

2024/25

POWER OF INNOVATION

The University of Edinburgh's annual impact review



**THE UNIVERSITY
of EDINBURGH**



**EDINBURGH
INNOVATIONS**



**Data-Driven
Innovation**

Foreword



Professor Liz Baggs
Interim VP Research and Innovation



Dr Andrea Taylor
CEO, Edinburgh Innovations

The University of Edinburgh is a beacon of knowledge and discovery. We harness our extraordinary ideas for the benefit of everyone; taking research out of academia and into the world. We are a driver of impact and wealth creation as we catalyse knowledge into change.

We do this in three main ways: by partnering with others to understand real-world challenges and co-create for growth; by protecting and licensing our inventions and other intellectual property; and by forming companies and attracting investment.

Our Research and Innovation Strategy 2030 sets out three missions where the world most urgently needs solutions: shaping the future of health and care; tackling the climate and environmental crisis; and harnessing data, digital and AI for public good.

In this report we quantify our innovation activities aligned to our missions underlining our commitment to mission-orientated impact. The evidence shows significant investment and research funding awarded for health (with significant crossover with data); strong consultancy income from climate and environment projects; and a majority of new companies created to harness data and AI for good.

Our strong commercialisation results demonstrate our expertise, brought to life through the stories of our successes.

This year we have also launched the Innovation Career Pathway, formalising innovation alongside research and teaching as a route to career development, built around a UK-first Competency Framework. This fulfils a commitment in the Research and Innovation Strategy and supports our ambition to double the number of innovation-active academics.

Alongside creating licensing opportunities for company adoption, we are committed to creating more companies. We see this as a direct route to impact for our academics and students, catalysing change and bringing investment. Our companies support economic and regional development as they contribute to growing clusters and, in the best cases, they create societal change on a global scale, from advances in renewable energy to curing disease.

We celebrate the University’s innovation ecosystem, from our Data-Driven Innovation and engineering biology hubs, to our Pathways Pledge to increase women’s participation in entrepreneurship.

At the University of Edinburgh, we unlock innovation through our unique combination of purpose, expertise and infrastructure.

Work with us to make ideas work for a better world.

Innovation involves the utilisation, adoption, and commercialisation of new ideas, technologies, and research to benefit society and the economy.

Commercialisation is the process of converting university research into products and services.

How we make it happen:

- Partnerships
- Provision of expertise
- Venture creation and investment
- IP, patents and licensing
- University innovation ecosystem

Our Innovation in Numbers 2024/2025*



*Figures represent the period 1 August 2024 - 31 July 2025, unless otherwise stated.

From research to impact

These charts illustrate our innovation activity aligned to the three core University missions within the Research and Innovation Strategy 2030.

- Shaping the future of health and care
- Both health and climate
- Tackling the climate and environmental crisis
- Both climate and data
- Harnessing data, digital and AI for good
- Both data and health

i Projects were classified by primary and, where relevant, secondary mission. Climate and environment figures were generated using an existing methodology that supports institutional reporting on this theme.



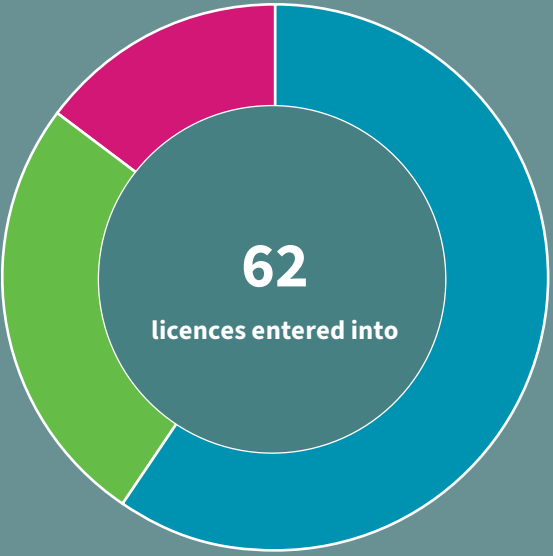
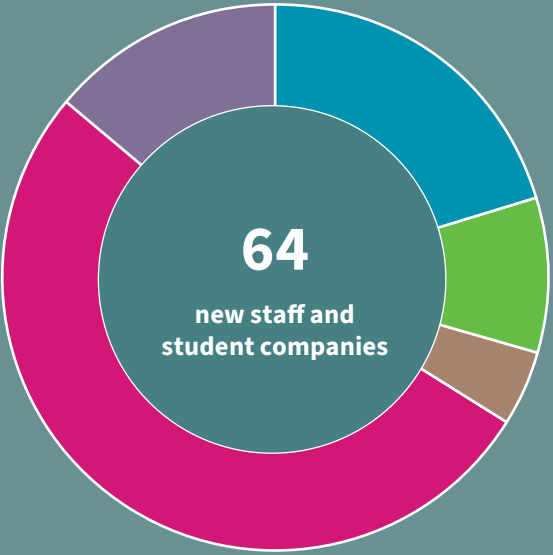
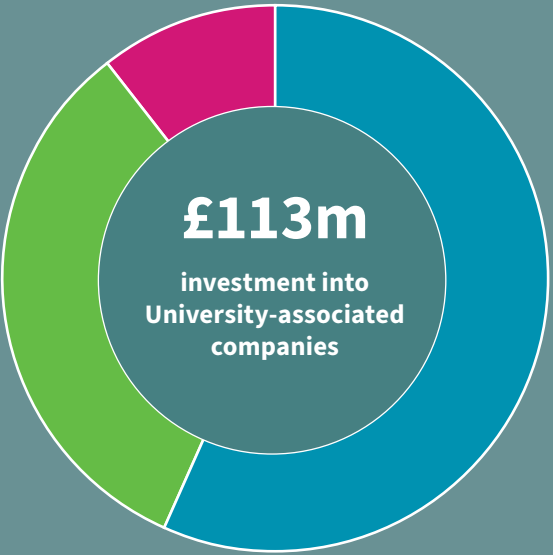
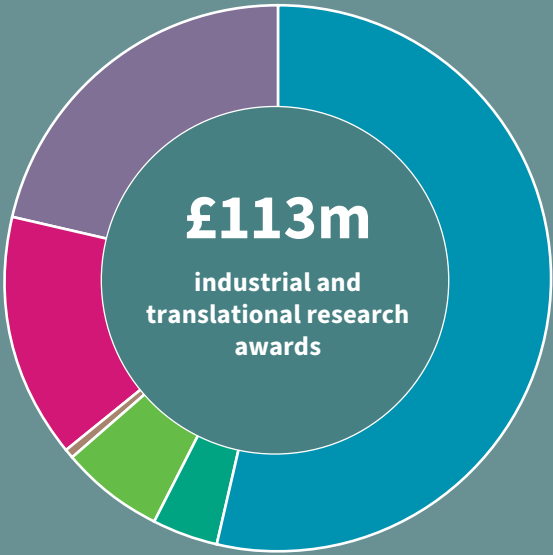
The Royal (Dick) School of Veterinary Studies’ advanced surgical, laboratory and animal facilities support research translation



Facilities like the Edinburgh Plant Growth Facility advance discoveries in science



Professor Shannon Vallor is driving the conversation on AI ethics and responsible technology



Partnerships

AI and high street eye tests could reveal dementia risk

Picture: Professor Baljean Dhillon

Data scientists and clinical researchers have been working with high street opticians for the first time to develop a digital tool that can predict a person’s risk of dementia from a routine eye test.

