



### **Contents**

- 4 Recognition for our achievements
- 6 Game-changing research at Chelsea Flower Show
- 8 Research and innovation snapshots
- 10 A giant leap for in-orbit manufacturing
- **12** Collaboration snapshots
- 14 How Cranfield created a huge pile-up
- 16 Teaching snapshots
- 18 Digital detox with a dose of science
- **20** Community snapshots
- 22 Cranfield University value for money statement
- 23 Financial accounts for year ending 31 July 2025



### Foreword

### from the Chair of Council, Iain Ferguson CBE

As I come to the end of my ten-year tenure on the University Council, including the past six years as Chair, I reflect on the wide-reaching and positive impacts Cranfield University has on people's lives. Our founding mission, to work closely with industry to drive innovation and growth, remains as relevant today as it did back in 1946 when the predecessor to the University, the College of Aeronautics, was established.

Of course today's Cranfield is much more than aerospace – although this remains one of our core specialisms – and this annual report highlights just some of the impactful research and teaching that happens at our University which is helping to drive positive change in our world. From new processes to reduce food waste to developing clean energy systems; advancing space robotics to removing 'forever plastics' from water – the breadth and ambition of our work here never ceases to impress me.

Building work started this year on the Cranfield Hydrogen Integration Incubator, creating the first large-scale hub for advanced research and development of hydrogen technologies at a UK airport.

Projects like this are full of technical challenges, but advancing sustainability is crucial – and we're proud to have a real impact, placing us in the top 6% in the world for our environmental research (QS World University Rankings: Sustainability 2025).

Cranfield has always had strong links to industry needs and a real focus on impact and outcomes. A report released this year from London Economics found that the universities in our East of England region contribute £19.5 billion to the economy, and for every £1 of public money invested in universities, £14 is returned into the economy.

Cranfield has a vital role in the region and this year hosted Science Minister Lord Vallance for a roundtable with stakeholders in the Oxford to Cambridge Growth Corridor.

Not only is Cranfield an engine for regional growth, we align to high-growth sectors identified in the UK's new Modern Industrial Strategy, such as advanced manufacturing, AI, clean energy and defence, supporting ambitions with our expertise, teaching and applied research.

Universities have a vital role in delivering the Government's objectives and in helping thousands of students realise their potential. But Cranfield is not immune to external challenges and the higher education sector is in a difficult financial position with reduced international student numbers and increased costs. Steps have been taken to ensure we move forward in a prudent manner, securing our future whilst continuing to deliver on our mission.

I'm proud to present this report and share with you some of Cranfield's highlights of the year.

### Recognition for our

achievements

A leading University for business

We're one of the strongest universities for working with businesses and bringing commercial impacts.

This year's Knowledge Exchange
Framework (KEF) from Research England
ranked us in the top 20% for working
with business and the top 20% for IP
and commercialisation among the
STEM cluster of specialist institutions
that focus on science, technology,
engineering and maths.

Compared with others in the STEM cluster we achieved above the group average for continuing professional development and graduate start-ups and we've also improved our position for local growth and regeneration.



### Sustainability-focused

### Third year of increased impact in sustainability

We've increased our overall score in the *Times Higher Education Impact* rankings and maintained our position in the top 200 universities in the world.

**SDG 12 - Responsible Consumption** – covering sustainability reporting, recycling and research into responsible consumption and production, we soared into the world' s top 20.

**SDG 8 - Decent Work and Economic Growth** – relating to research in economics and employment and into working practices and student work placements, we achieved top 50 in the world.

### Success in the 2025 QS World University Rankings: Sustainability

Cranfield is in the top 15% of universities worldwide and with the rankings expanded to include 300 more institutions than in 2024 our continued presence in the top 15% is even more impressive and testament to our ongoing commitment to sustainability.

We excelled in multiple areas – top 15% for overall sustainability, top 6% for impact of environmental research and top 10% for overall environmental impact.



