**Venue:** Room H230, Faculty of Health and Social Care Building, Robert Gordon University, Garthdee Road, Aberdeen, AB10 7QG

**Organised by:** Institute for Health and Welfare Research, Robert Gordon University, Glasgow School of Art, Duncan of Jordanstone College of Art and Design, University of Dundee, NHS Lanarkshire, NHS Grampian and NHS Education for Scotland

**Supported by:** Arts and Humanities Research Council, Scottish Funding Council and Robert Gordon University

**AUDIENCE LEVEL:** 2 **FREE**

# WORKSHOPS

## SUN 9 SEP

SUN 9 SEP, 10.00 - 12.00

### RIISING TIDE: THE SUBMERGED ARCHAEOLOGY OF ORKNEY

The seas around Orkney have risen some 30 metres since people first inhabited the islands some 10,000 years ago. Archaeological sites on land such as Skara Brae are well known. This workshop will present the first results of work to examine the seabed. Meet the team and experience some of the methods used to study and recreate the submerged landscape of Orkney.

**Venue:** Linklater Rooms, University of Aberdeen **5**

**Organised by:** University of Aberdeen, University of Dundee, University of St Andrews and University of Wales (Trinity St David)

**AUDIENCE LEVEL:** 2

**£3.00**



Rising tide: The submerged archaeology of Orkney

SUN 9 SEP, 11.15 - 12.00  
AND 14.15 - 15.00

### FOLDING WORKSHOP

What has origami got to do with the space station or paper cranes with the atom bomb? Did you know that anything can be folded out of a piece of paper using a recently devised computer programme? Come along and learn to fold paper models.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Bubblestrings

**AUDIENCE LEVEL:** 2

**£5.00, CONC. £3.00**



Finding Aberdeen: The historical way

SUN 9 SEP, 13.00 - 15.00

### FINDING ABERDEEN: THE HISTORICAL WAY

Ever felt lost at sea? Get some hands-on experience of how sailors from the Vikings onward would have navigated their way to Aberdeen harbour. Seafarers from the past will step into the present to discuss and demonstrate a variety of historical navigational techniques, from currents, stars, and visible landmarks, through to the development of magnetic compasses, improved mapping techniques, and accurate timepieces.

**Venue:** Aberdeen Maritime Museum, Shiprow, Aberdeen, AB11 5BY **5**

**Organised by:** History of Science Section, British Science Association

**AUDIENCE LEVEL:** 2

**FREE**

**NO BOOKING REQUIRED BUT LIMITED SPACES**

SUN 9 SEP, 13.00 - 15.00

### THE WAR WITHIN US: FIGHTING INFECTION

Our bodies are under constant attack from gazillions of minute bugs, such as bacteria, viruses and fungi. We successfully fend off most assaults, but sometimes the attackers cause serious infections and can be lethal. Have a microscopic view at the frontline; team up with biologists and mathematicians to see how cutting-edge experiments, supercomputers and exciting ideas help to win the war raging inside each of us.

**Venue:** Linklater Rooms, University of Aberdeen **5**

**Organised by:** University of Aberdeen

**AUDIENCE LEVEL:** 2

**£3.00**

See the map on p49  
for city centre venues



@BritishSciFest



/BritishScienceFestival

**Booking Line:**

**08456 807 207**

or visit

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

You can book in person at Aberdeen  
Box Office, Music Hall.

**Audience Level:**

**1 – Families**

**2 – Everyone**

**3 – All adults**

**4 – Adults with some  
knowledge of the topic**

**5 – Professionals**

# EVENING EVENTS

Join us after dark for a varied programme of shows, film screenings, performances and debates. Don't miss our new, wild fin-de-siècle nightspot – the Spiegeltent.



The Diving Bell and the Butterfly



Paul Nurse



Festival of the Spoken Nerd

## TUES 4 SEP

TUES 4 SEP, 18.00 – 19.30

### CHEMISTRY SECTION MIXER

An opportunity to meet the Chemistry Section committee and speakers over drinks and nibbles.

**Venue:** Meston Building, NFRI Boardroom, G05A, University of Aberdeen <sup>3</sup>

**Organised by:** Chemistry Section, British Science Association

AUDIENCE LEVEL: 2

FREE

TUES 4 SEP, 18.00 – 19.00

### CAFÉ CONTROVERSIAL: NEVER WORK WITH CHILDREN OR ANIMALS?

Few issues fire up public opinion more than medical research involving humans or animals does. However, many stories may challenge some perceptions on the ethics of human and animal experimentation. In this special Café Controversial event join **Dianne Stillwell**, **Laura Waters** and **Pamela Dicks** to share your views and explore two interactive stories around animal testing and research involving children.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Public Engagement with Research Unit, University of Aberdeen

AUDIENCE LEVEL: 3

FREE

TUES 4 SEP, 18.00 – 19.00

### GREAT IDEAS OF BIOLOGY

Three of the great ideas of biology are gene theory, evolution by natural selection, and the proposal that the cell is the fundamental unit of all life. A fourth idea is that the organisation of chemistry within the cell provides explanations for life's phenomena. A new idea is the central role that information management plays in generating biological organisation. Join Nobel Prize-winner **Paul Nurse** to explore life.

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen <sup>6</sup>

**Organised by:** British Science Association

AUDIENCE LEVEL: 3

£10.00, CONC £8.00

TUES 4 SEP, 19.00 – 20.00

### SECTIONS RECEPTION

Join the scientific sections of the British Science Association for an informal evening of games and chat. The Sections are made up of volunteers from all fields of science, who work hard year after year to create events in the Festival programme.

**Venue:** Elphinstone Hall, University of Aberdeen <sup>5</sup>

**Organised by:** British Science Association Sections

AUDIENCE LEVEL: 3

FREE

TUES 4 SEP, 19.00 – 21.45

### RUNNING FREE FROM LOCKED-IN SYNDROME

In 2010 **Kate Allatt** experienced the terrifying reality of locked-in syndrome - left completely paralysed by a severe brain stem stroke. Two years on, Kate has written two books and is campaigning for stroke awareness. Following a screening of *The Diving Bell and the Butterfly* join Kate, along with **Christian Schwarzbauer**, **Helen Gooday**, **Stephen Stott** and **Neva Hailes**, for a journey into coma and consciousness.

**Venue:** Belmont Cinema, Belmont Street, Aberdeen, AB10 1JS <sup>6</sup>

**Organised by:** Public Engagement with Research Unit, University of Aberdeen

AUDIENCE LEVEL: 3

£5.00, CONC £3.00

TO BOOK CALL 0871 9025721

TUES 4 SEP, 20.00 – 22.30

### FESTIVAL OF THE SPOKEN NERD

Before they embark on their first national tour, join stand-up mathematician **Matt Parker**, geek songstress **Helen Arney** and experiments guy **Steve Mould** for a variety show for the fearlessly inquisitive. Join three of the UK's best (and nerdiest) performers for a celebration of comedy, science, music, maths, interactive experiments and maybe some things that go bang.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Festival of the Spoken Nerd

AUDIENCE LEVEL: 3

£5.00

More talks and debates on pages 4 - 20



/BritishScienceFestival



# EVENING EVENTS



Susan Greenfield



Maggie Aderin-Pocock



Behind the scenes with Michael Mosley

## WED 5 SEP

WED 5 SEP, 18.00 - 19.00

### THE 21ST CENTURY MIND

The human brain will adapt to whatever environment in which it is placed; today's cyber world is offering a new type of environment; the brain could therefore be changing in parallel, in correspondingly new ways. So we need to try and foresee what these changes, be they positive or negative, may be. Only then can we minimise the threats and harness the opportunities. Join **Susan Greenfield** to explore the 21st century mind.

**Venue:** Aberdeen Business School, Lecture Theatre 225, Garthdee Campus, Robert Gordon University, AB10 7QE

**Organised by:** Robert Gordon University

**AUDIENCE LEVEL:** 3 **£10.00, CONC £8.00**

**BOOK SIGNING 19.00, ROBERT GORDON UNIVERSITY**

WED 5 SEP, 18.00 - 19.00

### BEHIND THE SCENES WITH MICHAEL MOSLEY

What is it that excites BBC presenter and producer, **Michael Mosley**, about science? Find out how science documentaries are made. From the stunning special effects in Pompeii and Supervolcano to filming an experiment to prove that spontaneous human combustion is caused by the "wick effect". Join Michael for a journey behind the scenes of film-making.

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen 6

**Organised by:** British Science Association

**AUDIENCE LEVEL:** 3 **£10.00, CONC £8.00**

WED 5 SEP, 19.00 - 21.00

### CAFÉ SCI: ARE WE ALONE AND WHEN WILL WE KNOW?

Space science is helping us discover more and more about the amazing Universe we live in. But as we search for life in the Universe how will the latest technology help us answer the ultimate question sooner rather than later? Join space scientist and BBC presenter **Maggie Aderin-Pocock** for our Café-Sci special.

**Venue:** Waterstones Book Store, Union Bridge, Aberdeen, AB11 6BG 15

**Organised by:** Public Engagement with Research Unit, University of Aberdeen

**AUDIENCE LEVEL:** 2

**FREE**

**NO BOOKING REQUIRED, JUST TURN UP**

WED 5 SEP, 19.30 - 21.30

### MURDER, MYSTERY & MICROSCOPES

Can local crime writer **Stuart MacBride** get his scientific facts right in this specially written short story? Forensic experts **Lorna Dawson** and **Dave Barclay**, and pathologist **James Grieve** test Stuart's forensic science in this lively event hosted by presenter of BBC's Material World, **Quentin Cooper**. Join us to put crime fiction under the microscope.

**Venue:** King's College Conference Centre Auditorium, University of Aberdeen 6

**Organised by:** The James Hutton Institute, University of Aberdeen and Robert Gordon University

**Supported by:** RESAS

**AUDIENCE LEVEL:** 3

**FREE**

**BOOK SIGNING 18.00, ELPHINSTONE HALL**

WED 5 SEP, 19.30 - 22.00

### CHEMISTRY SECTION DINNER

Join the Chemistry Section and speakers for an informal dinner. We will announce the venue during the Chemistry Section events.

**Organised by:** Chemistry Section, British Science Association

**AUDIENCE LEVEL:** 3

WED 5 SEP, 20.00 - 22.00

### BRIGHT CLUB

What would happen if we got a bunch of interesting comedians, and combined them with all of the fascinating people who work for Scotland's top universities? Bright Club is where comedy and brains collide to bring you an entertaining night of laughs, music and new ideas.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Bright Club

**Supported by:** University of Dundee

**AUDIENCE LEVEL:** 3

**£5.00**

**Booking Line:**

**08456 807 207**

**or visit**

**[www.britishsciencefestival.org](http://www.britishsciencefestival.org)**

You can book in person at Aberdeen Box Office, Music Hall.

# EVENING EVENTS

For more information  
and to book visit  
[www.britishtsciencefestival.org](http://www.britishtsciencefestival.org)



John Krebs



Brian Cox



A Beautiful Mind

## THURS 6 SEP

THURS 6 SEP, 17.00 - 18.00

### BRITISH SCIENCE ASSOCIATION PRESIDENTIAL ADDRESS: DOING THE RIGHT THING

Almost all the major challenges facing society involve changing human behaviour. Climate change, obesity, educational attainment and sexual health are among many issues that will not be solved by technological fixes alone. Join British Science Association President, **John Krebs**, to consider the extent to which applying insights from psychology, behavioural economics and other disciplines are an effective way of getting people to 'do the right thing'.

