



JOINT PRINCIPAL SPONSORS

TECHFEST

PUBLIC FESTIVAL PROGRAMME 2023

Spring into Science

MON 20 MAR > SAT 1 APR



**VARIOUS
LOCATIONS**



techfest.org.uk

Scottish Charity No. SC010349

A NOTE FROM TECHFEST'S JOINT PRINCIPAL SPONSORS 2023



Shell and bp are proud, as Joint Principal Sponsors, to welcome you to TechFest, as we celebrate the 29th annual festival of Science, Technology, Engineering and Mathematics (STEM).

We are delighted to support the public programme of fascinating events, which allow audiences to explore STEM. The varied programme encourages visitors to get involved in activities throughout the North-east of Scotland through the exciting variety of shows, presentations and workshops on offer.

By supporting TechFest we aim to provide both enjoyment for the public and inspiration for the next generation of scientists and engineers. We look forward to another successful festival.

Simon Roddy
Senior Vice President
Shell U.K. Upstream

Doris Reiter
Senior Vice President
bp North Sea

WELCOME TO TECHFEST PUBLIC PROGRAMME 2023



IMPORTANT INFO...



Age Classification

This key will help you identify which events are suitable for each age group. The appropriate symbols will be highlighted under each event.

F = Suitable for Family

Y = Suitable for Young Adult

S = Suitable for Student

A = Suitable for Adult

Disclaimer

All details of events in this programme are correct at time of going to print. TechFest reserves the right to alter or cancel programme information without prior notice. Any changes will be posted on the TechFest website. The views of presenters are their own and are not necessarily endorsed by TechFest, their Sponsors or Supporters.

How to Book Tickets:

More details of all the events and how to book are on the TechFest website. www.techfest.org.uk

Join our Mailing List

To receive the Festival programme and other TechFest information, please click [here](#).

PUBLISHED BY:
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Scottish Charity No. SC010349

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STEM COORDINATOR Yvonne McLellan

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PUBLIC PROGRAMME SPONSORED BY



The energy industry depends on advances in science, technology, engineering and maths. Investing in science is key for us to be able to provide the world with the energy it needs in a sustainable way.

TechFest offers something for everyone in STEM – it promotes young children’s natural curiosity as well as offers opportunities for secondary pupils to gain an insight into subjects for future studies or careers.

We are proud to play our part in inspiring the next generation of scientists and engineers with TechFest to improve the world in which we live. We call them our ‘Heroes of Tomorrow’.

Arne Gürtner,
Senior Vice President Upstream in the UK and Ireland at Equinor

AT A GLANCE



JOINT PRINCIPAL SPONSORS

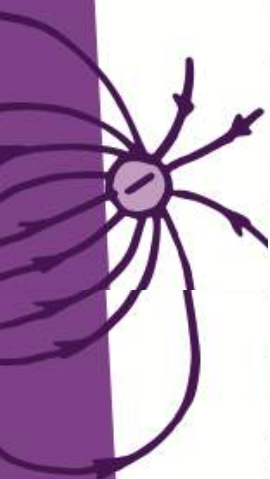
20 – 26 Mar

- HYBRID RENEWABLE ENERGY DEVICE
- MOSSES: A KEY ELEMENT IN BUILDING SUSTAINABLE CITIES
- GAME-CHANGING PORTABLE OIL CONDITION MONITORING DEVICE FOR THE MARINE AND OFFSHORE ENERGY INDUSTRY
- ANIMALS BEHAVING BADLY
- CLIMATE WEEK NE ACTIVITY DAY AT HAZELHEAD
- FAMILY DAY AT ROWETT INSTITUTE – HEALTHY AND SUSTAINABLE FOOD

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27 mar – 01 apr

- HOW DO YOU EXPLORE THE SITE FOR AN OFFSHORE WIND FARM?
- OFF-GRID & GREEN: DISCOVER GREYHOPE BAY'S JOURNEY AS AN ECO-VISITOR ATTRACTION
- SO YOU WANT TO BE A FORENSIC SCIENTIST?
 - AYE TO AI: NEW TECHNOLOGIES SUPPORTING DIAGNOSIS IN HEALTHCARE
 - MODERN RADIOTHERAPY: NEW TECHNOLOGY FOR BETTER CANCER TREATMENTS
 - EXTINCT



$E=mc^2$





TECHFEST

HYBRID RENEWABLE ENERGY DEVICE

Developing a hybrid machine, the ES-Wave, which is capable of harnessing unprecedented levels of energy from waves and also to store large amounts of energy creating a pumped hydro application in the middle of the ocean with no environmental constraints and with great efficiency thanks to the use of the tidal range.

Four machines in one, working 24/7, to provide what the Grid requires, reducing its inefficiencies and lowering the costs for the taxpayers.