# Top 35 in the world for Engineering Mechanical, Aeronautical

and Manufacturing

2025 QS World University
Rankings by Subject

Cranfield is in the world top 35 for Engineering – Mechanical, Aeronautical and Manufacturing in the 2025 QS World University Rankings by Subject.

Cranfield School of Management ranked

UK
TOP 5

Financial Times European Business Schools 2024 rankings

Cranfield School of Management is in the UK top five in the *Financial Times European Business Schools 2024 rankings*.

Cranfield Full-time MBA
Global
Top
20%
QS Global MBA Rankings 2025

In the *QS Global MBA Rankings 2025,* the Cranfield Full-time MBA was in the global top 20%.

for overall student satisfaction

Financial Times Executive Education Rankings 2025

Cranfield is second in the *Financial Times Executive Education Rankings 2025* for overall student satisfaction.

8th
in the UK
for employability

2025 Center for World
University Rankings

Cranfield is ranked 8th in the UK for employability and is in the overall top 5% of universities in the world in the **2025 Center** for World University Rankings.

Top 200
in the world
for Environmental
Sciences and
Materials Science
2025 QS World University
Rankings by Subject

We're in the top 200 in the world for Environmental Sciences and Materials Science in the 2025 QS World University Rankings by Subject.





"It's not every day you see a toilet in a garden at the Chelsea Flower Show. This is a brilliant example of research and engineering which has a real-world impact and could have applications across the world to improve sanitation," said Professor Leon Williams, Director of Manufacturing and Materials at Cranfield University. "The Circular Toilet draws on Cranfield's expertise in advanced manufacturing, systems integration and sustainable design to reimagine the toilet. It was hugely rewarding to see our work showcased at such a prestigious event."

The Garden of the Future put climate-smart planting in the spotlight and showcased innovations from around the world that help communities adapt to a changing climate.

The Gates Foundation has been at the forefront of sanitation innovation for nearly 15 years, supporting technologies that treat waste at the source, eliminate pathogens, and can operate independently of traditional infrastructure. Cranfield has played a key role in that global effort, applying engineering and environmental expertise to build systems that are clean, safe and scalable.



Professor Leon Williams, Director of Manufacturing and Materials at Cranfield University

# [•] Research and innovation snapshots

### Cranfield celebrates milestone for landmark project

Cranfield University marked the first milestone in its £69 million Hydrogen Integration Incubator (CH2i) project with a groundbreaking event for new test cell facilities. Supported by Research England and industry partners, CH2i aims to create the UK's first large-scale hydrogen research hub at an airport, advancing clean energy and hydrogen-enabled aviation technologies.



### Women in the boardroom - latest report highlights progress and gaps

In its 25th year, Cranfield University's Female FTSE Board Report highlighted continued growth in female board representation but revealed a persistent lack of women in executive roles. The report called for stronger action to close the leadership gender gap and ensure meaningful progress toward true gender parity in UK boardrooms.

### Lord Vallance opens state-of-the-art space lab

The Advanced Space Technology for Robotics and Astronautics laboratory (ASTRA-Lab) was opened by Lord Vallance, Science Minister. The ASTRA-Lab simulates orbital-like conditions allowing researchers to design, programme and test space robotics and guidance, navigation and control. It gives invaluable hands-on experience for students, and a cutting-edge facility for those developing the next generation of space robotics.





### New tests created to find fake honey

Researchers have developed new ways to detect sugar syrup adulteration in honey, paving the way for fast, accurate tests to detect fake products. Using specialist light analysis and DNA barcoding scientists created methods to test honey without opening the jars. The tests are effective, quick, and will help the industry protect consumers and verify supply chains.



### Origami paper sensors help detect infectious diseases

Researchers have created a low-cost method to detect infectious diseases in wastewater. Using folded wax paper and a mobile phone camera, the £1 test delivers results in just 90 minutes and accuracy mirrors the more involved PCR test. The test could transform global public health surveillance, especially in low-resource areas.

