University of Nottingham
UK | CHINA | MALAYSIA

SUSTAINABLE DEVELOPMENT GOALS

Towards a fairer world

2023/24 report

Tri-campus approach to global challenges

The University of Nottingham is proud to be recognised among the world's top higher education institutions for our efforts in support of the United Nations Sustainable Development Goals (SDGs).

The SDGs are a call to action to address the challenges facing our planet. Making a positive contribution to the goals and securing a fairer future for all is central to our mission:

> "To be a university without borders, where we embrace the opportunities presented by a changing world, and where ambitious people and a creative culture will enable us to change the world for the better."

Our commitment to the goals runs through all that we do, from developing innovations that can make a difference to people's lives and the sharing of transformative knowledge with our partners and communities, to inspiring our students and equipping them with the skills and motivation to shape a positive future.

Our collaborative, tri-campus approach to solving complex challenges lies at the heart of our reputation as the UK's pioneering global university.

Our Malaysia campus was the first overseas campus to be established by a UK university and Nottingham was the first to open a Sino-foreign university in China. Today, the excellence of research and education at the University of Nottingham Malaysia (UNM) and University of Nottingham Ningbo China (UNNC) are internationally recognised.

Our tri-campus strengths extend and deepen our ability to collaborate and deliver positive contributions to securing a sustainable, fairer future. We have common strengths in food, health and sustainable technologies, each with distinct characteristics that are applied to local and regional challenges, while having an international reputation and impact.

In Malaysia, there is a strong focus on food and water security, biodiversity conservation, and health and wellbeing, while our researchers in China add leadership in areas such as green chemical engineering, addressing air pollution and smart technologies for agriculture, health and sustainable cities. In the UK, we offer research expertise across the food system, stunning advances in medical imaging, and significant investment in the translation of net zero technologies to decarbonise transport. A focus on equality and achieving fairer societies is also central to what we do, bringing together researchers from across the disciplines.

Thousands of our students have taken the life-changing opportunity to join a summer school or spend a semester or academic year at our UK, China and Malaysia campuses, with scholarships and travel awards available. Students also get the chance to collaborate on real-world issues, such as a tri-campus sustainability challenge linked to the SDGs. Our researchers explore opportunities to collaborate and build networks and as a longstanding member of U21, a global network of 30 research-intensive universities, we share a commitment to advancing international collaboration, academic excellence and impactful research.

I'm delighted to share this review of the university's contribution to the United Nations Sustainable Development Goals, and how our UK, China and Malaysia campuses are making a difference to people's lives nationally and across the world, and to the local and regional communities we serve.

Professor Sarah Metcalfe
Deputy Pro-Vice-Chancellor
for Research and Knowledge Exchange

University of Nottingham UK

Top 100
in the world for four UN SDGs

7th
in UK for research power
REF2021

38
spinout companies

250,000 plus
visitors attend university hosted public events

£1.1bn
contributed to local economy

175
student exchange agreements in 40 countries

6,500
research collaborations with partner institutions
2019-24

University of Nottingham Ningbo China

10,000
students from 60 countries

6
subjects in the top 1% of global ESI rankings 2024

55
start-ups cultivated by Li Dak Sum Incubator

University of Nottingham Malaysia

5,500+
students

RM11.3m
award by the Wellcome Trust
for an eight-year research initiative focused on the early detection and prevention of non-communicable diseases in under-served populations.

1,640
exchange and transfer students to China and UK campuses in 2024

1 NO POVERTY

End poverty in all its forms everywhere

231
research outputs

21st
UK university for research outputs

1.8%
UK research outputs

15.2%
co-authored with low and lower middle-income countries

58.4%
internationally co-authored

1.54
citation impact

263
policy citations

2,886
households featured in fuel poverty study

9,828
total overnight places available over winter at homeless shelter

39
scholarship programmes at University of Nottingham Malaysia

Operations

Winter shelter for homeless reopens

The university, once again working with local homelessness charity Emmanuel House, re-opened its **Winter Shelter** on University Park Campus. From October 2023 to April 2024, short-term emergency accommodation was available for up to 27 people every night. 24-hour support is provided in a university building, ensuring that there are fewer people sleeping on the streets of Nottingham during the coldest months of the year.

Research

Overcoming challenges in global south

The **Consortium of Future Rural Studies** is a platform for early career researchers to foster interdisciplinary and cross-boundary research collaboration in sustainable food, agricultural innovation and rural development. Its mission is to address global challenges in poverty alleviation, food security and rural sustainability in the global south. More than 1,000 young researchers and students have attended online training courses to develop a knowledge system for local challenges and good practices in the developing world.

Call for clarity on fuel poverty

A study by researchers in the Faculty of Engineering and University of Nottingham Business School has shown that the number of households in fuel poverty across England is likely to be up to **two and a half times higher than previously thought**. The government's Low Income Low Energy Efficiency (LILEE) indicator excludes homes with a good (A-C) energy performance rating, which means a significant number of financially vulnerable homes are automatically excluded from fuel poverty statistics. The researchers are collaborating with industry to test their ideas against household data, with the aim of proposing a replacement for LILEE.

Learning and students

SuitUp: removing barriers to work

Enactus Nottingham is a not-for-profit organisation led by University of Nottingham students. It works to transform the lives of people in need by setting up social enterprises that provide employment and deliver social and environmental good. Projects include SuitUp, which aims to help students with special educational needs and disabilities overcome barriers they may face in entering employment. It provides students with workwear for interviews and placements by reusing garments that are rarely worn. SuitUp also engages with employers to help secure SEND pupils work experience and find pathways into employment.

University of Nottingham Malaysia scholarships

University of Nottingham Malaysia champions accessible education through a diverse and competitive range of scholarships, including the Provost's Excellence Scholarship offering full tuition waivers to high-achieving students from low-income families. The university has also targeted aid for under-represented communities including scholarships for indigenous communities, particularly from the Penan group.

Public engagement

Minimising barriers to business

Nottingham University Business School's Dr Lorna Treanor has developed a charter aiming to help **minimise the barriers to entrepreneurship** for underserved and under-represented groups. Dr Treanor says groups such as women, ethnic minorities, young people, and people experiencing disabilities can face barriers such as equitable access to finance. She is calling for a more inclusive ecosystem for enterprise, with more diverse role models, inclusive support, equal access to enterprise finance, and inclusive policies and practices.

2 ZERO HUNGER

End hunger, achieve food security and improve nutrition and promote sustainable agriculture

692 research outputs

7th UK university for research outputs

3.6% UK research outputs

23.6% co-authored with low and lower middle-income countries

71.1% internationally co-authored

2.16 citation impact

537 policy citations

30 schools in Nutri Kit trial

270 local businesses supported by Food Innovation Centre

£10m in research projects at Centre for Sustainable Agricultural Systems

Operations

Food Innovation Centre

The centre **provides leading scientific and technical advice** to food and drink manufacturing businesses in the UK, to support the development of new products and processes from conception to consumption. Following successful work with SMEs across the East Midlands over a number of years, the centre has developed as a UK-wide commercial consultancy. It combines academic expertise and commercial knowledge with state-of-the-art facilities such as a development kitchen and food processing hall to support businesses in delivering innovative new products to market.

Centre for Sustainable Agricultural Systems

The university's **Centre for Sustainable Agricultural Systems** (CSAS) provides expert support and research into enhancing sustainability and climate resilience in agriculture. CSAS brings together 50-plus researchers from across the university, and over £10m in current research projects to create one of the UK's largest groups working on global agricultural sustainability. Our expertise hubs, focused on regenerative farming, climate-smart crops, and digital agriculture, allow Nottingham's world-leading researchers to support businesses to make sustainable transitions.

Learning and students

Nutri Kit to encourage healthy eating

A new education toolkit to encourage healthy behaviours in children is being offered to 30 schools across the East Midlands in a pilot project. The Nutrition Advisory Team created the **Nutri Kit** with support from the University of Nottingham's Food Innovation Centre. The toolkit contains engaging and interactive teaching materials covering mind, body and health, and invites children to consider how their dietary and lifestyle decisions have an impact – on themselves, the community and the planet.

Public engagement

Plant-based food partnership

Innovate UK funding supported a partnership of our Division of Food, Nutrition and Dietetics with UK-based Jampa's and Canadian manufacturer Tartistes, in the **development of next-generation, plant-based protein products** that use sustainable local crops. The collaboration aims to deliver nutritious, great-tasting products that resonate with consumers, while strengthening UK–Canada innovation ties and supporting more sustainable food supply chains. The products will be tested with consumers at the university's **Sensory Science Centre**.

Research

Discovery of eco-friendly fungicide

Researchers in the Faculty of Medicine and Health Sciences and Faculty of Engineering have discovered and successfully trialled **an eco-friendly fungicide**, which could protect crops, increase food security and help protect wildlife. The polymer is non-toxic and works by passively resisting attachment of fungal spores to crop surfaces. Its non-toxicity, relative simplicity of production and potential for scaling up as a compound spray offers a sustainable, effective alternative to current pesticides, a number of which are linked to biodiversity damage, water contamination and human illness, such as cancer and infertility, yet are still being used in the UK.

