# UCL Sustainable Development Goals Report
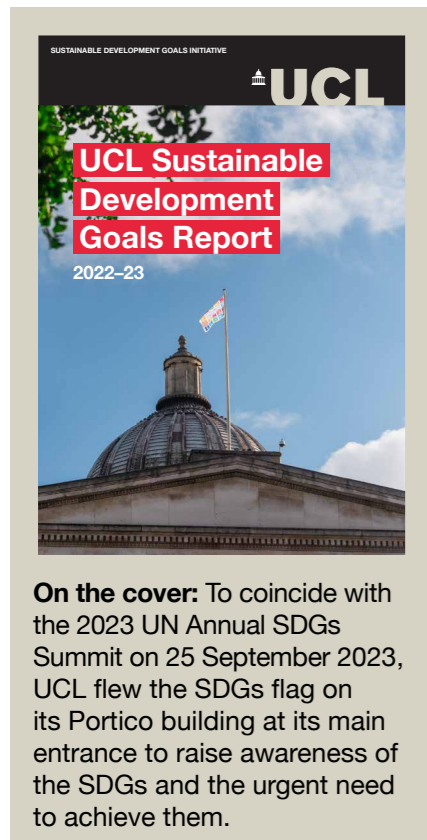
## 2022–23

# CONTENTS

**On the cover:** To coincide with the 2023 UN Annual SDGs Summit on 25 September 2023, UCL flew the SDGs flag on its Portico building at its main entrance to raise awareness of the SDGs and the urgent need to achieve them.

# FOREWORD



In UCL's 2021–22 Sustainable Development Goals (SDGs) Report, I cautioned that the world was beyond the halfway point to 2030, the target date set out by the UN in its 2030 Agenda for Sustainable Development, which it published in 2015. A year on, the world is still not on track to achieve the SDGs by 2030.

It makes it ever more important that universities – with each other and with our partners in other sectors – continue to focus our efforts on addressing the challenges framed by the SDGs.

Addressing global problems has been at the core of UCL's mission since our founding almost 200 years ago. In 2008, we established our Grand Challenges initiative to help solve complex global challenges through innovative cross-disciplinary research. Since then, the initiative has supported colleagues across UCL's breadth of disciplines to come together with partners outside our university to develop holistic solutions to complex global problems.

This year, we announced we would refocus on five issues of global concern. The first two new Grand Challenges – Climate Crisis and Mental Health & Wellbeing – commenced at the end of 2023, with further themes launching in the coming years. We look forward to working with our current and new partners to accelerate the pace and scale of action in these critical areas.

The Grand Challenges demonstrate our institutional commitment to addressing complex global challenges, but they are not everything we do. Our academic community continues to undertake excellent research across all our disciplines that address all aspects of the SDGs, as illustrated by the breadth of examples that you can read in this report.

These span from improving the biodiversity of the River Lea, which flows through our new UCL East Campus (page 8) and reviewing the UK's progress towards achieving the SDGs (page 13), to our students helping local charities to address their own sustainability challenges (page 24).

Recognising that solutions to these global problems will take decades, we are also seeking to equip our students during their time at UCL with the knowledge and skills to address the SDGs in their future careers. Many of our students are not waiting until they graduate: recognising the urgency of problems like increasing inequalities and biodiversity loss, they are also undertaking volunteering activities to address the SDGs outside of their studies.

We have supported several of the initiatives featured in this report through our UCL Grand Challenges Pathway to Achievement (SDGs) funding scheme. These included:

## SUSTAINABLE DEVELOPMENT GOALS INITIATIVE

The UCL SDGs Initiative (SDGI) was established in 2020–21 to stimulate more SDGs-related activities across UCL. These include: our world-class research and teaching; the ways we engage with local, national and global communities; the co-curricular activities of our students; and the way we operate as an institution.

The SDGI is facilitating new opportunities for collaboration between and beyond these different spheres of our activity. It will help to ensure our collective effort is greater than the sum of its parts.

**Read more about the UCL SDGs Initiative.**

helping the world to restore the health of its coral reefs (page 6); improving access to healthcare for marginalised groups (page 9); inspiring a new generation of engineers to embrace sustainability (page 22); and holding a student society model UN Conference (page 27).

Over the next five years, it is critical we see a step change in progress on the SDGs. UCL commits itself to use our world-class research, education, and innovation to accelerate the pace and scale of local and global action.

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**Dr Michael Spence,**
UCL President and Provost

# METHODOLOGY

2022–23 is the third academic year that UCL has reported on the extent of SDGs-related activity across the university.

We are aware some of our measures could be improved and that some of the organisations who supply the data we use are also continually refining their methodologies: we set out some of these caveats to our methodologies below. We will continue to improve our measurement of SDGs-related activity by learning from others in the sector and beyond. In addition to the extent of activity, going forwards we will also explore how we can measure the impact of SDGs-related activity.


Photo: Felix Mittermeier - Pexels

## SDGs-related research activity at UCL

### Research publications

Like last year, to broaden our search for SDGs-related research, we mapped UCL research activity related to each SDG by combining the publications found in Elsevier's Scopus database (using keyword searches) and in Clarivate's Web of Science database (as categorised by their InCites tool). To be included, a paper had to be present in the Scopus or Web of Science databases, with any duplicates removed from the total. We then attributed each paper to UCL faculties by matching to UCL's internal publications database by DOIs.

A paper was counted once per faculty (even if it had multiple authors within a faculty), but was counted in more than one faculty if it had co-authors in multiple faculties. It could be counted in more than one SDG if it is given multiple SDG classifications by Scopus and InCites.

Figures 1 (page 7) and 2 (page 12) show the number of SDGs-related publications by UCL faculty and by SDG.

### Policy citations

Policy citations were sourced from Overton, an index of policy documents, guidelines, think tank publications and working papers, which collects data from more than 1,000 sources worldwide.

## SDGs-related teaching activity at UCL

For the third year, we classified the descriptions of the 6,343 taught modules in UCL's online module catalogue by SDG using OSDG, a multilingual open-access tool jointly developed by the UN Development Programme SDG AI Lab and research and policy analysis centre PPMI.

Combining several existing sets of SDG categories and augmenting them with additional keywords, OSDG compiled a set of SDG-relevant terminology. The list of original sources is available on OSDG's website.

OSDG continues to improve its methodology, so the results should be more accurate than in previous years. A team in UCL Computer Science is also developing an AI tool to map UCL's modules in-house.

The methodology relies on module leads using SDG keywords in their description, which many may not have done – they were unaware their description would be mapped – so the number identified is likely to be an underestimate.

Similarly, longer module descriptions have higher chances of being identified as relevant to an SDG simply because they tend to use a wider vocabulary. Figures 3 (page 19) and 4 (page 21) show the numbers of SDG-related modules by UCL faculty and by SDG.

## Student extra-curricular activity addressing the SDGs

For the second year, we mapped how many of our students were engaged in activity outside of their course which was contributing to the SDGs. We surveyed student societies asking them to state which of the SDGs their activity was supporting. For those societies that didn't respond, the UCL SDGs Initiative made that judgement on their behalf, based on information provided by the societies.

The Students' Union UCL Volunteering Service did the same for the student-led volunteering projects. We used the number of students who were members of those societies and projects that were judged to be supporting an SDG as an indicator of the extent of student involvement in each Goal.

The figures rely on the subjective judgement of staff and students at UCL. The numbers also reflect a particular moment in the year, while membership numbers of societies and projects fluctuate during the academic year. There is no way of knowing how active participants in societies and volunteering projects are.

Figures 5 (page 23) and 6 (page 26) show the numbers of students involved in addressing the SDGs through their student societies and volunteering projects.

