

EXPLORATHON '15

ONE NIGHT • UNLIMITED DISCOVERY



EXPLORATHON '15 afternoon @ the National Museum of Scotland

Come for the afternoon and play with cutting-edge digital data, see how we speak, discover the destructive power of volcanoes, find out how we'll soon recharge our electronic devices on the move, how our blood works and how we see the world. Join an awesome assemblage of Archaeologists as they excavate the Museum in Minecraft, and delve deep into the past as part of [Digit! 2015](#). Celebrate the UN International Year of Light www.light2015.scot through dance and music and find out how Chemists, Physicists and Astronomers use light in innovative ways.

HAWTHORNDEN COURT

Scots Auld and New: Changing Words, Changing Accent

We all know that speech is something we hear, but can we also 'see speech'? An ultrasound scanner will show you how your tongue moves to create speech sounds. Discover some of the specific sounds from different English and Scots dialects with Professor Jim Scobbie and Dr Patrycja Strycharczuk, speech scientists from Queen Margaret University, who research regional and social differences in pronunciation. Join in with real time observations of how we move our tongues as we speak to reveal the normally invisible movements that create different dialects.

Drop in activity

Three Minute PhDs

Laugh and learn at the archaeology "open mic" for PhD researchers. Can these archaeology researchers present their entire PhDs in just 180 seconds? As the clock counts down, you'll get the lowdown on their ground breaking work, with a bonus insight into some of the collections within the Museum. If the dreaded buzzer sounds, they'll have to face the wrath of the MC!

12.30pm / 1.30pm / 2.30pm / 3.30pm / 4.30pm

Symmetry, Asymmetry & Life

Giuditta Perversi, University of Edinburgh
School of Chemistry & Centre for Science at Extreme Conditions

Our concept of beauty is deeply connected with symmetry and we seek it in art and creative works. Find out what this has to do with science, technology and your own life with a researcher from the University of Edinburgh's School of Chemistry. From snowflakes to the Big Bang, passing through crystals and arabesques, be stunned by symmetry and astonished by asymmetry.

TALK

12pm

Advancing the European Multilingual Experience

Language and communication are at the heart of the human experience. How can speaking more than one language affect your thoughts and behaviour? The project 'Advancing the European Multilingual Experience' (AThEME) investigates the many facets of multilingualism across Europe. Find out about the highly debated bilingual 'advantage'. Get involved by testing your knowledge of foreign languages and try your hand at a task-switching game commonly used in bilingual research.

Drop in activity

Windiana Jones and the Raiders of the Lost Teacake

Join Clara Croft and Windianda Jones on an adventure like no other. Immerse yourself in an archaeology adventure with the entertaining and theatrical storytelling duo from Macastory.

SHOWS

**2-2.30pm
3-3.30pm**

Lichtsuchende: the journey of a cybernetic society – an interactive photo-kinetic installation

Rocio von Jungenfeld, University of Edinburgh,
Edinburgh College of Art

When we started developing the cybernetic society of light seeking robotic flowers we could not have imagined how far it would take us. We will follow the journey of the Lichtsuchende from a dark vault in Edinburgh to a design studio in China to a cellar in Ghent (Belgium) to a shower room in Glasgow, and finally to the RBGE room where you will have the opportunity of shining some light at the robotic creatures. Lichtsuchende was funded by the University of Edinburgh Innovative Initiative Grant.

TALK

1.30pm & 4pm

THE EVENT SPACE

Digital Social Science: Understanding Society Through Data

Society is constantly changing.... as cities grow, populations migrate, economic conditions vary and policies affect the way we work, educate our children, pay our taxes and access services. Understanding this complexity presents challenges for social research. Analysing 'big data', captured when we interact with public services and through population surveys like the census, offers new ways of generating social research insights. Come along and find out how the Administrative Data Research Centre for Scotland (ADRC-S), based in the University of Edinburgh, is trying to improve our society through Big Data Research.

Shine: Music of the Universe 12-3pm only

Shine is celebrating the UN International Year of Light with science, music and art! Meet the Shine team from the University of St Andrews and explore the similarities between light and sound, through music, art and science demos. Come and explore astronomy using sound. Do you want to compose your own pulsar symphony? Find out if you can hear the Echo of the Big Bang? Come and dance on our cosmic floor keyboard? Then drop by our Shine stand, and find out more about astronomy, light and music, while you explore our demos!

Fiery eruptions: Volcanoes Exposed

Volcanoes are fascinating but their stunning beauty but can transform into deadly threats within hours. Immense destructive power is hidden below their outer facades and globally over 500 million people live close to active volcanoes. Come and meet researchers from the University of Edinburgh's School of GeoSciences. Find out how volcanoes work through a series of interactive activities and discover the inner workings of volcanoes, the origin of magma and their eruptive potential.

Seeing Life in a New Light

Come and join the Science Outreach Team from the University of St Andrews to see *the unreachable* - have a go at bending light with an endoscope. See *the unseeable* using microscopes to reveal the micro-world and find out how light can be used as tweezers and scissor or pick up and push objects.