PRESENTED BY: JAVIER DOMINGUEZ

FROM: TWEFDA LIMITED

DATE: MON, 20 MARCH 2023

TIME: 18:30

AGE RANGE: SA

VENUE: FRASER NOBLE BUILDING, UNIVERSITY OF ABERDEEN, AB24 3UE

WEBSITE: [HTTPS://WWW.TWEFDA.COM](https://www.tweFDA.com)

GAME-CHANGING PORTABLE OIL CONDITION MONITORING DEVICE FOR THE MARINE AND OFFSHORE ENERGY INDUSTRY

RAB Microfluidics will present and demonstrate its revolutionary "laboratory-on-a-chip" device, Oleum Oracle, for on-site measurement of lubricating oil condition. A world first, Oleum Oracle, improves efficiency, reduces operating expenditure and increases the uptime of rotating machinery.

PRESENTED BY: MICHAEL O'SULLIVAN, RAB MICROFLUIDICS

DATE: THU, 23 MARCH 2023

TIME: 18:30

AGE RANGE: SA

VENUE: FRASER NOBLE BUILDING, UNIVERSITY OF ABERDEEN, AB24 3UE



ANIMALS BEHAVING BADLY

We've all heard the statement "animals never lie". But they do – all the time. Some are experts at extortion, a few are dependent on alcohol, others have perfected robbery and clever con-tricks.



PRESENTED BY: DR MICHAEL LEACH

DATE: FRI, 24 MARCH 2023

TIME: 18:30

VENUE: ONLINE

AGE RANGE: F



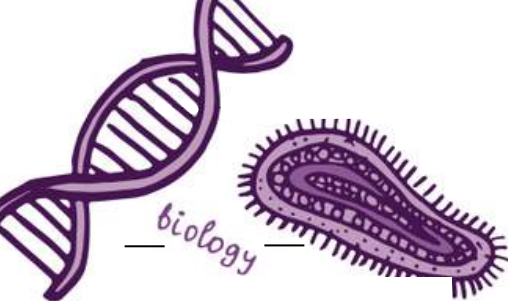
HOW DO YOU EXPLORE THE SITE FOR AN OFFSHORE WIND FARM?

Offshore wind energy is playing a vital and growing part of the world's energy supply as we accelerate to net zero. But what do we need to know about the piece of seabed we build these wind farms on- and how do we find this out? This talk will explain why and how we investigate these areas beneath the world's seas- and the roles involved for the engineers and scientists of the future.

PRESENTED BY: RICHARD ORREN, INOSYS LTD

DATE: MON 27 MARCH 2023

TIME: 19:00



MOSES: A KEY ELEMENT IN BUILDING SUSTAINABLE CITIES

Mosses can filter the air; this potential has been studied in mosses in Aberdeen. Their uptake of polycyclic aromatic hydrocarbons (PAHs) was observed to be linked to the variation in human activities. PAHs are pollutants emitted as gases or particulates from combustion activities. The inhalation or ingestion of PAHs has carcinogenic and other harmful effects. This talk shares how the presence of mosses in the urban environment can serve as sustainable tools for greening cities.

PRESENTED BY: THOMAS DANIYA,

UNIVERSITY OF ABERDEEN

DATE: TUE, 21 MARCH 2023

TIME: 18:00

VENUE: FRASER NOBLE BUILDING, UNIVERSITY OF ABERDEEN, AB24 3UE

AGE RANGE: YSA

FAMILY DAY AT ROWETT INSTITUTE – HEALTHY AND SUSTAINABLE FOOD



We welcome families to attend our event. There will be hands on activities for all ages to support learning on healthy and sustainable food.

PRESENTED BY: ROWETT INSTITUTE,

UNIVERSITY OF ABERDEEN

DATE: SUNDAY 26 MARCH 2023

TIME: 9:30 – 12:30

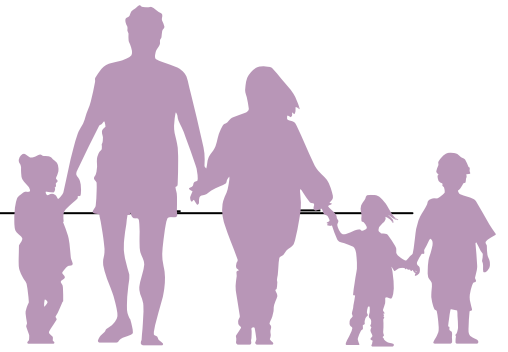
VENUE: THE ROWETT INSTITUTE, ASHGROVE ROAD WEST, ABERDEEN AB25 2ZD

AGE RANGE: FYSA





TECHFEST



CLIMATE WEEK NE FAMILY FUNDAY

Join us for a day of green family fun! Pets Corner, stalls with loads of hands on activities and information about nature, conservation projects, recycling and how to save energy at home. The little and big kids among us will have a whole heap of fun while learning! Free. No booking required.