## External partnerships activity addressing the SDGs

Working with the UCL Office of the Vice-President (Advancement), we measured solicited philanthropic income received by UCL in support of activity relating to specific SDGs (see Figure 7, page 34). OVPA assigned each gift to one 'lead' SDG to avoid duplication and double counting.

Similarly, we also mapped the extent to which two types of external partnerships were supporting the SDGs. With UCL Innovation & Enterprise we measured how many of the student startups supported by the UCL Entrepreneurship Hub were addressing each of the SDGs (see Figure 8, page 36). Each startup was asked to identify which (if any) of the SDGs they thought they were addressing.

# Our research

**Our world-class, cross-disciplinary research across UCL's 11 faculties – from Medical Sciences to Arts & Humanities – is helping to address all 17 of the SDGs.**

## Measuring the success of reef restoration

A collaborative project including UCL scientists is generating three-dimensional (3D) models of healthy, restored and degraded coral reefs in Indonesia to help measure ecosystem characteristics and to understand the success of coral reef restoration.

Coral reefs provide food, income opportunities and protection from tropical storms for hundreds of millions of people worldwide. In recent decades many of the world's largest reefs have been decimated by the effects of over-fishing, pollution and global warming.

Intercontinental collaborations between scientists, local reef

experts and others are helping to restore the reefs. One restoration technique involves placing star-shaped structures seeded with coral on the seabed, to encourage a wide variety of corals and fish to return. As the reefs are brought back to life, research projects are monitoring the progress of the restoration and identifying opportunities for improvement. ▸

▸ Scientists from UCL's Biome Health Project are collaborating the IPB University, Indonesia, and Lancaster University, UK, on the world's largest coral restoration programme at Hope Reef in Indonesia's Spermonde Archipelago. They are shedding light on the complexities of the reef's 3D structure and how the new ecosystems develop. The project is being co-produced with local experts and is already supporting the career development of female scientists in Indonesia who are underrepresented in their country.
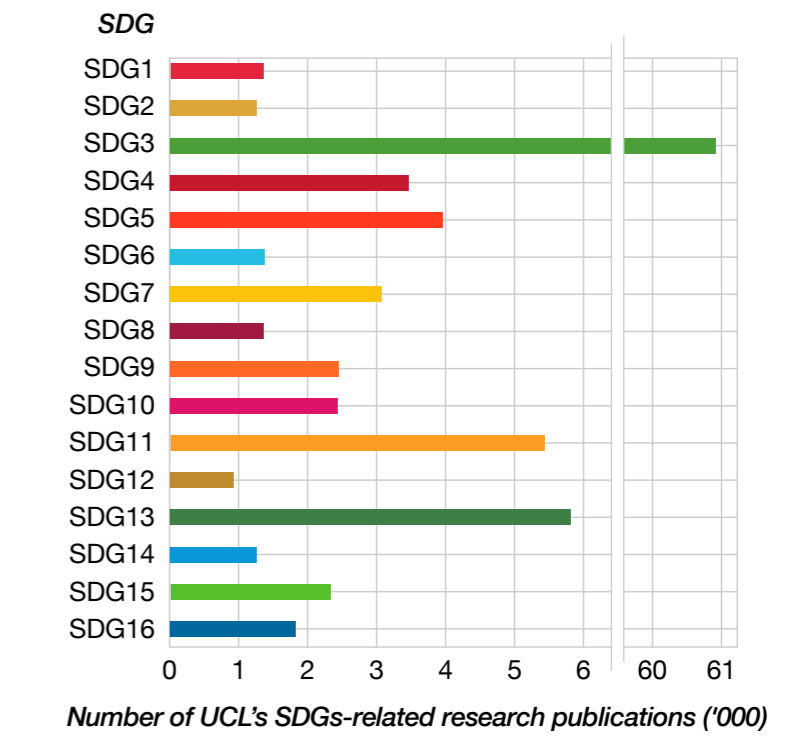
The international team is using a technique called photogrammetry to create and analyse 3D scaled digital models of the reef from overlapping photographs. Experts, based anywhere in the world, can use these models to explore the complexities of the coral's 3D structure and the corals and fish within the reef. The information will help to ensure that future restoration projects maximise biodiversity within coral ecosystems, as well as identifying changes that might signal their decline.

*"We will identify what works and what doesn't in current restoration practice, guiding new ways to rebuild reefs that encourage natural ecosystems to establish and flourish."*

**Jason Lynch (UCL Geography)**

"Using photogrammetry we can critically evaluate the effectiveness of one of the world's most popular coral restoration techniques, which uses steel star-shaped structures seeded with coral fragments," explains Jason Lynch, a PhD student in UCL Geography, who is leading this component of the project at UCL.

"We will identify what works and what doesn't in current restoration practice, guiding new ways to rebuild reefs that encourage natural ecosystems to establish and flourish," he adds.

In a pilot project, the team has reconstructed 18 sites into scaled 3D digital models, measuring 20m x 50m and comprising healthy, restored and degraded

reef sites. Now, the project is being expanded with funding from UCL Grand Challenges SDGs: Pathways to Achievement, which will facilitate the international collaboration. Ultimately, the team will measure restoration success and identify trends to improve restoration practices in future.

Helping to achieve **Target 14.2**

Helping to achieve **Target 14.4**

Helping to achieve **Target 14.a**



## Figure 1: Research at UCL supporting the SDGs, 2018–22, by SDG

Source: Scopus and Clarivate – see Methodology, pages 4–5

*SDG*

SDG1, SDG2, SDG3, SDG4, SDG5, SDG6, SDG7, SDG8, SDG9, SDG10, SDG11, SDG12, SDG13, SDG14, SDG15, SDG16

0 1 2 3 4 5 6 60 61

*Number of UCL's SDGs-related research publications ('000)*

## Reversing biodiversity loss in East London river

A collaborative project led by UCL to identify and record river invertebrates in and near the River Lea is helping local organisations to monitor natural habitats and inform conservation efforts.

Dr Isabel Bishop (UCL Centre for Biodiversity & Environment Research), a freshwater ecologist in UCL's recently established People & Nature Lab, is collaborating with local organisations to help to address concerns about the River Lea's health.

The river provides drinking water for thousands of Londoners and habitats for thousands of plant and animal species. However, pollution and land management issues are destroying natural habitats and affecting how local people can use it.

The Lea passes through the new UCL East campus in Stratford, East London. UCL staff and students are working hard with local community and conservation groups, to reverse the decline.

"The River Lea is complicated and has multiple issues that affect its wildlife habitats," Dr Bishop explains. "Pollution is a big problem, with sewage discharges and agricultural run-off affecting oxygen levels and plastic waste endangering wildlife."

To tackle the issues, local organisations including Thames21 and The Wildlife Gardeners of Haggerston are leading restoration projects to introduce reedbeds that help to oxygenate the water. They are also installing wood structures to attract sediment that will encourage plant life, providing new habitats for insects and invertebrates.

In collaboration with the organisations, Dr Bishop is collecting data on invertebrates that live in and close to the river to explore how and when their numbers change. The information will provide much-needed evidence to support drives to change local behaviours, such as repairing misconnected domestic sewerage.

"We are working with local community organisations to understand how the ecosystems around the River Lea are functioning, with the aim of improving plant and insect life in the area," Dr Bishop says.

Once a month, a team of up to ten volunteers from local community groups, including UCL students and staff, spend several hours collecting invertebrates from the river. The creatures are identified and recorded using an app as part of the national Riverfly Partnership. The changes in the numbers of invertebrates provide an indicator of water quality. As well as informing local activities, the data is fed to national biological records centres and helps to inform UK policy-making.

UCL students are also using the data to compare how different habitats are faring under the pressures of human activity and climate change.

The project is set to expand with a workshop involving 30 citizen scientists who will work together to develop additional ways to monitor pollution in the River Lea.