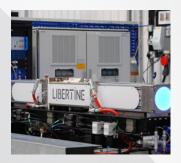


### Scientists chip away at potato storage problems

Cranfield University researchers launched a project to improve potato storage and reduce food waste, supported by Biotechnology and Biological Sciences Research Council (BBSRC) and industry partners. Using genetic analysis, the team aims to extend dormancy, lower energy use, and reduce chemical reliance. The research supports year-round supply and sustainable farming, helping safeguard one of the UK's most important staple foods.

### MINIMAL project works to reduce aviation emissions

Cranfield University is advancing hydrogen-fuelled composite cycle engine research under the EU and UKRI-funded MINIMAL project. Using Libertine's OpenFPE research engine, researchers will conduct hydrogen combustion tests aiming for major fuel and CO<sub>2</sub> reductions. The technology could transform future net zero aviation and other transport sectors with ultra-efficient, low-emission engines.



### Shaping the future of aviation safety

In conjunction with the University of Greenwich, Cranfield hosted pioneering evacuation trials focusing on next generation blended wing body aircraft. Inside a purpose-built mock aeroplane body, participants were asked to evacuate and their behaviour was recorded. Participants also answered questionnaires about their decision making during the evacuation. Trials like this are a fundamental part of designing the passenger aeroplanes of the future.

# AGIANTILEAP for in-orbit manufacturing with first ever 3D metal part printed in space

The challenges space travel and exploration pose are vast and varied. Just getting there is logistically difficult and incredibly expensive, and when you finally reach space it doesn't get any easier. Operating in microgravity is very different to Earth, so processes we take for granted here work differently once you're in orbit.

Those challenges were front and centre for the team from Cranfield University who joined with lead partners Airbus Defence and Space on Metal3D, a project aiming to develop a metal 3D printer that could work aboard the International Space Station (ISS).

The list of requirements to operate a 3D printer aboard the ISS was daunting – first, it had to be small and as light as possible. Then the operational requirements were an even bigger challenge. "We've measured the effect of gravity on liquids in space before," explains Dr Wojciech Suder, Senior Lecturer in Laser Processing and Additive

Manufacturing and Cranfield University's lead on the project. "But we haven't done this when printing components from liquid metal form because of the high temperatures involved."

Those temperatures meant that heat transfer was a real risk, so the printer had to be thermally neutral, and couldn't emit heat or radiation into the ISS.

"It was quite a challenge," says Dr Suder.

"But one we successfully completed. The

"But one we successfully completed. The purpose is to understand the effects of microgravity on 3D metal printing, to find out how to best use this technology in space in the future."



The printer was launched in January 2024 as part of the Cygnus NG-20 mission from Cape Canaveral in the USA, and in August that year it successfully produced the first ever 3D printed metal object in orbit.

Each time a milestone like this is reached, it brings the possibility of longer-term, manned deep space exploration. Right now, re-supply is one of the key barriers, because sending supplies up from Earth is an incredibly costly process, and the lead times are long even for the in-orbit ISS.

If humans are to build a research station on the moon, or maybe even visit Mars, it will be moments like this that paved the way.

# [-] Collaboration snapshots

### Airbus collaboration nominated for prestigious award

Cranfield University and Airbus were finalists for the prestigious 2024 Bhattacharyya Award, given by the Royal Academy of Engineering to celebrate outstanding industry-academia collaboration. Cranfield University and Airbus's partnership is one of the longest running collaborations between academia and the aviation industry and has generated significant research and innovation, pioneering the future of flight.

### Creating a secure and accurate time infrastructure

Cranfield University opened a new innovation timing node in partnership with the National Physical Laboratory, supporting the UK's National Timing Centre programme. The node will help develop secure, wireless timing infrastructure crucial for future technologies such as 6G, smart cities and connected autonomous vehicles, reducing reliance on vulnerable satellite systems and enabling precise synchronisation across air and ground transport networks.