Car parking and Bus Routes nearby. Saturday 25th March 2023

ORGANISED BY: ABERDEEN CITY COUNCIL
RANGERS SERVICE

DATE: SAT, 25 MARCH 2023

TIME: 11:00 - 15:00

VENUE: HAZLEHEAD PARK, ABERDEEN

MORE INFO: [HERE](#)



OFF-GRID & GREEN: DISCOVER GREYHOPE BAY'S JOURNEY AS AN ECO-VISITOR ATTRACTION

Join us at the Greyhope Bay Centre where we'll be showcasing our state-of-the-art facilities and share our story so far operating as an off-grid, eco attraction! We'll be discussing the environmental benefits of these systems and the challenges we've faced during our first year of being open to the public.

This event can be attended in-person or livestreamed online. Entry is free but booking required for in-person attendance as spaces are limited.

PRESENTED BY: GREYHOPE BAY

TYPE: HYBRID (IN-PERSON AT CENTRE AND LIVE STREAMING)

DATE: TUE, 28 MARCH 2023

TIME: 14:00-15:00. ONLINE BROADCAST TO RUN FROM 14:15PM.

VENUE: GREYHOPE BAY CENTRE, TORRY BATTERY, ABERDEEN, AB11 8QX

AGE RANGE: FYSA



MODERN RADIOTHERAPY: NEW TECHNOLOGY FOR BETTER CANCER TREATMENTS

Wilhelm Roentgen discovered x-rays almost 130 years ago and within three years of his detection of these mysterious rays, radiation was being used to treat cancer. Of course, modern radiotherapy technology has advanced beyond anything that Roentgen might have imagined and the pace of development is now faster than ever. This talk will describe the treatment technologies that are now available and how they allow us to visualise and treat cancer with unprecedented accuracy.



PRESENTED BY: DR JOHN MCLELLAN, HEAD OF RADIOTHERAPY PHYSICS, NHS GRAMPIAN AND HONORARY LECTURER, UNIVERSITY OF ABERDEEN

DATE: THUR 30 MARCH 2023

TIME: 19:15

VENUE: FRASER NOBLE BUILDING, UNIVERSITY OF ABERDEEN, AB24 3UE

AGE RANGE: 16+

EXTINCT

PRESENTED BY: PROFESSOR BEN GARROD

Why do some species go extinct and what can we do to save endangered species?



For as long as there have been species, there has been extinction. What causes it? Why do some species go extinct and what can we do to save endangered species? Join Prof Ben Garrod as he explores how extinction is one of the most complex, interesting and evolving topics. Writing about the most devastating mass extinctions to have affected the planet and life on it, Ben explores what happened to the world's first super-predator, why one of the most successful animals of all time went extinct, and how the mighty Tyrannosaurus rex was killed by a huge asteroid.



SO YOU WANT TO BE A FORENSIC SCIENTIST?

It is usually the kids that get to have all the fun, but not this time! **This interactive event** is for adults to come and play at being a Forensic Scientist at the RGU forensic lab. Help put the pieces of the case together and try to solve the crime.

PRESENTED BY: WENDY DEEGAN, LECTURER IN FORENSIC SCIENCE, RGU SCHOOL OF PHARMACY AND LIFE SCIENCES

DATE: WED, 29 MARCH 2023

TIME: 19:00 - 21:00

VENUE: SIR IAN WOOD BUILDING RGU, AB10 7GJ

AGE RANGE: 18+

SM: @RGUPALS

AYE TO AI: NEW TECHNOLOGIES SUPPORTING DIAGNOSIS IN HEALTHCARE

Think a career in technology is not for you? Come along and we will tell you all about the fun we are having and great work we are doing to deliver Artificial Intelligence into Healthcare.

PRESENTED BY: ICAIRD, UNIVERSITY OF ABERDEEN

DATE: THUR 30 MARCH 2023

TIME: 18:30

VENUE: FRASER NOBLE BUILDING, UNIVERSITY OF ABERDEEN, AB24 3UE

TWITTER: @ABDNCHDS;
@ICAIRD_SCOT;
@ABERDEENUNI



AGE RANGE: F

TechFest Talks

Our podcast series where industry professionals are interviewed by students.



Explorathon Podcast Series

As part of the Explorathon 2021 event. Student led podcast series where students, who are interested in diabetes, had the opportunity to interview people who work in the field of diabetes, and/or who have been diagnosed with diabetes.

Inside Forensic Science

Commissioned by the Leverhulme Research Centre for Forensic Science (LRCFS) at the University of Dundee.

