

# Let's Experiment! Edinburgh Science Festival 2023 turns the city into a living laboratory 1-16 April



14th February 2023

## Let's Experiment!

Edinburgh Science Festival 2023 turns the city into a living laboratory

1-16 April

- Edinburgh Science Festival 2023 is calling on everyone – let's experiment! – and will deliver a world-class live programme getting people of all ages hands-on with science, embracing the concepts of experimentation, innovation, creativity, curiosity and invention that lie at the heart of all scientific disciplines.
- 2023 is a year of transition and stabilisation as the Festival builds on the success of previous recent editions and presents a rich programme of workshops, talks, activities and exhibitions all around the city.
- City Art Centre returns as the Festival's premier family experience with new *FutureFest* and *EarthFest* themed weekends at the National Museum of Scotland bookmarking the Festival.
- Interactive activity *Experimental Life* and large-scale outdoor photography exhibition *Cherish: Shaping Our Planet* are just two examples of the Festival's fantastic free events.

- As always, the Festival connects its audiences with some of the world's most inspiring scientists, researchers and authors in Big Ideas talks: Edinburgh Medallist 2023 – Prof. Marion Nestle, Benita Matofska, Prof. Dame Jocelyn Bell Burnell, Lord Martin Rees, Florence Schechter of the Vagina Museum, Marcus Chown, Prof. Anil Seth, and author Louise Gray.
- On 6 April, *A Climate of Change* talk features First Minister Nicola Sturgeon in conversation with Ambassador Patricia Espinosa, former Executive Secretary of the United National Framework Convention on Climate Change (UNFCCC, 2016–2022).

Edinburgh Science Festival is the **first and one of the most respected science festivals in the world**, taking place over the Easter holidays, between **1 and 16 April**. Known for producing **world-class live events**, this year's Festival invites everyone to get hands-on with science and embrace the concepts of **experimentation, innovation, creativity, curiosity and invention that lie at the heart of its 2023 theme – Let's Experiment!**

With innovation and creative thinking across disciplines essential if we are to harness the opportunities and deal with the potential perils and pitfalls of our rapidly changing world, the Festival brings together innovators – **scientists, researchers and practitioners** – who push the frontiers of our knowledge about ourselves and the wider Universe, and sci-curious audiences of all ages for **a variety of talks, workshops and activities in venues around the city**.

The Festival also **becomes a living laboratory** thanks to its experimentation with formats, approaches, and partnerships as it provides new and innovative ways for audiences to interact with science and scientists.

**Amanda Tyndall, Festival and Creative Director at Edinburgh Science said:** “As we emerge from the disruption of the past few years and confront ongoing wider-world challenges, we remain in a period of transition and stabilisation but are excited by a whole-hearted return to live, hands-on science experiences. We call on audiences of all ages to join us in celebrating all things experimental!”

This year's programme is **spread across 31 venues and locations around Edinburgh and one-third of it is free to access**.

Edinburgh Science Festival continues its **commitment to championing the achievements of women in science and science communication**, and strive for a balance representation of gender in its programming. With **60% of artists and speakers at the Festival identifying as women**, this year's programme offers an invaluable opportunity to hear from some of the world's leading experts in their fields. Just some of the highlights of this year's Women in STEM programme, sponsored by Cirrus Logic, include The Edinburgh Medal Address with Prof. Marion Nestle (12 April), The Long Shot (12 April) with Dame Kate Bingham, Chair of the UK Vaccine Taskforce 2020, Demystifying Bisexuality (14 April) with psychologist Dr Julia Shaw and The N Most Important Symbol in Mathematics(5 April) with mathematician Katie Steckles.

## 2023 KEY HIGHLIGHTS

**City Art Centre** (1-15 April) – five floors of hands-on science extravaganza for children between 3 and 12 years old. With 6 new workshops this year – including *Construction Challenges*, *Ella's Wobble*, *Speedy Sails*, *Creative Coding*, *Tech Corner* and **LEGO® Build The Change** – and all-time favourites *E.R. Surgery* and *Splat-tastic*, City Art Centre is the most fun a family can have this Easter holidays. On sale from 1 March.

**Experimental Life** at the National Museum of Scotland (3-14 April) – new, free, interactive experience inviting everyone to take a deep dive into the weird and wonderful diversity of life. Includes *Trees of Life* installation from *We Throw Switches* and artist Robert Baumgarten exploring Darwin's revolutionary theory of evolution. Developed with support from Creative Scotland through the Scottish Government's Festival Expo Fund and supported by Lumo.