Transforming the food system

The University of Nottingham's **Food Systems Institute** brings together researchers from across disciplines and works with industry and policymakers to deliver solutions to transform the food system. The Food Systems Institute will strengthen Nottingham's reputation as the only UK university offering research expertise and capabilities across the food system, covering everything from production and processing to transport, consumption, waste and sustainability.

3 GOOD HEALTH AND WELL-BEING

Ensure healthy lives and promote well-being for all at all ages

6,666 research outputs

17th UK university for research outputs

2.7% UK research outputs

12.2% co-authored with low and lower middle-income countries

60.1% internationally co-authored

3 citation impact

3,872 policy citations

2 Sports University of the Year awards in 2024

11.7T the UK's most powerful MRI scanner

1st smart breathing tube for ventilator patients

Public engagement

Reshaping headlines to reduce harm

Does irresponsible or sensationalist media reporting of suicide risk further harm and imitative behaviour? Researchers at the University of Nottingham Malaysia addressed this challenge by engaging with media professionals, mental health practitioners, and individuals with lived suicidal experience or bereavement. This comprehensive and evidence-based approach informed the launch of **suicide prevention content guidelines** by the Minister of Communications, believed to be the first such guidelines in the world.

Research

Human trials for smart breathing tube

The world's first **smart breathing tube for mechanically ventilated patients,** developed by the university's **Centre for Healthcare Technologies**, is undergoing human trials funded by the Medical Research Council. The optical fibre sensor-equipped endotracheal tube (iTraXS) allows clinicians to accurately monitor the contact pressure of the cuff (balloon) inserted into the trachea to control air flow from the ventilator tube into the lungs. Too much pressure can damage the windpipe; too little risks fluid getting into the lungs and causing ventilator-associate pneumonia, which affects 20% of patients in intensive care.

50 years on, a new frontier for MRI

In March 2023, the university celebrated the 50th anniversary of Sir Peter Mansfield publishing his **first research paper**, which led to the development of magnetic resonance imaging (MRI) – an invention that revolutionised medicine. The University of Nottingham continues to advance medical imaging, with Tesla Engineering and Philips UK being commissioned to design and build the **UK's most powerful MRI scanner**. The 11.7T ultra-high field scanner that will be at the heart of a UKRI-funded national scanning facility at the Sir Peter Mansfield Imaging Centre, on University Park Campus.

Operations

Sport champions do the double

Nottingham is crowned the **best university in the UK** for sports by The Times and The Sunday Times Good University Guide 2024 – the third time the university has been awarded the accolade by the publication since 2018. This is hot on the heels of being named Sports University of the Year by the inaugural Daily Mail University Guide.

We have more than 70 sports clubs, with support for all, from those who want to play for fun or nip to the gym between lectures, to elite athletes. We are committed to ensuring sport and fitness activities are inclusive and accessible to all our students.

National Rehabilitation Centre

Nottingham University Hospitals NHS Trust (NUH) is to host the UK's first National Rehabilitation Centre. The 70-bed centre near Loughborough will include research, training and education alongside clinical care delivered by NUH staff. Academics from the University of Nottingham and Loughborough University aim to pioneer innovative approaches to rehabilitation at the centre, including new technologies, with real-time feedback from clinicians and patients. This clinical model could be rolled out across the country.

Learning and students

'Crash' course for health students

The university teams up with ambulance and fire and rescue teams to give nursing, midwifery, medicine and physiotherapy students realistic insights into the journey of traffic accident victims - from a car wreck to recovery. The 999 teams stage **a mock car crash on campus**, and invite students to see first-hand how the situation is assessed and 'casualties' extracted from the wreckage and taken to hospital. Next, the university's immersion suite enables students to witness 'casualties' arrival in A&E, and their journey from assessment and treatment to rehabilitation.

4 QUALITY EDUCATION

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

708 research outputs

10th UK university for research outputs

2.5% UK research outputs

8.8% co-authored with low and lower middle-income countries

46% internationally co-authored

1.95 citation impact

344 policy citations

£8m grant from XTX Markets for Observatory for Mathematical Education

4 out of 5 of our UK students land highly skilled jobs or go into graduate level study within 15 months of graduating

97% of UNM graduates in employment, further studies or enhancement programmes in 2024

Public engagement

Student innovators make a difference

OPAD is an **award-winning** Faculty of Engineering -led initiative that brings together students and staff from across the university to work on designing and manufacturing assistive devices. It works with community and health care partners, such as Able Orchestra, Lark Hill Retirement Village, and Nottingham University Hospitals NHS Trust to create user-centric bespoke devices to make a real difference to people's lives. The student projects include **ear defenders** for premature babies and a **joystick adaptor** for disabled young musicians.

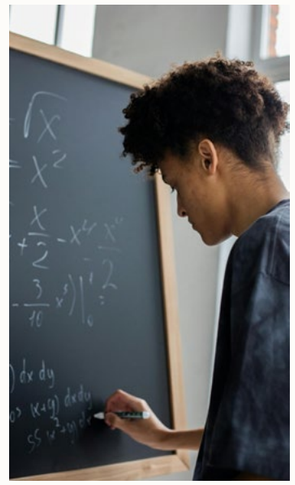
Addressing fears over climate change

Research into climate anxiety is a growing field. But we know little about how a sense of fear or tension linked to climate change may affect the wellbeing of parents, and their role in shaping children's responses. Dr Jessica Jackson, of the Centre for Children and Young People's Health Research, is exploring the links between parents' attitudes and actions on this challenge, and how these may impact their children. **By working with schools and parents**, her research is helping develop resources that build emotional resilience into environmental education.

Operations

Observatory for Mathematical Education

The University of Nottingham has secured a founding £8m grant from XTX Markets to establish the **Observatory for Mathematical Education**. The Observatory will generate state-of -the-art, data-driven research to support the national improvement of mathematics education from the start of school to post-graduate level, with long-term benefits for individuals and society.



Research

Embedding sustainability in schools

Education for Sustainable Development (ESD) is embedded in Malaysia's national curriculum. However, a **national study by Dr Subarna Sivapalan**, of the University of Nottingham Malaysia, established that while teachers and school leaders may share a passion for environmental education, more can be done to embed sustainability in a school's ethos through teaching and learning, policy, practice and community partnerships. Her research is set to inform the Ministry of Education's curriculum review and has been highlighted at COP climate conferences and UNESCO's Greening Education Partnership.

Learning and students

Inspiring future engineers in Ghana

The Faculty of Engineering continued its commitment to inspiring future engineers and architects across the globe by organising the second schools structure building **competition in Ghana**. The competition aimed to provide high school students with hands-on engineering experience with the hopes of broadening their understanding of STEM subjects while fostering teamwork, creativity, project management and problem-solving skills. The event, delivered in collaboration with **Graduate Guidance Group (G3)**, saw seven schools from across Ghana compete to build the strongest vertical structure using only wooden sticks and glue.

Global success for PhD student

PhD student Diret Bitrus Tang'an is the People's Choice winner at the **Universitas21 Global Three Minute Thesis (U21 3MT®)** competition. The competition brings doctoral students from around the world together to present a three-minute version of their thesis online – getting straight to the heart of their research and communicating clearly to an international audience. Diret Bitrus Tang'an's presentation **Hope for The Environment: Microwave Heating** explained how microwave heating can be used to help clean petroleum contamination from the Niger delta.

5 GENDER EQUALITY

Achieve gender equality and empower all women and girls

378 research outputs

19th UK university for research outputs

1.7% UK research outputs

14% co-authored with low and lower middle-income countries

47.9% internationally co-authored

5.22 citation impact

301 policy citations

8,000 visitors to Dear sisters: activists' archives

1.2m million sanitary pads and tampons bought

1st Athena Swan Gold Award for UK engineering department

Learning and students

Athena Swan Gold Award

The Faculty of Engineering was the first engineering department in the UK to be awarded an **Athena Swan Gold Award** for excellence in advancing gender equality across higher education and research. We retain this important accreditation and are proud to continue to champion women in engineering. **Meet some of our inspiring women in engineering**

Research

Recognition for women's unpaid work

Researchers from the university teamed up with ethical traders, cooperatives and social business networks to analyse the impact of **invisible, unpaid work by women** in rural Nicaragua. They produced a strategy and policy recommendations for equitable supply chains, showing how recognising women's right to paid work has a positive ripple effect on local economies and communities, as well as promoting fairness and equality. The impact of the partnership included setting up an innovative cooperative food supply chain, where women's previously unpaid work in sesame oil production was recognised.

Virtual sports lab boosts gender equity

A virtual lab developed with the University of Manitoba aims to generate new solutions for gender equity in sport and physical activity. The **EDGE Lab** – Environments Designed for Gender Equity in Sport & Physical Activity Lab – will explore gendered environments in elite sport, inequities in everyday exercise environments, and inclusive youth sport and physical activity. EDGE lab co-lead Dr Stephanie Coen said: "With our international network of community, sport, and academic collaborators, EDGE Lab is a hub for developing new and impactful ways to positively improve the landscape of girls' and women's sport and physical activity."