### £16 million initiative to transform innovation and entrepreneurship

Cranfield and 14 Midlands university partners launched a new initiative to revolutionise how research and innovation are translated into real-world impact across the region. Forging Ahead will enhance the commercialisation ecosystem, boosting entrepreneurial activity and innovation, and creating new pathways for academic ideas to become high-growth ventures. It's backed by £9.9 million from Research England's Connecting Capability Fund, with an additional £6.1 million in matched support from the partner universities and regional stakeholders.



### UK's first hydrogen-powered commercial aircraft turnaround

Cranfield University has helped deliver the UK's first hydrogen-powered turnaround of a commercial aircraft at Exeter Airport. The trial saw a TUI Boeing 737 serviced using hydrogen-fuelled ground equipment, marking a major step toward net zero aviation. Conducted with industry partners under the UK CAA's Hydrogen Challenge, the project showcased practical, safe hydrogen use for airport operations.

### Significant milestone for electric flight

Cranfield University's EnabEl project marked a UK aviation milestone with the first flight of the British-built all-electric Sherwood eKub aircraft. Piloted by Professor Guy Gratton, the 10- and 22-minute flights support research into sustainable flight. Developed with consortium partners and UKRI funding, the eKub aims to guide future electric aircraft design and certification standards.

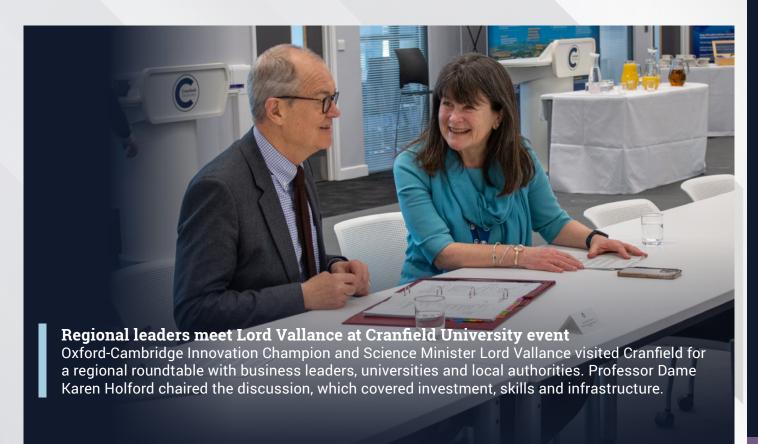


### Six innovative green technology projects receive funding

We awarded funding to six green technology projects through the Green Future Investments Ltd (GFIL) Technology Accelerator Fund. This initiative supports the development of innovative solutions to combat climate change. The funded ventures cover areas like textile recycling, optimising EV batteries, sustainable packaging, and energy-efficient home systems. Beyond funding, recipients gain access to Cranfield's multidisciplinary academic expertise, design engineering support, and state-of-the-art laboratory and industrial-scale test facilities.

NFLC supports emissions research with airborne chase Our National Flying Laboratory Centre's Saab 340B played a crucial role in a first-of-its-kind UK experiment, testing emissions from sustainable aviation fuel. In a groundbreaking project led by the National Centre for Atmospheric Science, an airborne 'chase' saw the Saab trailed by the FAAM Airborne Laboratory - the aircraft flying within 60 metres of each other to test in-flight emissions.





# World's How biggest Cranfield crash created a test: huge pile-up...

When TV company Blink Films approached Cranfield experts with the unusual request to engineer and analyse the world's biggest motorway pile-up, the answer, despite the enormous complexity, was a resounding yes! The academic team in the Advanced Vehicle Engineering Centre saw a golden opportunity to bring a complex engineering challenge into an unparalleled learning experience for our students.

Involving eight cars, 94 cameras, a 30-tonne HGV, hundreds of hours of planning and preparation and a team of drivers with no idea what was about to happen, the TV programme, *Pile Up – The World's Biggest Crash Test* was a hugely ambitious project, broadcast on Channel 4 and US network PBS America.