The NeurEYE research team, led by the University of Edinburgh, with Glasgow Caledonian University, has collected almost a million eye scans from opticians across Scotland, forming the world’s largest data set of its kind.

The scientists are using artificial intelligence and machine learning to analyse the image data, linked to relevant patient data on demographics, treatment history and pre-existing conditions. This data is anonymised and patients can’t be identified, but it allows researchers to find patterns that could indicate a person’s risk of developing dementia.

Retired mechanical engineer, David Steele, 65, whose mother had Alzheimer’s, said predictive software like this could have saved his family ten years of heartache and struggle. He said: “My mum

was initially diagnosed with dry macular degeneration, but this masked the underlying issue that we now know to be cerebral blindness linked to Alzheimer’s. If we had known, then we would have been able to access help.”

Identifying people at risk of dementia could also accelerate the development of new treatments.

The data is held securely in the Scottish National Safe Haven, hosted by the Edinburgh International Data Facility through EPCC at the University of Edinburgh.

The project came out of a partnership called NEURii, between global pharmaceutical, philanthropic, health data and medical research organisations and the University of Edinburgh. The collaboration, facilitated by Edinburgh Innovations, aimed to transform care for people living with dementia.



£113m
secured in combined industrial and translational research awards



£15m
processed for consultancy projects



Picture: Working with the Red Cross in Madagascar

Building cyclone-resistant homes

Tropical cyclones destroy thousands of traditional houses around Madagascar’s coast every year.

The School of Engineering’s Dr Thomas Reynolds, Dr Yuner Huang and Dr Chris Beckett are working with the Red Cross and local people to test construction techniques and materials that will build more resilient homes.

Working alongside researchers from the universities of Liverpool and Antananarivo, they developed a consistent process for making building components and a portable structural testing rig.

The team worked with the Red Cross to train and enable local operatives to perform structural tests.

They used software developed at the University of Edinburgh to give an immediate visual representation of results, demonstrating examples to the – sometimes large – crowds

of local people watching.

Back in Edinburgh, the team analysed the data and made recommendations about how guidelines and experiments should be adapted for future fieldwork and how the rig can be adapted to test other components used in traditional building techniques, such as clay bricks.

The project was initially funded by the University’s EPSRC IAA programme and has been supported by Edinburgh Innovations.



649
organisations collaborated with



Picture: The CoSTAR Realtime Lab in action



New £9m virtual production studios for Scotland’s creative industries

The CoSTAR Realtime Lab opened its first dedicated virtual production studio at Chroma Developments’ Water’s Edge in Dundee in February, marking the start of operations for a major infrastructure project that will provide a significant boost to Scotland’s screen industries.

Researchers are collaborating with industry partners to enhance production pipelines through advancements in 3D environments, video processing, performance and motion capture, facial animation, automated speech, and hyper-realistic digital film sets.

Led by Abertay University, the Lab is operated in partnership with the University of Edinburgh, supported by Edinburgh Innovations, with CodeBase, Interface and Chroma Developments.

It represents the largest investment in creative industries R&D to date, with a £75.6m grant awarded by the UKRI Infrastructure Fund and delivered by the Arts and Humanities Research Council.

Data to tackle liver disease

SteatoSITE is a co-created data resource for improving the understanding, prevention, and treatment of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD).

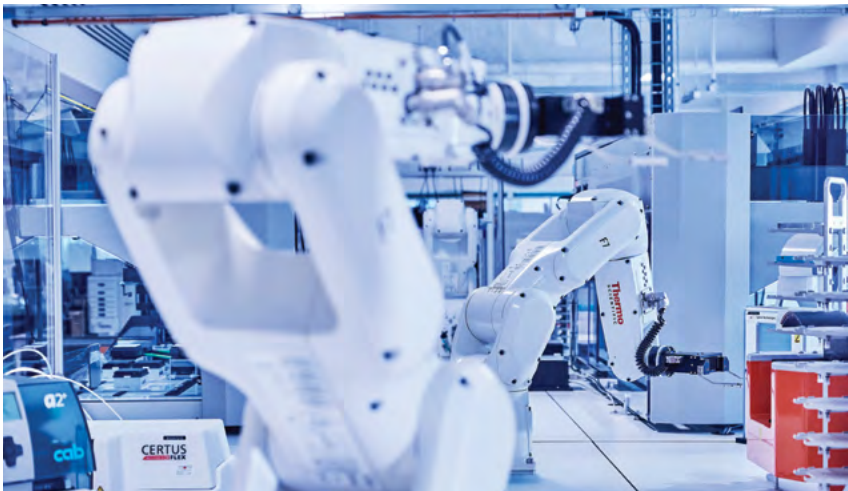
Containing data from 940 patients in Scotland, SteatoSITE combines tissue-derived metrics and clinical data such as pathology scores, hepatic RNA sequencing, and routine health data from electronic patient records. It was co-created with funding from Innovate UK by the University of Edinburgh and the Precision Medicine Scotland

Innovation Centre in Glasgow, using tissue from the NHS Biorepository Network and data from 12 of the 14 Scottish National Health Service (NHS) boards through the Scottish Safe Haven Network.

Using the data storage and computational infrastructure provided by EPCC Safe Haven Services, SteatoSITE enables researchers to collaborate with industry to develop impactful tools for global public health.



Picture: The Edinburgh Genome Foundry



C-Loop engineering biology hub to convert industrial waste into valuable chemicals

A new sustainable manufacturing hub launched in June will use engineering biology techniques to transform carbon-based waste usually destined for landfill into next-generation materials including pharmaceuticals and cosmetics.

By engineering microorganisms, the Carbon-Loop Sustainable Biomanufacturing Hub (C-Loop) aims to make the manufacturing

of everyday products – more than 90 per cent of which are manufactured from fossil fuels using unsustainable chemical processes – cleaner and part of a circular economy.

The new £14m hub will also establish the UK’s first BioFactory, a dedicated platform for waste analysis, sustainability evaluation and scale-up that will cut emissions, reduce landfill and help to build a fossil-free manufacturing base.

It will be led by Professor Stephen Wallace, UKRI Future Leaders Fellow and Chair of Chemical Biotechnology from the University of Edinburgh, in partnership with the Universities of Manchester, Nottingham and Surrey, University College London and Imperial College London.