**Helping to achieve Target 6.3**

*"We are working with local community organisations to understand how the ecosystems are functioning, with the aim of improving plant and insect life in the area."*

**Dr Isabel Bishop (UCL Centre for Biodiversity & Environment Research)**

## Better monitoring of access to healthcare for marginalised groups

A team from UCL Institute for Health Informatics (IHI), in collaboration with the non-governmental organisation, Doctors of the World (Medicins du Monde, MdM), is finding ways to improve how data on migrants' access to healthcare is collected, so it can better monitor developments that will ensure countries do more to provide universal health coverage (UHC).

MdM runs medical clinics in countries across Europe, including the UK, supporting more than 40,000 people each year, many of whom are undocumented migrants. To monitor and improve their services, each country's MdM branch collects data on who attends clinics and why. This large dataset of health-related information for a group of people that do not appear in national statistics, helps the organisation to identify gaps in services and provide for the unmet needs of service users.

The teams work with GP surgeries to register patients and run a training programme called 'Safe Surgeries' to ensure surgery staff are aware of the rights of undocumented migrants.

"Some underserved migrant groups struggle to access healthcare services in the UK, either because they don't know what they are entitled to, or because they are incorrectly refused GP registration," explains Rachel Burns (UCL IHI).

Rachel is a member of the MdM Observatory Project, which brings together UCL epidemiologists with representatives from ten MdM clinics worldwide, to find better ways to standardise their data collection and analysis and improve the data quality of the MdM clinics.

Through a series of workshops, issues such as variations in sample size, missing data and inconsistent wording have been identified. A quality improvement toolkit is now being designed that will be implemented across all MdM clinics across the world.

The team is also running culturally relevant workshops with advocates and service users, which will help identify ways to evidence the unmet UHC needs of migrants.

"Huge inequalities exist in who can access supposedly universal healthcare," says Rachel. "We want to break down barriers and ensure people with lived experience of exclusion from health services can help to shape research and influence provision that will help these underserved groups to access healthcare."

The project received UCL Grand Challenge Pathways to Achievement (SDGs) funding.



**Helping to achieve Target 3.8**

**Helping to achieve Target 10.2**

**Helping to achieve Target 17.18**

## Survey highlights the need for better professional development for teachers in climate change and sustainability

A recent survey of 870 teachers in England, led by a team of researchers at the Centre for Climate Change & Sustainability Education (CCCSE), in UCL Institute of Education, found that only 13% of respondents reported that climate change and sustainability had been included in their Initial Teacher Education. 'Teaching climate change and sustainability: A survey of teachers in England' found that teachers from all subjects and at all stages need more support to help them embed climate change and sustainability across the curriculum.

In England, climate change and sustainability are most commonly incorporated into secondary school geography and science lessons. The curriculum emphasises facts about the science and impacts of climate change but does little to encourage students to think about how they might themselves respond to the urgent need for action.

"Teachers across all subjects and years of study can play a part in climate change education, but they need support to do so," explains the centre's Programme Director Dr Alison Kitson. "The support needs to include and also go beyond science and geography teachers, because this is a holistic issue that affects all aspects of our lives."

Building teachers' confidence and capabilities through formal professional development will help them to embed climate change into their teaching and should ensure more young people will be motivated and able to act in response to climate change, now and in their future careers.

The CCCSE recommends that all teachers should be provided with high-quality professional development, tailored to their subject and the age of children they teach, starting with Initial Teacher Education.

*"Teachers across all subjects can play a part in climate change education, but they need support to do so."*

**Dr Alison Kitson (UCL Institute of Education, Faculty of Education & Society)**

Drawing from the survey findings, in July 2023, the UCL team launched a programme of free professional development for teachers, the first of its kind in England. The programme, Teaching for Sustainable Futures, includes history and geography modules for both primary and secondary teachers. Further modules in English, science, citizenship and mathematics will be added later this year.

"Teachers need formal support – not just in geography and science, but history, mathematics, art, English and others – so they can support young people to take real action against climate change," says Dr Kitson.

**Helping to achieve Target 4.7**

**Helping to achieve Target 13.3**

## Research helps shape international decarbonisation policy toolkit

A multidisciplinary collaboration between UCL and European partners has explored how to make the low-carbon transition, 'just and politically robust', and developed a toolkit to support policymakers.

Low-carbon technologies and economies are vital if climate warming is to be slowed. However, making the shift away from fossil fuels is disruptive and can have a disproportionately negative impact on some industries and communities.

Such unequal impacts can affect how policies are perceived by those affected and ultimately influence whether a policy is successful. ▶

▶ Dr Fergus Green (UCL Political Science) has teamed up with colleagues at the London School of Economics and institutions in Norway, the Czech Republic and Austria to explore the moral and political implications of decarbonisation policy development. The JUSTDECARB research project has helped them to identify who might benefit and who might lose out in the transition to a low-carbon future – and how governments should assist the 'losers'.

"Unsurprisingly, people who lose out most from a particular climate policy tend to resist the low-carbon transition," explains Dr Green. "To ensure a just and smooth transition away from fossil fuels, we need to understand who is most vulnerable to the changes and how we can best support them. For example, where an industry needs to be phased out, workers should have access to retraining and financial support," says Dr Green.

Transitional assistance policies such as these are key elements of a 'just transition', but it is also crucial for vulnerable stakeholders to have a voice in the policy process. Accordingly, Dr Green's research includes a project to understand how participatory processes, such as citizens assemblies, can increase the perceived legitimacy of climate policies.

The interdisciplinary research by the political scientists, philosophers, economists and lawyers has culminated in a toolkit for policymakers. The production of this toolkit was informed by a series of workshops and consultations with representatives from government bodies in each of the four countries in the consortium, including the UK's Climate Change Committee.

The evidence-based toolkit, launched in Norway in October 2023, sets out analytical tools, frameworks and policy options for use across the five phases of the policy cycle: planning and analysis; stakeholder consultation; policy design; implementation; and monitoring and evaluation.

"We expect the toolkit will be used by civil servants, NGOs and trade unions, to help them develop policies that will smooth the transition away from fossil fuels," says Dr Green.

**Helping to achieve Target 7.2**

**Helping to achieve Target 13.2**

**Helping to achieve Target 13.3**

Figure 2:
Research at
UCL supporting
the SDGs,
2018–22,
by faculty

**Figure 2:
Research at
UCL supporting
the SDGs,
2018–22,
by faculty**

*UCL faculty*



Source: Scopus and Clarivate – see Methodology, pages 4–5

*Number of UCL's SDGs-related research publications ('000s)*

## UCL institute becomes UK's first WHO Collaborating Centre to help beat tuberculosis

Infectious diseases such as tuberculosis (TB), hepatitis and malaria cause millions of deaths worldwide each year. Across Europe, more than 27,000 people die prematurely each year due to drug-resistant TB or from TB/HIV co-infection. Nine out of the 30 countries in the region have the world's highest proportion of antibiotic-resistant TB cases.

To accelerate progress in eliminating TB epidemics worldwide, the World Health Organization (WHO) has designated the UCL Institute for Global Health (IGH) as a Collaborating Centre for TB Research & Innovation, the first of its kind in the UK.

The centre will act as a hub to facilitate research initiatives and activities with WHO in the European Region, on TB and related challenges such as pandemic preparedness and vaccine development.

Currently, there are more than 800 WHO collaborating centres in 80 member states working with WHO on diverse topics from occupational health, communicable diseases and mental health, to nutrition and health technologies.

Progress against TB has slowed in recent years due to the COVID pandemic, wars and other humanitarian crises, together with challenges with TB care delivery and medicine supply chains.

"This new partnership is an incredible opportunity to accelerate UCL's involvement in policy-changing research in tuberculosis that benefits people in the region and globally," explains the centre's Director, Professor Lele Rangaka (UCL IGH).