The concept was to create a dramatic full-scale multiple vehicle accident, with real cars driven at motorway speeds by novice drivers, who were totally immersed in the scene despite operating the cars remotely. The cars would approach the impact point in excess of 31 metres per second, but without the drivers having a clue that a crash was about to unfold – so the vehicle triggering the crash needed to be cued within a single second to make the impact play out as planned.

The crash was to be so severe that if you ran the scenario manually in real life, even with stunt cars and expert drivers, the fatality rate would be 100%.

Professor of Automotive Engineering James Brighton said: "Creating a high-speed motorway crash really was a unique challenge and there could be no second takes. There was a lot at stake, and we had to plan meticulously to get it right first time."

As part of the project, master's and PhD students at Cranfield were tasked with solving critical technical questions – how do we remotely drive cars at speed? How do we initiate the crash? Their mission was to test production ideas and develop the remote operating systems, applying knowledge to a live problem.

The expertise of Cranfield Impact Centre was also brought in. Renowned for F1 crash testing, the team installed and calibrated motorsport crash data recorders in each vehicle.

The detailed crash data captured gave Cranfield rich, authentic material for analysis and was essential for analysing the severity of impacts at a more detailed level than video evidence could provide. Cranfield students could look at how safety systems fared, examine structural integrity and impact severity, bringing real world data into their classroom.



"It was a fascinating opportunity for students to look at a real-world crash scenario and get very detailed data from driver reactions to the events unfolding before them," continued Professor Brighton. "That's something we now feed into our teaching materials across all our automotive and motorsport MSc courses so that students taking our courses can help develop even safer and more efficient cars in the future."

What began as an audacious idea for great television has become something much more long-lasting – as Cranfield uses the experience to help future engineers understand crashes and design safer cars.

# [•] Teaching snapshots

Cranfield's graduate employability highly rated

Cranfield University is ranked 8th in the UK for employability and is in the overall top 5% of universities in the world, in the 2025 Center for World University Rankings (CWUR). Ranking 55th in the UK overall, Cranfield is highly rated for the professional success of its alumni



### **Prestigious recognition for Cranfield Academics**

Fifteen Cranfield academic were awarded Senior Fellowships by the Higher Education Academy, with a further ten achieving a Fellowship. The recognition is given for teaching excellence and a personal commitment to professionalism in learning and teaching in higher education.

### **Aston University partnership**

Cranfield University and Aston University launched a three-year strategic partnership to address national engineering skills shortages. Focused on aeronautical and sustainable engineering, the collaboration will create pathways from Aston's undergraduate programmes to Cranfield's postgraduate courses, explore joint degree apprenticeships, and share research facilities to drive innovation and widen access to higher education.





New robotics engineer degree apprenticeship to answer industry needs
GXO employees joined the UK's first degree-level robotics engineering apprenticeship at MK:U,
launched in partnership with Cranfield University. The programme combines academic learning
with hands-on experience, preparing apprentices for careers in robotics, Al and automation. The

initiative supports industry growth and aims to build a skilled workforce for the future of logistics.

### New partnership to build skills in the Kingdom of Saudi Arabia

motorsport manufacturing.

The Academy of Defense Industries (ADI) and Cranfield University signed a Memorandum of Understanding to advance collaborative research and teaching, and to build skills in the Kingdom of Saudi Arabia.

The partnership is launching several postgraduate executive development courses in defence through ADI, including Logistics and Supply Chain Management, Management for Technology, and Defence Resource Management in Saudi Arabia.



Lincoln College International partnership to deliver joint education and training Lincoln College International (LCI) has partnered with Cranfield to deliver joint education and training opportunities across the Kingdom of Saudi Arabia. The partnership aims to strengthen technical education and develop world-class, industry-driven training programmes in areas such as aerospace and aviation, energy, space, water and sustainability.



# Digital detox with a dose of science



That's what inspired Dr Dan Evans to create a set of outdoor benches with integrated audio, giving people the chance to engage a little deeper with the world around them while they're out and about.