Professor Wallace, Director of C-Loop, said: “Amid a growing population, diminishing natural resources, and a changing climate, there is now an urgent environmental, industrial and political imperative to rapidly harness engineering biology technologies to defossilise manufacturing and accelerate the UK’s path to net zero.”

Supported by Edinburgh Innovations, more than 40 industry partners are involved in the hub. Dr Andrea Taylor, CEO of Edinburgh Innovations, said: “In 2023, the UK Government identified engineering biology as one of its five priority areas, and it’s fantastic to see investment into this field: one that offers so much promise for sustainable industry, and an area where the UK can lead globally.

“At Edinburgh, we have a host of pioneering, engineering biology researchers such as Professor Louise Horsfall and Professor Susan Rosser, and world-class facilities. We would urge companies to get in touch and work with us as part of this future green industrial revolution.”

Picture: Professor Stephen Wallace



Microbes transform plastic waste into paracetamol

Working with pharmaceutical company AstraZeneca, a research team used microbes to turn everyday plastic waste into paracetamol.

In findings published in Nature Chemistry in June, the new method, using engineering biology techniques, produced virtually no carbon emissions.

The team, also led by Professor Stephen Wallace, of the University’s School of Biological Sciences, used genetically reprogrammed E. coli, a harmless bacterium, to transform a molecule derived from polyethylene terephthalate (PET) plastic, known as terephthalic acid, into the active ingredient of paracetamol.

Supported by Edinburgh Innovations, he is now in discussions with several pharmaceutical companies interested in manufacture.

Ventures and Investment

Biotech spinout Kynos Therapeutics acquired by Dr. Falk Pharma

In October 2024, biotechnology spinout Kynos Therapeutics was acquired by clinical stage biopharmaceutical company Dr. Falk Pharma GmbH, which will develop Kynos' kynurenine 3-monooxygenase (KMO) inflammation inhibitors for the treatment of acute pancreatitis.

The company was spun out of the University of Edinburgh's Institute for Regeneration and Repair and the Centre for Cardiovascular Science in 2022 by co-founders Professors Damian Mole and Scott Webster, together with founding investor Epidarex Capital,

a leading early-stage transatlantic venture fund. The company has been backed by investment from Epidarex Capital, IP Group and Scottish Enterprise and led by CEO Jonathan Savidge since 2022.

Since its foundation, Kynos Therapeutics has progressed development of its lead molecule, KNS366, a highly potent and selective first-in-class inhibitor of the enzyme KMO, through a Phase I trial. KNS366 was shown to be safe and well-tolerated and led to a dose-dependent inhibition of the enzyme KMO and modulation of its downstream metabolites.

Dr. Falk Pharma has now added KNS366 to its pipeline for future clinical trials, initially focusing on acute pancreatitis.

Edinburgh Innovations supported the founders through early industry partnerships, technology transfer and company formation.

The return of funds to the University, due to the sale of its shares and royalties on its intellectual property, will help support future spinouts and startups.

Biotech startup MiAlgae raises £14m for new production facility



Picture: Old College Capital with Douglas Martin (centre) at the Earthshot Prize

It was a big year for biotech startup MiAlgae, which raised £14m to build an industrial scale production facility and was a finalist in the Earthshot global environment prize.

Founded by Douglas Martin while he was studying for an MSc in Synthetic Biology and Biotechnology in 2016, MiAlgae uses co-products from the whisky

industry to sustainably produce Omega-3 for fish feed.

The company has now reached commercial-scale of its product, NaturAlgae, at its demonstrator site in Balfron, Stirlingshire. The expansion will boost MiAlgae's production capacity, fuel its global growth, and create new 'green' jobs.

New venture capital investors SWEN Blue Ocean, Clay Capital, and Rabo Ventures joined existing backers Equity Gap, Scottish Enterprise and Old College Capital (OCC), amongst others, in the oversubscribed funding round.

In December, MiAlgae and OCC travelled to South Africa as finalists

in the Earthshot Prize, a global search for game-changing solutions to repair the planet, presided over by His Royal Highness The Prince of Wales.



55 student startups
4 staff spinouts | 5 staff startups

New spinout CGEN set to transform offshore renewables

CGEN Engineering launched in October, with modular generator technology the founders say could reduce the levelised cost of energy for offshore renewables by 10 to 15 per cent.

Its lightweight, stackable generator system can be easily transported to onshore and offshore wind, wave, and tidal installations, where it is assembled into a complete power system for converting mechanical energy into electricity.

In contrast with conventional systems, each module can be added, replaced or moved

individually, meaning energy companies can keep operations running without long downtimes. They can also upgrade their system over time without major overhauls.

Invented by Professor Markus Mueller of the University's School of Engineering and developed by CGEN's managing director, research fellow Dr Joseph Burchell, alongside mechanical and manufacturing engineer Mike Galbraith, the team found that their technology can increase the operational life of installations by 30 to 40 per cent when compared to conventional generator systems.



Picture: The CGEN team on Mocean Energy's BlueX wave converter

CGEN participated in Innovate UK's ICURe accelerator programme and received support from EPSRC's Impact Acceleration Account and Scottish Enterprise. It was supported to spin out by Edinburgh Innovations and received seed funding from OCC.

Picture: University of Edinburgh's Converge 2024 winners



Awards for staff and student entrepreneurs

University of Edinburgh student and staff companies triumphed in this year's national entrepreneurship awards.

At Converge, E.V.A Biosystems, co-founded by Dr Alexander Speakman, a PhD graduate of the Institute of Bioengineering, won the Converge top prize in the Net Zero category.

The startup is developing selectively degradable plastics that can detect their environment, such as seawater or landfill, and degrade themselves in response. E.V.A. also scooped the IBiolC award and, later in the year, announced a partnership with Coca-Cola.

Other Converge winners were Seasat, which uses satellite images and machine learning to

monitor coastal water conditions and SolarSub, whose system of floating solar panels addresses the challenges of overheating and reduced efficiency in water-based solar farms.

SolarSub, co-founded by School of Engineering alumni Sebastiaan Schalkwijk and James Taylor, also won at Scottish Edge, alongside SimPat, with its AI-powered online medical education platform; Sunsave Solutions, which aims to provide low-cost, clean electricity to rural communities worldwide, and digital entrepreneurship programme Creator Campus.

Winning partnerships

SolarSub won again at the Scottish Knowledge Exchange Awards, as did the partnership between longstanding University of Edinburgh spinout Canon Medical Research Europe and Professor Sotos Tsafaris, of the University's School of Engineering.

The relationship with Professor Tsafaris has contributed to increased inward investment and headcount in Canon Edinburgh, which now employs 135 people, and has helped Canon Medical Japan develop expertise and manage risk in AI and healthcare. Canon Medical has also joined the University's new Causal AI in Healthcare (CHAI) Hub.



Picture: Professor Sotos Tsafaris (left); Duncan Simpson of Canon Medical Research Europe (right)

And three University of Edinburgh companies were named finalists in Scotland's Life Sciences Awards 2025: biotech company Dyneval, based at the Roslin Innovation Centre, under CEO Dr Tiffany Wood.