To do this, experts within the centre and UCL-TB Network will work with partners to support implementation of WHO programmes and global policy developments. They will also accelerate the implementation of research to scale up TB preventative treatment, including for contacts of people diagnosed with drug-resistant TB, and support capacity-building to improve diagnosis of TB within European countries.

The centre draws on expertise from the UCL IGH and the MRC Clinical Trials Unit at UCL, as well as the UCL-TB network, a broad and cross-disciplinary group of experts spanning UCL and partner institutes around the world. It covers research across a wide range of disciplines from basic science to translational medicine and behavioural research.

Helping to achieve **Target 3.3**

**99,438**

SDGs-related UCL research publications, 2018–22
Source: Scopus and Clarivate – see methodology, pages 4–5

**17,238**

SDGs-related policy citations in 2018–22
Source: Overton – see methodology, pages 4–5

## Researchers at UCL review the UK's progress towards achieving the SDGs

Researchers at the UCL Institute for Innovation & Public Purpose (IIPP) made major contributions to a report that measures the UK's performance towards the SDGs – and that shows poor progress against the country achieving most targets.

The report, Measuring Up 2.0, highlights the Government's continued lack of progress towards its commitments to deliver the SDGs in the UK. The report also outlines the opportunities and challenges ahead and makes several recommendations for the type of action required to achieve the SDGs.

"Measuring Up 2.0 assesses the UK's performance against each of the 17 SDGs and their domestically relevant targets to understand how and where the government and other organisations should focus efforts for the remainder of this decade of action," explains Dr Kate Roll (UCL IIPP).

Dr Roll worked with IIPP colleagues Anca Tacu and Abby Hauver to identify and collect data for the report and wrote the chapter on the UK's progress towards SDG13: Climate Action.

As the host institution of the Sustainable Development Solutions Network (SDSN) UK Hub (see page 34), UCL IIPP also collaborated with other Hub members on the report, including Newcastle University and the University of Strathclyde, and made recommendations for addressing gaps in the collection of data underpinning the report.

Since the first 'Measuring Up' report was published in 2018, the state of many of the SDGs in the UK has worsened," Dr Roll explains. "The UK is only performing well on 17% of its targets. In particular, the UK is falling behind on targets related to poverty and inequality. "The report highlights the significant danger of quality of life getting worse in the UK if action is not taken, particularly in view of the energy and cost-of-living crises, and of the increased risks of climate change," Dr Roll emphasises.
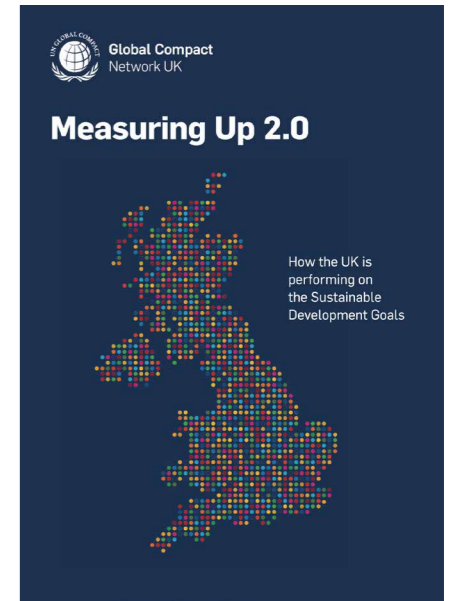
"Urgent action is needed to ensure the UK achieves the ambitious commitments it made to end poverty and inequalities, and to reduce the risks of climate change and ecological decline."

The report outlines the need for Government action in four key areas: planning; leadership and endorsement; stakeholder engagement; and reporting. It includes nearly 50 case studies from businesses and civil society organisations that illustrate what is being done to accelerate progress and how others might follow suit.

Helping to achieve **Target 17.14**

Helping to achieve **Target 17.17**



**Measuring Up 2.0**

How the UK is performing on the Sustainable Development Goals

**62.8%**

of UCL's SDGs-related research publications are international collaborations, 2018–22
Source: Scopus and Clarivate – see methodology, pages 4–5

**19.1%**

of UCL's SDGs-related publications are in the top 10% most cited for all research of similar papers in 2018–22
Source: Scopus and Clarivate – see methodology, pages 4–5

**DISCOVER MORE**

Read more on these activities and other examples of how research at UCL is helping to address the SDGs on the UCL SDGs Initiative website. Filter by 'Our research'.

# Our teaching

**Increasing numbers of our courses are equipping our students with the skills and knowledge that will help them to address the SDGs in their future careers after graduating from UCL.**

## UCL management summer school helps students build sustainable business mindsets

A summer school led by UCL to build students' understanding of innovation management is encouraging entrepreneurship and inspiring delivery of sustainable business solutions that benefit society.

Bright minds and entrepreneurial thinking are vital if humanity is to address the complex challenges facing the world, and to meet the SDGs targets. A summer school delivered by the UCL School of Management (SoM) is helping to upskill a cadre of new managers who will help guide future innovation ecosystems.

The module runs as a two-week residential course, Innovation Ecosystems for Grand Challenges, in the heart of London's financial district at Canary Wharf. It is open to postgraduates from all disciplines from partner educational institutions. The course ▶

▶ combines theory and practice to convey concepts of how businesses can be managed to create and benefit from innovation ecosystems, and emphasises data-driven analysis, risk management and prioritisation.

"By connecting discussions of innovation in organisations to urgent global problems, students develop the skills, knowledge and capabilities to be critical decision-makers in complex environments, such as those relating to SDGs," explains Professor Magda Hercheui, MSc Management Programme Director, UCL SoM.

*"Students develop the skills, knowledge and capabilities to be critical decision-makers in complex environments, such as those relating to SDGs."*

**Professor Magda Hercheui
(UCL School of Management)**

During the summer school, UCL experts and industry professionals deliver a range of interactive lectures, discussions and activities. Topics range from the innovation ecosystem framework to business model platforms, artificial intelligence and climate and urban innovation.

This year, more than 30 students studying management and business, some with engineering, completed the course. They came from UCL or at one its partner institutes in Belgium, China and India. In future years, the organisers plan to extend its reach to North America, South America and other parts of Asia.

The course culminates with students completing an assignment to develop a business plan for a new or existing company, following the principles of a research-based education, as defined by the UCL Connected Curriculum: that all UCL students are able to learn through participating in research and enquiry at all levels of their programme of study.

This year, several students chose projects relating to the SDGs, from assignments in the areas of: global cancer healthcare and wellbeing for ageing populations (SDG3); developing new materials for batteries (SDG7); and supporting education for children with disabilities in developing countries (SDG4).

By teaching aspects of management theory for innovation management, students go away equipped to bring key stakeholders together, including government, funding bodies and companies. In addition, to help focus minds on complex global challenges and the SDGs, students learn about green finance, AI for sustainability, and circular economies, as well as develop leadership skills for volatile, uncertain, complex and ambiguous environments.

"Many students feel really passionate about the topics they research in their coursework," Professor Hercheui adds, "particularly after realising they can do something to help solve a small part of a big puzzle."

Helping to achieve **Target 3.4**

Helping to achieve **Target 4.5**

Helping to achieve **Target 7.2**

Helping to achieve **Target 9.4**

## UCL network launched to increase education for sustainable development

A new network was launched in May 2023 for staff who are already practising education for sustainable development (ESD) within their courses to share their experience with others, and for those who want support in embedding ESD in their programmes. The network is also open to students at UCL who want to contribute to UCL's ambitions to increase ESD across the university.



The network is helping to progress UCL's commitment that 'every student will have the opportunity to study and be involved in sustainability by 2024'.

Dr Kate Roach (UCL Engineering), Chair of the UCL ESD Steering Group, said: "We have discovered a vast array of exceptional work already taking place across the institution to embed sustainable development into the curriculum, as well as our induction programmes and the provision of extra-curricular opportunities for our students.