As a Senior Lecturer in Soil Formation Dr Evans has a love of - and in-depth knowledge about - the very foundations of green space in the UK and beyond. His 'talking benches' are loaded with audio tracks designed to share that knowledge and teach people about the ground beneath their feet.

Think of them like you do audio guides in museums, but instead of explaining the exhibit you're looking at, they're telling you about the world you live in.

"Putting these recordings in benches gives people something to ponder while they relax, which hopefully adds to their experience", Dr Evans explains. "At the moment the focus is on soils, but in the future I hope different research groups can showcase their work using the benches."



The technical side of these benches is well thought out. They're weatherproof and solar powered, making them self-sustaining and almost maintenance-free. They're also able to be updated wirelessly, so changing the audio track is easy. That makes them perfect for use at events and in outreach programmes where they can be quickly adapted for any audience. The benches also have a dynamic QR code that users can scan to find further audio and video content about their chosen subject.

Dr Evans is keen for the benches to be spread far wider than their current home on the campus of Cranfield University, and the future possibilities for such an innovative outreach tool seem extremely bright.

Imagine sitting in your local park listening to Sir David Attenborough telling you about the world, or watching the night sky to the dulcet tones of someone like Neil deGrasse Tyson. Now that's bringing science to life.



# **Community** snapshots

### Prestigious engineering award for Dr Emma Taylor

Dr Emma Taylor won the Chief Engineer category at the 2024 Institution of Engineering and Technology's Excellence and Innovation Awards, recognising her work in leading innovative projects and championing inclusive engineering environments.

Dr Taylor is Royal Academy of Engineering Visiting Professor in Digital Safety and Security at Cranfield University, with over 30 years of expertise in risk management across the transport, aerospace, and energy sectors.

### Cranfield team global winners in emergency aircraft design competition

A Cranfield University team is through to the second stage of a prestigious three-year global competition to design vertical take-off and landing (VTOL) autonomous emergency response aircraft. The CraneAERO Team, which includes staff, students and researchers, is one of only 11 global winners from over 200 competing teams in stage one and the only UK team selected. Their innovative conceptual design – CRANE (Cranfield Rapid Aerial Network for Emergency) – was recognised for its strengths in safety, performance, feasibility, mission-readiness, and technical innovation.



### Alumni return to celebrate Cranfield's rich legacy in automotive and motorsport education

On 19 July, the University hosted an alumni event to mark 65 years of automotive innovation and 25 years of motorsport education at Cranfield. The day included a vehicle exhibition including high performance race cars and motorsport legends, classic car ride experiences, the chance to try out some of the high-tech simulators on campus and a tour of Cranfield's world-class facilities.



### NASA astronaut and alumnus inspires local pupils

NASA astronaut and alumnus Commander Jack Hathaway visited a local school in Cranfield to inspire pupils with his journey from Navy Commander to space explorer.

He shared insights into astronaut training and future missions, answered students' questions, and judged a space-themed competition. The visit sparked huge excitement and enthusiasm for all things space from the children involved! Back on campus Commander Hathaway addressed staff and students as part of the Distinguished Aerospace Alumni awards.



### Cranfield technician wins prestigious Papin Prize

Hannah Charlotte-Smith won the Apprentice category at the 2025 Papin Prizes, recognising outstanding UK higher education technicians. Hannah, a Senior Technician started at Cranfield in 2018 as a Level 3 Apprentice and she now works supporting algae and microbiology research as well as training students in important lab techniques.



### A special moment at a unique reunion

Alumni and staff from Cranfield University reunited with the Lancaster PA474 at the Battle of Britain Memorial Flight, celebrating the aircraft's 80th anniversary. Once part of Cranfield's fleet (1954–64) and used for aerodynamic research, the Lancaster aircraft remains one of only two airworthy Lancasters in the world. Former researcher David Hyde was thrilled to have a long-awaited reunion with the aircraft and meet the crew members that fly her today.