Operations

Targeting period poverty

Project Period, which provides free sanitary pads and tampons to students and staff at the University of Nottingham, is seeing hundreds of thousands of products being distributed across all campus sites. The project team highlighted the volunteer-led initiative in the journal **Perspectives in Public Health**, as part of discussion around the growing issue of period poverty and lack of access to sanitary products due to financial constraints.

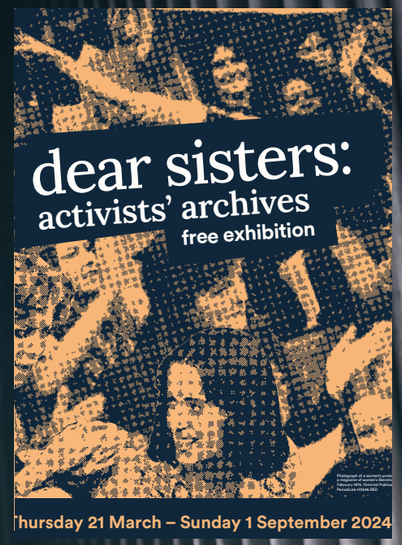
Public engagement

The fight goes on! Highlighting women's activism

An exhibition at the University of Nottingham's Lakeside Arts showcased research collections documenting the battles fought by women for personal and civil liberties in Nottingham. **Dear sisters: activists' archives**, brought together personal memories of activists – zines, photographs, posters, papers, campaign badges and t-shirts – and highlighted the work of the women involved in activism in their own communities. A series of lectures and talks featured alongside the exhibition.

Celebrating digital art's innovators

Creative industry experts from the University of Nottingham and King's College London came together for International Women's Day to showcase a **groundbreaking digital art exhibition**. GLOW: Illuminating Innovation celebrated women's contribution to innovations in creative and immersive technology, such as the first Virtual Reality and Augmented Reality explorations and leading the development of computer and 3D animation.



6 CLEAN WATER AND SANITATION

Ensure availability and sustainable management of water and sanitation for all

660 research outputs

14th UK university for research outputs

2.4% UK research outputs

28.6% co-authored with low and lower middle-income countries

75.6% internationally co-authored

2.47 citation impact

367 policy citations

99% removal efficiency of pollutants by graphene sponge developed at University of Nottingham Malaysia

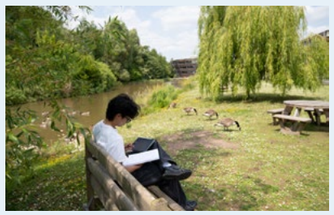
9m litres of water saved each year by 'dry' lab pumps

36% target to reduce UoN water consumption by 2040

Learning and students

Campus lakes are living labs for students

Water is an integral part of the University of Nottingham's beautiful, biodiverse campuses, from the ornamental lake at University Park, to Jubilee Campus, where the lake delivers green cooling to its buildings. These living labs provide opportunities for Enviromental Science and Geography students to gain hands-on insights into how stewardship of these natural features promotes biodiversity, while supporting climate resilience, reducing flood risk and providing sustainable drainage and cooling systems.



Public engagement

Estimating Covid risk from wastewater

Analysing wastewater as an early warning tool for Covid-19 has been adopted by more than 70 countries, but research into its effectiveness has focused on high-income countries with centralised sewage infrastructure. University of Nottingham researchers have contributed to a **pioneering study**, conducted during the second wave of the Covid-19 pandemic in India in 2021, into the feasibility of collecting untreated wastewater samples in the Nagpur district. They analysed 983 wastewater samples and by integrating modelling techniques revealed significantly higher viral loads in urban areas, with unreported cases of Covid estimated to be nearly 14 times higher than confirmed cases. This combination of wastewater-based epidemiology with the Susceptible-Exposed-Infectious-Confirmed Positives-Recovered (SEIPR) model has important implications for reliable preparation for Covid surges, and is a cost-effective tool for management of healthcare resources in lower-income countries.

Addressing the rise of microplastic waste

Microplastics pose a growing risk to ecosystems and human health. The University of Nottingham Malaysia has pioneered microplastic studies in the country's rivers and aquatic life while also engaging the public and communities to deepen understanding of this challenge. With support from the United Nations Development programme and the Kurita Water and Environment Foundation, UNM is developing innovative water treatment technologies to remove microplastics from domestic wastewater.

Research

Sponge city research takes on Asia's mega deltas

Research by Professor Faith Chan, of the University of Nottingham Ningbo China, has influenced the concept of the **sponge city** and nature-based solutions to mitigate flood risk in urban areas. His research is also exploring how these blue-green solutions can be applied to Asia's five mega deltas, where communities are facing 90% of global flood exposure, together with saline intrusion and erosion. For example, the Ganges–Brahmaputra–Meghna (in Bangladesh and India) and Vietnam's Mekong deltas use strategic delta plans to identify risk hotspots and guide decision-making, while the Yangtze and Pearl deltas in China have developed forecasting and sensing technologies to prepare for and respond to hazards.

Graphene sponges to soak up water pollutants

Industrial pollutants such as heavy metals, pharmaceuticals and synthetic dyes are contaminating water systems worldwide, posing serious risks to both the environment and public health. Professor Lee Lai Yee, of the University of Nottingham Malaysia, is pioneering **sustainable nanotechnology to transform water purification**. Her research focuses on advanced nanomaterials, particularly 3D graphene-based composites. These graphene sponges have exceptionally high surface area and porosity, to effectively remove hazardous contaminants. This innovative approach offers a promising pathway to cleaner water, improved human health, and greater environmental sustainability.

Operations

Innovation cuts water use in thirsty labs

The University of Nottingham, which has set a target to reduce consumption by 36% by 2040, uses about 1.97 million litres of potable water daily. Labs are typically very thirsty, and can use up to five times more water than a comparable building space. Water aspirators - designed to connect to a tap and allow water to flow through a tube inside the aspirator to create a vacuum – have been a staple in many labs but use 6-7 litres of water every minute or over 350 litres of water every hour. We worked with Scientific Laboratory Supplies (SLS) to replace 100 water aspirators with **dry-running vacuum pumps**. This has saved more than 9 million litres of water each year (and a cost saving of £20,000).

7 AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable, reliable, sustainable and modern energy for all

2,417 research outputs

7th UK university for research outputs

3.6% UK research outputs

15.6% co-authored with low and lower middle-income countries

69.4% internationally co-authored

1.66 citation impact

119 policy citations

31,400 kWh saved by energy-conscious student competition winners

30% fall in carbon emissions in China buildings project

1/10th amount of rare metals needed in new hydrogen catalyst using metal waste

Public engagement

Delivering a just energy transition

A policy commission, brought together by the University of Nottingham and chaired by Lord Watson of Wyre Forest, called on the UK to ensure fairness and opportunity around the transition to a low carbon energy system. Its **Delivering a Just Energy Transition** report was informed by expert witnesses from across sectors including academia, business and local government.

The report, launched in Parliament, urges the UK Government to form a positive narrative around decarbonisation, focusing on benefits associated with hosting a new energy infrastructure, together with setting up a transition taskforce to enable those impacted by the energy transition to have influence over policies.

AI advances for China's low-carbon buildings

Experts in Artificial Intelligence and renewable energy technologies at the University of Nottingham Ningbo China worked with the city's municipal government to deliver a 30% reduction in carbon emissions across an office compound of seven buildings.

The team developed an innovative energy system control model, which intelligently integrated renewable energy systems, chilled water and air-conditioning systems, and electric vehicle charging stations. With support from local and national commercial partners, these innovations are being deployed across industrial parks and university campuses, contributing to China's low-carbon transition.

Learning and students

Greener halls competition cuts energy use

The university's **Go! Switch off** campaign encourages students and staff to think about energy use on campus. This includes a Greener Halls Competition, with on-campus halls competing to see who can reduce their electricity and water use the most, alongside reducing waste. In autumn 2023, it was very close between Rutland Hall and Lenton & Wortley Hall. Together, these halls saved over 31,400 kWh of electricity during the competition. This could power 90 refrigerators for an entire year or an average home for almost three years.

Operations

Renewing our sustainability commitment

The university renewed its **Environmental Sustainability Policy Statement** in 2024. This reaffirms a commitment to reducing our environmental impact and drive down greenhouse gas emissions, led by the transition to an integrated, clean energy system. We have proactively increased our capacity to generate and distribute smart renewable and low carbon energy across our estate, incorporating renewable technologies such as heat pumps using air, ground and lake sources, biofuels for combined heat and power, biomass boilers and solar energy arrays.