Inside Forensic Science tells the story of a crime scene investigation through the eyes of forensic scientists. This first series focuses on a historical unsolved murder case from 1912 and asks forensic scientists 'what would you do differently today?'

The podcast was commissioned by the Leverhulme Research Centre for Forensic Science (LRCFS) at the University of Dundee. LRCFS works to disrupt conventional thinking, embrace new opportunities, and drive innovation that enables reliable science to be used in the delivery of justice.

The series is narrated by Pennie Latin, the researcher was Heather Doran (Public Engagement Manager, LRCFS) consultant Pauline Mack (Digital Learning Technology Lead, LRCFS).

Inside Forensic Science is an Adventurous Audio production. The podcast was funded by The Leverhulme Trust.

<https://www.dundee.ac.uk/leverhulme/citizenscience/details/inside-forensic-science-podcast.php>

UPCOMING EVENTS

TECHFEST ACTIVITY WEEKEND

SAT 3 > SUN 4 JUNE



ROBERT GORDON UNIVERSITY



THE **CREST AWARDS** SCHEME IS THE BRITISH SCIENCE ASSOCIATION'S FLAGSHIP PROGRAMME FOR YOUNG PEOPLE, PROVIDING SCIENCE ENRICHMENT ACTIVITIES TO INSPIRE AND ENGAGE 5–19 YEAR OLDS.

It is the only nationally recognised accreditation scheme for project work in science, technology, engineering and mathematics (STEM) subjects.

In addition to giving young people the opportunity to undertake hands-on science, CREST Awards are designed to help develop skills that are transferrable to other subjects, further education and future employment.

To find out more about CREST Awards and to see how you can get involved visit the TechFest website: www.techfest.org.uk/crest or email: kirstycranna@techfest.org.uk

TechFest is your Regional CREST Support Organisation for Scotland..
TechFest.org.uk

To find out more information about CREST and how to register for awards follow the link below:
www.crestawards.org



CAREER LINKS

Biology and the Environment

Off-Grid & Green: Discover Greyhope Bay's journey as an eco-visitor attraction

How do you explore the site for an offshore wind farm?

Animals Behaving Badly

Mosses: A key element in building sustainable cities

Extinct

Biomedical Sciences

So you want to be a Forensic Scientist?

Design and Technology

Off-Grid & Green: Discover Greyhope Bay's journey as an eco-visitor attraction

Aye to AI: New technologies supporting diagnosis in healthcare

Modern Radiotherapy: New Technology for Better Cancer Treatments

Game-changing portable oil condition monitoring device for the marine and offshore energy industry

Hybrid Renewable Energy Device

Energy Transition

How do you explore the site for an offshore wind farm?

Game-changing portable oil condition monitoring device for the marine and offshore energy industry

Hybrid Renewable Energy Device

Food and Drink

Family Day at Rowett Institute – Healthy and sustainable food

Forensic Science

So you want to be a Forensic Scientist?

Health

Modern Radiotherapy: New Technology for Better Cancer Treatments

Aye to AI: New technologies supporting diagnosis in healthcare

Research

Modern Radiotherapy: New Technology for Better Cancer Treatments

Mosses: A key element in building sustainable cities

STEM Careers and Science Communication

Animals Behaving Badly

Extinct

**Skills
Development
Scotland**

THANK YOU



TO ALL OF OUR CONTRIBUTORS WHO HELPED MAKE THE TECHFEST 2023 PUBLIC FESTIVAL POSSIBLE!

JAVIER DOMINGUEZ, TWEFDA LIMITED

THOMAS DANIYA, UNIVERSITY OF ABERDEEN

MICHAEL O'SULLIVAN, RAB MICROFLUIDICS

DR MICHAEL LEACH

ICAIRD, UNIVERSITY OF ABERDEEN

ABERDEEN CITY COUNCIL RANGERS SERVICE

PUBLIC ENGAGEMENT WITH RESEARCH UNIT,
UNIVERSITY OF ABERDEEN

PROF ALEX JOHNSTONE AND THE ROWETT
INSTITUTE, UNIVERSITY OF ABERDEEN

MICHAEL O'SULLIVAN, RAB MICROFLUIDICS

RICHARD ORREN, INOSYS LTD

GREYHOPE BAY

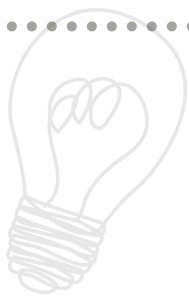
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PHYSICS, NHS GRAMPAN AND HONORARY
LECTURER, UNIVERSITY OF ABERDEEN

WENDY DEEGAN, ROBERT GORDON UNIVERSITY

BEN GARROD

TECHFEST IS KINDLY HOSTED BY THE UNIVERSITY OF ABERDEEN.



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