Other finalists were Roslin CT, which span out of the Roslin Institute in 2006 and exited in 2022, and the four founders of student startup Bioliberty, School of Engineering graduates Rowan Armstrong (CEO) and Ross O'Hanlon (CTO) and co-founders Conan Bradley and Shéa Quinn.

Picture: Professor Steve Pollard



New spinout Trogenix unveils revolutionary cancer treatment platform

Spinout Trogenix emerged from stealth mode, unveiling a revolutionary new technology platform that achieves unprecedented precision in targeting aggressive cancers, starting with brain cancer.

Pre-clinical trials have shown its technology can kill glioblastoma cancer cells, leaving nearby healthy cells untouched in a way previous therapies have not managed, whilst also activating the body's immune system against tumours. Currently, only 25% of glioblastoma patients survive beyond one year.

Trogenix' Synthetic Super-Enhancer (SSE) precision viral immunotherapy technology, Odyssey, uses a combination of gene control, machine learning, gene therapy and precision targeting to attack the cancer cells and stimulate the immune system.

Studies demonstrated curative responses with no toxicity and evidence of persistent anti-tumour immunity. Phase 1/2 clinical trials in human patients are planned for spring 2026.

Trogenix emerged from groundbreaking research led by Professor Steve Pollard of the University's Institute for Regeneration and Repair, working with the UK Centre for Mammalian Synthetic Biology and the Cancer Research UK Scotland Centre. It was co-founded by investor 4BIO Capital, which specialises in creating breakthrough therapeutic companies.

The company has also received investment from IQ Capital, Cancer Research Horizons, the US National Brain Tumor Society, AIN Ventures and Old College Capital (OCC), and was supported to spin out by a deal team at Edinburgh Innovations.

Dr Ken Macnamara, a veteran gene therapy executive who held leadership roles at Bayer/AskBio and Synpromics was appointed as Chief Executive Officer.



64

company launches

Neuranics raises £6m for magnetic sensing

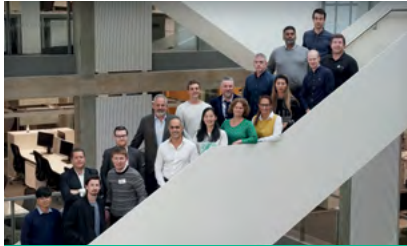
Deep tech semiconductor company Neuranics, a joint spinout between the universities of Edinburgh and Glasgow, raised £6m in April to accelerate global growth and commercial adoption of its magnetic sensing technology.

The investment round was led by Blackfinch Ventures, with participation from Archangels, and continued support from Par Equity, the University of Glasgow, and Old College Capital, the University of Edinburgh's venture investment fund.



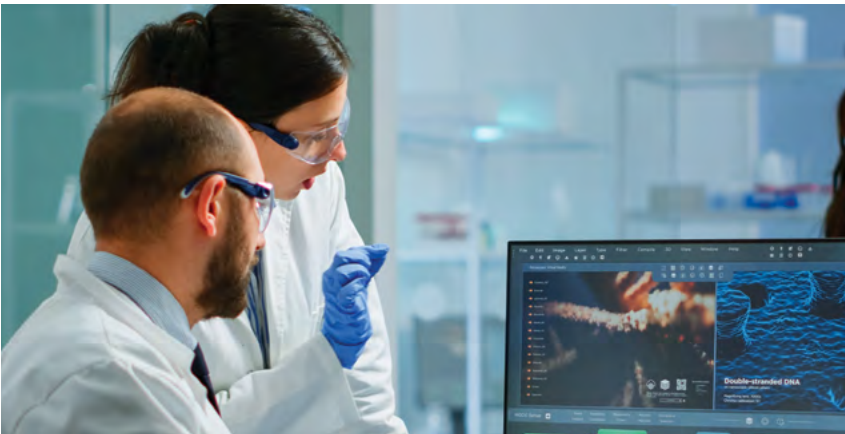
Picture: L-R Kia Nazarpour, Hadi Heidari and Noel McKenna of Neuranics

The funding will drive the company's next phase – strengthening its team, accelerating innovation across core technologies, and enabling widespread integration of its Tunnelling Magnetoresistance (TMR) technology into emerging and high-tech markets, including extended reality (XR), wearables, and digital health monitoring.



£113m

invested in University-associated companies



Spinout Forth Tx to revolutionise fibrosis treatments

In March, Forth Therapeutics (Forth Tx) launched with a precision therapeutics platform to tackle fibrosis across multiple organ systems.

The biotech company builds on pioneering research from Professor Neil Henderson, out of the University's Institute for Regeneration and Repair.

It was supported by the venture creation team at Edinburgh Innovations, and backed by Sofinnova Partners and Old College Capital.

Its assets target key fibrosis pathways, underpinned by state-of-the-art 'omics' technology.

Omics are methods used to study biological molecules (like DNA, RNA, proteins, and metabolites) on a large scale.

Fibrosis, or tissue-scarring in response to an injury, can lead to severe organ damage or even death.

Forth Tx also holds access to one of the largest single-cell human liver disease datasets in the world, accelerating precision drug discovery and development.



Resolution: investment for novel macrophage cell therapy

In October, biotech spinout Resolution Therapeutics raised £63.5m in a series B financing round led by healthcare investor Syncona Ltd.

The company, founded on research by Professor Stuart Forbes of the Institute for Regeneration and Repair, demonstrated preclinical proof of concept of safety and efficacy for RTX001, a novel autologous engineered macrophage cell therapy for end-stage liver disease.

In November, data presented from the completed MATCH Phase 2 trial showed strong promise for RTX001 as a treatment. A new Phase I/II EMERALD trial started in October 2025.

Investing at the early stages

Old College Capital (OCC) is the University's in-house venture investment fund. Part of Edinburgh Innovations, OCC manages Edinburgh's early-stage investment activities and shareholdings, supporting exciting ideas and technologies emerging from the University.



Head of Investment Dr Kate Fox said: "In 2024/25, £113m was invested into University-associated companies, from OCC and our partner investors under our co-investment model. This is a fantastic outcome given continuing market headwinds, which saw the overall number of UK venture investment deals fall by between 15% and 20% over the period.

"Through initiatives like Launch 20 and Launch 50, OCC invested £3.8m into 25 companies this year. As part of our evergreen model, the University has committed to reinvesting returns and proceeds – such as from the Kynos exit this year – into the next generation of founders. OCC's assets under management remain at more than £65m."