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen **6**

**Organised by:** British Science Association

AUDIENCE LEVEL: 3

FREE

THURS 6 SEP, 18.15 - 19.15

### THE QUANTUM UNIVERSE

Just what is quantum physics? How does it help us understand the world? Where does it leave Newton and Einstein? And why can we be sure that the theory is good? The bizarre behaviour of the atoms and energy that make up the universe has led to some very woolly pronouncements on the nature of all interconnectedness. Join **Brian Cox** and **Jeff Forshaw** to talk about the real science, and the profound theory that allows for concrete, yet astonishing, predictions about the world.

**Venue:** Arts Lecture Theatre, University of Aberdeen **8**

**Organised by:** British Science Association

AUDIENCE LEVEL: 2 £10.00, CONC. £8.00

WE WILL ALSO SHOW THE TALK LIVE ON SCREEN IN A SEPARATE VENUE. TICKETS £5.00

THURS 6 SEP, 19.00 - 22.30

### BLOWING THE MIND IN THE MEDIA

A Beautiful Mind is an Oscar-winning film which tackles what is often referred to as the last taboo in mental health. Based on the life of John Nash, a Nobel Prize winner, it explores his struggles with paranoid schizophrenia. Following a film screening a panel of medical professionals will discuss the often difficult relationship between mental health and the media.

**Venue:** Belmont Cinema, Belmont Street, AB10 1JS **6**

**Organised by:** University of Aberdeen, Division of Medical and Dental Education and Shrink

AUDIENCE LEVEL: 3 £5.00, CONC. £3.00

TO BOOK CALL 0871 9025721

## Booking Line:

**08456 807 207**

or visit

[www.britishtsciencefestival.org](http://www.britishtsciencefestival.org)

You can book in person at Aberdeen Box Office, Music Hall.

THURS 6 SEP, 18.30 - 21.00

### DISCOVERY DINNER

A chance to dine with the scientists and chefs who have designed a sustainable and healthy four course meal for you. You can hear presentations on the menus, nutritional analysis and you will get the chance to sample the gastronomic delights created.

**Venue:** William Dyce Brasserie, Aberdeen College, Gallowgate, AB25 1BN **4**

**Organised by:** Aberdeen College and Rowett Institute of Nutrition and Health

AUDIENCE LEVEL: 3 £20.00

TO BOOK CALL 01224 612169

THURS 6 SEP, 19.30 - 22.00

### FESTIVAL DINNER

Join us for dinner to hear who has been presented with a British Science Association Honorary Fellowship. Celebrate the Association's work and achievements throughout the year.

**Venue:** Elphinstone Hall, University of Aberdeen **5**

**Organised by:** British Science Association

AUDIENCE LEVEL: 3 £50.00

# EVENING EVENTS



Rocket Lolly



Stuart Clark



Bill Bryson

## FRI 7 SEP

THURS 6 SEP, 20.00 - 22.00

### BRAIN OF ABERDEEN

Do you have the biggest brain in Aberdeen? Could your team be crowned Aberdeen Skeptics in the Pub quiz champions 2012? Join The Guardian's **Alok Jha** as we test your general knowledge, with just a hint of science – you don't need to be Stephen Hawking to win.

**Venue:** The Illicit Still, Broad Street, AB10 1AU **1**

**Organised by:** Medical Sciences Section, British Science Association and Aberdeen Skeptics in the Pub

**AUDIENCE LEVEL:** 3

**FREE**

THURS 6 SEP, 20.30 - 21.30

### ROCKET LOLLY

A feast of vintage scientific curiosities on film, many accompanied live by human, theremin and robot band Spacedog. Enjoy infrasonic terrors, smoking robots, mind control experiments, space age fashions, bizarre time and motion studies and other gems from the archives. Includes a vision of the 'future' (1955) made in 1933.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Spacedog

**AUDIENCE LEVEL:** 3

**£5.00**

FRI 7 SEP, 18.00 - 19.00

### ISAAC NEWTON AND THE SENSORIUM OF GOD

Isaac Newton: quintessential scientist – also alchemist, maverick theologian, and arch-heretic. Astrophysicist and author **Stuart Clark** explores how this complicated man's unscientific traits were essential in shaping the scientific revolution. Just what did Newton mean when he called the Universe the sensorium of God?

**Venue:** King's College Conference Centre, Auditorium, University of Aberdeen **6**

**Organised by:** British Astronomical Association

**AUDIENCE LEVEL:** 3

**£10.00, CONC. £8.00**

**BOOK SIGNING 19.00, ELPHINSTONE HALL**

FRI 7 SEP, 18.00 - 20.00

### DATING, MATING AND RELATING: THE SCIENCE OF ATTRACTION

What does she see in him? We often ask about celebrity couples, our friends, and even our own relationships. What makes Justin Bieber irresistible to some, but unappealing to others? The answers may lie in our life experiences and physical attributes. Scientists from all over Scotland are studying how and why we respond to others' odours, voices, faces and bodies.

**Venue:** Fraser Noble Building, Lecture Theatre 3, University of Aberdeen **2**

**Organised by:** University of Glasgow, University of St Andrews, University of Stirling, University of Abertay, University of Dundee

**AUDIENCE LEVEL:** 3

**FREE**

FRI 7 SEP, 20.00 - 21.00

### ANNUAL MUSIC HALL LECTURE 2012: AN AUDIENCE WITH BILL BRYSON

**Bill Bryson** is the UK's biggest selling non-fiction author since official records began. Millions have enjoyed his hilarious travel books and joined him on an enthralling journey through *A Short History of Nearly Everything*, the international bestseller. Join him as he talks to presenter **Quentin Cooper** about his life, his passions and his adventures along the way.

**Venue:** The Music Hall, Aberdeen **15**

**Organised by:** British Science Association Aberdeen Branch and Aberdeen Performing Arts

**Supported by:** Aberdeen Performing Arts

**AUDIENCE LEVEL:** 3

**£10.00**

**BOOK SIGNING 21.00, THE MUSIC HALL**

FRI 7 SEP, 20.00 - 22.00

### THE SCIENCE OF COCKTAILS

Are all vodkas the same? Why should you put water in your scotch, but never ice? What are the ingredients that make a good cocktail a great one? Chemist and mixologist **Noel Jackson** gets hands-on to make the perfect Irish coffee. Develop your own new cocktail and drink a few tried and tested classics. If you've got a thirst for knowledge, quench it with our Festival special mix called energising minds.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Centre for Life, Newcastle

**Supported by:** Glen Garioch Whisky

**AUDIENCE LEVEL:** 3

**£20.00 (Includes 6 cocktails)**



/BritishScienceFestival

# EVENING EVENTS

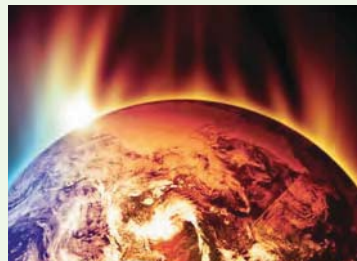
For more information  
and to book visit  
[www.britishsiencefestival.org](http://www.britishsiencefestival.org)



Iain Stewart



Richard Wiseman



End of the world party

## SAT 8 SEP

SAT 8 SEP, 18.00 - 19.00

### THE STORY OF THE CONTINENTS

Join geologist and TV presenter **Iain Stewart** for an insight into his next four part series, The story of the continents, which he is still filming. Each of the four programmes focuses on one continent or set of continents – the Americas, Eurasia, Africa and Australia/Oceania.

**Venue:** Arts Lecture Theatre, University of Aberdeen **8**

**Organised by:** British Science Association

**AUDIENCE LEVEL:** 3 **£10.00, CONC. £8.00**

**BOOK SIGNING 19.00, ELPHINSTONE HALL**

SAT 8 SEP, 19.00 - LATE

### END OF THE WORLD PARTY

This evening of adults-only apocalyptic activity will greet you, upon arrival, in a contamination suite, show you what it was like in a 1950s bunkers, teach you to create deadly viruses, help you choose your last meal on Earth and lead you to your doom with live music from Edinburgh-based arts collective, Found. All is not as it may seem as we prepare for the end of the world.

**Venue:** The Tunnels, Carnegie's Brae, Aberdeen AB10 1BF **2**

**Organised by:** British Science Association and We Are Smart Consultants

**AUDIENCE LEVEL:** 3 **£5.00**

SAT 8 SEP, 20.00 - 21.00

### SWEET DREAMS

Join psychologist **Richard Wiseman** as he delves deep into the science of sleep and dreaming. Why do you dream? Is it possible to control your dreams? Do your dreams predict the future? How do you get the perfect night's sleep? Richard reveals what happens when your brain goes to sleep, and the new technology that claims to be able to create your perfect dream.

**Venue:** Arts Lecture Theatre, University of Aberdeen **8**

**Organised by:** British Science Association

**AUDIENCE LEVEL:** 3 **£10.00, CONC. £8.00**

**BOOK SIGNING 21.00, ELPHINSTONE HALL**

SAT 8 SEP, 20.00 - 22.00

### WHAT'S THE POINT?

Scientists aren't known for being concise. So what will happen when host **Timandra Harkness** takes scientists, adds a mathematician, and catalyses with games rewarding 'ifs' and 'buts'? Featuring **Matt Parker** (as heard on Radio 4's Infinite Monkey Cage), **Greg Foot** (presenter, BBC3's Secrets of Everything), **Lucie Green** (Infinite Monkey Cage/Stargazing Live/Sky at Night), **Steve Mould**, (Blue Peter), **Dallas Campbell** (BBC's Bang Goes The Theory), **Tom Whyntie**, **Andrew Pontzen**, **Andrea Sella** and many more for a couple of hours of action-packed, explosive science silliness.

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Andrew Pontzen

**AUDIENCE LEVEL:** 3 **£5.00**

## SUN 9 SEP

SUN 9 SEP, 18.00 - 20.00

### SPEED SCIENCE

What happens when you take the quickfire speed dating format and invite scientists to present their cutting-edge research and digital innovation in an exciting and innovative way? Can they beat the clock and impress you to be voted the winner? You will then get the chance to hear more from the winner and join in with the lively discussion that follows. The clock's ticking!

**Venue:** Spiegeltent, King's Lawn, University of Aberdeen

**Organised by:** Speed Science and dot.rural Digital Economy Research Hub, University of Aberdeen

**AUDIENCE LEVEL:** 3 **FREE**

SUN 9 SEP, 19.00 - 23.00

### FESTIVAL FINALE: CULTURES CEILIDH

Fancy a dance? Our Festival finale frivolity kicks off at 19.00 with an eclectic exploration of Scottish and Celtic folklore, interwoven with traditional Scottish dances from **Ghillie Dhu** ceilidh band and commentary from leading archaeologists and anthropologists. At 20.30 hot foot it into our closing ceilidh knees-up with all the dance favourites and grab a delicious helping of Scottish stovies.

**Venue:** Elphinstone Hall, University of Aberdeen **5**

**Organised by:** Archaeology and Anthropology Section, British Science Association and the University of Aberdeen

**AUDIENCE LEVEL:** 2 **FREE**  
**BOOKING IN ADVANCE IS ESSENTIAL.**  
**\*STOVIES £3 AT THE VENUE.**



# FAMILY EVENTS IN THE CITY

Spend some quality time with the kids in our jam-packed programme of family-friendly events taking place around town.



