

2022 Edinburgh Science Festival leads the Green Revolution

Edinburgh Science Festival is back! The world's first – and still Europe's biggest – science festival returns to its usual Easter holidays slot with an ambitious programme of exhibitions, a science playground at City Art Centre, workshops, Big Ideas discussions and many more events for curious minds of all ages, taking place in and around Edinburgh between 9 and 24 April.

In the year of the 75th anniversary of Edinburgh becoming the world's leading festival city, the Science Festival is the first of the biggest Edinburgh festivals to take place in 2022, a year of transition and recovery.

With Revolutions as its 2022 theme and Cirrus Logic returns as Headline Sponsor with matched funding from Culture & Business Fund Scotland, the Festival celebrates 50 years since James Lovelock first referred to his revolutionary Gaia hypothesis in print – drawing public attention to the interconnectedness of the delicate ecological cycles essential to sustaining life on Earth.



StrongWomen Science was one of the highlights from ESF 2019 Focusing on revolutionary approaches to everything from personal to planetary health – and with an unashamed emphasis on the urgency of tackling the climate crisis – the 2022 Festival will explore lifeforms, lifecycles, revolutionary ideas and solutions to global challenges, accompanied by a heartfelt call for a shift in attitudes and behaviours to combat the climate crisis and protect the delicately interconnected lifecycles and biodiversity of our planet.

Spread across 13 venues in and around Edinburgh, including a new sociable science mini hub at Assembly Roxy, and with more than a half of its programme free, the Festival gets people of all ages and interests inspired to take part in the most important revolution of them all: assuming our responsibility for Planet Earth and making changes in our everyday lives to help preserve it.

Edinburgh Science Festival's Creative Director Amanda Tyndall said: "We are delighted and excited to be getting back to what we love, delivering LIVE events that bring people together for a world of new experiences in the name of science. We encourage everyone to join us this April for a thoughtful yet

joyful celebration of the role that science and Festivals play in our lives – sharing the joy of discovery, celebrating the human spirit and shedding fresh light on the key issues shaping our future – and let the good times roll!”

With over 50% of the Festival speakers women, audiences will have a unique opportunity to get a glimpse into the respective fields of inspiring experts such as conservationist and the 2022 Edinburgh Medal recipient Dr Gladys Kalema-Zikusoka, anthropologist and best-selling author Victoria Finlay in [The Material World](#), environmental journalist Gaia Vince in *Gaia* at 50, climate campaigner and author Alice Bell in [Climate Change: A Time Travel Adventure](#), Astronomer Royal Catherine Heyman in [Scotland's Einstein](#) supported by the James Clerk Maxwell Foundation or lichenologist Dr Sally Gouldstone in [Phenomenal Fungi](#).

KEY FESTIVAL HIGHLIGHTS

City Art Centre is back! Five floors of hands-on science for children as young as 3 years old, this family science hub offers a world-class range of bookable and drop-in activities and workshops. With two new workshops – young [Nature Explorers](#) meeting endangered species and [Ocean Constructors](#) building their own underwater landscape – City Art Centre is the perfect family day out this Easter break. Supported by Cirrus Logic, Culture & Business Fund Scotland, HCI Skills Gateway, Edina Trust and the Science and Technology Facilities Council.
9 – 23 April

[DATASPHERE](#) at the National Museum of Scotland takes a closer look at the power of big data. From personal data to smart cities and global environmental monitoring, this free interactive exhibition explores the potential for data to make our lives easier, while not shying away from looking at some of the potential pitfalls. Supported by Cirrus Logic, Culture & Business Fund Scotland, US Embassy London, UK Government, Digital Xtra Fund, and the PLACE (Platforms for Creative

Excellence) Programme, a partnership between the Scottish Government – through Creative Scotland – the City of Edinburgh Council and the Edinburgh Festivals. 9 – 24 April