Research

Turning metal waste into a catalyst for hydrogen

Hydrogen is a key part of the future energy matrix. But producing this clean source of energy predominantly uses fossil fuel feedstock. Even the greener pathway of electrolysis, which uses only water and electricity, demands precious elements such as platinum to act as a catalyst. Our chemists and engineers have now **discovered a way to transform swarf - metal waste from manufacturing - into a highly efficient catalyst**. The researchers found that swarf is textured with nanoscale grooves, anchoring atoms of platinum or cobalt, which act as efficient electrocatalysts to split water into hydrogen and oxygen. This process uses one-tenth of the amount of platinum, while upcycling metal waste from industry.

Extending the life of batteries

School of Chemistry research into the development of new materials and technologies for next generation batteries received a share of **£19m additional funding from the Faraday Institution**, the UK's flagship institute for electrochemical energy storage research. Researchers were awarded £230,000 to drive innovation in energy storage technologies through their FutureCat project, which targets the development of new electrolytes that will stabilise instability at the interfaces of lithium-ion technology and greatly extend battery life.

8 DECENT WORK AND ECONOMIC GROWTH

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

986 research outputs

11th UK university for research outputs

2.5% UK research outputs

15.8% co-authored with low and lower middle-income countries

64.7% internationally co-authored

2.34 citation impact

1,050 policy citations

88% of households identified as affected by climate change in Bangladesh study

Good Ofsted rating for UoN skills provision (2024)

918 potential victims of care home labour exploitation identified in 2023

Research

Protecting workers in rubber glove supply chain

Dr Karma Tashi Choedron, of the University of Nottingham Malaysia, collaborated with the International Labour Organisation to explore challenges to decent working conditions in the **supply chain of the country's rubber glove industry**. Her study informed policy recommendations and contributed to improved compliance frameworks for issues such as unfair recruitment practices, excessive working hours and inadequate living conditions for workers.

Driving up labour standards in adult social care

The UK's adult social care sector is under significant stress, with problematic labour conditions and a lack of financial sustainability. Research by the Rights Lab and University of Nottingham Business School has highlighted the role investors can play in **helping to improve labour standards** across this sector. This includes adopting measures to strengthen investor stewardship, set and monitor labour standards, conduct labour-related due diligence and post-investment monitoring on the companies in whom they invest, and introduce contractual obligations in leases and through red lines related to the quality of care and work.

Climate migrants and the risk of exploitation

A study by the university's Rights Lab found more than one-third of households in the southwest border region of India and Bangladesh had migrated due to livelihoods being lost or made unsustainable by climate change. Researchers found that such climate migrants are more at risk from debt bondage, trafficking, and exploitation. Their unprecedented study has given our partners, the Catholic Agency for Overseas Development (CAFOD), Caritas Bangladesh, OKUP, and Caritas India, valuable insights into how to better support vulnerable, displaced communities.

Learning and students

Degree apprenticeships a driving force

Degree apprenticeships are a cost-effective way to develop a highly skilled workforce. Designed with employers, our programmes combine real work with rigorous study, tackling industry skills gaps and producing experienced, work-ready graduates. **Hassan Mujtaba**, now a Specialist Data Scientist at Toyota, recounts how his degree apprenticeship allowed him to develop soft skills – such as communication and presentation – alongside technical know-how and how to bridge the gap between technology and business... "allowing me to generate actionable insights that can truly impact an organisation".

Operations

Giving NHS staff a lift

The retention of experienced clinical staff is a significant challenge for the NHS. Researchers at the University of Nottingham Business School are working with Nottingham University Hospitals NHS Trust to address this issue, with a focus on late-career nurses and midwives. Our researchers worked with experienced NHS staff to create tailored development programmes that benefited the staff as well as improving patient care. This focus on job enrichment and career development has had a positive impact on job satisfaction and staff retention, as well as giving NHS staff the opportunity to design and deliver innovative, more efficient practices.

Public engagement

Helping business secure rights of workers

The **UN Guiding Principles on Business and Human Rights** recognise that workers should have access to effective remedies if their rights are infringed or violated. Research at the university's International Centre for Corporate Social Responsibility has highlighted challenges securing effective access to remedies, such as fear of retaliation, the transient nature of migrant work, or where corporate responsibility is seen as a tick box exercise. Dr Lara Bianchi launched a **Knowledge Exchange Hub** to support business practitioners in providing effective access to remedy for workers. The Hub includes a video and practical guidance.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

2141 research outputs

7th UK university for research outputs

3.2% UK research outputs

11.1% co-authored with low and lower middle-income countries

62.5% internationally co-authored

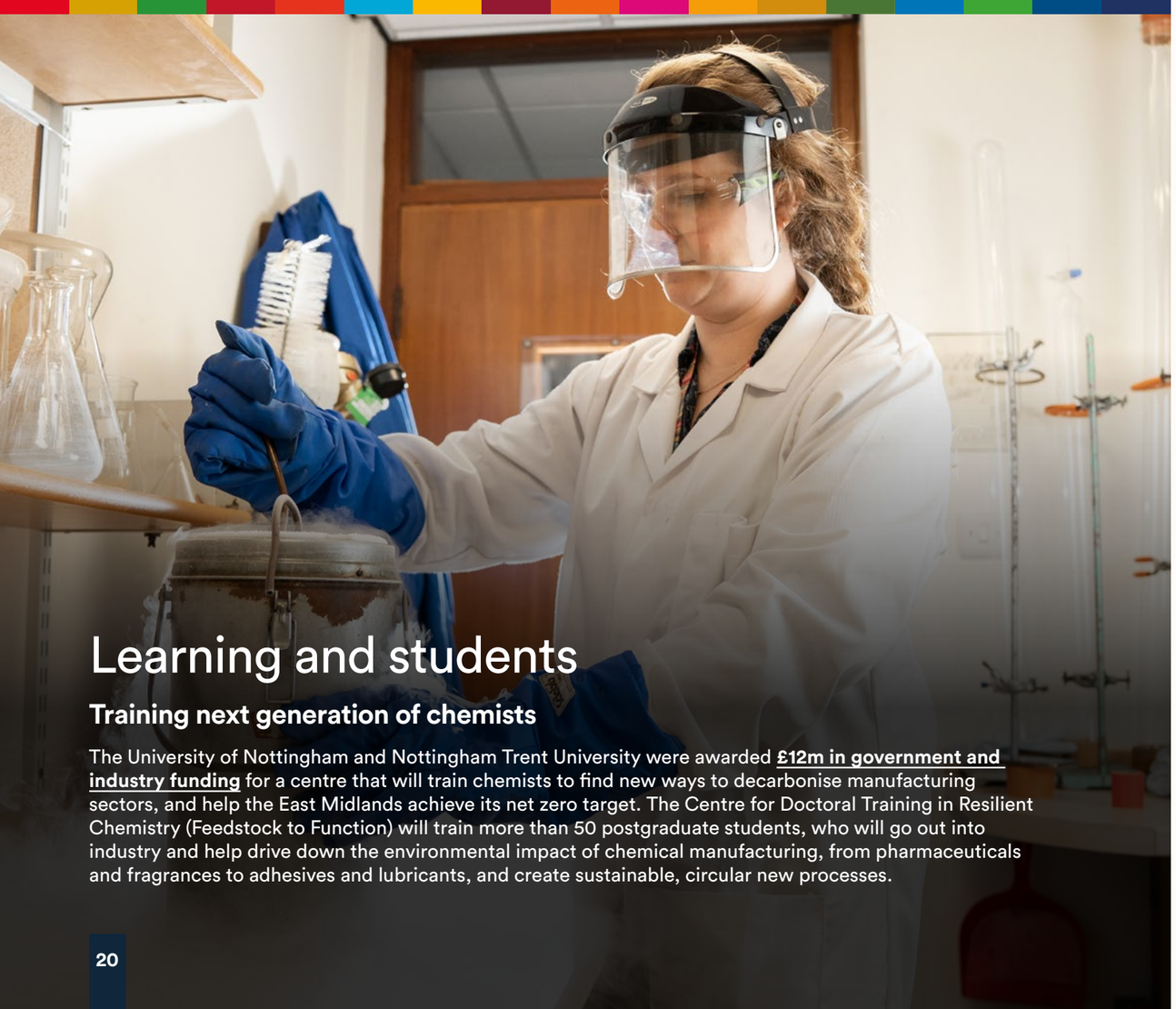
1.89 citation impact

313 policy citations

£204m generated for UK economy by National Biofilms Innovation Centre

£70m funding for decarbonising transport research

60+ local businesses supported by talent and innovation programmes

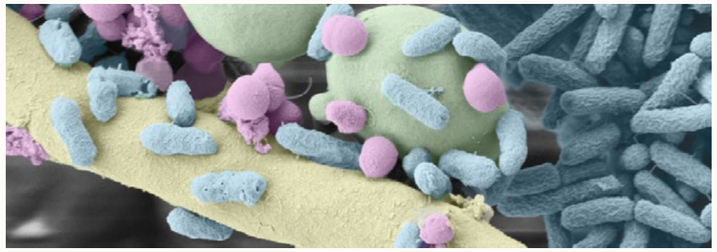


Learning and students

Training next generation of chemists

The University of Nottingham and Nottingham Trent University were awarded **£12m in government and industry funding** for a centre that will train chemists to find new ways to decarbonise manufacturing sectors, and help the East Midlands achieve its net zero target. The Centre for Doctoral Training in Resilient Chemistry (Feedstock to Function) will train more than 50 postgraduate students, who will go out into industry and help drive down the environmental impact of chemical manufacturing, from pharmaceuticals and fragrances to adhesives and lubricants, and create sustainable, circular new processes.