Secret life of the skeleton



Superhero science



Visualise: Reloaded © science made simple 2007

## TUES 4 SEP

TUES 4 SEP, 18.00 - 19.00

### THE SCIENCE OF FIREWORKS

How do they make colours, crackles, bangs and whistles in firework displays? How does it all work? Come and find out in this behind-the-scenes look at the science of fireworks with pyrotechnician **Matthew Tosh**. Featuring real indoor fireworks, videos and stage effects, you'll be on the edge of your seat in this exciting science talk with a difference. May contain loud bangs.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Matthew Tosh and Skyburst, The Firework Company

**Supported by:** Le Maitre Ltd

**AUDIENCE LEVEL:** 1 (10+) **£5.00, CONC. £3.00**

## WED 5 SEP

WED 5 SEP, 18.00 - 19.00

### SECRET LIFE OF THE SKELETON

The skeleton is a remarkable structure, extremely light yet able to support our weight and continuously repair itself. With your help, we'll reveal its secrets in this family show brought to you by scientists from the University of Aberdeen.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Bone and Musculoskeletal Group, University of Aberdeen

**AUDIENCE LEVEL:** 1 (7+) **£5.00, CONC. £3.00**

## FRI 7 SEP

FRI 7 SEP, 18.00 - 19.00

### VISUALISE: RELOADED

A mischievous mix of physical theatre, live science demonstrations, projected images and music. Using their mastery of the laws of physics to create a world of wordless mystery, the technoclowns use everyday objects in unexpected ways, including balloons, cabbage, toilet rolls and more. The lack of language means less explanation and more exploration. Join the technoclowns to discover the world of science in our everyday lives.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** science made simple

**AUDIENCE LEVEL:** 1 (6+) **£5.00, CONC. £3.00**

## THURS 6 SEP

THURS 6 SEP, 18.00 - 19.00

### SUPERHERO SCIENCE

Can you wrestle tigers, read minds, see through walls and burn people with your laser eyes? That's the twisted (and somewhat unrealistic) dream of presenter **Matt Pritchard**. Family-friendly comedy and magic show exploring the sneaky science behind superhero powers. What's fact, what's fiction and what's feasible in the future?

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Lab Monkey Productions

**AUDIENCE LEVEL:** 1 (6+) **£5.00, CONC. £3.00**



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See the map on p49  
for city centre venues

## Booking Line:

**08456 807 207**

or visit

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

You can book in person at Aberdeen Box Office, Music Hall.

## Audience Level:

- 1 – Families
- 2 – Everyone
- 3 – All adults
- 4 – Adults with some knowledge of the topic
- 5 – Professionals

# FAMILY EVENTS IN THE CITY

Spend some quality time with the kids in our jam-packed programme of family-friendly events taking place around town.



Science misadventures: Daring demos and science stunts



Bubbles and balloons



Poking the brain

## SAT 8 SEP

### SAT 8 SEP, 10.00 - 16.00 SCIENCE IN THE QUAD

What does physics have to do with the Olympics? In the future of stargazing, how far will we be able to see? Just two questions that will be answered in a series of talks and interactive workshops for all ages at Robert Gordon College, including Marvin the cat and Milo the dog performing simple science experiments.

**Venue:** Robert Gordon's College, Schoolhill, Aberdeen, AB10 1FE **10**

**Organised by:** Institute of Physics Scotland, Robert Gordon's College and Association for Science Education

#### EVENTS AND ACTIVITIES THROUGHOUT THE DAY INCLUDE:

**20/20 Vision: the future of astronomical observation**  
Martin Hendry, University of Glasgow

**Wish You Were Here? Exoplanet Films Planetarium**  
The Royal Observatory Edinburgh

**Particle Physics for Scottish Schools**  
University of Edinburgh

**Rockets, Dragsters, Physics in the Field Marvin and Milo, What Happens Next? Flight**  
Institute of Physics

**Thermal Imaging**  
Thales, Glasgow

**Remotely Operated Vehicles**  
Robert Gordon's College and The Robert Gordon University

AUDIENCE LEVEL: 2

FREE

### SAT 8 SEP, 10.00 - 11.00 BUBBLES AND BALLOONS

Explore the best bits about bubbles and balloons. From blowing them up to bursting them, discover all the amazing things you can do in between. In this perfect introduction to science, through fun demonstrations you can gain a basic understanding of materials and their properties and have your curiosity aroused.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** science made simple

AUDIENCE LEVEL: 1 (3-11) £5.00, CONC. £3.00

### SAT 8 SEP, 10.00 - 12.00 CITIZEN SCIENCE: GET INVOLVED WITH WATER

Join in this fun event and learn how you can take part in citizen science in your own back garden. With demonstrations and interactive games, we will show you how important water is to our everyday lives.

**Venue:** Water Citizen, The Macaulay Suite, The James Hutton Institute, Craigiebuckler, Aberdeen, AB15 8HQ

**Organised by:** The James Hutton Institute

**Supported by:** RESAS

AUDIENCE LEVEL: 1

FREE

### SAT 8 SEP, 13.00 - 14.00 POKING THE BRAIN

We can learn about the workings of the human brain by poking it with unusual stimuli and seeing what comes out. That's why scientists love illusions. This show uses illusions to demonstrate the weird workings of our senses and our common sense. Join Blue Peter's science expert **Steve Mould** to explore the workings of the physical world around us with interactive demos and experiments.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Steve Mould

AUDIENCE LEVEL: 1 (7+) £5.00, CONC. £3.00

### SAT 8 SEP, 15.30 - 16.30 SCIENCE MISADVENTURES: DARING DEMOS AND SCIENCE STUNTS

Are gorillas stronger than air? Can you really walk on custard? When was science ever this much fun? BBC demo developer **Fran Scott** will answer these and more in this high-octane, fast-paced celebration of science. An explosion of daring and downright nutty demonstrations of great past scientists and large-scale science stunts that Fran designs for tv. There'll be plenty of ooohs and aahhs and a few bangs to boot!

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Fran Scott

AUDIENCE LEVEL: 1 (6+) £5.00, CONC. £3.00

# FAMILY EVENTS IN THE CITY

We advise that you pre-book your tickets, even where events are free. Visit the website [www.britishtsciencefestival.org](http://www.britishtsciencefestival.org)



Science junkie: In the zone



The weird world of really really long molecules



Jamie Gallagher

## SUN 9 SEP

SAT 8 SEP, 18.00 - 19.00

### SCIENCE JUNKIE: IN THE ZONE

This new, action-packed show explores the physiology and sports engineering that make an Olympic and Paralympic athlete a champion. BBC science presenter **Greg Foot** and astronomer and adventurer **Huw James** explore how Usain Bolt can unleash the explosive energy he needs to sprint and how Paula Radcliffe's muscles are perfectly suited to marathon running. How do sports engineers give cyclist Chris Hoy his medal-winning edge and why were high-tech swimsuits banned for London 2012?

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Science Junkie

**AUDIENCE LEVEL:** 1 (12+) **£5.00, CONC. £3.00**

SUN 9 SEP, 10.00 - 11.00

### IZZY'S INCREDIBLE ADVENTURE

Can you help Izzy on her incredible adventure? Along the way discover and explore how transport really works! Can a toaster make a hot air balloon rise? Why do space rockets need explosions? Can you make metal float? This show involves everyone in investigating the way we travel, explaining the science behind everyday transport and also the more unusual.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** science made simple

**AUDIENCE LEVEL:** 1 (3-7) **£5.00, CONC. £3.00**

SUN 9 SEP, 15.30 - 16.30

### INDESTRUCTIBLE ENERGY

Petrol, ping pong balls, calories and cookies: what do they all have in common? Energy! FameLabber **Jamie Gallagher** burns food, bounces balls and generates electricity as he shows us what energy is and why we can't create or destroy it. Explore how your body is like a combustion engine and why cars burn petrol instead of eating cookies!

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Jamie Gallagher

**Supported by:** University of Glasgow and Royal Academy of Engineering

**AUDIENCE LEVEL:** 1 (7+) **£5.00, CONC. £3.00**

SUN 9 SEP, 13.00 - 14.00

### THE WEIRD WORLD OF REALLY REALLY LONG MOLECULES

Polymers are amazingly diverse molecules. They're used in loads of clever ways. They have strange properties that are exciting to explore. This show reveals the strange workings of well-known polymers like polystyrene and the weird behaviour of unknown polymers like polyethylene oxide. Join Blue Peter's science expert **Steve Mould** to explore some high tech polymers that are shaping the modern world.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Steve Mould

**AUDIENCE LEVEL:** 1 (7+) **£5.00, CONC. £3.00**

SUN 9 SEP, 18.00 - 19.30

### THE MATHS AND COMPUTING MAGIC SHOW

Witness some amazing magic tricks and sneak behind the scenes to explore the maths and computing secrets behind them. Mathematics and computer science are behind today's technological wizardry, and help us understand our own brains! **Peter McOwan** and **Matt Parker** are both scientists and magicians, and they will be your guides to the secret world where science and conjuring meet.

**Venue:** Aberdeen Arts Centre **3**

**Organised by:** Queen Mary, University of London

**AUDIENCE LEVEL:** 1 (10+) **£5.00, CONC. £3.00**



#bsf2012



/BritishScienceFestival

# FAMILY EVENTS AT THE BEACH

Join us at the Beach Ballroom, Beach Leisure Centre and Satrosphere Science Centre for a range of fun activities.

## Cost:

Individual day pass £5.00

Group of 4 day passes £18.00

Individual weekend pass £7.50

Group of 4 weekend passes £28.00

Under 3s are free



To take part in events at the beach, just turn up on the day. You can buy a wrist band which gives you access to all events happening at the beach on the day you book. You cannot book any of the following events in advance.

## Events taking place at Aberdeen Beach Ballroom <sup>12</sup>

SAT 8 AND 9 SEP, 09.30 – 16.30

### WHICH WAY IS UP?

Presented by **Ken Farquhar**

Two British hopefuls are inspired to join the Space Race with the aim to get to the moon... one step at a time. Will they get their rockets off the ground? Will they survive basic training? This show is part comedy, part science. A Tardis full of experiments, amazing tricks and stunts.

We regret there is no disabled access to this show.

**AUDIENCE LEVEL: 2**

**TIMED SHOWS THROUGHOUT THE DAY. FIRST COME FIRST SERVED BASIS**

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### ANIMATES

Presented by **Becky Rowe**

Have you ever wondered why lizards have three eyes, why not all snakes are venomous and how you can help the planet's most endangered species? Then come and meet the Animates crew where we will introduce you to our live animal guests, sharing facts about their habitats and how to care for such amazing creatures. Working with HM Revenue and Customs, Animates brings you a showcase of seized items, many of which belong to some of the world's most endangered species.

**AUDIENCE LEVEL: 2**

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### TOP TURBINES

Presented by the **Royal Navy**

This drop-in workshop demonstrates a table top turbine, as used on the new type 45 frigates. You can design and make your own fans and measure their efficiency.

**AUDIENCE LEVEL: 2**

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### LIFE WITH MICROBES : THE GOOD, THE BAD AND THE UGLY OF THE BUG WORLD

Presented by **NovaBiotics**

In this drop-in workshop you can find out how and why we share our lives with a bewildering array of microbes. Learn how to tell the 'good bugs' from the 'bad bugs' and become a bug detective to discover which harmful microbes cause which type of infections and how these can be prevented and treated.

**AUDIENCE LEVEL: 2**

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### MOVING MATERIALS

Presented by **BP**

In this drop-in workshop you will be challenged to move a fluid material from a well at sea to a storage facility on land. You will build pumps and pipelines from simple materials. Specialist workshop leaders will be on hand to explain how the process simulates the movement of oil from the North Sea.

**AUDIENCE LEVEL: 2**

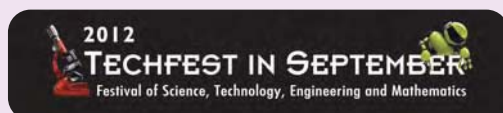
SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### ANIMAL ADAPTATIONS

Presented by **Noel Jackson**, Centre for Life

How do cheetahs run so fast yet manage to turn so quickly? How do whales dive so deep? Why do marine iguanas sneeze? This is an exciting workshop where you can help scientists do wacky experiments to explore the wonderful ways that animals are adapted to their environments. It's a must for anyone who loves wildlife.