1,236

jobs created by 102 OCC portfolio companies

Technologies

Cancer drug candidate in trials

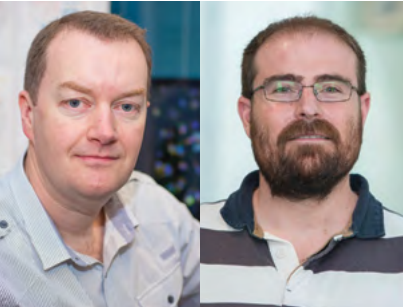
A Phase 1A clinical trial of a drug candidate for hard-to-treat cancers, discovered at the University of Edinburgh and licensed by US biopharmaceutical company Nuvectis Pharma, Inc., came to a successful conclusion, triggering the start of Phase 1B.

The novel compound, NXP900, employs a novel mechanism of action to inhibit the activity of SRC family kinases (a particular group of enzymatic proteins), in particular YES1 and SRC. An association between the SRC family of kinases (SFKs) and cancer growth has been known for several decades but previous attempts at treating solid tumours using this mechanism have met with little success.

The Phase 1A study proved the safety, tolerability and pharmacokinetic properties of NXP900 in patients with advanced solid tumours. Phase 1B will be conducted throughout 2026.

Ron Bentsur, Chairman and Chief Executive Officer of Nuvectis said: “We are very excited to announce the initiation of the NXP900 Phase 1B programme, starting with the single agent segment. We believe that NXP900 represents a unique ‘pipeline in a pill’ opportunity with the potential to address several substantial areas of unmet medical need in oncology.”

The drug discovery programme was led by Professors Neil Carragher and Asier Unciti-Broceta at Edinburgh Cancer Research within the University of Edinburgh’s Institute of Genetics and Cancer, involving more than ten years of research.



Picture: Professor Neil Carragher, Professor Asier Unciti-Broceta

Nuvectis licensed rights to NXP900 in September 2021 in a deal facilitated by Edinburgh Innovations, and the clinical trials began in September 2023.

Speaking at the start of the trial, Professor Neil Carragher said:

“This is the news we have been waiting for, as NXP900 makes the all-important transition from the lab into a clinical setting.

“This is a great step towards a medicine that could treat some of the toughest cancers and extend the lives of many thousands of people.”

Professor Unciti-Broceta said: “To know a drug discovered and developed preclinically in our lab is now to be given to patients is extremely rewarding – it is the realisation of years of work, collaboration and ambition.”



132

inventions disclosed



62

licences entered into



Picture: PRRS-resistant pigs developed at the Roslin Institute

Gene-edited pigs approved for US market

Pigs produced to be resistant to one of the world’s most costly livestock diseases, using technology developed by the Roslin Institute, at the Easter Bush Agritech Hub, were approved for sale to US consumers.

In May, the US Food and Drug Administration (FDA) approved the use of a gene-editing technology that makes pigs resistant to Porcine Reproductive and Respiratory Syndrome (PRRS) for the US food supply chain.

This landmark approval for animal genetics company Genus, following years of development, helps meet the challenge of a disease that is endemic to most pig-producing regions.

The infection, which causes fever, respiratory distress, and premature births, costs industry approximately \$2.5bn (£1.75bn) each year in lost revenue in the US and Europe alone.

Researchers at the University of Edinburgh’s Roslin Institute focused their efforts on the CD163 gene in pigs. This gene produces a receptor on the surface of cells, which the PRRS virus uses to cause infection.

Experts removed a small section of this gene, focusing on the section of the receptor that the virus attaches to, leaving the rest of the molecule intact.

Supported by Edinburgh Innovations, the team collaborated with Genus, who also licensed novel technologies from other institutions, to produce pigs with the specific DNA change.

The resulting pigs do not become infected with the virus, and the animals show no signs that the change in their DNA has had any other impact on their health or wellbeing.

Gene-edited animals are currently not allowed to be sold in the UK.



172

patent applications filed

Lab-grown fat cells a ‘game-changer’ for cultivated meat



A source of fat cells from pigs was developed at the Roslin Institute, at the Easter Bush Agritech Hub, offering scientists and food manufacturers a promising tool for the large-scale production of cultivated meat without the need for genetic modification.

Researchers Dr Tom Thrower and Professor Xavier Donadeu showed the novel cell line was capable of efficiently producing fat tissue with remarkable consistency.

The development could address the challenge of generating

realistic, sustainable animal fat, a significant hurdle in the cultivated meat industry.

The cells, known as FaTTy, are formed from early-stage stem cells which develop into fat, and can grow indefinitely in the lab without losing the ability to reliably produce fat cells.

The cell line is being shared with industry, via Edinburgh Innovations, to support further developments in the cultivated meat industry.

Spinout Concinnity Genetics to transform gene therapy safety

Biotech company Concinnity Genetics span out of the University this year, raising £3m for its AI-powered, novel, gene control systems.

Co-founded by bioengineers CEO Jessica Birt and CSO Dr Matthew Dale, both from Professor Susan Rosser’s UK Centre for Mammalian Synthetic Biology, Concinnity’s RNA-based systems enable the precise control of gene therapies even after dosing, conveying the ability to respond to and reduce their own side effects as well as improve the efficacy of these innovative treatments.

Gene therapies have the potential to revolutionise healthcare by treating or even curing a variety of intractable diseases, but they need to be delivered precisely into the body to avoid side effects.

The investment was led by Eos Advisory with participation from Scottish Enterprise, Old College Capital and Maven Capital Partners.



Picture: L-R Mark Beaumont, Partner at Eos; Jessica Birt, CEO and Co-founder; Dr Matthew Dale, CSO and Co-founder, Professor David Venables, Chair of board; Professor Susan Rosser, Chair of scientific advisory board

The seed funding is being used for three new programmes to target key applications within the cell and gene therapy market, as well as to develop Concinnity’s existing control systems with the aim of obtaining critical data to initiate partnerships with customers.

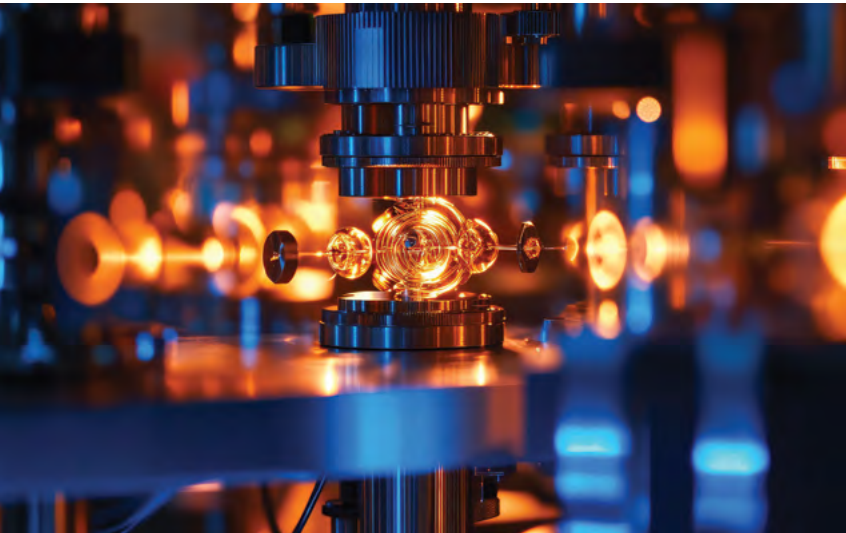
Twice winners at Scotland’s innovation competition Converge, Ms Birt and Dr Dale were supported to form the company by Edinburgh Innovations and benefitted from two years as part of Scottish Enterprise’s High Growth Spinout Programme.