We hope the network will provide staff with the opportunity to share their innovative examples of ESD so we can learn from each other."

The group has defined ESD as encouraging the development of competencies and skills, such as critical thinking and collaboration, through curricular and extra-curricular activities that will enable students to address the challenges of sustainable development and help to achieve the UN SDGs.

Hundreds of UCL's taught modules are already addressing one or more of the SDGs, including those highlighted in this section of the UCL SDGs Annual Report.

"It is essential that we equip our students with the knowledge and skills that will be increasingly demanded by employers operating in a world facing complex sustainability challenges, from the climate crisis and environmental degradation to inequalities and biodiversity loss," Dr Roach adds.

**Helping to achieve Target 4.7**

## New UCL MSc equips ecologists with cutting-edge data science tools

A new MSc at UCL is closing the skills gap for ecologists and conservationists, equipping them to apply analytical sensor technologies and artificial intelligence to environmental challenges.

Recent advances in technologies such as high-resolution satellite imagery, visual and audio sensors, geospatial tracking devices and environmental DNA, are revolutionising how environments can be monitored.

However, the huge and detailed data sets that are created require expert analysis and interpretation - and there is currently a skills

and knowledge gap between the experts generating the data and those who need to interpret it in order to develop strategies to manage ecosystems and protect our natural habitats.

The new MSc in Ecology & Data Science is designed to close that skills gap and provides students with the interdisciplinary skills and practical expertise needed to apply ▶

▶ cutting-edge data science, citizen science, sensor technologies and artificial intelligence to monitor and manage ecosystems and wildlife populations.

Its five core modules explore computational, analytical and sensor-based tools used to monitor and assess biodiversity and model environmental data using advanced machine learning techniques.

The course, developed by Professor Kate Jones and Dr Daniel Maynard (UCL Genetics, Evolution & Environment), is taught by a team at the People & Nature Lab at UCL's new UCL East campus, in collaboration with experts from other departments across UCL, including: Computer Science; Geography; Civil, Environmental & Geomatic Engineering; and the Bartlett Faculty of the Built Environment.

In addition, external experts at the Zoological Society of London and the Natural History Museum contribute their expertise and provide mentoring for student projects.

In its first year the course attracted 17 students from a mix of biology, data-science and geography disciplines. The 2023–24 course was quickly oversubscribed and has 45 students.

"Students also carry out a 'nature smart' project that involves partnerships with community groups," explains Professor Jones.

Each organisation set the students an ecology-related monitoring challenge using a new approach or technology. For example, the UK Centre for Ecology & Hydrology is installing automated moth monitoring systems in several countries. Some locations, for example, the Amazon, lack necessary infrastructure such as power. Therefore students were tasked with identifying ways to



Photo: Imaan Baig

deploy the technology in low-resource settings. At the London Wildlife Trust, students developed a way to effectively map the distribution of water voles using environmental DNA.

Students also undertake a technology focused research project. For example, in one project a team used data from acoustic sensors set up in conservation areas to develop machine learning algorithms that can provide more detailed analysis of the impacts of conservation projects.

"We encourage students to think about systems, exploring how the technical concept they choose can be applied in a practical way to inform real world conservation," says Professor Jones.

*"We encourage students to think about systems, exploring how the technical concept they choose can be applied in a practical way to inform real world conservation."*

**Professor Kate Jones (UCL Genetics, Evolution & Environment)**

**Helping to achieve Target 14.5**

**Figure 3: Taught modules addressing one or more SDGs, by faculty, 2023–24**

*UCL faculty*

| Faculty | Number of modules (approx) |
| --- | --- |
| Arts & Humanities | ~660 |
| Brain Sciences | ~370 |
| Bartlett (Built Environment) | ~450 |
| Engineering Sciences | ~670 |
| IOE, UCL's Faculty of Education & Society | ~680 |
| Laws | ~120 |
| Life Sciences | ~230 |
| Mathematical & Physical Sciences | ~280 |
| Medical Sciences | ~390 |
| Population Health Sciences | ~280 |
| Social & Historical Sciences | ~720 |

*Number of modules* (0 – 800)

Source: OSDG – see Methodology, pages 4–5

## Undergraduate module paves the way for greener cities

A UCL degree module is empowering students across disciplines to explore how cities and other urban environments can be adapted through nature-based solutions to address the impacts of climate change.

More than half the world's population live in urban spaces and this proportion is expected to rise to almost 70% by 2050. As the climate warms, cities face multiple challenges, from overheating and surface flooding to pollution and lack of nature.

To create climate-adapted, resilient environments that support people and nature, strategies are being developed and implemented in which ecosystems themselves help to cool, clean and care for cities. Since 2013, nature-based solutions - such as green roofs and walls, rain gardens, trees and green spaces - have been a key strategy employed across Europe to support urban climate change adaptation.

To support progress towards sustainable cities, Greening Cities – an elective degree module for second- or third-year students at UCL – is equipping more graduates with an understanding of how to make cities greener and more sustainable to support better health and wellbeing.

The 12-week course includes taught and practical elements, delivered by course lead Blanche Cameron (UCL Bartlett School of Architecture), along with practising industry and policy experts, who use the connected curriculum to creatively explore and analyse nature-based solutions.

By learning the principles and applications of urban green infrastructure planning, design, implementation and stewardship, graduates are equipped to deliver ecosystem services that will support biodiversity recovery and healthier cities. ▶
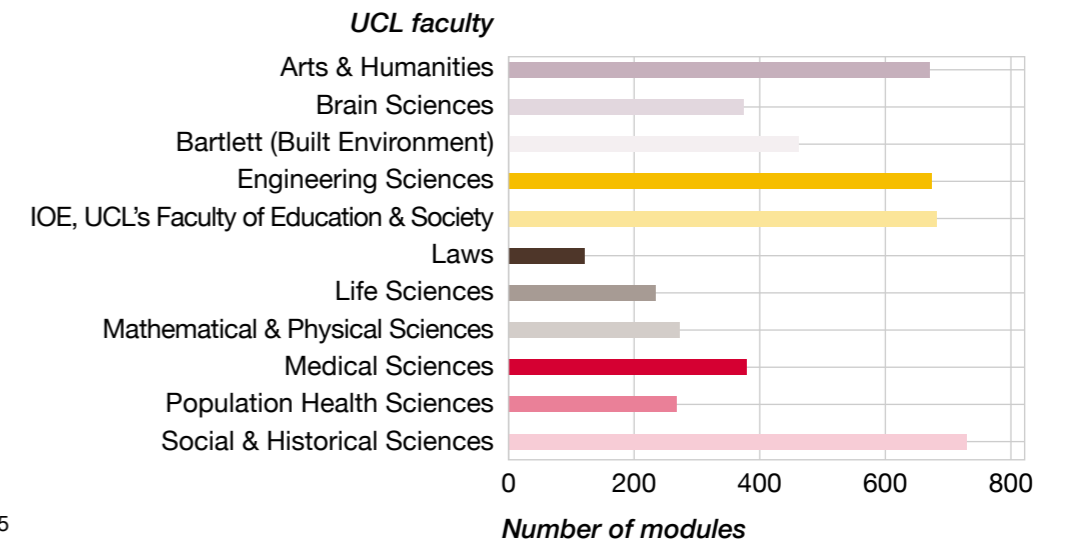
▶ Through workshops, site visits and coursework, students gain an understanding of the causes and impacts of climate change and biodiversity loss, and how impacts such as heatwaves, surface flooding and water pollution affect people living in urban environments.

The course also explores the impacts of rapid urban expansion, land use changes, and over-extraction of natural resources. Wider issues such as large-scale agricultural methods and impacts that affect biodiversity and habitat loss locally and globally are also covered.