**FutureFest** (1-2 April) and **EarthFest** (15-16 April) at the National Museum of Scotland – two family-friendly, hands-on weekends bookmarking the Festival, filled with fantastic shows and new activities. First is a celebration of technology, robotics, artificial intelligence, coding, computers, and space while the latter invites the participants to learn more about our planet, the animals that live here and how we can take care of them. Supported by PLACE funding. EarthFest headline sponsor is Cirrus Logic. Both weekends are supported by Headline Festival Community Engagement Partner **LEGO® Build the Change**

**Edinburgh Medal** (12 April, City Chambers) – the prestigious annual award celebrating the achievements of the women and men of science and their contributions to the humanity. This year's Edinburgh Medal recipient is Prof. Marion Nestle, a pioneer in the study of nutrition, public health and food politics, who will explore the wide-reaching implications of what and how we eat – from production and marketing, to the possibilities of fairer distribution of resources. Supported by the U.S. Embassy London.

**Cherish: Shaping Our Planet** (23 March-4 May) – a free, large-scale, outdoor photography exhibition on Portobello Promenade which looks at the human impact on the landscapes that support all life and considers how we can cherish its wonders and tread more lightly upon this Earth.

**A Climate of Change: Nicola Sturgeon in Conversation with Ambassador Patricia Espinosa** (6 April) – climate change is the greatest challenge of our time, but alongside the challenges come valuable opportunities to work together to transform our world for the better. Providing a truly global perspective, Ambassador Patricia Espinosa, former Executive Secretary of the United National Framework Convention on Climate Change (UNFCCC, 2016–2022) who was instrumental in efforts to make the Paris Agreement a reality and led crucial climate conversations at COP26 in Glasgow, joins Scotland's First Minister, Nicola Sturgeon, for a fascinating conversation exploring Scottish, and global, efforts to face up to our climate emergency.

## PROGRAMME OVERVIEW

### Festival for families

For those who performed a surgery, dug up a dinosaur, built a wind turbine and coded their own robot at **City Art Centre**, or got hands-on at the **National Museum of Scotland** with *FutureFest*, *Experimental Life* and *EarthFest* interactive exhibitions, the Festival fun continues with various activities around the city.

*Junior Reading Experiment* (4-6 April) gives sci-curious young minds a chance to meet science authors while the **Royal Botanic Garden Edinburgh** presents, among many others trails and workshops, *Frankenstein's Plants: The Revenge* (14-16 April) where children design their own herbarium specimen to take home, and *Spring in the Vegetable Garden* (16 April) – all about growing your own food at home.

Taking to heart Greta Thunberg's words "No one is too small to make a difference.", **Dynamic Earth** presents *Use Your Voice* (1-16 April) an exhibition about young climate activists inspiring the next generation, and explains the wonders of the weather in *Whatever the Weather* (6 & 13 April) workshop for children 1+.

Over at the **Edinburgh Zoo**, animal enthusiasts learn all about our ancestors in *Primates Pop-Up* (6-7 April) activity for all ages and the recent discoveries at the Royal Zoological Society of Scotland followed by breakfast and activities in *Eggsperimental Breakfast* (1-2 & 15-16 April).

Out and about, audiences can visit *Cherish: Shaping Our Planet* (23 March – 4 May) photography exhibition on **Portobello Promenade**, take part in *Operation Sabotage* escape room experience at the **National Museum of Flight** (14-15 April), visit **Yellowcraig Beach** to learn how to identify and prepare wild vegetables and seaweeds in a *Guided Walk with Monica Wilde* (8 April) or pop by **The Bayes Centre** for a chance to meet humanoid robots and hear about how they can assist humans in *Meet the Robots* (14 April).

For the rainy stay-at-home days, EdSciFest on Demand is the perfect answer – a free online resource full of engaging workshops, quizzes and self-led trails.