Crafting the Past: Games-Based Learning Through Minecraft

Team up with ImmersiveMinds in Minecraft to explore a Roman fort, an 18th-century mansion and a Pictish hillfort as part of the Crafting the Past project. If you'd like to travel a bit further without leaving the room, step into the Museum's portal to find yourself in ancient Egypt, Rome or Viking Scotland. Once you're back from your adventures, you can use your expertise to help rebuild the entire National Museum of Scotland.

GRAND GALLERY

Wireless Power Transfer Demo

Our lives run on personal electronic devices powered by batteries - all dependant on wall sockets to recharge. Researchers at the Microwave and Antenna Engineering Group at Heriot-Watt University are adapting traditional electromagnetic concepts to wirelessly transmit power to recharge electronic devices, allowing us to charge our devices on the move. Soon there will be no need for annoying cables, finding wall plugs and the massive use of environmentally unfriendly batteries!

Data as Sculpture

Many types of social and health data can be best understood by thinking about them as statistical landscapes, which can be freed from the confines of the page, the researchers' mind, and the computer screen by 3D printers. By turning them into physical objects, data sculptures can be held in the hand and explored with the finger as well as the eye. Data sculptures created by Jonathan Minton from the University of Glasgow will be presented by Ben Matthews from the University of Edinburgh.

High-Tech Heritage

Create and explore 3D -models of archaeological sites and monuments from Shetland to the Borders. The ACCORD project has been travelling across Scotland working with local communities to co-create 3D-models of local archaeological sites and monuments, and they've now set their sights on Explorathon '15. Join the team for an afternoon to dive into the high-tech world of digital visualisations and 3D printing.

Excite-Mols

Have you ever wondered how atoms and molecules absorb light? And what happens to them when they do? Come and see for yourself - and make sure to bring your singing voice! See how Adam Kirrander's research group from the University of Edinburgh's School of Chemistry work on ultrafast dynamics and imaging is transforming our understanding of what happens when matter interacts with light, and how we can control it.

History in 3D

What happens when you combine archaeology and architecture with the latest cutting-edge technology? Investigate the possibilities with the Edinburgh College of Art and Luma3Di. Explore reconstructions of Neolithic tombs and even the University of Edinburgh's Old College Quad.

Save Our Past

Join the SCAPE Trust as they tackle the issues behind Scottish coastal archaeology and erosion. Get your hands on the latest technology used to capture these amazing sites and find out how you can join the fight with just your smartphone or tablet.

From the Eye to the Brain - How Do You See the World?

How are images processed within our brains? Why do we see visual illusions? Can we replace a retina with a chip? See an artificial retina and movie clips showing neural activity in the visual areas of the brain. Find out how our brain manages how and what we see with researchers from the School of Informatics and the Centre for Integrative Physiology at the University of Edinburgh.

AUDITORIUM

From the Ground Up: Career Tips, Tricks and Tales
4-5pm

Then go on to
BRIGHT CLUB – CURIOUS COMEDY (AGES 16+ SPECIAL)
5.30-6.30pm
The Stand Comedy Club, 5 York Place, Edinburgh EH1 3EB

Join Matt Ritchie, Archaeologist at Forestry Commission Scotland, Researchers from the University of Edinburgh's School of Geosciences and the University of Edinburgh Careers Service as they pass on their tips for getting a foot on the career ladder. You'll then have the opportunity to put them on the spot as they answer all of your burning career questions. Whether you're simply curious about this line of work, or seriously considering a career in these fields, you won't want to miss this unique opportunity.

Enjoy the freshest thing in stand-up – straight from the (research) field to the stage. Scientists perform comedy about their own work. Authoritatively original and brilliantly entertaining.

Tickets are FREE and will be available on the door but to be sure of getting in you can book in advance from The Stand Comedy Club (Note a 50p per ticket booking fee will apply)

LEARNING SUITE – STUDIO 1

Dancing Light Workshop

Workshop Times:

1: 2-3pm

2: 3.30-4.30pm

If you think science and dance have nothing in common, then think again! To celebrate the UN International Year of Light, come and learn how to dance like a photon with the University of Edinburgh! The School of Chemistry's Outreach Team illustrate the features of light and its uses in everyday technologies by using movement, dance, music and fun interactive activities during this one hour workshop. No dance experience needed and all welcomed over the age of 8 years.

LEARNING SUITE – STUDIO 2

Heart-Stopping: The Finals

Workshop Times:

1: 12.15-1.15pm

2: 1.30-2.30pm

3: 2.45-3.45pm

4: 4-5pm

In the future we'll make diagnostic decisions and accelerate drug discovery by watching immune cells go head-head with teams of tiny problems! You can hear the concepts here and shrink down to the level of the cells themselves to learn how our blood works and lead you team to victory, with researchers from University of Edinburgh's School of Chemistry.