The number of students choosing this elective module has almost doubled since it started in 2019. In 2023, 33 students completed the course, which is designed to develop students' own creative responses to climate adaptation and nature recovery. Many students studying UCL's BSc

Architectural & Interdisciplinary Studies choose the course, together with others studying disciplines as varied as urban studies, genetics and sociology.

"The course allows students to go from learning a new topic, to designing and implementing real-world projects, including on UCL's own campuses," enthuses Blanche, who devised and leads the course.

For example, in 2022 students collaborated with biodiverse garden designer and consultant Wendy Allen, to develop and install rain planters (pictured opposite) on a building in UCL's Bloomsbury campus with the help of UCL Estates.

In 2023, projects include refurbishing green roofs for better climate resilience and stormwater management that bring benefits for air quality, biodiversity and human wellbeing.

"To solve the vast existential crises we face, we need to understand and care for nature, biodiversity and the biosphere – the Earth's astoundingly complex and beautiful ecosystem – our home," Blanche says. "This course should equip more graduates to do exactly that."

Helping to achieve **Target 11.6**

Helping to achieve **Target 13.1**

Helping to achieve **Target 13.2**

Helping to achieve **Target 15.5**

Helping to achieve **Target 15.9**

## New master's course accelerates sustainable energy solutions

A new MSc is teaching students how to design materials for use in technologies that can help create sustainable low-carbon solutions for transport, heat and energy production.

The UN's Intergovernmental Panel on Climate Change (IPCC) has advised that to keep global temperature rise below 1.5°C by 2030, greenhouse gas emissions must be reduced by 43%.

A new master's course devised by Dr Prospero Taroni-Junior (UCL Institute for Materials Discovery) that focuses on designing new materials for sustainable technologies, will help address the urgent need to reduce global carbon emissions. The MSc in Advanced Material Sciences (Sustainability) will upskill material scientists and engineers to design materials for technologies that help improve the efficiency of renewable energy production and carbon-capture, as well as reducing waste.

"Renewable energy production does not always equate to sustainable energy production," Dr Taroni-Junior explains. "Biomass produces $CO_2$ when burnt, and this needs to be captured; solar panels currently contain components that cannot be recycled; and computers produce heat that is wasted."

The course includes two new taught modules, devised by Dr Taroni-Junior specifically to explore issues around sustainability. The modules are in Advanced Materials for Sustainable Energy Technologies and in Advanced Topics in Materials Science for Sustainable Developments.

On the new MSc, students also complete a six-month research project, where they have an opportunity to design new materials and explore design solutions to challenges such as waste heat recovery and polymer recycling using state-of-the-art facilities on the new UCL East campus.

By designing new materials, including metals, polymers and ceramics, and developing new ways to recycle them, circular models of production can be developed without the need for further material extraction.

"Despite recent advances in renewable energy production, carbon capture will continue to be essential," Dr Taroni-Junior explains. "We still need to design more efficient carbon-capture methods and this requires new materials that can react with carbon and remove it from the atmosphere."

"Our ultimate goals are to link theory with practice for addressing global challenges and societal needs," adds Dr Taroni-Junior. "We want our students to contribute to creating a sustainable future by design, through using materials with a lower environmental impact and higher durability.

Helping to achieve **Target 9.4**

Helping to achieve **Target 13.1**

**Abigail Hunt** (UCL Political Science) was one of UCL's Millennium Fellows 2022–23 (see page 24) and appeared in episodes 3 and 4 of the UCL podcast series 'Unlocking the SDGs' (see page 37).

### Which SDG is the most important for humanity to address?

*It's really tricky to pick one SDG, as they all intersect and rely on one another, and it's really hard to separate the different goals. So SDG4 (Quality Education) is vital to achieve SDG5 (Gender Equality).*

### If there was an 18th Goal, what should it be?

*There needs to be a wider conversation about rural communities, and the individuals who live in them, and how the different SDGs impact them differently.*

### If you could bring in one law or societal shift to help the UK address the SDGs, what would it be?

*Specifically looking at SDG5, to achieve gender equality, the UK Government needs to ensure that the online safety bill is passed.*

### Figure 4: Taught modules addressing one or more SDGs, 2023–24

Source: OSDG – see Methodology, pages 4–5



*Number of modules*
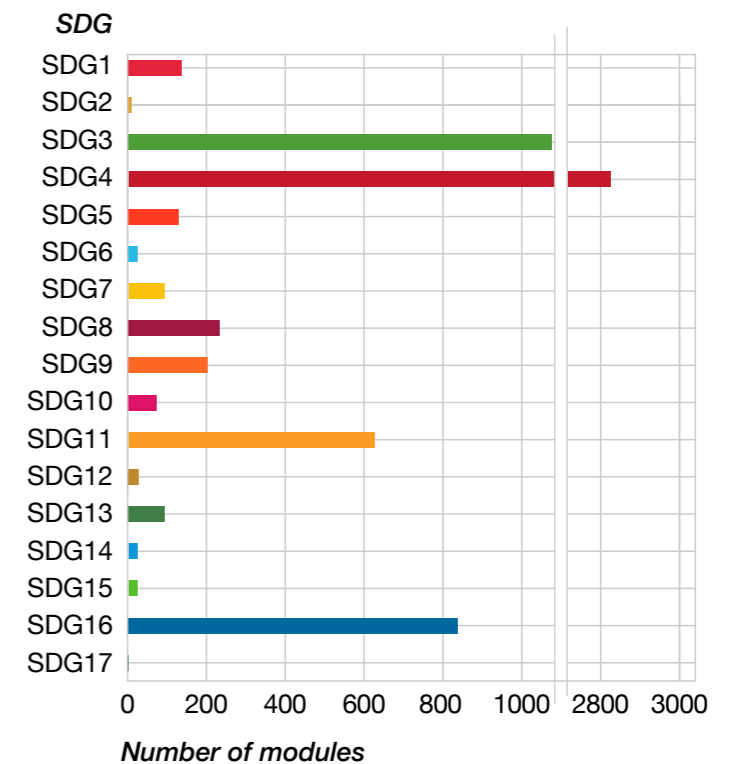
**77%**
of taught courses at UCL address one or more of the SDGs
Source: OSDG – see methodology, pages 4–5

### DISCOVER MORE

Read more on these activities and other examples of how teaching at UCL is helping to address the SDGs on the UCL SDGs Initiative website. Filter by 'Our teaching'.

# Our students' extra-curricular activities

**Our students are helping to address the SDGs through their wide range of student societies and volunteering projects.**

## Inspiring a new generation of engineers to embrace sustainability

UCL student-led volunteering programme, in collaboration with the charity Engineering Without Borders (EWB), is providing undergraduates with an opportunity to develop leadership and project management skills, while encouraging more young people to consider engineering as a career option.

Between September 2022 and March 2023, student, Rachel Wan (UCL Medical Physics & Biomedical Engineering) led a team of 25 UCL students to deliver 19 hands-on workshops for primary and secondary schoolchildren across nine schools in London. Approximately 500 schoolchildren attended the workshops with further workshops planned.

"Through our Engineers Without Borders outreach we are encouraging young people from different backgrounds to consider a career in engineering," says Rachel. "Our ultimate aim is to inspire the next generation ▶

▶ of engineers to become more globally responsible in making the world a better place."

Rachel's outreach programme included workshops focusing on sustainable power generation and housing solutions for under-served communities. Children worked together to design and build a wind-turbine, a water filter and floating 'house' (pictured, right), linking engineering design with some of the concepts of sustainable development.

The UCL-EWB collaboration has given Rachel and the team of UCL volunteers opportunities to develop their leadership skills and use their own passion for engineering to inspire young children to become engineers.