**AUDIENCE LEVEL: 2**





# FAMILY EVENTS AT THE BEACH

Join us at the Beach Ballroom, Beach Leisure Centre and Satrosphere Science Centre for a range of fun activities.

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## BODYWORKS SPORT STATION

Presented by **Glasgow Science Centre**

Your body is amazing! Test out its flexibility, strength and endurance and find out how hard your heart and lungs work plus how you can stay healthy, in this interactive workshop experience.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## K'NEX ENGINEERING 4 ALL

Presented by **TechFest-SetPoint**

Drop in to discover the problems associated with constructing towers. Find out more about the shapes and structures that engineers use to address these problems.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## THE COSMIC DOME

Presented by **TechFest-SetPoint**

Enjoy a visit to the unique environment of the Cosmic Dome, TechFest-SetPoint's mobile planetarium. Book into one of our shows to find out why we have day and night, wonder at a sky full of stars and discover the constellations.

AUDIENCE LEVEL: 2 (6+)

TIMED WORKSHOP – BOOK ON ARRIVAL

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## THE SECRET LIFE OF SNOT

Presented by **Isabel Crane, University of Aberdeen**

Snot, what's it all about? Sometimes it's white and sometimes it's green. If you want to know more about that bogie in your nose, then this is the place for you. Come crawl through our giant nose and get up close to the green stuff itself by making your own snot to take home.

AUDIENCE LEVEL: 2 (6+)

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## FANCY FEATHERS AND NOISY NEIGHBOURS

Presented by the **Royal Society for the Protection of Birds (RSPB) Scotland**

RSPB Scotland explores the truth behind the world of bird communication. From the show-off peacock to the chorale nightingale, drop in to find out why we think birds really are brainy and how they use amazing ways to communicate just like us and play our brilliant Bowerbird game.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## FROZEN SCIENCE: LIFE AND WORK AT POLAR EXTREMES

Presented by the **UK Polar Network**

Immerse yourself in the Polar regions and discover what it's like to work and live in sub-zero temperatures. The UK Polar Network will bring you presentations, activities and equipment to demonstrate the importance of science at the Poles. Drop in and meet a team of scientists from both the Arctic and Antarctic, and hear plenty of stories to inspire you about the ends of the earth.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## THE SOLAR SPARK

Presented by the **University of Edinburgh**

Make a 'rainbow in a box' and colour in a Newton wheel to explore light and colour. Generate your own electricity from batteries made of fruit, fizzy drinks and coins. Then see how light can be used to make electricity by indulging in solar cell powered car races! This fun and interactive workshop brings together the concepts of light, energy and electricity in a novel way which can be adapted to suit all age groups.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## BEE BOTS & ROBOLAB

Presented by **Satrosphere Science Centre**

Bee Bots are programmable floor robots designed to introduce children to control technology, directional language and programming. In this workshop, everyone will work to complete a series of challenges and activities. Robolab uses sophisticated Lego Mindstorms robot buggies and icon-led Robolab software and provides us with the opportunity to discover and explore control technology. The public will be able to program the robots to move and respond to light and touch sensors.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## SUSTAINABLE SOUNDS

Presented by **Michael Freeman**

Explore the world of sound and communication through musical instruments created from recycled objects. By making and playing musical instruments from plastics, metals, cardboard and other materials you'll see discarded objects as a resource rather than waste.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

## PLAYTALKREAD: THE BIG PURPLE BUS

Presented by **The Scottish Government**

Come on board the PlayTalkRead bus with your wee one and join in the fun! There will be Bookbug sessions, play activities and lots more for under threes.

AUDIENCE LEVEL: 2



# FAMILY EVENTS AT THE BEACH

Join us at the Beach Ballroom, Beach Leisure Centre and Satrosphere Science Centre for a range of fun activities.

## Events taking place at Aberdeen Beach Leisure Centre 12

### Cost:

Individual day pass £5.00

Group of 4 day passes £18.00

Individual weekend pass £7.50

Group of 4 weekend passes £28.00

Under 3s are free



SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### THE ART OF EVOLUTION

Presented by the **Biochemical Society** and the **Society of Biology**

This exhibition stand illustrates Charles Darwin's theory of evolution. Discover different ideas about evolution and creation and see a huge range of species found in nature.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### PLASTICS "R" FANTASTIC

Presented by the **Sustainable Communities Initiative**

Have fun whilst being creative with waste. Try your hand at transforming used plastic drinks bottles into flowers, windmills, birdfeeders and rockets.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### THE REAL SCIENCE OF THE CIRCUS

Presented by **James Soper**

Join **James Soper**, a professional circus performer, to see spectacular juggling and balancing tricks. Find out how forces work and combine when real circus performers show off their skills.

AUDIENCE LEVEL: 2

TIMED SHOWS THROUGHOUT THE DAY.  
FIRST COME FIRST SERVED BASIS

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### "CAR BOOT" SCIENCE

Presented by the **University of Aberdeen** and **TechFest-SetPoint**

The "Car Boot" science team are returning with an exciting and engaging take on the physics of the world around us. Come and see everyday objects be used in a way you have never seen before.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### ANIMAL ENCOUNTERS

Presented by **Mr Bug**

Join presenter **Mr Bug** and bring your family face to face with small, friendly animals from around the world, book into our informative show and meet cockroaches, snails, snakes and lizards and find out about their lives in the wild.

AUDIENCE LEVEL: 2 (6+)

TIMED WORKSHOP - BOOK ON ARRIVAL

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### CLINICAL SKILLS AND TEDDY BEAR HOSPITAL

Find out how to fix broken bones and see some of the replacement joints that are used to help people become mobile again. Why not bring your teddy bear to the teddy bear hospital for a check up, and watch the doctors in the operating theatre as they help a teddy bear get better.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30

### TODDLIFEST: WEATHER WATCHERS

A hands-on weather workshop for younger children looking at measuring, recording and identifying patterns in the various forces of nature. Find out why the weather changes with seasons, how to record weather and how the weather affects you.

AUDIENCE LEVEL: 2





SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**TODDLIFEST: KID K'NEX DINOSAURS**

This workshop is designed to introduce younger children to the fascinating world of engineering design. Drop in to develop your construction skills and build up your creative confidence.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**GREEN SCREEN**

Presented by the **Robert Gordon University, School of Computing**

Use computer generated imagery (CGI) to transport yourself to another world. Past, present, future or extraterrestrial. Where will your imagination and our technology take you?

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**ON A ROLL: MARBLE SCIENCE**

Presented by **Shell Education Service**

Take part in activities themed around investigating marbles, helping to develop investigative skills. Participate in investigations to find out more about floating, sinking, friction and movement, and three different problem-solving activities involving topics such as separation techniques, friction and structures.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**GIANT PANTOGRAPH**

Presented by **Nick Sayers**

Pairs of participants are invited to lie down while their partner traces around them with a two metres long pantograph drawing machine. Through the magic of maths and mechanics, their outline is scaled down to one sixth size and drawn onto a sheet of paper.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**MADLAB**

Presented by **Madlab Ltd**

Discover the secrets of soldering and make your own working electronic gadget.

AUDIENCE LEVEL: 2

KITS FROM £3

SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**INVESTIGATING INKS**

Presented by **TechFest-SetPoint**

In this CREST Star Investigators workshop, help the detectives to match the ink from the ransom note to one of the suspects' pens. Learn how chromatography can be used to separate and identify all sorts of substances. Be Sherlock Holmes and use your investigative skills to solve the crime.

AUDIENCE LEVEL: 2

KITS FROM £3

SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**POWERING THE FUTURE**

Presented by **Robert Gordon University, School of Engineering**

With growing populations and diminishing supplies of fossil fuels, the energy supplies used by our communities in the future will be much more varied. Come and learn about different renewable energy sources through a range of hands-on activities.

AUDIENCE LEVEL: 2

**Wristbands on sale at the Beach Ballroom, Beach Leisure Centre and Satrosphere Science Centre.**

SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**GIFTED AND TALENTED PROGRAMME**

Presented by **Saudi Aramco**

Saudi Aramco is a powerhouse of technology innovation, supporting the Kingdom's Gifted and Talented Programme. Over the family weekend, four teenage students from the Programme will showcase their inventions and discuss what science means to them – with the aim of inspiring other young people.

AUDIENCE LEVEL: 2

SAT 8 AND SUN 9 SEP, 09.30 – 16.30  
**ENGINEER'N' OUR LIVES**


Presented by **Live Wire Productions**

Did you know that by playing with bricks, learning to draw, making models, solving problems and measuring, children are learning some of the same skills that engineers need to build our homes and roads, to grow our food, make our clothes and everything else we need to live? Come and work with some of these engineers and discover who these people are and why they are the engineers in our lives.

AUDIENCE LEVEL: 2

**Satrosphere Science Centre**

MON 3 – SUN 9 SEP  
**SHELL: ENERGY**

Presented by **Shell at Satrosphere** 

You can't see it or touch it... but you can play with it as you'll discover with Shell at Satrosphere. Find out how Shell is working to ensure a better future. Come and find out how much energy you can create by dancing. Change gas into a liquid and use it to power a car. Get involved in energy challenges and competitions and win some cool prizes. We look forward to seeing you there – full of energy.

AUDIENCE LEVEL: 2



# TRIPS AND TOURS

Get out and about with our programme of excursions and walking tours.



Simulation training in oil and gas industry



Ten KM under the sea: Oceanlab



Scotlands molten forts: Discovering the prehistory of Aberdeen

## TUES 4 SEP

TUES 4 SEP, 13.15 - 16.45

### MACKIES OF ROTHENORMAN

The Mackie family have been farming at Westertown since the turn of the century formerly as a milk retail company but now ice cream is currently the main focus of the business employing 70 staff and producing over 10 million litres of luxury ice cream per year. During your trip you will be able to walk through the byre, see how robotic milking operates, visit the calf shed with its calves of one day to six months old and take a turn round the feed shed before visiting the byre office for a treat.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** University of Aberdeen, Mackies of Rothenorman and Pam Wells Ltd

**AUDIENCE LEVEL:** 2

**£5.00**

## WED 5 SEP

WED 5 SEP, 09.30 - 17.30

### TEN KM UNDER THE SEA: OCEANLAB

Take a tour around the University of Aberdeen's OceanLab, the world's first purpose built oceanlander laboratory, providing state of the art equipment which allows scientists to explore the deep ocean. Hear from scientists conducting cutting-edge research from around the world and celebrate marine science with tours, demonstrations and short presentations on topics including the open ocean and life in the deepest places on Earth.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** Marinelab and Oceanlab, University of Aberdeen

**AUDIENCE LEVEL:** 2

**£5.00**

WED 5 SEP, 10.00 - 12.00, 13.00 - 15.00, 15.30 - 17.30

### SIMULATION TRAINING IN OIL AND GAS INDUSTRY

Take a tour of Aberdeen College and ASET's world-leading, fully functioning oil and gas platform which replicates an offshore platform in a safe environment by pumping water and air. The plant is equipped with the latest control room technology. See the plant in action and find out the career opportunities available in the oil and gas production industry.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** ASET International Oil and Gas Training Academy and Aberdeen College

**AUDIENCE LEVEL:** 4

**£5.00**

WED 5 SEP 10.00, 14.00 AND 18.00 AND SAT 8 SEP 10.00, 14.00 AND 16.00

### DISCOVER MORE, RECOVER MORE: UNEARTHING THE SECRETS OF THE OIL AND GAS INDUSTRY

How does a company like BP find and produce oil and gas from rocks deep beneath the North Sea. Find out what it's like to live on a platform in the middle of the world's most hostile environment. See some of the technology used to keep the oil and gas flowing. On this 90 minute tour of the BP North Sea Headquarters you will visit our Highly Immersive Visual Environment, talk to a real control room offshore and meet some of our experts.