### Adult programme overview

#### **Environment/ Climate**

With programming for the Planet a continuing focus for the Festival, this year's programme features an inspiring line-up of speakers and events: eminent voice in the climate crisis discussion, Astronomer Royal and former President of the Royal Society, **Lord Martin Rees** explores *If Science Is To Save Us* (3 April), author **Louise Gray** looks at the environmental impact of our favourite fruits and vegetables in *Avocado Anxiety* (3 April), founder of the global network The People Who Share, **Benita Matofska** talks about how sharing and circular economy can fundamentally change the way we live in *Generation Share* (12 April), supported by Zero Waste Scotland. *Emotion and the Climate Emergency* (13 April) features a panel of experts answering the question of whether emotions stop us from thinking rationally about climate action, or are there times when emotion is just what we need to make us strive for a better world?

while a panel of Edinburgh scientists and healthcare workers explore the interaction of environment and climate with our health from the womb throughout our life course in *Our Planet, Our Health and Our Future* (14 April). In *How to Save a Planet in Crisis?* (14 April), young author **Siddarth Shrikanth** shows us how valuing our planet's natural capital will motivate us to work in our self-interest and can pull us back from the brink of environmental catastrophe. Supported by SSE Energy Solutions.

To read more about Edinburgh Science's work outwith the Festival to fight climate crisis and ensuring a sustainable future, visit the charity's website.

### Health/medicine/sexuality

This year's University of Edinburgh's Tam Dalyell Prize for Excellence in Engaging the Public with Science goes to **Dr Sinead Rhodes** for her work to facilitate understanding and support for neurodivergent children and young people – audiences have a chance to hear her lecture on 2 April. In *The You, The V and The W* (11 April), founder of the **Vagina Museum Florence Schechter** and **NHS midwife and bestselling author Leah Hazard** take audiences on a myth-busting adventure exploring the anatomy of the vulva, the womb and how they create all of us, while **zoologist and National Geographic explorer Lucy Cooke** changes the way we think about sex, sexual identity and sexuality in animals in *Bitch: A Revolutionary Guide* (7 April).

### Tech & engineering

In *Can Robots Care?* (12 April), audiences hear about the latest developments in assistive and care robots and discuss what's at stake for people working in and relying on health and care services. This year's **ARUP lecture** is *Gaudi's Sagrada Família in the Making* (13 April), a fascinating look at how state-of-the-art understanding of structural engineering and digital fabrication has enabled Gaudi's remarkable creative genius to be realised using methods he could not have imagined possible.

Scientists have developed machine learning systems that outperform humans on any given task. However, unlike humans, these systems fail spectacularly when generalising between old and new tasks. Can machines be taught to learn like humans? In *Psychology of Learning: Humans VS Machines* (14 April), **Dr Alex Dumas** explains if the future of machine learning is a bit more human. Italian Institute of Culture and the Consulate General of Italy in Edinburgh supports *Fuelling the Future: The Promise of Plasma Fusion* (4 April), a fascinating look at how plasma fusion could be one of the best ways of tackling the challenge of net-zero electricity production.

### Space

*A Night in the Stars* (4 April) at Dynamic Earth is one the Festival's special LateLab events this year. A celestial evening of art, circus, poetry, drop-in activities, planetarium shows and talks, it looks at **The James Webb Space Telescope** as one of the biggest and most ambitious scientific missions of this century. Both events are supported by PLACE funding.

*The Sky is for Everyone* (5 April) is a triumphant showcase of the women who broke down barriers and changed the face of modern astronomy, including discoverer of pulsars **Prof Dame Jocelyn Bell Burnell**, former Chief Scientific Adviser at the Foreign & Commonwealth Office **Prof Carole Mundell** and Professor of Astronomy at the University of Cambridge **Prof Cathie Clarke**.

### Sociable science

As every year, Edinburgh Science Festival produces a range of entertaining science events with a twist, with the Festival's Opening Event – *Science Festival Late* (30 March) – being the hot ticket every Easter break. *Experimental Life* interactive family-friendly exhibition at the National Museum of Scotland gets an adult-only evening on 6 April while Dynamic Earth hosts a range of fantastic late-night events: *When Fish Begin to Crawl* (15 April) is a dialogue between arts and science and a world premiere of a new work by **composer Jim Sutherland** in collaboration with **BAFTA-winning filmmaker Morag Mckinnon**, a meditation on the climate crisis and humanity's relationship with nature recorded by the Evolution Orchestra; *A Night in the Stars* (4 April), a multi-art form celebration of the scientific achievement that is the James Webb Space Telescope; *Biomimicry* (5 April) explores the practice of learning to solve human and scientific conundrums through mimicking nature, with examples from the world of fashion, AI and digital art. Over at the Heriot-Watt University, audiences have a chance to meet *Robots After Dark* (15 April) in a unique event of hands-on exploration of the machines of the future, supported by The National Robotarium & CDT-RAS at Edinburgh Centre for Robotics.