"The most rewarding part about the workshops is that the children get really engaged and take satisfaction from their creations," explains Rachel. "They get involved in the process of designing and have an opportunity to implement the principles they learn during the workshop, while gaining skills in collaboration and teamwork."

UCL-EWB is one of the many initiatives supported by Students' Union UCL Volunteering Service, which connects students with community volunteering opportunities across London. The project also received UCL Grand Challenge Pathways to Achievement (SDGs) funding.
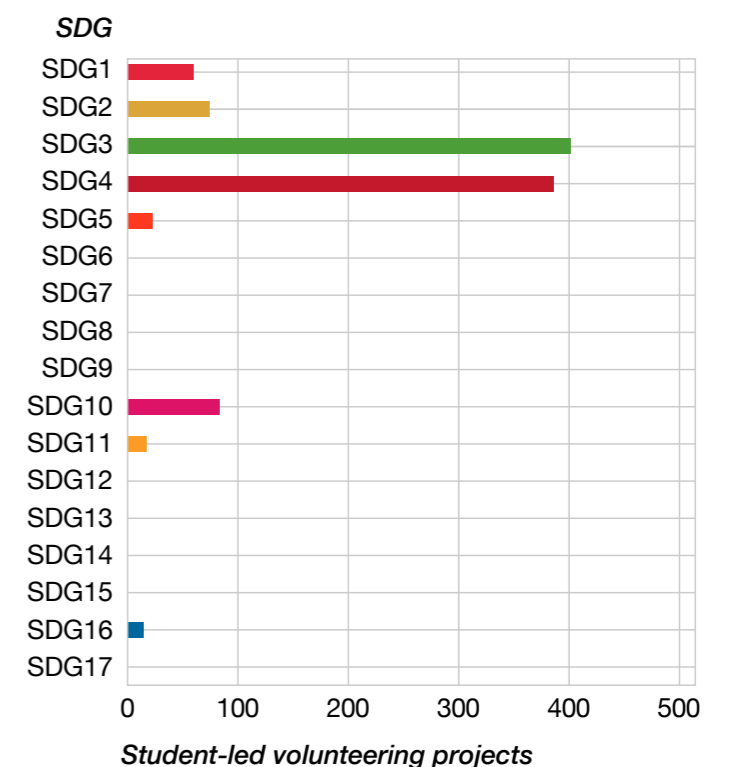
Helping to achieve **Target 4.7**

Helping to achieve **Target 13.3**

Helping to achieve **Target 17.7**

## Figure 5: Number of student-led volunteering projects addressing the SDGs

Source: Students' Union UCL – see Methodology, pages 4–5



*Student-led volunteering projects*

## UCL students achieve Europe's highest number of Millennium Fellows

Forty UCL undergraduate students were chosen as Millennium Fellows 2023–24, joining a global initiative designed to help achieve the SDGs. This was the most Fellows of any UK university for the fourth year running and the highest across Europe.

More than 44,000 students from around 3,000 campuses worldwide applied to join the Class of 2023–24, with 4,000 fellows chosen to take part.

Run by the Millennium Campus Network and United Nations Academic Impact, the Millennium Fellowship Scheme encourages undergraduate students to help to address the SDGs in their communities.

As part of their application, students propose a project they will undertake during the scheme.

The UCL Fellows' projects include: developing a wearable AI-powered smart badge to revolutionise personal safety and an initiative to address climate literacy among children.

The scheme appoints Fellows to coordinate efforts on participating campuses, sharing best practice on their own projects or working together on larger initiatives.

UCL's 2023–24 Campus Coordinators are (clockwise from top left): Mariya Kachwala (UCL School of Slavonic & East European Studies, SSEES); Anson Law (UCL SSEES); Leila Lai (UCL Psychology & Human Development); and Gaelic Jara Reinhold (UCL Electronic & Electrical Engineering).

**Helping to achieve Target 17.7**
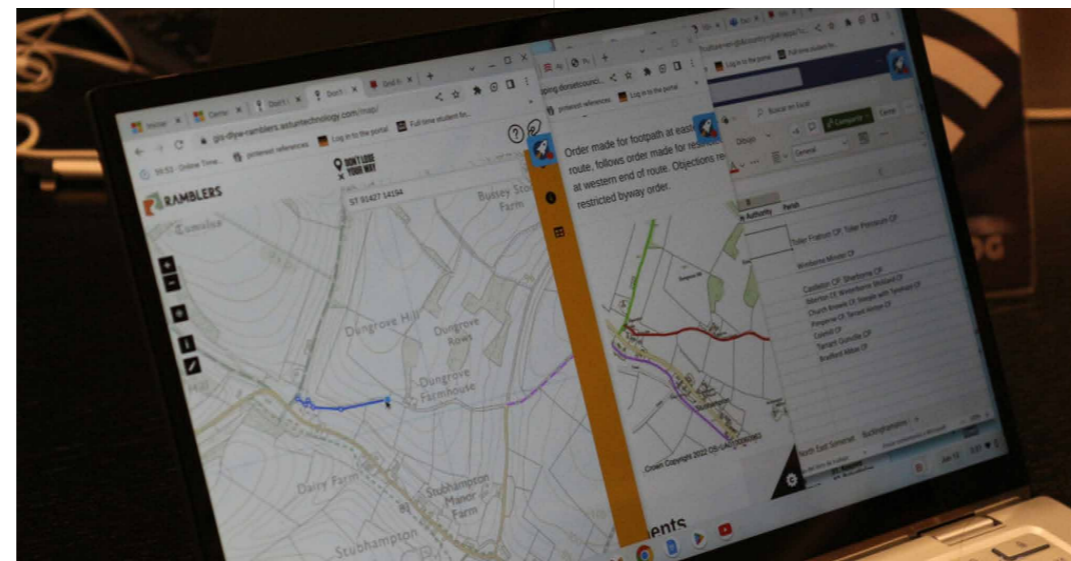


## UCL student consultancy challenge boosts charity action towards the SDGs

A UCL volunteering initiative that provides charities across London with a week's free consultancy is raising awareness of the SDGs and providing solutions to tangible sustainable development challenges.

The UCL SDGs Consultancy Challenge gives UCL undergraduate and postgraduate students the chance to work on a week-long group challenge in partnership with charities across London to help find sustainable solutions to real-life problems faced by their organisation.

The programme is delivered by staff from UCL Careers and UCL Students' Union. In 2023, 61 students were selected to support one of eight different charity partners to address problems they face that relate to the SDGs.

Initially, four postgraduate students acted as consultancy coordinators to work with the selected charities to produce detailed briefs for the projects. ▶



*"The consultancy challenge allows us to involve a large number of students in delivering high-impact activities and solutions that address issues relevant to our local communities."*

**Oliver Peachey (UCL Students' Union Volunteering Service)**

▶ Following a training day, the volunteer teams spent a week at the charities' headquarters to discuss the brief and to develop solutions to their real-life challenges. Projects included developing new products and services for social enterprises, undertaking business planning and research, and designing communications strategies for fundraising and to recruit volunteers.

For example, one team carried out a sustainability audit at Marlborough Sports Garden on behalf of Bankside Open Spaces Trust, researching and reporting on the garden's facilities, usage and practice. At the Refugee Therapy Centre, a team explored ways to raise awareness of the organisation to end users, volunteers and potential funders. They also used the organisation's own data to inform a new communications strategy.

The challenge culminated with students presenting the findings and outcomes to charity representatives and UCL staff. Each charity was given £250 to implement the solutions proposed by the students and the student volunteering team voted as giving the most outstanding presentation was given a further £500 towards implementing their project.

In 2022/2023, the winning team worked with the Ramblers Association, which is striving to map all rights of way across England. The students set out to finish mapping the paths across all English counties and to streamline the data collected from county council websites. They also transferred it to an interactive map (pictured), making the network of paths more accessible to walkers.