**Venue:** BP North Sea HQ, Wellheads Avenue, Dyce, AB21 7PM

A limited number of places are available and pre-booking is essential. For tickets email [bpnorthseaevents@uk.bp.com](mailto:bpnorthseaevents@uk.bp.com) stating the date and time of the session you wish to attend and how many tickets you require. Closing date for tickets: 23rd August 2012. Successful applicants will be required to register and provide personal information including full name, home address, date of birth, etc in advance.

**Organised by:** BP

**AUDIENCE LEVEL:** 2

**FREE**

## Booking Line:

**08456 807 207**

or visit

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

You can book in person at Aberdeen Box Office, Music Hall.

Don't miss the bus!  
Please arrive 15 minutes before start times at pick up point



# TRIPS AND TOURS

For more information  
and to book visit  
[www.britisheciencefestival.org](http://www.britisheciencefestival.org)

## THURS 6 SEP

THURS 6 SEP, 13.00 - 18.00

### SCOTLAND'S MOLTEN FORTS: DISCOVERING THE PREHISTORY OF ABERDEENSHIRE

Never mind bricks and mortar, some ancient inhabitants of Scotland built stone ramparts and set fire to surrounding timbers, producing a solid wall. On this field trip, visit a fine example of such a 'vitrified' hillfort, Dunnideer in Aberdeenshire, and discover how and why it was constructed. Also visit other nearby prehistoric monuments and consider how the landscape developed over time.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** Anthropology and Archaeology Section, British Science Association

**AUDIENCE LEVEL: 2** **£5.00**

Coach pick up point  
shown on the map  
on p48

#### Audience Level:

- 1 – Families
- 2 – Everyone
- 3 – All adults

## FRI 7 SEP

FRI 7 SEP, 08.45 - 17.00

### RENEWABLE ENERGY: PAST, PRESENT AND FUTURE IN NORTH-EAST SCOTLAND

Join us on a discussion tour of locations in North-East Scotland used for renewable energy, past, present and future. Hear about community and farmer-led developments of wind energy in Udry and Auchnagatt and the use of micro-hydro and biomass at Haddo House. We will also stop on the coast to discuss opportunities for marine renewables. Lunch and refreshments provided.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** The James Hutton Institute

**Supported by:** RESAS

**AUDIENCE LEVEL: 4** **£5.00**

FRI 7 SEP, 10.00 - 12.30

### ABERDEEN HARBOUR

Aberdeen Harbour is the marine support centre for the energy sector in the North Sea and the Atlantic margin and is also the principal commercial port serving the North of Scotland. Take a coach tour of the harbour and see first-hand the port's many activities and the on-going development of new facilities. Visit the port's Marine Operations Centre where you can pilot a vessel into and around the port using the ship's bridge simulator.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** University of Aberdeen, Aberdeen Harbour Board and Pam Wells Ltd

**AUDIENCE LEVEL: 2** **£5.00**

- 4 – Adults with some knowledge of the topic
- 5 – Professionals

## SAT 8 SEP

SAT 8 SEP, 10.00 - 12.00

### SENSE-WALKING

Our senses help most of us navigate the world but we rarely think about the environmental clues they provide. Begin this session indoors, discussing how we perceive landscape, seascape and weather through different senses. Walk to Aberdeen beach, talking about what we see, hear, touch and smell, considering how our view of the world alters in the open air.

**Venue:** Seminar room 707, New Library, University of Aberdeen 1

**Organised by:** University of Aberdeen, Anthropology and Archaeology Section, British Science Association

**AUDIENCE LEVEL: 2** **£5.00**



Aberdeen harbour

SAT 8 SEP, 11.00 - 13.00

### BLOOD, BRAINS, BABIES AND OIL: MEDICINE IN ABERDEEN

Explore Aberdeen's rich medical history, and some of the city's hidden stories of death and disease, in the company of Wellcome Trust Engagement Fellow and medical historian **Richard Barnett**. This walk will also be available to download as a free smartphone app.

**Venue:** Meet at the New Library, University of Aberdeen 1

**Organised by:** Medical Sciences Section, British Science Association

**AUDIENCE LEVEL: 2** **£5.00**

Supported by



/BritishScienceFestival



#BSF2012

# TRIPS AND TOURS

For more information  
and to book visit  
[www.britishsciencefestival.org](http://www.britishsciencefestival.org)



Whisky on the rocks



Exploring forests with new eyes



The northern past: Bloody Bennachie

## SAT 8 SEP

SAT 8 SEP, 12.00 - 18.00

### WHISKY ON THE ROCKS

Water of life, more commonly known as whisky, relies on a complicated production process to define its flavour. This trip will combine visits to local geological sites with a trip to a distillery to explore the role geology plays. Our guide, geologist **Steve Cribb**, is a Blue Badge member of the Scottish Tourist Guides Association, and has been sharing the delights of Scottish life and landscape with visitors for over 30 years.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** Geology Section, British Science Association and Pam Wells Ltd.

**AUDIENCE LEVEL:** 3    **£10 (INCLUDES WHISKY TASTING)**

SAT 8 SEP, 13.00 - 18.00

### EXPLORING FORESTS WITH NEW EYES

Join us on a guided walk through Tyrebagger Forest on the edge of Aberdeen, where creativity and ecology merge. View the public art works with the artists who contributed to them, and see how artists and anthropologists are working alongside each other to explore why forests make such inspiring landscapes.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** University of Aberdeen and Anthropology and Archaeology Section, British Science Association

**AUDIENCE LEVEL:** 2    **£5.00**

## SUN 9 SEP

SUN 9 SEP, 08.00 - 17.30

### CROMARTY LIGHTHOUSE FIELD STATION TOUR

Take a trip on the Moray Firth to see local marine wildlife and hear how scientists and artists have collaborated to promote the understanding of marine research. After the boat trip, take a tour of the Lighthouse Field Station where **Paul Thompson** will tell you all about the marine research undertaken by the University of Aberdeen. Artists **Mark Lyken** and **Stephen Hurrell** present new artwork supported by Creative Scotland.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** Lighthouse Field Station, University of Aberdeen and Pam Wells Ltd

**AUDIENCE LEVEL:** 3    **£25.00**

SUN 9 SEP, 13.00 - 17.30

### THE NORTHERN PAST: BLOODY BENNACHIE

Is Bennachie the site of Mons Graupius, one of the Roman conquests of the North's largest and bloodiest conflicts? Nearly two thousand years later, what caused the tension between the crofter colonists and landowners? On this field trip, explore how the University of Aberdeen's Bennachie Community Archaeology project reveals 19th century, medieval, Roman and even prehistoric use of this mountain landscape.

**Venue:** Coach pick up point, University of Aberdeen

**Organised by:** University of Aberdeen and Anthropology and Archaeology Section, British Science Association

**AUDIENCE LEVEL:** 2    **£5.00**



@BritishSciFest



/BritishScienceFestival

Don't miss the bus!  
Please arrive 15  
minutes before start  
times at pick up point

Booking Line:

**08456 807 207**

or visit

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)

You can book in person at Aberdeen  
Box Office, Music Hall.

Supported by



# ABERDEENSHIRE AND BEYOND

See what's happening outside of Aberdeen and across Scotland.



Bubbles and balloons



Wish you were here? Searching for exoplanets



Sharking around at Macduff Marine Aquarium

## TUES 4 SEP

TUES 4 SEP, 19.00 - 21.00

### SMARTER PHONES ENABLING A SMARTER COUNTRYSIDE?

The current generation of smartphones combine incredible computing power with sophisticated sensors in a lightweight package. What does this mean for rural communities? See demonstrations of how these technologies can deliver innovative new services and hear **Chris Burnett** discuss work the University of Aberdeen's dot.rural and TRUMP Digital Economy are doing. Explore how smart phones may enable a smarter countryside in realms as diverse as culture, conservation, enterprise, health and transport.

**Venue:** Woodend Barn, Banchory, Aberdeenshire, AB31 5QA

**Organised by:** dot.rural Digital Economy Research Hub, University of Aberdeen

**AUDIENCE LEVEL:** 3 **£3.00**

## WED 5 SEP

WED 5 SEP, 19.00 - 21.00

### WISH YOU WERE HERE? SEARCHING FOR EXOPLANETS

See two short, engaging documentary films. Followed by star gazing (weather permitting). See page 14.

**Venue:** Woodend Barn, Banchory, Aberdeenshire, AB31 5QA

**Organised by:** Royal Observatory Edinburgh, University of St Andrews and University of Edinburgh

**Supported by:** STFC

**AUDIENCE LEVEL:** 2 **£3.00**

## FRI 7 SEP

FRI 7 SEP, 18.30 - 21.30

### FUTURE OF FOOD

Join nutritionist **Alexandra Johnstone** and head chef **John McInnes** for an entertaining evening of eating and conversation on the future of food. Find out what makes a sustainable diet, where our food comes from and how we can use novel ingredients to produce healthy and tasty meals. Following a cookery demonstration, a three-course dinner gives you the chance to exchange ideas and have lively discussion.

**Venue:** Baxters of Fochabers, IV32 7LD

**Organised by:** Rowett Institute of Nutrition and Health and Baxters of Fochabers

**AUDIENCE LEVEL:** 3 **£15.00**

FRI 7 SEP, 19.00 - 20.00

### SECRET LIFE OF THE SKELETON

The skeleton is a remarkable structure, extremely light yet able to support our weight and continuously repair itself. See page 29.

**Venue:** Acorn Centre, Inverurie, Aberdeenshire, AB51 3SA

**Organised by:** Bone and Musculoskeletal Group, University of Aberdeen

**AUDIENCE LEVEL:** 1 (7+) **£3.00**

## SAT 8 SEP

SAT 8 SEP, 11.00 - 17.00

### SHARKING AROUND AT MACDUFF AQUARIUM

Visit Macduff Marine Aquarium to get up close to some fishy friends from the Moray Firth. A fish feeding show at 14.00 will be followed by a guest talk from **Les Noble** at 15.00. Learn all about white sharks in the Mediterranean, where they come from, how they got there, and how endangered they are.

**Venue:** Macduff Marine Aquarium, AB44 1SL

**Organised by:** University of Aberdeen and Macduff Marine Aquarium

**AUDIENCE LEVEL:** 2 **£2.45 - £4.75**

**RECEIVE THIS DISCOUNT BY PRE-BOOKING ON 01261 833369.**

SAT 8 SEP, 18.00 - 19.00

### BUBBLES AND BALLOONS

Explore the best bits about bubbles and balloons. See page 30.

**Venue:** Mearns Community Centre, Laurencekirk, Aberdeenshire, AB30 1BL

**AUDIENCE LEVEL:** 1 (3-11) **£3.00**

## SUN 9 SEP

SUN 9 SEP, 18.00 - 19.00

### IZZY'S INCREDIBLE ADVENTURE

Can you help Izzy on her incredible adventure? See page 31.

**Venue:** Victoria Hall, Ellon, AB41 9AY

**Organised by:** science made simple

**AUDIENCE LEVEL:** 1 (3-7) **£3.00**

# ABERDEENSHIRE AND BEYOND

For more information  
and to book visit  
[www.britishtsciencefestival.org](http://www.britishtsciencefestival.org)

## EVENTS AROUND SCOTLAND ORGANISED BY BRITISH SCIENCE ASSOCIATION BRANCHES

20 AUG - 29 SEP, MON - FRI  
10.00 - 18.00, SAT 9.30 - 17.00

### EXHIBITION - DUNDEE AND SCIENCE: THEN AND NOW (1912-2012)

In September 1912 Dundee hosted a meeting of the world's greatest scientific minds, the Annual Meeting of the British Association for the Advancement of Science. This exhibition showcases the history of Dundee in 1912, and asks what has changed after a century of city life and scientific advancement. You can meet scientists in the exhibition from 11.00 - 16.00 on Saturday 1 Sep.