ESF Children's Hub at City Arts Centre in 2019

[CONSUMED](#) on the Mound Precinct is a free, outdoor, interactive exhibition that shines a light on our ever-increasing need for 'stuff' and how it affects the planet. Challenging the climate of consumption and championing circular economies and the need to reach net zero (and fast!), it offers practical advice on how we can all live well without it costing us the Earth. Supported by Cirrus Logic, Culture & Business Fund Scotland, Pawprint, Orbital Marine, Scottish Water, the Royal Academy of Engineering, Zero Waste Scotland and the Scottish Government's FestivalsExpo Fund. 9 – 24 April

This year's [Edinburgh Medal](#) is awarded to Ugandan veterinarian, pioneer in community-led wildlife conservation, subject of the BBC documentary Gladys the African Vet, and Founder and Chief Executive Officer of the Conservation Through Public Health, Dr Gladys Kalema-Zikusoka. Supported by M&G. Medal Address on 20 April

Opening ahead of the Festival, on 19 March, Wild Scotland on

Portobello Promenade is a free, large-scale photography exhibition. Featuring stories of the flora, fauna and people who call Scotland's wild spaces home and exploring the ways in which we can protect our precious natural heritage. Supported by Cirrus Logic and Culture & Business Fund Scotland 19 March – 24 April

FAMILY HIGHLIGHTS

Alongside a return to City Art Centre – offering families the perfect Easter holidays day out getting hands-on with science – Edinburgh Science Festival takes over some of the most iconic Edinburgh venues with a range of workshops, talks and activities. At the National Museum of Scotland, children will learn [How We Recycle Chemicals?](#) and its link to the climate crisis, and in [Amazing Immunology: Build a Vaccine!](#) young scientists can become immunologists for a day and make their own vaccine from 3D printed elements.

[In Ready, Steady, Grow: The Lifecycle of a Human Body](#), children will join scientists to learn about the challenges of creating a new life, and in [Disease Detective](#) they can follow real-life disease detectives working to find out more about infectious diseases. [Cyber Zone](#) is back – accompanying the [DATASPHERE](#) exhibition – and full of tech-focused workshops, from designing an app, a video game or a piece of electronic music to a data-driven piece of digital art. Cyber Zone is supported by PLACE (Platforms for Creative Excellence) Programme, a partnership between the Scottish Government – through Creative Scotland – the City of Edinburgh Council and the Edinburgh Festivals.



Edinburgh Science Festival Launch, Summerhall, Edinburgh, 24th Feb 2022

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Over at Dynamic Earth, it is all about [Discovering the Deep](#) – a new exhibition about marine science, including the story of Edinburgh's very own Charles Wyville Thomson, whose exploration of Scotland's marine environments in the 19th century launched the modern science of oceanography. Visitors will also be able to, among other things, take part in a Boat Building workshop or experience Edinburgh's only planetarium and its brand new, live show [Under Pressure](#), delving deep into the dark, hidden ecosystems of our oceans.

At the Royal Botanic Garden Edinburgh, for those with a green thumb there will be [Engaging Gardens Spring Festival](#) looking at a lifecycle of the productive plots at the start of the growing season or an opportunity to become [Nature Champions](#), exploring all the fascinating flora and fauna thriving in the Garden. The annual Easter Trail is also back, alongside many other engaging activities at the Garden while at the Edinburgh Zoo audiences are invited to step back in time to [Meet the Ances-Tour](#) during a self-guided tour exploring how the Zoo animals are linked to the pre-historic worlds.

In and around Edinburgh, the Festival presents a range of self-guided trails getting audiences hands-on with science, including making one's own [Sensory Seashore Scrapbook](#) on any sea coast, Exploring Edinburgh's Volcano to learn all about the time, long before dinosaurs, when our capital was part of a 'ring of fire', or joining the [Family Bushcraft](#) workshop all about surviving in the wilderness... of Leith Links.

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.

More family [highlights here](#).