Research

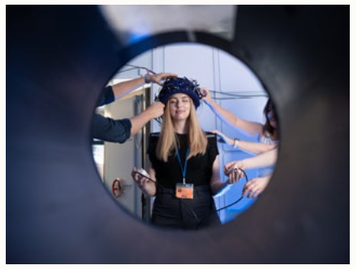


Biofilms generate economic impact

The National Biofilms Innovation Centre, hosted by the University of Nottingham and funded by the Biotechnology and Biological Sciences Research Council and Innovate UK, has **generated impact of around £204m in the UK economy**. Biofilms – communities of living micro-organisms – offer solutions to global challenges such as antimicrobial resistance, food safety, and water security, as well as making a significant contribution to the UK and global economy through job creation, and sparking industry investment.

Generating £1.3bn to the East Midlands economy

As a member of the Russell Group of research-intensive universities, the University of Nottingham contributed to generating more than £1.3bn to the East Midlands economy in 2021/22. **A 2024 report by London Economics** found that the Russell Group also generated £37.6bn to the overall UK economy through research and commercialisation activities in sectors ranging from medicine to green energy and the creative industries, and aligning with SDG9 by supporting sustainable economies and innovation. Across the UK, more than 250,000 jobs, twice as many as in the chemical and pharmaceutical manufacturing industries combined, were supported by all 24 Russell Group universities.



£70m to power net zero transport

The university secured more than **£70 million** to establish new world-leading and open-access research facilities and programmes that will decarbonise future transport. The funding is underpinned by a £14m award from the UK Research Partnership Investment Fund (UKRPIF). This is augmented by both public and private co-investment that will allow the university to build on its internationally leading capabilities in electrification, hydrogen and manufacturing. The university's co-investment partners span a range of industries across aerospace, power generation, marine, and off-highway.

Public engagement

Helping local business to innovate

Nottingham businesses are being offered Talent Grants of up to £2,500 towards the recruitment of a university graduate or student for a minimum of eight weeks. To qualify for one of the grants, businesses demonstrate how the recruit would help it enter new markets or improve products or services. Innovation Vouchers of up to £5,000 also allow businesses to access consultancy services. The schemes are offered in partnership with Nottingham Trent University and Nottingham City Council under the Universities for Nottingham Civic Agreement.

Operations

Joining EU aerospace flagship

Led by the Institute for Aerospace Technology, Nottingham became the first UK university to become an **Associated Member of the Clean Aviation Joint Undertaking** – the EU's leading research and innovation programme for making the aviation industry ready for a sustainable future. As an Associated Member, the university has a seat on the Clean Aviation's technical committee, providing expertise and guidance on future funding and roadmaps towards achieving net zero aviation.

10 REDUCED INEQUALITIES

Reduce inequality within and among countries

750 research outputs

20th UK university for research outputs

2% UK research outputs

11.2% co-authored with low and lower middle-income countries

51.6% internationally co-authored

2.1 citation impact

583 policy citations

87RM (£15.4m) in aid for University of Nottingham Malaysia students 2020-25

50% or 100% tuition fee grants for postgraduate student from developing countries

70+ countries and regions represented by University of Nottingham Ningbo China students and staff

Learning and students

Making tourism fairer for all

Tourism is a prime source of revenue, especially for communities in the global south. But tourism has socio-cultural and environmental challenges for societies grappling with achieving sustainable development, including ensuring that local people have fair and equitable access to its economic benefits, without being disadvantaged or marginalised by tourism industries. Business students undertaking the module **Sustainable Tourism Futures** explore these challenges and investigate innovative solutions through the lens of the UN Sustainable Development Goals, including SDG 10: reduced inequalities.

Research

Musical robot breaks down barriers

Researchers at the University of Nottingham have **developed a musical robot** that can help musicians with disabilities to improvise and access instruments in a way that hasn't previously been possible. **Jess+** has been developed as part of the DigiScore project, the first large-scale collaboration between the university's Department of Music, Orchestras Live, and Sinfonia Viva. The AI robot helps musicians with disabilities to collaborate as part of a mixed ensemble and to improvise in the creation of live scores where dexterity can be a barrier.

Supporting neurodivergence in Malaysia

In many non-Western countries, children with suspected neurodevelopmental conditions face long delays in receiving assessments and support, largely due to the lack of culturally adapted tools. Most existing instruments are developed for Western, English-speaking populations, leaving critical gaps in care. Stigma and limited awareness often compound these challenges. Dr Christine Leong and her team from the University of Nottingham Malaysia are **developing diagnostic tools tailored to local contexts**. Their work aims to make developmental screening more inclusive, timely, and accessible, ensuring children and families receive the support they need.

Operations

Disability Confident Employer

We are proud to announce that our university is registered as a **Disability Confident Employer** (Level 2) through the Disability Confident Scheme. This scheme is a government initiative designed to help employers recruit and retain disabled people and those with health conditions. It aims to challenge attitudes towards disability, increase understanding, and ensure that disabled individuals have the opportunities to fulfil their potential.

Public engagement

Champion of diversity and inclusion

Dr June McCombie, alongside her research into molecular physics and astrophysical chemistry, has long been an advocate and champion of diversity in STEM education, influencing workplace practices and promoting equity. Dr McCombie was awarded an MBE for contributions to science in 2013, and in 2023 was recognised by the Institute of Physics, which bestowed a **Phillips Award for her contribution to diversity and inclusion**.

Comic book explores forced marriage

A comic book, based on research from the University of Nottingham, has been designed to help children aged 13 to 16 understand the risks and signs of forced marriage and how they can help prevent it and protect themselves and their loved ones. The book came about after the UK Forced Marriage Unit reported that around 30% of cases involved children. The comic book was used as part of pilot study in Nottingham schools, with an accompanying pack also developed to help to teach students about the issues surrounding forced marriage.

11 SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient and sustainable

904 research outputs

18th UK university for research outputs

2.1% UK research outputs

11.5% co-authored with low and lower middle-income countries

61.1% internationally co-authored

1.84 citation impact

171 policy citations

36,000 homeless households in survey

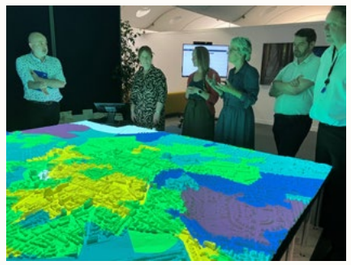
Top 40 of the world's greenest universities

£900k funding from the National Institute for Health and Care Research

Public engagement

Connecting research to healthier communities

The **Knowledge for Public Health (KNOW-PH)** team at the University of Nottingham aims to revolutionise the way research is used in public health planning and delivery, paving the way for a healthier and more equitable society. With funding from the National Institute for Health and Care Research, KNOW-PH is bringing together people working in universities, local government, the voluntary sector, and creative industries to help improve the delivery of public health services, and bridge the critical gap between research discoveries and implementation in health policies and practice.



Doorstep challenge for researchers

The Co(l)laboratory programme – a joint initiative by the University of Nottingham and Nottingham Trent University – is inviting our local communities to **tell us about challenges they are facing** – so research by PhD students can be conducted to help find solutions. The issues raised include:

- Community boxing clubs as a pathway to reduce violence
- Racial barriers to maternity care
- Workplace coercion and modern slavery in the community

Being Human Festival

Cheese tastings, history walks, virtual reality dance shows, lacemaking, a Royal Society book prize, local lingo, and Viking poetry… all feature in the **Being Human Festival**, Nottingham's hugely popular annual celebration of arts and humanities research and its relevance to the lives of people in our city.

Learning and students

Building culturally sustainable communities

The SDGs identify heritage and the continuity of cultural identities as key factors in quality of life and fostering social inclusion. **Students at the University of Nottingham Ningbo China** are collaborating with a local community museum, the Ningbo Bang Museum, to create transmedia narratives about the individuals featured in the exhibits. Their aim is to engage local people with explorations of heritage, community and identity, as well as emphasise how culture and heritage enrich lives in one of China's industrial cities.

Research

'Out of area' vulnerability for homeless

Researchers from the School of Sociology and Social Policy have shown that homeless households placed **'out of area'** by their local authority are vulnerable to losing access to support, affecting mental health, wellbeing, and educational attainment. They also found that lack of data was masking the disproportionate impact on Black and minoritised ethnic households. The study called for more transparent policies and better communication between local authorities to help improve support and build resilience in 'out of area' communities.