**Venue:** Dundee Central Library, The Wellgate, Dundee, DD1 1DB

**Organised by:** Tayside and Fife Branch, British Science Association

**AUDIENCE LEVEL: 2**

**FREE**

T: 01382 431500

WED 5 SEP 18.30 - 21.30

### DUNDEE AND SCIENCE: THEN AND NOW (1912-2012)

How has science changed over the past century? Do we still think the same things or has each idea been dismissed? Join us for an evening of entertaining short talks where local scientists will compare and contrast the science of 1912 and 2012. Marvel as some of the scientists seem to have predicted the future whilst others got it hopelessly wrong!

**Venue:** D'Arcy Thompson Lecture Theatre, Tower Building, University of Dundee, Dundee, DD1 4HN

**Organised by:** Tayside and Fife Branch, British Science Association

**BOOKING INFORMATION: FREE,  
NO BOOKING REQUIRED**

#### Audience Level:

1 - Families

2 - Everyone

3 - All adults

WED 5 SEP, 11.00 - 16.00

### ALL AT SEA

Ever since we first set sail on the high seas, the challenges of communicating over the vast expanses of water have produced some innovative and brilliant solutions. From semaphore to satellites, and radio to radar, find out how technology revolutionised life on the ocean waves.

**Venue:** Museum of Communication, 131 High Street, Burntisland, Fife, KY3 9AA

**Organised by:** Museum of Communication and British Science Association Edinburgh & SE Scotland Branch

**AUDIENCE LEVEL: 2**

FRI 7 SEP, 10.00 - 16.00

### FROM SEEING TO BEING

What makes us human? This question has always challenged philosophers and scientists. All aspects of our personalities are determined by a range of factors including our biology and the world we grow up in. Join us to explore what makes you, you.

**Venue:** University of St Andrews, KY16 9AJ

**Organised by:** St Andrew's Branch, British Science Association

**AUDIENCE LEVEL: 2**

**BOOKING NOT REQUIRED BUT QUERIES  
SHOULD BE DIRECTED TO PAUL GARDNER,  
PLG@ST-ANDREWS.AC.UK**

4 - Adults with some  
knowledge  
of the topic

5 - Professionals

SAT 8 SEP

### KNEX AND LEGO MINDSTORMS PROGRAMMING DAY

Spend the day making programmable models from Lego and KNet.

**Venue:** Castlehill Heritage Centre, KW14 8TG

**Organised by:** Caithness Branch, British Science Association

**AUDIENCE LEVEL: 1**

**FREE**

**FOR MORE INFORMATION VISIT  
[WWW.CAITHNESS-SCIENCE.ORG](http://WWW.CAITHNESS-SCIENCE.ORG)**

MON 10 SEP, 19.30 - 21.30

### CLIMATE CHANGE: THE GREAT DEBATE

The Earth's climate is changing, but are we the cause? The arguments have been fierce. Two speakers from each side debate, with lawyers cross-examining them under the watchful eye of a jury, with a final vote to come from the audience as well.

**Venue:** King Street Halls, Kirkwall, KW15 1JF

**Organised by:** Kirkwall Moray and Highlands Branch, British Science Association, Drever and Heddle and Stromness Debating Society

**AUDIENCE LEVEL: 3**

**£4.00, CONC. £2**

**SEE [WWW.OISF.ORG](http://WWW.OISF.ORG) FOR MORE DETAILS  
AND BOOKING.**

Visit **[britishscience  
association.org/regions](http://britishscienceassociation.org/regions)**  
to find out how you  
can get involved in  
your local branch



# DROP-IN ACTIVITIES AND EXHIBITIONS

There's an array of exhibitions around Aberdeen that you can drop into at your leisure.



Food stories

Day at the Zoology Museum and Cruickshank Gardens

SAT 25 AUG - SUN 16 SEP, MON - FRI  
11.00 - 16.00 AND SAT - SUN 10.00 - 16.00

## FABRIC OF THE LAND

A series of exhibitions exploring links between art and science brought to you by the Geology and Petroleum Geology Department at the University of Aberdeen.

**Venue:** Meston Building, Lab 118, University of Aberdeen <sup>3</sup>

**Organised by:** We Are Smart Consultants and Geology Department, University of Aberdeen

AUDIENCE LEVEL: 3

FREE

SAT 1 SEP - SAT 10 NOV, MON - THURS,  
10.00 - 19.00; FRI & SAT, 10.00 - 17.00;  
SUN, 12.00 - 16.00

## PHARMACOPOEIA

Discover rare and fascinating manuscripts and archives that demonstrate some of the earliest recorded understanding of the natural sciences - a history of health. Illustrated and annotated, the documents explore the study of the medicinal qualities of plants in the treatment of disease, making links with the contemporary scientific research and practice.

**Venue:** Gallery, New Library, University of Aberdeen <sup>1</sup>

**Organised by:** University of Aberdeen

AUDIENCE LEVEL: 2

FREE

TUES 4 SEP - SUN 9 SEP, 10.00 - CLOSE

## SHAPING THE FUTURE

See our exciting poster display showcasing different areas of research undertaken at the University of Aberdeen. Topics range from marine science to depression and global trade to high risk surgery. This special poster display has been created to present various University research projects and has been specially designed for the British Science Festival 2012.

**Venue:** Elphinstone Hall, University of Aberdeen <sup>5</sup>

**Organised by:** University of Aberdeen

AUDIENCE LEVEL: 2

FREE

TUES 4 SEP - SUN 9 SEP, 10.00 - 17.00

## TREASURE TRAIL: AU'S HIDDEN GEMS

Take your brain off the beaten track and have some fun with the AU Science Magazine team. Explore hidden Aberdeen, and find out about past and present science and scientists from Aberdeen. The trail runs throughout August as well as during the Festival, when we will announce the winner. Fun for all the family. You can complete the trail in one go, or over a period of time.

**Venue:** Aberdeen City Centre. Get started by picking up clues from the Belmont Cinema <sup>6</sup>

**Organised by:** British Science Association Aberdeen Branch and AU Magazine Team

AUDIENCE LEVEL: 2

FREE

TUES 4 SEP - SUN 14 OCT, 10.00 - 17.00

## INTUITION AND INGENUITY: CELEBRATING THE LIFE OF ALAN TURING

Art meets the computer in this celebration of Alan Turing. Turing invented the digital computer, helped to decode the Enigma machine and founded the science of artificial intelligence. This exhibition explores the enduring influence of Turing on art and contemporary culture, featuring a group of outstanding British artists whose work responds directly to Turing's life and work.

**Venue:** Georgina Scott Sutherland Library, Robert Gordon University, Garthdee Campus, Aberdeen, AB10 7QE

**Organised by:** Robert Gordon University

AUDIENCE LEVEL: 2

FREE

TUES 4 SEP, 10.00 - 19.30,  
WED 5 SEP - SUN 9 SEP, 10.00 - 16.00

## FOOD STORIES

This exhibition explores what we eat and why. Objects from the University Museums tell fascinating stories about the different ways in which people across the world obtain, prepare and eat their food, showing the cultural and environmental issues which shape our food choices. Food stories is a treat for the senses with a soundscape and scent jars adding to the visual feast.

**Venue:** King's Museum, 17 High Street, Old Aberdeen, AB24 3EE

**Organised by:** University of Aberdeen Museums and the Rowett Institute of Nutrition and Health

**Supported by:** The Nutrition Society

AUDIENCE LEVEL: 2

FREE

# DROP-IN ACTIVITIES AND EXHIBITIONS

There's an array of exhibitions around Aberdeen that you can drop into at your leisure.

TUES 4 SEP - SUN 9 SEP, 10.00 - 16.00

## MEET THE BRITISH SCIENCE ASSOCIATION

Why not drop by and visit the British Science Association stand. Meet our staff and volunteers who will be sharing their passion for science with you. Find out how to get involved in local science events, get free education resources and have some sciencey fun.

**Venue:** New Library, University of Aberdeen ①

**Organised by:** British Science Association

**AUDIENCE LEVEL:** 2

**FREE**

TUES 4 SEP - SUN 9 SEP, 10.00 - 16.00

## DISCOVER MORE, RECOVER MORE: THE APPLICATION OF SCIENCE IN THE OIL AND GAS INDUSTRY

The oil and gas industry relies on the application of maths, science and engineering on a daily basis. Come along to this interactive exhibition to find out more about how we apply science and technology to help us discover and produce oil and gas efficiently for the needs of today's society.

**Venue:** Cowdray Hall, Schoolhill, AB10 1SQ ⑧

**Organised by:** BP

**AUDIENCE LEVEL:** 4

**FREE**

TUE 4 SEP - FRI 7 SEP 10.00 - 17.30

## SCIENCE ON A PLATE

Do you know where the food on your plate comes from? Or who was involved in producing it? What is good for you and what isn't? Find out about our food and science from six of Scotland's leading research institutes at the science on a plate interactive market stalls.

**Venue:** The Academy Shopping Centre, Schoolhill, Aberdeen, AB10 1LB ⑬

**Organised by:** Royal Botanic Gardens Edinburgh

**Supported by:** James Hutton Institute, Marine Scotland, Moredun Research Institute, Rowett Institute of Nutrition and Health and the SAC

**Sponsored by:** The Scottish Government

**AUDIENCE LEVEL:** 2

**FREE**

TUE 4 SEP, 10.00 - 16.00

## I HEARD IT ON THE GRAPEVINE: THE SOCIAL EVOLUTION OF INFORMATION

We learn much of the knowledge we have from other people and in turn pass on this information to others. This exhibition explores what happens to knowledge as it is passed from the mind of one person to the mind of another person. Does it stay the same? Does it change? If it changes, can we predict how it changes?

**Venue:** New Library, University of Aberdeen ①

**Organised by:** Person Perception Lab, University of Aberdeen

**AUDIENCE LEVEL:** 2

**FREE**

TUES 4 SEP, 10.00 - 16.00

## ENERGISING THE PUBLIC: HOW ENERGY SHOULD BE SUPPLIED AND USED IN THE FUTURE

Energy issues are increasingly front-page news and have huge impacts on our lives. This interactive exhibition encourages you to think about critical social and environmental issues associated with how energy is and should be supplied and used. Featuring a dynamic web-tool to allow you to make decisions about how to meet our energy needs for 2050 while also reaching 80% CO<sub>2</sub> reduction targets. You can watch vox pops videos and see posters showing research findings on how we use and understand energy.

**Venue:** New Library, University of Aberdeen ①

**Organised by:** Cardiff University

**AUDIENCE LEVEL:** 2

**FREE**

TUES 4 SEP, 10.00 - 16.00

## FROM FERROFLUID TO FLUBBER: PHYSICAL ATTRACTION IN THE LIQUID STATE

Come and explore the mysterious and beautiful worlds of liquid crystals, magnetic fluids, liquid body armour, ionic liquids and find out how to make elephant's toothpaste.

**Venue:** New Library, University of Aberdeen ①

**Organised by:** Chemistry Section, British Science Association

**Supported by:** Chemical Physics Section, Imperial College London and D30 lab

**Sponsored by:** EU (FP7) and EPSRC

**AUDIENCE LEVEL:** 3

**FREE**

WED 5 SEP AND

THURS 6 SEP, 10.00 - 16.00

## PSYCHOLOGICAL SCIENCE OBSERVATORY

Experience cutting-edge psychological research. View demonstrations and experience psychological effects. It's your chance to take part in some contemporary psychological studies.