Spinout Singular Photonics launches with novel image sensors

Spun out of the School of Engineering, Singular Photonics launched in January with a new generation of image sensors for use in multiple sectors, including medical imaging, scientific instrumentation and quantum.

Singular Photonics’ novel technology adds complex layers of computation beneath 3D-stacked single photon avalanche diodes (SPAD) sensors to reveal previously invisible details of the material world.

Accurate photon detection and fast data processing is not only crucial in fields such as medical imaging, environmental sensing



and scientific instrumentation, it will also bring societal benefits, including real-time cancer diagnosis, and discovery of new materials to advance quantum applications.

The company was co-founded by SPAD sensor pioneer Professor Robert Henderson, Dr Aravind Venugopalan, Dr Neil Finlayson

and Shahida Imani, Chief Executive Officer, with support from Edinburgh Innovations and investment from Old College Capital.

In June, they announced a strategic partnership with AMS Technologies, Europe’s leading distributor and solution provider for optical technologies.

New flexible sensor can improve compression therapy

Edinburgh scientists have developed a low-cost, flexible device that can help prevent blood clots for patients after an operation.

Their polymer-based sensor fits underneath bandages and compression stockings like a sticking plaster, and a handheld reader measures whether the bandage is exerting the correct pressure on the body.

The sensor, invented by Dr Philip Hands of the University of Edinburgh alongside Professor Marc Desmulliez and Drs Vasileios Mitrakos and Lisa Macintyre of



Picture: L-R Dr Philip Hands and Professor Marc Desmulliez with their sensor technology

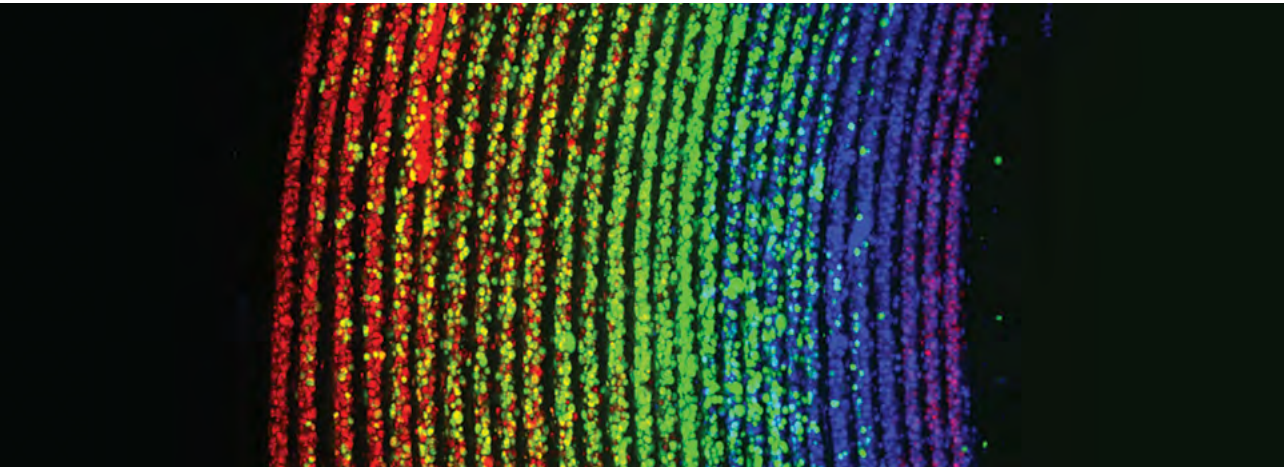
Heriot-Watt University, is wireless, thinner, more sensitive and more flexible than similar devices, so it doesn’t distort the compression garment as it measures the pressure.

The team received Scottish Enterprise High Growth Spinout

funding, as they move towards forming a company, supported by Edinburgh Innovations.

Other funders so far include Innovate UK’s ICUR programme and the EPSRC Impact Acceleration Accounts at the University of Edinburgh and Heriot-Watt University.

Picture: A microscopic rainbow created with RIFLE technology



Advance in human tissue creation for drug development

Innovation Fellow Dr Ian Holland is developing human tissues for use in lab research.

Made from ultra-thin layers of human cells that more accurately mimic complex human tissues such as blood vessels, his RIFLE technology (rotational internal flow layer engineering) will help replace the use of animals in drug development.

The layered, tubular tissue can be used for testing and developing

drugs in the early stages, instead of using animals, providing clear ethical benefits whilst reducing project failure rates with human specific data.

The team at Edinburgh Innovations helped patent the technology, which was developed with scientists at the University of Strathclyde, and supported by EU Horizon 2020, EPSRC, BBSRC and Wellcome Trust iTPA funding.

In the last year, Dr Holland has received further funding from EPSRC and from British Heart Foundation, and has been working with subject matter experts in renal, vascular and tracheal fields to further develop the expertise in his own team.

He has demonstrated human tissue models in these three areas and, supported by Edinburgh Innovations, is working on delivering product prototypes for further testing.

Ecosystem

Career advancement for academic innovators

Picture: Professor Christina Boswell

In May, the University launched a new route to career development for academics wishing to focus on commercialisation and engagement with industry.

The Innovation Career Pathway includes a UK-first Competency Framework that sets out the skills, knowledge and behaviours required to support advancement.

And a new Innovation Careers Hub provides 20 learning and development opportunities, information for hiring managers and detail about Innovation Fellowships and current Fellows, who are given the time, resources, and support necessary to develop and implement groundbreaking ideas.

The University’s first Innovation Fellows are Dr Dahlia Doughty Shenton, Dr Kwabena Nuamah, Dr Lisa Golds, Dr Ian Holland (see p19 technologies RIFLE), Dr Shama Rahman, Dr Craig McDougall and Dr Daniel Tolhurst.

These Early Career Researchers are turning their groundbreaking ideas into market-ready innovations. Dr Craig McDougall is developing a localised liquid biopsy technology, which enables precision sampling of the surface of inaccessible tissues such as the lungs without leaving fluid behind, which can exacerbate illness.

This year, he has filed a patent and developed a prototype device that is under evaluation. He said : “Working with regulatory requirements and

commercialisation strategy has been eye opening. Like learning several new languages at the same time!”

Dr Lisa Golds is working with parents to develop interventions to reduce the effect that mobile phone use by parents has on the development of their infant in the critical first 1,000 days. She is prototyping digital delivery methods and has begun building a Minimum Viable Product app for testing.