Operations

Among the world's greenest universities

The University of Nottingham's commitment to sustainability has been recognised by an international league table, which has ranked it among the **top 40 of the world's 'greenest' universities**. Nottingham jumped 85 places in the QS World University Rankings: Sustainability 2024, up to 33rd out of 1,403 global institutions. The university is placed 17th out of 493 European universities and 12th in the UK.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns

980 research outputs

8th UK university for research outputs

2.8% UK research outputs

16.9% co-authored with low and lower middle-income countries

66.6% internationally co-authored

2.17 citation impact

322 policy citations

1st UK member of £123m Chile clean energy programme

25% potential reduction in polyurethane processing waste

80% of UNNC students aware of importance of e-waste disposal and recycling

Public engagement

University testbed for electric vehicle breakthrough

Our partnership with Nissan helped achieve a milestone in car battery charging technology, allowing users of electric vehicles to use electricity stored in the car's battery to power their homes, or sell it back into the grid. Nissan has piloted Vehicle to Grid (V2G) projects throughout the world, **including at University Park in 2023-24**. Researchers with significant experience in V2G supported the trial, with V2G vehicle batteries plugged in to the micro-grid research testbed at our on-campus Creative Energy Homes. The V2G technology will be launched in the UK in 2026.

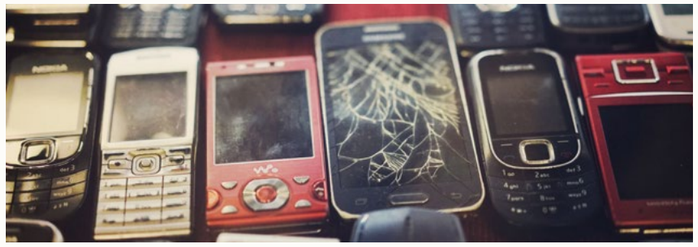
Paving the way for sustainable polyurethane

Nottinghamshire-based **Trelleborg Applied Technologies** is an industry leader in advanced material solutions for demanding environments – from deep-sea to aerospace applications. A **Knowledge Transfer Partnership** with the University of Nottingham evaluated the carbon footprint of its materials and processes, revealing that a significant volume of its processed polyurethane waste can be recycled as thermoplastic materials, reducing waste and costs while strengthening Trelleborg's circular economy strategy.

Learning and students

Sustainability insights from marketing giant

MSc Marketing students from Nottingham University Business School have the opportunity to visit Ipsos London as part of their Critical Marketing module. Ipsos is one of the world's largest market research companies, operating in 90 markets with more than 20,000 professionals. Students engage with industry experts, gaining invaluable insights into sustainability and ethical marketing and thinking beyond the sector's traditional focus on profitability to consider its broader impact on stakeholders, society and the environment.



Reducing e-waste on campus

E-waste, generated by discarded electronic devices, is a global issue. At the University of Nottingham Ningbo China's Centre for Responsible Business and Innovation, researchers have partnered with students, staff and sustainability groups to explore **how e-waste can be reduced on campus**. By engaging with students, the project gauged awareness of the issue and gained insights for a report on e-waste disposal and recycling behaviour, which proposed strategies to improve on-campus e-waste management.

Operations

Supporting Chile's journey to net zero

The university's Power Electronics, Machines and Control (PEMC) Research Group has been announced as a member of the Chilean Institute of Clean Technologies, via the University of Nottingham - Chile Foundation, making Nottingham the **first UK institution** to join the $123m programme, which aims to develop advanced technologies to decarbonise Chile's vast mining industry. The partnership will allow hydrogen, solar and electrified transport technologies created in Nottingham to be tested in real-world, highly demanding industrial environments.

Research

Discovery could transform global vaccine roll-out

Squalene - typically sourced from shark livers - is critical to human health. It is a commonly used as an adjuvant material, which is added to vaccines to help boost our immune response. Harvesting this substance from sharks raises ethical and environmental questions, yet there are few synthetic alternatives available. Those that exist are also less stable, and use in vaccines is problematic in countries without reliable access to refrigerators. Researchers at the Faculty of Engineering collaborated with the Access to Advanced Health Institute to identify **synthetic alternatives to squalene**, which remain stable for up to 18 months at the same temperature and caused an innate immune response when tested with human cells. Further development could ensure sustainable, reliable, and ethical sourcing of adjuvant raw materials for future vaccines.

13 CLIMATE ACTION

Take urgent action to combat climate change and its impacts

1,267 research outputs

11th UK university for research outputs

2.7% UK research outputs

18.9% co-authored with low and lower middle-income countries

69.3% internationally co-authored

2.36 citation impact

547 policy citations

60 businesses supported by climate innovation network

30% cheaper to use innovative composites for bridge repairs

16 student environmental projects supported by University of Nottingham Malaysia

Public engagement

Key role of green finance in a sustainable future

Finance has a critical role in fostering sustainability and green transitions, with green finance evolving from a niche research field into a central force in combating climate change. The University of Nottingham Ningbo China (UNNC) has taken a lead in engaging industry, government and financial organisations with this subject. In 2024, the university hosted an online Green Finance Workshop, with speakers including a director from the People's Bank of China discussing pathways to building a green financial system. The workshop reinforced the understanding of green finance's role as an engine for economic transformation and sustainable development.

Giving climate innovators a boost

The University of Nottingham's **Energy Institute** is a founder member of a national network dedicated to providing robust support to new and emerging businesses that are working on solutions for climate mitigation and adaptation, helping them develop from initial funding to commercial deployment. **EarthScale**, launched in 2024 as the **Climate Scaling Collaborative**, is a network of regional hubs giving IP-rich startups and spinout companies unprecedented support and access to university facilities and expertise across the UK. By supporting climate-tech innovators in the scale-up phase, the network will promote green jobs and investment and ultimately build a more resilient, skills-rich, and sustainable UK economy.

Learning and students

Goals at the heart of Geography teaching

Many of the learning opportunities and modules available to Geography and environmental science students at Nottingham are directly linked to the SDGs, including Climate Action. First-year students explore how geographical research can contribute to tackling the SDGs, and reflect critically on the goals themselves. Other modules include teaching on **blue-green cities** and how research in Nottingham is mitigating the problems caused by heatwaves and helping create pleasant spaces to benefit the health and wellbeing of our communities.

Operations

Taking a lead in conserving Asia's rich biodiversity

Developing Sustainable Societies is the University of Nottingham Malaysia's multidisciplinary platform for tackling environmental problems and helping make societies resilient to global change. It brings together social scientists, engineers, and researchers from the natural sciences, who work in partnership with non-governmental organisations such as the World Wildlife Fund and the Department of Wildlife and National Parks of Peninsular Malaysia (PERHILITAN), along with companies such as Sime Darby Plantation, to contribute to the conservation of tropical Asia's rich and globally important biodiversity. A notable project is **MEME**, an evidence-based approach to the conservation of elephants and the sustainable management of agricultural landscapes.

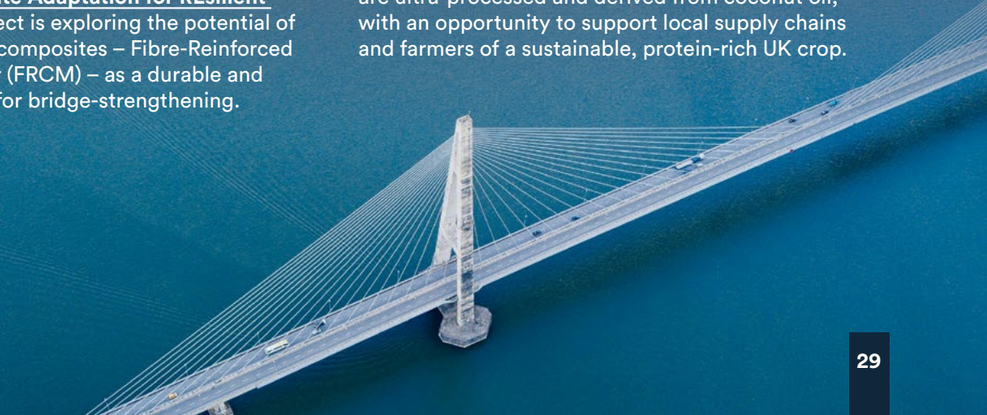
Research

Strengthening bridges in face of climate change

The RAAC concrete crisis demonstrates that much of the UK's current infrastructure is nearing, or has exceeded, its expected design life. With temperatures soaring due to climate change, and traffic levels gradually rising post-pandemic, the speed of this deterioration is increasing. Researchers from the University of Nottingham are collaborating with Luleå University of Technology in Sweden on a project that aims to improve the resilience of bridges across the world. The **Climate Adaptation for REsilient Bridges (CARE)** project is exploring the potential of a new generation of composites – Fibre-Reinforced Cementitious Mortar (FRCM) – as a durable and sustainable solution for bridge-strengthening.