**Venue:** New Library, University of Aberdeen ①

**Organised by:** Psychology Section, British Science Association and University of Glasgow

**Supported by:** British Psychological Society

**AUDIENCE LEVEL:** 2

**FREE**

### Audience Level:

1 – Families

2 – Everyone

3 – All adults

4 – Adults with some knowledge of the topic

5 – Professionals



THURS 6 SEP 10.30 - 15.00  
FRI 7 SEP 10.30 - 16.30  
SAT 8 SEP, 10.30 - 15.00

### STRICTLY ENGINEERING

Strictly Engineering is a poster exhibition to spark conversations about how engineering affects our lives and celebrates the world-class engineering going on in the UK. Meet interesting engineers and have a chat about their work and what it means to you. Don't forget to vote for the one you liked the most!

**Venue:** Elphinstone Hall, University of Aberdeen **5**

**Organised by:** British Science Association

**Supported by:** Royal Academy of Engineering

AUDIENCE LEVEL: 2

FREE

FRI 7 SEP, 10.00 - 16.00

### SEEING IS BELIEVING

An interactive exhibition aimed at those with little or no active experience of investigatory science. Based on Hugh Miller's advice to learn to make the right use of your eyes, this is a fun exhibition about art and the power of observation. There are puzzling things to see and practical things to do.

**Venue:** New Library, University of Aberdeen **1**

**Organised by:** National Trust for Scotland (Hugh Miller's Birthplace Cottage and Museum)

AUDIENCE LEVEL: 2

FREE

FRI 7 SEP, 10.00 - 16.00

### THE SIGHTS AND SOUNDS OF MRI

This is your chance for a rare insight into MRI, from the underlying physics to measuring functional brain activity and imaging the digestive tract. Get hands-on and learn how to use MRI as an investigative tool, have a go at functional tasks and read scans. Come along and learn all about MRI from a Nobel Prize-winning department.

**Venue:** New Library, University of Aberdeen **1**

**Organised by:** The Sir Peter Mansfield Magnetic Resonance Centre, The University of Nottingham

AUDIENCE LEVEL: 2

FREE

SAT 8 SEP, 10.00 - 17.00

### DAY AT THE ZOOLOGY MUSEUM AND CRUICKSHANK GARDENS

Drop in to the Zoology Building for a range of fun and interactive activities including demonstrations on DNA and protein, come and see our soil market stalls in the Cruickshank Gardens and visit Aberdeen City Council's Waste Aware Bus to explore the science behind our everyday waste. There will be many more exciting workshops for all ages.

**Venue:** Cruickshank Gardens and Zoology Building, University of Aberdeen **13**

**Organised by:** University of Aberdeen

AUDIENCE LEVEL: 2

SAT 8 SEP, 10.00 - 16.00  
(SOME BUILDINGS OPEN FOR TOURS ONLY)



### DOORS OPEN DAY

Doors Open Day is Scotland's largest architectural event co-ordinated by the Scottish Civic Trust. The event allows access to hundreds of buildings across Scotland which are normally closed to the public. The full programme is available from August.

**Venue:** Various venues

**Organised by:** Aberdeen Doors Open Day Committee

AUDIENCE LEVEL: 2

FREE

VISIT [WWW.ABERDEENCITY.GOV.UK](http://WWW.ABERDEENCITY.GOV.UK)

SAT 8 SEP, 13.00 - 14.00 AND  
SUN 9 SEP, 13.00 - 14.00

### GIGANTIC BUBBLE RECORD ATTEMPT

Using a pair of fishing rods and a long loop of string, we will attempt to make a soap film and let the wind draw it out into a large spherical bubble. We're aiming for a Scottish record but if conditions are just right, the world record (a 4000 cubic feet bubble) is possible. You will have the chance to make bubbles with similar equipment.

**Venue:** Outside Aberdeen Arts Centre **3**

**Organised by:** Bubblestrings

AUDIENCE LEVEL: 2

FREE

No need to book for drop-in  
activities and exhibitions

*Year of Creative  
Scotland 2012*



@BritishSciFest



/BritishScienceFestival

# DROP-IN ACTIVITIES AND EXHIBITIONS

For more information  
and to book visit  
[www.britishsiencefestival.org](http://www.britishsiencefestival.org)

SAT 8 SEP, 10.00 - 16.00

## DNA: DEAD OR ALIVE

Come and see our exciting interactive exhibit on DNA. From its application in medicine and nutrition to its use in forensic science, you can take part in quizzes and laboratory workshops to gain a better understanding of this wonderful molecule. Recover and extract DNA from fruits to forensic evidence.

**Venue:** Robert Gordon University, St. Andrew Street, AB25 1HG 

**Organised by:** School of Pharmacy and Life Sciences, Robert Gordon University


AUDIENCE LEVEL: 2

FREE

SAT 8 SEP, 10.00 - 16.00

## FAT BODY SLIM: SHAPE MATTERS

What shape are you and why does it matter? Join us to discover more about the work of a scientist and explore the link between obesity and chronic health problems like heart disease, cancer and diabetes. Discover more about body shape and body fat in our interactive quiz and try on a fat suit.

**Venue:** Robert Gordon University, St. Andrew Street, AB25 1HG 

**Organised by:** Robert Gordon University and Northumbria University

AUDIENCE LEVEL: 2

FREE

SAT 8 SEP, 10.00 - 16.00

## CLUSTER: AURORA EXPLORER

Earth is protected from solar radiation by its magnetic field, which interacts with the Sun's magnetic field. This interaction causes the aurora, or Northern Lights. Learn how UK instruments on ESA's Cluster spacecraft are helping us understand the aurora, see artificial aurora in our planetarium and see how electric currents flowing in space help shape our magnetic shield.

**Venue:** King's College Conference Centre, University of Aberdeen 

**Organised by:** UCL and Imperial College London, University of Leicester, Lancaster University and RAL Space

AUDIENCE LEVEL: 2

FREE

SAT 8 SEP AND SUN 9 SEP, 10.00 - 16.00

## CULTURE EVOLVES

Does culture separate humans from the rest of nature? No! Discover the roots of culture in apes, meerkats and other animals, and how cultures evolve. Try learning a chimp tradition, build 'spaghetti towers' or shape a new language. This hands-on exhibit was selected for the Royal Society's Summer Exhibition, showcasing cutting-edge science for audiences of all ages.

**Venue:** New Library, University of Aberdeen 

**Organised by:** University of St Andrews and Universities of Edinburgh, Stirling and Cambridge

AUDIENCE LEVEL: 2

FREE

SAT 8 SEP, 10.00 - 16.00

## VISION VIBES

Although visual experience seems unitary and coherent, it is actually based on discrete sensations of lightness, colour, motion and depth. Furthermore, our actions and whole-body experience influence what we see. If you are interested in perception, come to this exhibition to see how vision works across contexts - from purely sensory-driven and static, to active and multisensory.

**Venue:** New Library, University of Aberdeen 

**Organised by:** EPCC, University of Edinburgh


AUDIENCE LEVEL: 2

FREE

SAT 8 AND SUN 9 SEP, 11.00 - 15.00

## A DIFFERENT KIND OF SHOPPING EXPERIENCE

How about some science while you shop? Aberdeen's most popular shopping areas, the Bon Accord Centre and Union Square, will host a number of scientific activities for the whole family. Hot-foot it down to Aberdeen city centre, where you will have your mind boggled by brilliant science buskers and experience a range of exciting, hands on experiments.

**Venue:** Bon Accord Centre AB10 1JX  and Union Square AB11 5RG

AUDIENCE LEVEL: 1

FREE

SAT 8 SEP AND SUN 9 SEP 10.00 - 16.00

## DONATE YOUR FACE TO SCIENCE

We are collecting 3D images for a new database of faces, for use in scientific research. We would like as wide a variety of faces as possible, so please come along and we'll give you a copy of your image to take away. It takes about ten minutes.

**Venue:** New Library, University of Aberdeen 

**Organised by:** University of Stirling

**Supported by:** Dimensional Imaging

AUDIENCE LEVEL: 2

FREE

SUN 9 SEP, 10.00 - 16.00

## THE FACIAL IMITATION TEST: ARE YOU A GOOD MIMIC?

Sit in front of a computer screen and imitate the facial expressions you see, whilst a web-cam takes your photo. This isn't as easy as it sounds as many expressions are similar. Drop in and see how good a mimic you are.

**Venue:** New Library, University of Aberdeen 

**Organised by:** University of Aberdeen and University of St. Andrews

AUDIENCE LEVEL: 2

FREE

SUN 9 SEP, 10.00 - 16.00

## SUPERCOMPUTING AND YOU

What makes a supercomputer super? Discover how HECToR, Britain's largest computer differs from your laptop. Explore how it is used in topics such as climate, molecules, dinosaurs and medicine. Interact with a chemistry simulation running on HECToR and learn the principles of parallel computing.

**Venue:** New Library, University of Aberdeen 

**Organised by:** EPCC, University of Edinburgh

AUDIENCE LEVEL: 2

FREE






# ENERGISING MINDS

ABERDEEN 4–9 SEP 2012

[www.britishsciencefestival.org](http://www.britishsciencefestival.org)



## WIN YOUR VERY OWN TELESCOPE

Join in the acebook fun. Cut out these goggles then take a pic of yourself, someone else or something else wearing them. We will be setting a theme each week so check out the British Science Festival Facebook page every Friday.

Just follow the simple steps below:

- 1) Upload your pic to the Festival Facebook page
- 2) Title your pic in the comments box
- 3) Email your pic and title to [festival@britishscienceassociation.org](mailto:festival@britishscienceassociation.org) to be in with a chance to win a science poster and your very own Sky-Watcher telescope (as recommended by Patrick Moore).



like us on



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follow us on



[@britishscifest](https://twitter.com/britishscifest) #bsf2012

For terms and conditions, please visit [www.britishsciencefestival.org](http://www.britishsciencefestival.org)

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UNIVERSITY OF ABERDEEN  
Science Journalism Society

PRODUCED BY STUDENTS

# Au magazine

Science



[www.aumag.co.uk](http://www.aumag.co.uk)

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## AFFILIATES

Affiliates of the British Science Association are a national network of organisations that share our vision of advancing the public understanding, accessibility and accountability of the sciences and engineering. Current Affiliates include:

Academy of Medical Sciences  
Anglia Ruskin University  
Arts and Humanities  
Research Council  
Aston University  
Biochemical Society  
Biotechnology and Biological  
Sciences Research Council  
BP International Ltd  
British Psychological Society  
British Society for Immunology  
British Sociological Association  
Cancer Research UK  
Cardiff University  
Centre for Life  
Department for Business,  
Innovation & Skills  
Economic and Social  
Research Council  
Edinburgh Napier University  
Einstein's Entertainers  
Engineering and Physical  
Sciences Research Council  
Geological Society  
Gizmos Lab  
Goodrich  
Graphic Science  
Immersive Theatres  
Institution of Chemical Engineers

Jaguar Land Rover  
John Innes Centre  
Keele University  
London Mathematical Society  
Loughborough University  
Marine Biological Association  
of the UK  
Medical Research Council  
National Museums Scotland  
Natural Environment Research  
Council  
Natural History Museum  
NESTA  
Nutrition Society  
Open University  
Our Dynamic Earth  
Oxford Trust  
People Science & Policy  
Physiological Society  
Prospect  
Research Councils UK  
Robert Gordon University  
Royal Academy of Engineering  
Royal Astronomical Society  
Royal Holloway, University of London  
Royal Society of Chemistry  
Saudi Aramco  
Science and Technology  
Facilities Council

Science Museum  
Selex Sensors & Airborne Systems Ltd  
Society for General Microbiology  
Society of Biology  
TechFest-SetPoint  
Thinktank (Birmingham Science  
Museum)  
UK Resource Centre for Women in SET  
University College London  
University of Aberdeen  
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Wellcome Trust

# BRITISH SCIENCE FESTIVAL

# ALUMNI REUNION WEEKEND

Friday 7 - Sunday 9 September 2012

As part of the British Science Festival 2012 we would like to invite you back to campus for an exclusive Alumni reunion weekend.