Describing the Innovation Career Pathway, Professor Christina Boswell, then Vice-Principal Research and Enterprise, said: “The more our ideas get taken up through commercialisation and industry engagement, the more benefit we bring to society”.



Picture: Edinburgh Futures Institute



Futureproofing Edinburgh

Having started to welcome students, the public, academics and even robots to its beautifully restored spaces from summer 2024, the Edinburgh Futures Institute (EFI) officially opened in April, in a ceremony led by the Chancellor of the University, Her Royal Highness The Princess Royal.

Formerly the old Royal Infirmary, this futures-focused hub for learning, research, and innovation, is designed to harness interdisciplinarity and data-driven innovation to tackle the world’s complex challenges.

In October, as part of an event series, novelist Jeanette Winterson interviewed ‘the world’s most advanced humanoid robot’ Ameca, owned by the National Robotarium.

In January, new director, culture and technology Professor Marion Thain, was appointed.

And in May, the UKRI-funded Centre for Net Zero High Density Buildings launched, aiming to improve energy efficiency and sustainability of urban housing and commercial properties.

EFI hosts four sector-specific Innovation Clusters led by Edinburgh Innovations: creative, public sector, travel and tourism and fintech and financial services.

The Scottish Prevention Hub, launched in 2023, is a partnership between the University, Public Health Scotland and Police Scotland that is fostering system-wide partnerships, leveraging data insights, and building capacity for collaborative working, aiming to significantly improve the health, wellbeing, and life chances of people across Scotland.

The Compassion in Financial Services Hub launched in February, partnering with Young Scot to reimagine and redesign financial products and services for young people. The Hub aims to develop a more inclusive, sustainable, and compassionate financial system.

A report by Dealroom in May showed the UK is the third largest traveltech investment destination globally, behind only the USA and Canada, with Edinburgh as a key centre.

And in June, the fourth CreativeTech Scotland Gathering brought together over 140 creative tech and data-driven innovation practitioners to share and explore developments in creative technology.

Supercomputing for public benefit

In July, EPCC, which operates the Edinburgh International Data Facility (EIDF), was designated the UK’s first National Supercomputing Centre by UK Government in recognition of 35 years of contribution to UK science and innovation.

The next UK National Supercomputing Service will be launched in 2027 at EPCC’s Advanced Computing Facility.

EPCC runs highly secure Safe Haven services for working with sensitive data, such as medical or financial records. This year, these services underpinned seven projects designed to improve health delivery in Scotland, including understanding risk factors for perinatal self-harm and assessing whether melanoma is being overdiagnosed.

And in an Internet of Things project, researchers worked with pupils from six South East Scotland local authorities, using real environmental data from their own schools to monitor air quality, track energy usage, and investigate climate patterns.

Picture: The Advanced Computing Facility



Hosting and nurturing companies

The University’s innovation hub for data science and artificial intelligence, the Bayes Centre, welcomed nine new companies, including three international organisations, who will be able to access University research and expertise.

Academic/industry collaborations have used data science and AI to improve cycle routes in Edinburgh, track endangered Scottish seabirds and monitor biodiversity through birdsong.

Bayes has hosted 90 founders, startups and scaleups this year through the University’s entrepreneurial programmes and events: the Venture Builder Incubator (VBI), AI Accelerator and EIE25.

In March, VBI alumnus Greg Verghese raised £15.9m from the Department for Science, Innovation and Technology for his startup Pharos.AI, which refines oncology data to enable precision medicine.



Picture: Venture Builder Incubator cohort 5.0

In May, EIE partnered with the European Tech Tour Growth DeepTech 25 to showcase emerging innovation and companies from Scottish universities to investors.

Picture: The Usher Building at Edinburgh BioQuarter



Ushering in a new era of data-driven health innovation

In a ceremony led by Dr Tedros Adhanom Ghebreyesus, Director General of the World Health Organisation, the Usher Building officially opened at Edinburgh BioQuarter in June.

Leveraging the colocation of the NHS – clinical staff and patients at Edinburgh Royal Infirmary – with University teaching and research at BioQuarter, the Usher Building is home to the Usher Institute and partners – working with people, populations and data to understand and advance the health of individuals and populations through innovative collaborations, under the direction of Professor Cathie Sudlow.

It is home to DataLoch – part of the Scottish Safe Haven Network, and developed in partnership by the University of Edinburgh and NHS Lothian – which supports the responsible and secure use of data in South East Scotland to improve health and social care.

Through close collaboration with NHS Lothian, the DataLoch team has improved the data underlying the Cyrenians InReach service that supports individuals at risk of

homelessness and has achieved a 68% reduction in re-admissions to hospital. By allowing address data to be updated more accurately and reliably every month – which hadn’t been possible previously – the latest information about emergency accommodation location allows Cyrenians to better prioritise where they focus their efforts.

Kathy Harrison (pictured below), Programme Lead for DataLoch, won the Digital Leader Award at the 2025 Holyrood Connect Digital Health and Care Awards in February.



This year, the Advanced Care Research Centre (ACRC) has appointed three Fellows to continue the ACRC mission to enhance the quality and sustainability of care for individuals with multiple conditions in later life.

Elsewhere at BioQuarter, centres such as the Anne Rowling Regenerative Neurology Clinic, the Baillie Gifford Pandemic Science Hub and the LifeArc Centre for Respiratory Diseases leverage the data science and healthcare expertise of the University and apply it to clinical practice.

Data scientists and clinical researchers have worked with high street opticians for the first time to predict a person’s risk of dementia from a routine eye test.

Since June, the UK’s second total body PET scanner has been available at BioQuarter to industry and researchers to support healthcare improvements.

Picture: Anne Rowling Clinic



Picture: Since its opening in 2022, the National Robotarium – the UK’s centre for robotics and AI at Heriot-Watt University, funded in partnership with the University of Edinburgh – has engaged with more than 33,000 children, learners and community groups through its outreach programme.



Using smart data to uncover hidden poverty

Amidst the UK’s cost-of-living crisis, East Renfrewshire Council recognised the need for clearer, more timely insight into the financial wellbeing of its residents.

Traditional data sources, such as Department of Work and Pensions data, while useful, often lag behind real-world changes and do not always capture the full picture. They can also miss individuals who don’t meet the benefits threshold but may still be experiencing financial challenges.

To address this, East Renfrewshire Council partnered with University subsidiary Smart Data Foundry to harness new forms of financial data. Levering the University’s partnership with NatWest Group, Smart Data Foundry developed the Economic Wellbeing Explorer, powered by a weekly feed of anonymised transactions from current account users in East Renfrewshire.

The tool brings together key financial wellbeing indicators – such as income band and source,



Picture: East Renfrewshire from the air

emergency resilience, and overdrawn accounts – with contextual local data, including school attainment, and council-provided data such as requests for financial advice and receipt of free school meals.