### Apprentices amongst sustainability's brightest rising stars

Two Cranfield University apprentices have been recognised for their drive, determination and potential to lead the UK towards a more sustainable future. Julia Anukam and Lucie Rowley feature in the prestigious edie 30 Under 30 Class of 2024, an annual list identifying young climate visionaries already making a significant contribution and displaying great potential to change the course of climate action.

### Investing in local woodland creation

Cranfield University partnered with local environmental charity the Forest of Marston Vale Trust this year to begin planting over 60,000 trees, creating a new woodland for public use and academic research. The site supports studies in biodiversity, carbon capture, and soil quality, while contributing to sustainability goals. Planting will take place over two years and involve volunteers from the community.



### Yicheng's amazing talent wows TV audiences

Dr Yicheng Sun, Lecturer in aircraft design, appeared on Britain's Got Talent 2025, creatively combining engineering with performance art. Previously crowned runner up in the global Red Bull Paper Wings event, throwing a paper plane over 57 metres, Yicheng took his paper plane demonstration to the nation on this popular TV show. Dr Sun's creative act involving bursting balloons with paper planes and launching paper planes from a theatre balcony to the stage was hugely entertaining!



### **Cranfield University** value for money statement

### By going to university, our students are investing in their future, in terms of both time and money.

A qualification from Cranfield University gives long lasting benefits, opening doors to career opportunities and industry networks, creating enduring connections and giving students the skills they need to succeed throughout their lives.

Cranfield's specialised postgraduate teaching and applied research is delivered by experts who have a deep understanding of their subjects and valuable industry knowledge. Our outstanding large-scale facilities are in many cases unique, and made available to government, industry, entrepreneurs and our students.

We challenge our students to build critical thinking and industry relevant skills, whilst supporting them to develop a fulfilling career path that makes an impact. Our close partnerships with industry ensure that students experience real-world challenges, developing their skills and employability.

We welcome students from around the world to our safe rural campuses and take great pride in creating positive changes in their lives.

Cranfield is a key academic anchor in the Oxford Cambridge Growth Corridor, supporting entrepreneurs, businesses and partners and offering value for money to the regional and national economy.

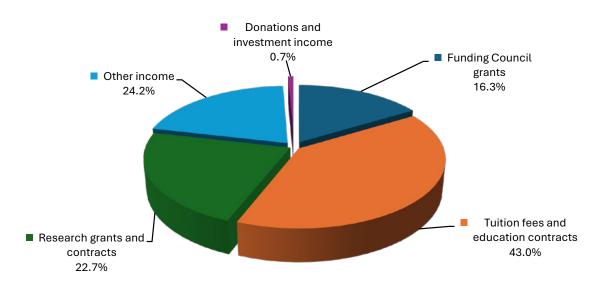
Cranfield University creates value for money in several ways, including:

- The value that students get from their experience at Cranfield now and in the future, as alumni of a world-renowned specialist institution.
- Equipping students with transferable skills, career opportunities and connections into industry.
- The societal impact of research and teaching at Cranfield, driving innovation and growth.
- Governance that ensures Cranfield's finances are managed efficiently and effectively, maximising the return on investment for our students, stakeholders and partners.

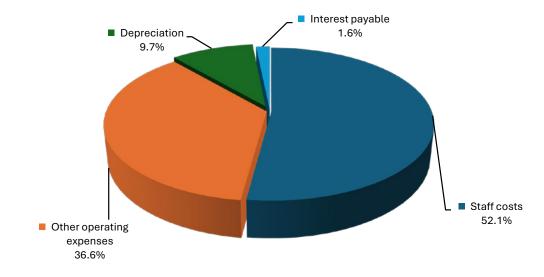
Universities are subject to regulation to ensure we behave responsibly and fulfil our obligations to students, through the Office for Students and by publishing our financial statements online.

## Financial accounts for year ending 31 July 2025

### Income 2025



### **Expenditure 2025**



View our financial statements for 2024/25 here.

### Annual REVIEW

www.cranfield.ac.uk