For further information please visit the website:  
[www.abdn.ac.uk/alumni-weekend](http://www.abdn.ac.uk/alumni-weekend)

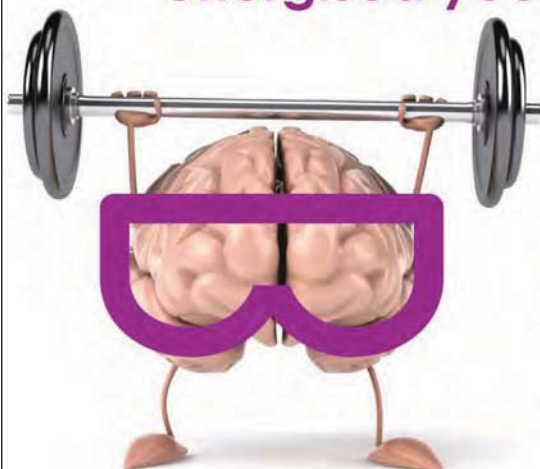


UNIVERSITY  
OF ABERDEEN



University of  
Aberdeen Alumni:  
**LET'S GET ENGAGED**

## Has the British Science Festival energised your mind?



The British Science Festival is just one of the programmes that the British Science Association provides to encourage people of all ages to learn about, discuss and challenge the sciences.

To find out more visit  
[www.britishsocietyassociation.org](http://www.britishsocietyassociation.org)

If you enjoyed the Festival please donate to help us to continue our work.

The British Science Association is a registered charity and our work depends on funding provided by donations, grants and sponsorship.

Text **GIFT31 £2/£5/£10** to  
70070 to donate now e.g.  
**GIFT31 £5**



Charity Commission no: 212479 and SC039236



# UNIVERSITY MAP



## UNIVERSITY OF ABERDEEN CAMPUS VENUES

All day parking



Limited parking after 16.00

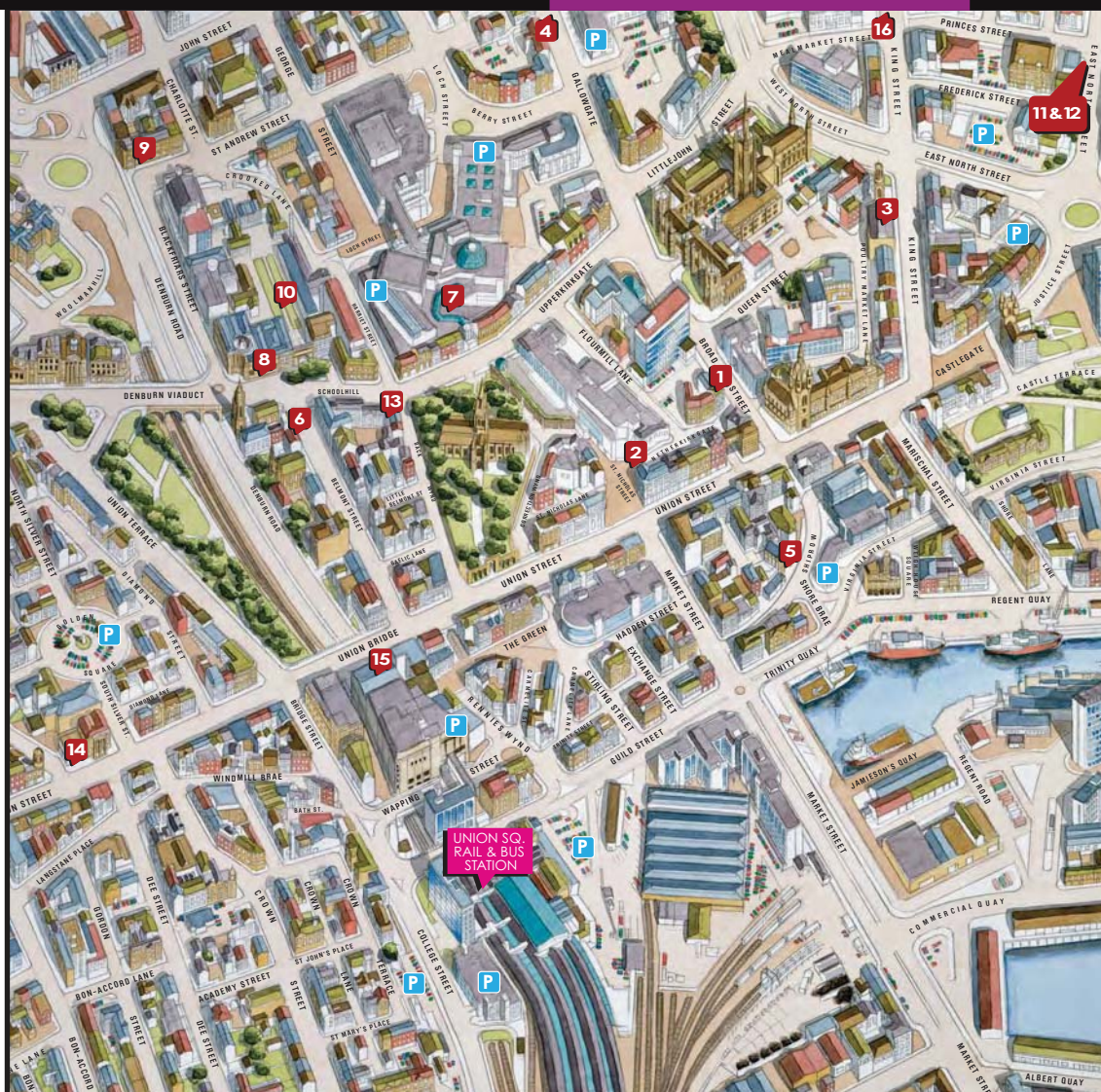


New Library / Box office	1
Fraser Noble Building	2
Meston Building	3
New King's	4
Elphinstone Hall Linklater Rooms	5
King's College Conference Centre	6

King's Quad, Lecture Theatres 7 + 8	7
Arts Lecture Theatre	8
Regent Building	9
Old Senate Rooms	10
Crombie Halls / Bishop's Table	11
The Hub	12
Zoology Building	13



# ABERDEEN CITY MAP



## ABERDEEN CITY VENUES

- The Illicit Still, Broad Street, AB10 1AU **1**
- The Tunnels, Carnegie's Brae, Aberdeen, AB10 1BF **2**
- Aberdeen Arts Centre, 33 King's Street, AB24 5AA **3**
- Aberdeen College Planetarium, Gallowgate, AB25 1BN (NOT ON MAP) **4**
- Aberdeen Maritime Museum, Shiprow, AB11 5BY **5**
- Belmont Cinema, Belmont Street, Aberdeen, AB10 1JS **6**

- Bon Accord Shopping Centre, AB10 1JX **7**
- Cowdray Hall, Schoolhill, AB10 1SQ **8**
- Robert Gordon University, St Andrew Street, AB25 1HG **9**
- Robert Gordon's College, Schoolhill, AB10 1FE **10**
- Satrosphere Science Centre, 179 Constitution Street, AB24 5TU (NOT ON MAP - 25 min walk from city centre) **11**

- Beach Ballroom and Leisure Centre, Beach Promenade, AB24 5NR (NOT ON MAP - 25 min walk from city centre) **12**
- The Academy Shopping Centre, Schoolhill, AB10 1LB **13**
- The Music Hall, Union Street, AB10 1QS **14**
- Waterstones Book Store, Union Bridge, AB11 6BG **15**
- University of Aberdeen, AB24 3FX (NOT ON MAP - 25 min walk from city centre) **16**





# BOOKING FESTIVAL TICKETS



Although most events are **free**, we recommend that you book your ticket in advance to guarantee your place at the event.

**Book online at [www.britishsciencefestival.org](http://www.britishsciencefestival.org)**

**Book by telephone 08456 807 207**

**Book in person at Aberdeen Box Office,  
Music Hall, Union Street, Aberdeen**

## During the Festival (4 – 9 September)

You can buy tickets in person from the British Science Festival Box Office, New Library, University of Aberdeen.

The Box Office will be open at the following times:

**Monday 3 September** 17.00 – 19.00

**Tuesday 4 – Saturday 8 September**  
9.00 – 20.00 (20.30 on Thursday)

**Sunday 9 September** 9.00 – 19.00

## Getting to the British Science Festival

### BUS SERVICES WITHIN ABERDEEN CITY

#### Between Aberdeen City Centre and Kings College Campus

First Bus: 1, 2, 13, 20, 40, 17, 17A, 21, 21A

#### Between Aberdeen City Centre and the beach areas

First Bus: 14, 15, 17, 17A, 19, 20, 21, 21A, 23

#### For Robert Gordon University

First Bus: 1, 2, 9

#### Hillhead halls of residence services

First Bus: 6, 20

#### Transport services - Aberdeenshire For Banchory

Stagecoach: 200 – 204

#### For Inverurie

Stagecoach: 10, 307, 727 'Jet' service.  
Train from Aberdeen Station,  
Union Square

#### For Laurencekirk

Train from Aberdeen Station,  
Union Square.

#### For Ellon

Stagecoach: 267, 268, 290 - 293

## TRAVELLING BY CAR

### Tuesday – Friday: 09:00 – late, Kittybrewster Car Park (AB24 3LJ)

Kittybrewster Car Park on Bedford Road is the designated Festival car park and will be available from Tuesday 4 September until Friday 7 September. The car park is a ten minute walk to the University Campus and is FREE. **Please note that vehicles are left at owners' risk and the University is not responsible for any loss or damage to vehicles.**

### University Campus, King's College (AB24 3FX) & Foresterhill Health Campus Parking (AB25 2ZD)

**Saturday & Sunday: 9.00 – 23.00**

**Tuesday – Friday: 16.00 – 23.00**

Please note parking is not allowed on the University Campus until after 16.00 (Tuesday 4 – Friday 7 September). University car parks are private property and are managed by Town & City parking Ltd on behalf of the University and vehicles are left at owners' risk.

## Eating and drinking at the British Science Festival

### Festival café, Elphinstone Hall

9.30 – 16.00 (Tuesday - Sunday)  
(Thursday 10.00 – 14.00) Food will be served from 11.30 – 14.30 daily

### Festival bar, Elphinstone Hall

12.00 – 23.00 (Tuesday – Sunday)  
(Thursday 12.00 – 14.00)

### The Hub

8.30 – 19.30 (Tuesday – Sunday)

### Bishop's Table

11.30 – 14.30 (Tuesday – Friday)

### New Library café

8.30 – 19.30 (Tuesday – Sunday)

## Eating and drinking at the British Science Festival (Continued)

### Spiegeltent, King's Lawn

Opens 11.00 (Tuesday – Sunday)  
Will be closed at certain times throughout the week for event & performance set up

### Waterstones Book Store

10.00 – late (Tuesday – Sunday),  
Elphinstone Hall (Thursday 10.00 – 14.00)



New Library, University of Aberdeen

British Science Festival events may be filmed or photographed for archive purposes and future promotion of the Festival.

All details are correct at the time of going to print. The British Science Festival reserves the right to change events due to unforeseen circumstances. Any changes will be posted on the British Science Festival website [www.britishsciencefestival.org](http://www.britishsciencefestival.org) and sign-posted on the day at the British Science Festival Box Office.

In the event of a cancellation, tickets will be refunded, otherwise tickets will not be accepted for refund or resale.

# FESTIVAL SUPPORTERS

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