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ADULT PROGRAMME HIGHLIGHTS

Every revolution starts with a big idea – some sort of spark to rally around. The Festival presents a programme of Big Ideas talks and discussions featuring world-renowned experts,

including acclaimed physicist and BBC presenter Prof. Jim Al-Khalili on how to unlock the clarity, empowerment and joy of thinking and living a little more scientifically in [Towards Rationale Life](#). The event will be hosted by Prof. Sheila Rowan, former Chief Scientific Adviser for Scotland.

Climate and environment

Half a century ago, in 1972, the scientist, engineer and inventor James Lovelock published a theory that was to change our understanding of Earth. [Gaia at 50](#) celebrates its legacy and future as it gathers leading physicists, philosophers and climate scientists – Prof. Chris Rapley, Gaia Vince, Oliver Morton, Dr Stephan Harding and Prof. Tim Lenton – to explore The Gaia hypothesis which proposed that living organisms interact with each other and the inorganic processes of the planet to form a complex self-regulating system that sustains all life.

Climate historian and author Alice Bell takes audiences on a trip through time in [Climate Change: A Time Travel Adventure](#), focusing on the decisions, inventions and accidents which created the warming world we're living in today – and how it could have ended up quite differently.

By 2050, it is projected that most of the world's population will live in cities. [Circular Cities](#) asks us to imagine what will those metropolises of the 22nd century look, function and feel like? As we already experience more extreme and unpredictable weather, both in Scotland and globally, [Preparing for Extreme Weather Events](#) with Arup Director David Wilkes will explore the role of engineers, economists and planners in predicting the scale of climate change, and how we can design our homes, transportation and energy systems to ensure they are ready for this future. Supported by Arup.

In [Animal, Vegetable, Criminal](#), best-selling American science author Mary Roach explores the global odyssey of the human-

animal conflict and how new technologies might offer hope for a more compassionate coexistence. Supported by the US Embassy London.

More environment-focused events here.

Health and Medicine

In [G-Lands: An Out of Body Experience](#) at Summerhall, a special talk accompanying an exhibition under the same title, medical artist Emily Fong and Dr Elaine Emmerson delve into the fascinating processes of the salivary gland, observing its journey from patient to laboratory, and assessing what its aspirations are outside of the body and beyond.

[Death and Beyond](#) explores how the story of the body's journey after death is as fascinating and revealing as it is macabre. Cat Irving, Human Remains Conservator for Surgeons' Hall Museums, joins forces with forensic pathologist and author of *The Seven Ages of Death*, Richard Shepherd, to show how what we leave behind can tell the story of how we lived.



Edinburgh Science Festival Launch, Summerhall, Edinburgh, 24th

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In Edinburgh's George Square, a special exhibition [Secrets of Healthy Cognitive Ageing](#) delves deep into the unique history of the Lothian Birth Cohort, a group of people who had worked with researchers at the University of Edinburgh since in 1932 they sat a test measuring their thinking abilities. What can this research tell us about our brain health and ageing?

More health and medicine [highlights here](#).

Technology

James Clerk Maxwell has been described as Scotland's most famous scientist, paving the way for much of our 21st century technology – from Bluetooth to broadband, from mobile phones to microwave ovens – yet in his homeland he is still far from a household name. Astronomer Royal for Scotland Prof. Catherine Heymans and black hole hunter Prof. Martin Hendry join forces for a whistle stop tour through the life and legacy of [Scotland's Einstein](#). Supported by the James Clerk Maxwell Foundation.

[How Robots will Help us in the Future](#) takes audiences on a voyage into the future with CEO of the new National Robotarium Stewart Miller alongside Heriot-Watt's Prof. Lynn Baillie as they explain how robots will help us stay safe, healthy and productive in the decades to come.

[Trust in Me](#) explores how Artificial Intelligence and evolving technology is causing us to think differently about who we are and who we might become. Tracey Follows, professional futurist and AI-human interface expert Kate Devlin delve into the dreams and nightmares of our digital future.

[Dictatorship, Revolution and Technology](#) explores the powers and pitfalls of modern communications technology for both regime and rebellion in the troubled nation of Belarus and asks what effect the evolution of these technologies might

have in similar situations around the world.