A council spokesperson said: “The Economic Wellbeing Explorer has influenced decision-making around how and where we deliver supports, such as the Thrive Under 5 project. As the dashboard highlighted widespread need, we took the decision to open this project to families from any part of the authority and not just limit it to the most deprived areas. This has meant families who might not previously have been known to us have been supported by the project. We will continue to use the Economic Wellbeing Explorer to monitor changes by area, age, or income level over time.”

The Smart Data Foundry is now working with policy makers to roll out the approach across Great Britain.



Pushing the boundaries of electronics

Professor Themis Prodromakis, Regius Chair of Engineering and RAEng Chair in Emerging Technologies, is a pioneer in semiconductor research. He has invented memristor technologies that allow the colocation of memory and processing power, paving the way for a new generation of faster and more energy-efficient AI hardware.

He is the Director of the University's Centre for Electronics Frontiers, which brings together expertise in materials science, devices and systems to build and test advanced nano-electronics. The Centre generates intellectual property through the Edinburgh Venture Builder for AI Hardware (EVA).

Professor Prodromakis is also the founder and Director of the APRIL AI Hub, which is developing and bringing to market AI-based tools for the electronics industry supply chain.

Safe gen-AI solutions

This year, the University's Generative AI Laboratory (GAIL), recruited more than 70 Fellows from across all three Colleges of the University, underscoring its multidisciplinary approach to innovation.

In partnership with the GAIL Fellows, four seminars, four workshops and one showcase were hosted in the Edinburgh Futures Institute, bringing together leading minds from academia and industry to share cutting-edge insights into areas of generative AI such as watermarking, modelling for extreme events and energy efficiency.

GAIL participated in the University's AI Showcase in May, which gave donors and alumni, policy makers and industry leaders based in London the chance to learn more about the University's AI expertise and offering.

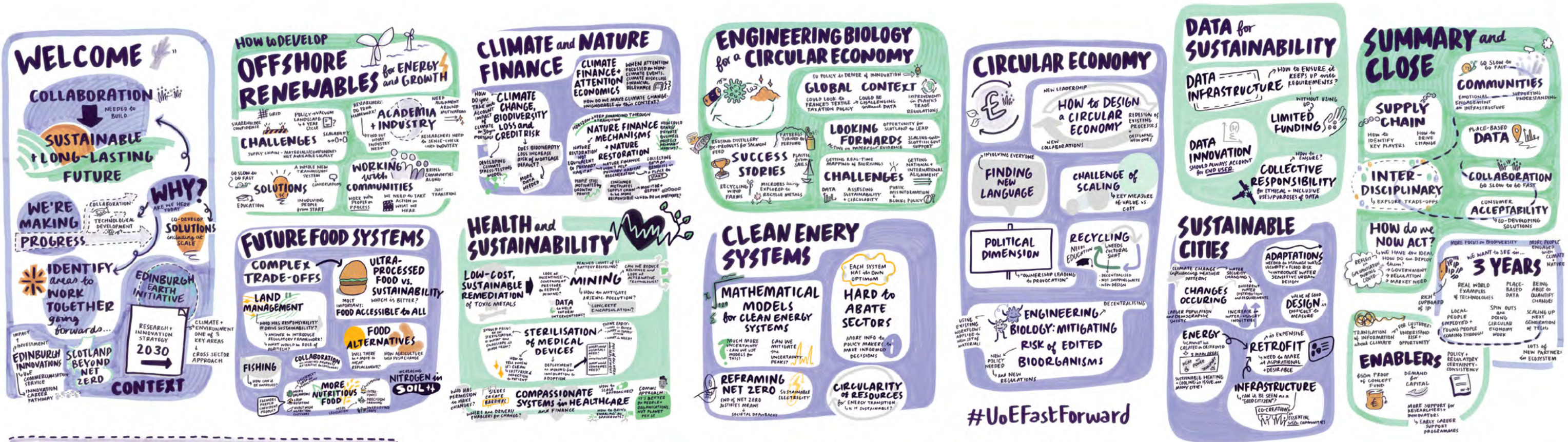


Picture: Bioliberty co-founder Rowan Armstrong. Currently resident company at the National Robotarium, the University of Edinburgh student startup launched its first product in the US in December 2024, integrating its robotics and AI-empowered Lifeglov and Lifehub technologies into rehabilitation therapy.



This year, the University signed the Pathways Pledge to support women entrepreneurs. The Pledge's fifth cohort includes Charlotte Waugh (far left) and Constanza Moreno Sanchez Ornelas (back row, third left) of Edinburgh Innovations, as well as Ana Stewart, Scottish Government's Chief Entrepreneur (second left).

Pictured below: Eddy Draws illustrated discussions at the EPSRC IAA-funded Fast Forward: Climate and Environment Industry Conference in May, organised by Edinburgh Innovations' sustainability team, who work with the University's department of Social Responsibility and Sustainability on climate innovation.



FAST FORWARD CLIMATE and ENVIRONMENT

Afterword



“Throughout my career, I have seen how innovation has the power to drive change in the world.

“The University of Edinburgh has world-class research in areas from engineering biology for advanced therapeutics and sustainable manufacturing, to clean energy and renewables, to data science and AI ethics.

“And, in Edinburgh Innovations, it has a large team of experts who know how to turn those ideas and inventions into partnerships and patents, consultancy and companies – in short, to make them work for a better world.

“It is inspirational to see such quantity and quality of innovation over the last year, and I very much look forward to the next.”

Dr Frank Armstrong
Chair of the Board of Edinburgh Innovations and biotechnology consultant

EDINBURGH INNOVATIONS

Edinburgh Innovations is the University of Edinburgh's commercialisation service.

We bring University of Edinburgh research to industry, working to identify ideas with value, and facilitating the process of bringing them to life in real-world applications.

For any enquiries about this report or to discuss a potential collaboration, please contact:
edinburgh.innovations@ed.ac.uk

**WE MAKE IDEAS WORK
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www.edinburgh-innovations.ed.ac.uk

OLD COLLEGE CAPITAL

Old College Capital (OCC) is the University of Edinburgh's venture investment fund. OCC manages Edinburgh's early-stage investment activities and shareholdings; supporting exciting ideas and technologies emerging from the University.

www.oldcollegecapital.com

DATA-DRIVEN INNOVATION

An innovation network helping organisations tackle challenges for industry and society to support Edinburgh in its ambition to become the data capital of Europe.

The Data-Driven Innovation (DDI) programme has helped establish six hubs at the University of Edinburgh and Heriot-Watt University – creating a regional power-house for collaboration with industry partners, as part of the City Region Deal.

To support the entrepreneurship strand of the DDI programme on behalf of the DDI hubs, the University of Edinburgh encourages students and staff to take entrepreneurial pathways, encourages the creation of DDI-related companies, supports growth in existing companies and attracts match funding and investment. This is part of a wider range of activities aiming to create and grow over 400 data-driven companies over 15 years, securing significant investment in those companies, and the creation of high value jobs in the city and region, contributing to the vision of Edinburgh as the data capital of Europe.

www.ddi.ac.uk



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