## Food

Politics of food are at the heart of this year's Edinburgh Medal (the Address takes place on 12 April and supported by the US Embassy London), awarded to **Prof Marion Nestle**, a pioneer in the study of food politics, nutrition and public health, who through her research, advocacy and public engagement work has contributed knowledge and inspiration to the field. Author Louise Gray looks at the environmental impact of the food we eat in *Avocado Anxiety* (3 April) and **sustainability expert Vincent Doumeizel**, author of *The Seaweed Revolution*, explores how seaweed could be the safe and sustainable solution to the world's looming agricultural crisis – as well as addressing climate change, tackling poverty and contributing to a growing ocean economy – in an event also called *The Seaweed Revolution* (5 April) supported by Lloyds Register Foundation. *Oysters in Edinburgh* (6 April) dives into the world of cutting-edge oyster research in Edinburgh which could help play a part in addressing the planetary emergency – oysters included! In the drinks world, *Gin and Genetics* (8 April) sheds light on gin distillation process while *Tasting Climate Change* (11 April, supported by PLACE funding) explores how, as the climate crisis continues, vineyards across the world are having to adapt to faster-ripening grapes, lower acidity and more alcoholic wines. Both events include drinks.

## STEM + Arts = STEAM

Known for forging unique collaborations between the world of science, technology, engineering and maths (STEM) and the arts (A), the Festival's 2023 offer delves deep into the weird and wonderful world of human creativity. In theatre, *Swell* (1 April) focuses on residents of fictional town, inspired by Fairbourne, set to be Britain's first climate refugees with their town to be decommissioned and depopulated by 2054 and in clown-inspired *Two in a Barrell* (15 April) family show, audiences meet Riri and Moku who are confined to a barrel sitting on top of an island of rubbish in the ocean...

In film, FloWave Ocean Energy Research Facility at The University of Edinburgh serves as a background to a screening of Studio Ghibli's 2008 classic *Ponyo* (16 April), screened alongside the Facility's wave simulation tank where 2.4 million litres of water is synchronised live with the action on screen. The event is supported by Festivals Expo Fund.

A Festival staple, Summerhall's galleries house a fascinating series of exhibitions and events from visual artists exploring themes of earth, climate, sustainability, biodiversity, micro-life and humanity by experimenting with scientific processes and practices. Presented by Summerhall and ASCUS Art and Science, *Interlinked* (1 April – 15 May) showcases *Darkroom Ecology* by environmental artist **Scott Hunter** which explores the co-existence of ecological and industrial materials; *Lost*, a climate action exhibition featuring a collection of 18 #LitterCUBES stitched and woven together from thousands of pieces of beach litter plastic, collected by artist **Julia Barton** and volunteers in the coastal communities of Eyemouth, Dunbar, Arbroath, Ullapool and Shetland; named after the number of bacteria species detected in her body, *3607* by artist **Kexin Liu** examines microorganisms living in the human body and their impact on our sense of "self"; relating the health and wellness of soil to our own existence, *Earth, Soil + Filth* by interdisciplinary artist **Agatha Smith** explores the soil as an indicator of the future and a record of our human struggle – when degraded, all life is threatened.

**Education Secretary Shirley-Anne Somerville said:** *"We are proud to support Edinburgh Science Festival for its part in inspiring the next generation of scientists across Scotland."*

*"I am sure this year's festival will build on its successes of the past, which will help to reinforce both the festival and Scotland's place as one of the world's leading scientific nations."*

*Councillor Val Walker, Culture and Communities Convener said:* *"Once again the fantastic Edinburgh Science Festival will transform the city into a celebration of science and technology which lets us all experiment!"*

*"We very much look forward to hosting families in our City Art Centre where there will be 5 floors of hands-on science for children as young as three. It's a perfect day out for the family in the Easter Holidays with six new workshops around construction, creative coding, technology and LEGO as well as all-time favourites E.R. Surgery and Splat-tastic. The unique mix of art, workshops, talks, photography and interactive exhibits included in the festival programme make science and the concepts being explored more accessible and entertaining for all ages."*