The Laser Garden PC exhibited a variety light sculptures during Edinburgh International Science Festival in 2018
More technology-focused [events here](#).

Sociable science

Who said the pursuit of knowledge had to be a solitary affair? For one night only, the Festival's flagship children venue City Art Centre is taken over by sci-curious adults during [Science Festival Late](#). Dive straight into the night with Ocean Constructors, prop up our Blood Bar and corral yourself for the Secret Life of Coral. Plus, [DATASPHERE](#) at the National Museum of Scotland also gets an adult-only evening, [Data After Dark](#).

Launching on 19 March, Toast to Gaia is a unique tour taking audiences around Edinburgh to showcase the community of independent bars and restaurants that have a keen eye on our future planet, each presenting a brand-new eco-cocktail.

More sociable science and society-focused [events here](#).

STEM + Arts = STEAM

Arts and science are often viewed as disparate pursuits but their worlds collide more often than we may think and the Festival is the perfect platform showcasing the best of STEAM, with Summerhall once again the main arts hub. Teaming up with ASCUS Art and Science, the venue hosts [Bioverse](#), a series of exhibitions exploring the dynamic biological revolutions within our natural world, with a particular focus on healthcare systems, coastal wetlands and our intertwined relationship with the microbial world.

Plus, [Elemental](#) by Bright Side Studios makes a welcome return, inviting audiences to interact with the elements on a magical, immersive multisensory exploration of the theory of the elements. Elemental was developed with support from Scottish Government's Festivals Expo Fund, and is supported by Cirrus Logic and Culture & Business Fund Scotland.



Women in STEM was an Edinburgh-wide public arts project in ESF 2020

Over at the Royal Botanic Garden Edinburgh, audiences will be able to enjoy [Seeing the Invisible](#), the first exhibition of its kind to be developed in collaboration between botanical gardens and art institutions from around the world and

featuring 13 augmented reality (AR) works by artists including: Ai Weiwei, Isaac Julien CBE, Daito Manabe, El Anatsui and Refik Anadol. The venue also presents [A Rose By Any Other Name](#), an exhibition all about the obsession, threat and the riddle of rhododendrons.

Art also has a place across the wider programme with the [DATASPHERE](#) exhibition at the National Museum of Scotland featuring artwork by Scottish artists Alan Brown and [Silent Chaos](#) while CAC is home to works by Ray Interactive, Ted Koterwas and John Brown.

More STEAM highlights here.

Culture Minister Neil Gray said: “We’re proud to support the Edinburgh Science Festival’s return to live events with this imaginative and educational programme that celebrates science in all its different forms. This year’s focus on revolutionary ideas, particularly in relation to finding solutions to climate change, couldn’t be more timely.

“The festival is a highlight of the Easter holidays and there is something here for everyone, especially children and families. As we embark on our culture recovery from the pandemic, I would urge people to support our world-class festivals by attending this fantastic programme of events.”

Councillor Donald Wilson, Culture and Communities Convener at the City of Edinburgh Council, said: “This Easter, the Edinburgh Science Festival will once again transform the city into a celebration of science and technology.

“The unique mix of art, design, photography and interactive exhibits included in the festival programme make science and the revolutionary concepts being explored both accessible and entertaining.

“The packed programme offers fascinating talks with Professors, pioneers, and experiments to entertain and educate

all ages. As a Council we continue our support of the Science Festival and I'm delighted that our own City Art Centre will again be transformed into a packed playground of discovery for even the youngest scientists and pioneers."

Cirrus Logic CEO John Forsyth said: "The human curiosity and inspiration that have propelled scientific and technological revolutions throughout the ages are more important than ever. Cirrus Logic is a proud sponsor of the Edinburgh Science Festival and we support the exploration of new breakthroughs in technology to ensure a brighter, sustainable future."

To learn more about Edinburgh Science's work on climate and sustainability outside of the Festival, including a free 8 step [NetZero Toolkit](#) helping UK businesses reach net zero carbon emissions by 2040, [visit the charity's website.](#)