'Cheese from peas' offers a sustainable alternative

'Cheese from peas' is a new product being developed by researchers from the University of Nottingham and spin-out company The Good Pulse Company, which is developing techniques to turn yellow peas grown in the UK into a **sustainable plant-based cheese.** The project is funded by Innovate UK, the Rothamsted Research SHAKE Climate Change programme, and venture capitalists. It offers a sustainable and more nutritious alternative to many vegan cheeses, which are ultra-processed and derived from coconut oil, with an opportunity to support local supply chains and farmers of a sustainable, protein-rich UK crop.



14 LIFE BELOW WATER

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

250 research outputs

30th UK university for research outputs

1.3% UK research outputs

25.2% co-authored with low and lower middle-income countries

76.8% internationally co-authored

1.79 citation impact

76 policy citations

70% of visitors support University of Nottingham Malaysia's campus lake management, including recreational use and opportunities for research

1# producer in world's biggest palm oil industry has biodiversity research partnership with UoN

40 litres of water filtered a day – animation highlights freshwater mussel as biodiversity hero

Learning and students

Global speakers offer insights

Our undergraduate students enjoy guest lectures from world-leading experts on areas including biodiversity, freshwater management and threats to tropical environments through climate change. The International Union for Conservation of Nature, the world's largest and most diverse environmental network, Nature Conservancy and the Environment Agency are among the global and UK organisations contributing to our students' rich learning experience.

Operations

Water strategy supports a wildlife-rich campus

The University of Nottingham Malaysia's **water management project** aims to reduce flooding risks and maintain water quality on campus and its surrounding areas. It supports sustainability education and research, incorporates native trees to boost biodiversity, and fosters community engagement. The university is a supporter of the **International Conference on Water and Environment for Sustainability** (ICWES), which in 2024 was themed Water, Energy, Climate, and Sustainability: Charting the Future of Environmental Research. The conference brought together experts and researchers to discuss and explore solutions for vital environmental issues.

Research

Addressing micro pollution in rivers

Rivers sustain ecosystems, support human populations and serve as vital transport routes — yet are increasingly threatened by microscopic plastics and pharmaceutical residues. These hidden pollutants infiltrate waterways, accumulate in fish and wildlife and ultimately reach humans. Research at the University of Nottingham Malaysia is uncovering the **risks posed by such contaminants** and highlighting the urgent need to address these overlooked pollutants and their threat to aquatic life and public health. The team has also developed an innovative, sustainable filtration system to capture plastic microfibres from wastewater, for example from washing machines, before they reach rivers.

Lessening impact of Indonesia's palm oil industry

The university is a partner in a project designed to lessen the impact of Indonesia's huge palm oil industry on tropical rivers. The Riparian Ecosystem Restoration in Tropical Agriculture (RERTA) Project is exploring methods for restoring river-bank vegetation and improving biodiversity and water quality, without impacting oil palm production, which is the biggest in the world and key to Indonesia's economy. The project tests approaches including active planting of native trees and passive restoration (less intensive management) of existing vegetation buffers.

Public engagement

Working with National Trust to curb blanket weed

Blanket weed can choke shallow and ornamental lakes, rendering these habitats unviable for wildlife and making management of such landmarks and recreational attractions both challenging and expensive. Blanket weed's rapid growth clogs equipment, depletes oxygen and harms fish and pondlife by creating a thick mat of algae. University researchers are engaging with landowners and public bodies such as the National Trust to find sustainable and cost-effective solutions to the issue.

Animation focuses on mussel power

A Surprising Hero: the Freshwater Mussel is a short animated documentary by Jess Mountfield inspired and informed by the research of Dr Alexandra Zieritz of the School of Geography. Funded by the EU's European Cooperation in Science and Technology, and produced by the CONFREMU group of scientists, of which Dr Zieritz is a working group lead, the animation aims to increase understanding of the importance of freshwater mussels to ecosystems. Mussels filter up to 40 litres of water a day, playing an essential role in purifying rivers and lakes and protecting their health and biodiversity.

15 LIFE ON LAND

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

525
research outputs

16th
UK university for research outputs

2.1%
UK research outputs

23.8%
co-authored with low and lower middle-income countries

79.2%
internationally co-authored

1.86
citation impact

206
policy citations

£9m
UK livestock disease project includes UoN

25%
cut in campus mowing to encourage biodiversity

500,000
annual visitors to Attenborough Nature Reserve

Operations

Encouraging biodiversity across our campuses

At the University of Nottingham, we're proud stewards of our stunning, green campuses. To further enhance the biodiversity of the parkland, trees, lakes, and meadows enjoyed by staff, students, and generations of local people, we carry out extensive rewilding and habitat restoration programmes. These include:

- Restoring habitats and allowing grass to grow longer to support pollinators and insect-eating birds
- Reducing mowing by 25% over the last decade and use of battery-powered mowers to reduce emissions and noise
- Participating in No Mow May to allow natural growth and flowering
- Creating wildflower meadows
- Planting native, species-rich hedgerows
- Enhancing traditional orchards with new trees for wildlife foraging

Research

Navigating 'conflict' between people and the planet

'More than human world', an eco-philosophy that emphasises the interconnectedness between humans and every element of the natural world, can help negotiate perceived conflicts between the priorities of people and the planet. Catherine Price, a social scientist, and soil scientist Tom Bott are being supported by the **Advancing Capacity for Climate Environment Social Science** (ACCESS) Flex Fund, which is seeking to embed this environmentally aware approach in research. The Nottingham team is using the case study of biochar, the biomass material with the potential to remove greenhouse gases at scale, to see how the 'more than human world' concept can inform responsible innovation.

Supporting fight against endemic livestock disease

Endemic disease is a challenge for the UK's livestock sector, affecting productivity and the health and welfare of animals. As part of a £9m project, funded by the Biotechnology and Biological Sciences Research Council and Department for Environment, Food and Rural Affairs, Dr Tania Dottorini, of the School of Veterinary Medicine and Science, is leading team using **artificial intelligence to monitor the gut microbiome in livestock**. This could lead to earlier detection of infection and support the development of new therapies to address the threat of anti-microbial resistance in livestock.

Bacteria could cut environmental cost of rare metals

Rare earth metals, such as copper, lithium and cobalt, are essential for smart phones and vital components of renewable energy technologies. But the mining of these expensive metals has a heavy environmental cost. Researchers from the Faculty of Engineering and Technical University of Denmark are together exploring how rare metals can be **sustainably recovered from waste**, by using bacteria to dissolve them in a reactor (bioleaching), and speeding up the process with a low-level electric current (electrodialysis). This novel approach would reduce reliance on mining, while creating a circular process that could scaled up to use in different types of waste.

Learning and students

Reconnecting schools and colleges with nature

The university is collaborating with Nottingham College and Bluecoat Aspley Academy on a National Lottery Heritage Fund project, which aims to bring nature back to the city's school and college campuses. Led by **Students Organising for Sustainability** (SOSUK), the Wilding Campuses project aims to support biodiversity, while creating spaces that are welcoming, attractive places to study and socialise. Beyond environmental impact, the project offers students, staff and young people across Nottingham the opportunity to develop practical skills as they reconnect with nature.

Public engagement

Measuring the impact of nature reserves

A research team at the University of Nottingham is working on a £1m project to inform the development of the **world's first biodiversity credit standards**, which will help businesses and governments to quantify their impacts on the natural world. The Nottingham team, led by the School of Geography's **Professor Richard Field**, is closely collaborating with the nearby **Attenborough Nature Reserve** and **Knepp Rewilding** to gather data on their freshwater biodiversity, using traditional approaches as well as DNA techniques.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

909 research outputs

11th UK university for research outputs

2.4% UK research outputs

8.6% co-authored with low and lower middle-income countries

44.4% internationally co-authored

2.36 citation impact

713 policy citations

1st international conference in China on journalism and SDGs

1st bespoke full-time educational provision for newly arrived refugee children

2,000+ policymakers and practitioners attended courses run by Human Rights Law Centre

Public engagement

Sustainable Development Goals Journalism Conference

The University of Nottingham Ningbo China hosted the **Sustainable Development Goals Journalism Conference**. Co-funded by the Erasmus+ Programme of the European Union, it was the first international conference held in China dedicated to exploring the role of news media and media practitioners in promoting the goals. More than 50 academics from Spain, Romania, Luxembourg, Malaysia, Cambodia, and China attended.

Supporting Humanities teaching in Ukraine

The University of Nottingham and the Ukrainian Catholic University (UCU) in Lviv have been developing closer links in the aftermath of the Russian invasion in 2022, including a twinning initiative and scholarships for Ukrainian students from a number of institutions displaced by the war. The latest initiative between Nottingham and UCU is a **Dual Master's Programme**, which will challenge Russian propaganda and support Humanities teaching, knowledge, and research in Ukraine. With a focus on themes of heritage, memory and identity, the programme aims to help students better evaluate the challenges faced by their country and build resilience for a better future.

Operations

Centre for Media, Politics and Communications Research

The university's **Centre for Media, Politics and Communications Research** focuses on challenges faced by every country across the world: disinformation in the media, freedom of reporting, and the often fraught relationship between media and politicians. The risks and potential benefits of AI are among topics being explored by the centre, which hopes to involve students and increase public engagement in such debates, including the wider need for media literacy skills to navigate the risks of disinformation and misinformation.

Learning and students

Empowering students for creative solutions

Education for Sustainable Development (ESD) empowers learners to apply creative thinking and problem-solving to address global challenges and secure a fairer, more sustainable future. The University of Nottingham Ningo China has been approved to establish a **Regional Centre of Excellence in Education for Sustainable Developmen**t, which is a significant milestone in the university's commitment to sustainability. The centre will help empower enterprises in China to meet growing demand for ESG compliance and sustainable practices.

Hands-on experience of human rights research

The **Human Rights Law Centre** offers students opportunities to take part in its research and project work, including voluntary placements and paid summer internships, broadening students' understanding of human rights research and practical work. This includes law students contributing to reports by UN Special Rapporteurs on modern slavery, or climate change and human rights; film students organising campus screenings to spark debates on human rights issues, or working remotely to support a refugee clinic in Egypt.

Research

Innovative approaches for child-inclusive research

Children face unprecedented challenges, from the climate emergency and conflict to socio-economic inequality. Our research with children focuses on providing solutions to the real-world problems they face, as well as generating evidence for policymakers.

Our 2023 report, **Innovative approaches for child-inclusive research**, includes:

- Contributing to the creation of the Nottingham Education Sanctuary Team (NEST), a full-time provision for newly arrived refugee children unable to secure spaces in schools and colleges
- Examining how choose-your-own-adventure books can contribute to children's awareness of climate change
- Understanding young children's experiences of Covid-19 in China and England

17 PARTNERSHIPS FOR THE GOALS

Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development

20,464
SDG publications 2020-24

2.39%
of all UK SDG publications

62.4%
internationally co-authored

14.4%
co-authored with low and lower middle-income countries

9,764
policy citations

22,000+
people took part in public engagement programmes

50
PhD students trained to find solutions to local challenges

100
climate ambassadors recruited

28
research projects co-created by community groups and academics

1st
incubator at a China university to join Europe's leading innovation network

Research

Partnership unlocks health tech innovation

A partnership between the University of Nottingham, Nottingham Trent University, Nottingham University Hospitals and the Association of British HealthTech Industries is **strengthening collaboration and innovation** in the sector. The University of Nottingham and our partners aim to strategically support the development of healthcare technologies and ensure they align with patient and NHS needs, while accelerating the translation of our world-class science and engineering research into technologies that deliver real benefits to people's health. These partnerships underline the university's commitment to SDG 17 and working with civic organisations and NGOs to deliver sustainable, inclusive change to communities.

Operations

The Universities for Nottingham partnership, a pioneering collaboration between the city's two universities and local partners, reported on **achievements in its first year**, including:

- Securing the £5.1m Co(l)laboratory project, which will train 50 PhD students and provide 25 paid 'Citizen Scientist' placements to work on finding solutions to local challenges
- Publication of the Student Living Strategy, to support the integration of students into their local communities
- Incentivising more than 500,000 individuals to make positive sustainable choices, tracked using the Green Rewards App. This has helped avoid the emission of over one million tonnes of CO_2 from the universities and local councils

University hosts African universities office

A new European office for the Association of African Universities, **officially opened at the university's School of Education**. The office will bring together academics in the UK and Africa to advance education and research collaboration, and to develop a new Nottingham strategy for engaging with partners in Africa, with the development of equitable partnerships at its core.

China campus joins innovation network

In 2024, the University of Nottingham Ningbo China became a member of the European Business and Innovation Centre Network (EBN), aligning its incubator services with the EU|BIC quality framework. This was the first time a Chinese incubator was recognised by Europe's leading innovation partner network. It provides UNNC with international benchmarking and opens structured channels for China–Europe collaboration in research commercialisation.

Public engagement

University's Silver Engage Watermark

The university has been awarded a prestigious **Silver Engage Watermark** by the National Co-ordinating Centre for Public Engagement. The watermark recognises the university's commitment to involving the public in its work and the sharing of knowledge, teaching, and research. Every year, the university engages and interacts with thousands of people and organisations, sharing knowledge and insights from our research and teaching, and working with business and civic partners to co-produce innovative solutions to the challenges faced by society.

Learning and students

East Midlands climate change education hub

A £2m national programme is offering every school, college and university in England free access to expert support to become greener and more climate resilient. The **East Midlands hub** of the climate change education programme, hosted by the University of Nottingham in partnership with Nottingham Trent University, will recruit and support volunteers from industry and academia to work as Climate Ambassadors to help promote green careers, reduce carbon emissions, increase biodiversity and allow communities to become more resilient to climate extremes.

University of Nottingham research outputs mapped to SDGs

2020-2024

Measure	SDG1	SDG 2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16
Research outputs	231	692	6,666	708	378	660	2,417	986	2,141	750	904	980	1,267	250	525	909
UoN ranking in UK HEIs for number of research outputs	21	7	17	10	19	14	7	11	7	20	18	8	11	30	16	11
% of UK research outputs	1.8	3.6	2.7	2.5	1.7	2.4	3.6	2.5	3.2	2	2.1	2.8	2.7	1.3	2.1	2.4
% co-authored with low and lower middle-income countries	15.2	23.6	12.2	8.8	14	28.6	15.6	15.8	11.1	11.2	11.5	16.9	18.9	25.2	23.8	8.6
Number of co-authored research outputs with low and lower middle-income countries	35	163	816	62	53	189	377	156	238	84	104	166	239	63	125	78
% internationally co-authored	58.4	71.1	60.1	46	47.9	75.6	69.4	64.7	62.5	51.6	61.1	66.6	69.3	76.8	79.2	44.4
Number of internationally co-authored research outputs	135	492	4,006	326	181	499	1,677	638	1,339	387	552	653	878	192	416	404
Citation impact	1.54	2.16	3	1.95	5.22	2.47	1.66	2.34	1.89	2.1	1.84	2.17	2.36	1.79	1.86	2.36
Policy citations	263	537	3,872	344	301	367	119	1,050	313	583	171	322	547	76	206	713

Methodology and timelines

Data and timeframes

This report uses Elsevier's **SciVal** tool to gather data on the number of University of Nottingham (UoN) research outputs which are linked to a Sustainable Development Goal (SDG).

The research metrics outlined in this report are specific to research outputs published by researchers from the University of Nottingham in the five calendar years from 2020 to 2024 (2020, 2021, 2022, 2023 and 2024).

Research output data current as of 30 July 2025.

SDG mapping

Research outputs are identified by Elsevier as being related to SDGs through a mapping process (**Elsevier 2025 Sustainable Development Goals (SDGs) Mapping**). To give more detail, developed search queries and machine learning algorithms are used to 'map' specific phrases from a research output to a related SDG. The text is screened from the research output title, abstract and author keywords. Elsevier use a term frequency calculation (term frequency – inverse document frequency) so phrases are not all weighted equally. Whilst Mapping Queries and Descriptions are available for all 17 SDGs, SciVal does not collect data on outputs relating to SDG 17 Partnerships for the goals.

University of Nottingham data

As UoN is an international university with presence in the UK, China and Malaysia the research output data for the institution is representative of our researchers across the three countries. Data presented will reflect the combined output from researchers at our UK, China and Malaysia campuses. Where comparisons to research output data relating to SDGs from the UK have been made, the UoN data selected has been filtered to relate to research outputs with UK affiliation only.

Policy data

Research output data relating to Policy has been obtained from SciVal but the source of the data feeding the SciVal Impact module is from **Overton**.

Data presented relates to the number of policy and grey literature papers which have cited research outputs with a UoN affiliation that have also been assigned an SDG. In addition, a count of the number of research outputs assigned to an SDG and cited by policy is also shown.

Policy data current as of 25 July 2025.

Metrics referred to

Field Weighted Citation Impact

The average Field Weighted Citation Impact (FWCI) for all research outputs from the University of Nottingham associated with an SDG. Publication period 2020 - 2024. FWCI shows how often an entity's publications are cited compared to similar publications in the **Scopus** database, considering year, type, and subject area. It includes citations from the year of publication plus the next three years. For more information please see the full **FWCI description** on SciVal

Collaboration with low and lower middle income countries

The number of University of Nottingham research outputs which have been assigned to an SDG which have a co-author from an institute in a **low or lower middle income country** as defined by the World Bank.

University of Nottingham
UK | CHINA | MALAYSIA

SUSTAINABLE DEVELOPMENT GOALS

Toward a fairer world

This report highlights activity during 2023-24 by the University of Nottingham in support of the United Nations Sustainable Development Goals (SDGs).

It was produced by the university's Communications and Advocacy team, with support from academics, and colleagues from our Estates, Sustainability, Libraries, and Research and Knowledge Exchange teams.

To find out more about the university's commitment to a sustainable future, please visit:

Our commitment to the goals

Email: **research@nottingham.ac.uk**