"The consultancy challenge allowed us to involve a large number of students, who deliver high-impact activities and solutions that address issues relevant to our local communities," explains Oliver Peachey, Partnerships Manager, UCL Students' Union Volunteering Service.

In 2022–23 the challenge received UCL Grand Challenges SDGs: Pathways to Achievement funding.

**Helping to achieve Target 17.7**

**Laura Dewhurst** (UCL Science & Technology Studies) appeared in episodes 2 and 6 of the UCL podcast series 'Unlocking the SDGs' (see page 36).

**Which SDG is the most important for humanity to address?**

*SDG13 (Climate Action), because the world depends on it.*

**If there was an 18th Goal, what should it be?**

*Animal rights, highlighting animal welfare needs.*

**If you could bring in one law or societal shift to help the UK address the SDGs, what would it be?**

*A change in attitudes that emphasises the need to reduce inequality. This means valuing everybody from the marginalised to the poorest in society to fleeing migrants, not just pushing policies that only help keep the rich and powerful, wealthy.*

## UCL undergraduates inspire more girls to keep up their football

A student-led volunteering project in collaboration with football clubs across London is inspiring more young women to continue playing football, building their confidence and challenging stereotypes.

To encourage more teenage girls to continue with football, two UCL undergraduates devised a student-led volunteer programme to reverse a trend that sees almost half of teenage girls in the UK drop out of playing the sports they once enjoyed.

Lily Wielar (UCL Education), and Emilia Privat (UCL English) run 'Girls Can Kick' in collaboration with UCL's Women's Football



Club (UCLWFC) and the nearby grassroots Camden & Islington United football club.

The community programme provides opportunities for young girls to gain extra practice with the student volunteers acting as coaches and role models, encouraging more girls to see football as a lifelong activity for them as women. It involves a team of 20 volunteers from the UCLWFC.

The volunteer coaches show the players that they can excel in the sport and embrace their passion without limitations. The programme helps to build confidence and provides a positive environment that helps girls thrive both on and off the pitch.

"It's really important that girls see that sports can be a part of their life and that being athletic and playing sports is something that can be just as rewarding and valuable for women as it is for men," says Lily.

Inspiration for the programme came from Lily and Emilia's own experiences of playing football as youngsters. They were determined to help challenge the deep-rooted gender stereotyping that can present a psychological barrier for women throughout life, by providing support and mentoring for girls playing football, and helping them to engage freely in the sport.

Girls Can Kick is one of the many initiatives supported by the Students' Union UCL Volunteering Service, which connects students with community volunteering opportunities across London.

### Figure 6: Number of student societies addressing the SDGs

Source: Students' Union UCL – see Methodology, pages 4–5



*SDG*

*Student societies*

Helping to achieve **Target 3.4**

Helping to achieve **Target 5.1**

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**17,665**

UCL students took part in SDGs-related student societies
Source: Students' Union UCL



### UCL students simulate UN SDGs summit

More than 150 student delegates and facilitators took part in a Model United Nations Conference at UCL in November 2023 to discuss complex challenges facing the world, including the need to increase efforts to achieve the SDGs by 2030.

At the event students simulated actual committees that took place at the UN General Assembly. The event was organised by the UCL United Nations Association (UCLUNA) student society.

"It was inspiring to see students from vastly different backgrounds coming together to think about the steps we can take to create a better, more sustainable future for all," said Wynsey Chen (UCL Political Science), Secretary General of UCLUNA. "The conference was a testament to the major force of youth in driving actions to achieve the UN SDGs."

Part of the event saw the students engage in a futuristic simulation of the 2024 Summit of the Future, scheduled to take place in September this year. The Summit will be a once-in-a-generation

opportunity to address gaps in global governance and to mark a new phase of accelerated progress towards achieving the 2030 Sustainable Development Agenda.

The student-led Summit of the Future simulation focused on two topics: how far off track the world is in achieving SDG16 (Peace, Justice & Strong Institutions); and a 'Declaration for Future Generations', which stated how much more effort the world should give to achieving the SDGs for the benefit of future generations.

The delegates also tackled issues including refugee access to jobs and financial services, climate change and gender inequality, and a new agenda for peace.

Delegates taking part in the model UN High Commissioner for Refugees (UNHCR) submitted a draft resolution to the UNHCR Model UN Refugee Challenge.

Dr Simone Datzberger (UCL Institute of Education, Faculty of Education and Society) was among the guest speakers. She joined the model UN Commission for the Status of Women Committee and spoke on the topic of gender and climate change.

In 2022–23 the challenge received UCL Grand Challenges: Pathways to Achievement (SDGs) funding.

Helping to achieve **Target 4.7**

Helping to achieve **Target 17.14**

**676**

UCL students took part in SDGs-related student-led volunteering projects
Source: Students' Union UCL.

**40**

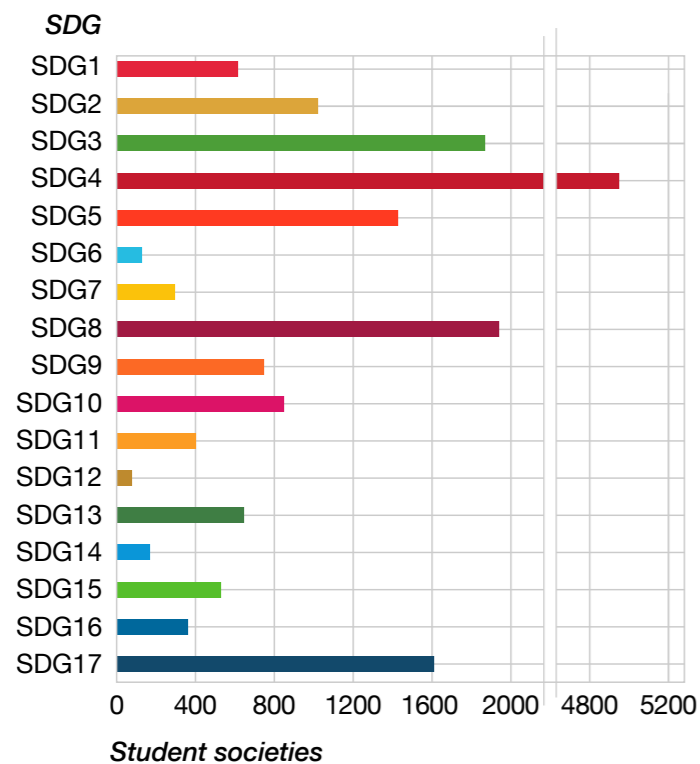UCL students were selected as Millennium Fellows 2023–24 – the highest across Europe
Source: Millennium Campus Network.

### DISCOVER MORE

Read more on these activities and other examples of how our students are helping to address the SDGs on the UCL SDGs Initiative website. Filter by 'Our student activity'.

# Our operational activities

As an institution we are working to ensure our own operations and policies can further the SDGs.

## Sustainable buildings at UCL push boundaries on carbon performance

As part of UCL's drive to reduce carbon emissions, the university has set ambitious targets for the design, build and operation of new and existing buildings.

New buildings across UCL are designed to be sustainable through using thermally efficient materials in construction, minimising waste and energy consumption, and contributing towards more biodiverse landscapes.

At UCL East, the university's new campus in East London

that opened (pictured) in 2022–23, every aspect of the development has a sustainable focus to create a healthy and comfortable working and living environment, which is climate resilient and has a low environmental impact.

The first new buildings to open on the campus were One Pool Street, ▶

▶ a mixed-use academic and residential building, and Marshgate, a new collaborative space to promote interdisciplinary research and innovation. Both exemplify UCL's Sustainable Building Standard.

"This lays out standards and targets for how we will deliver a sustainable built environment at UCL, including optimising thermal comfort, daylight and energy performance," explains Ben Stubbs, UCL Head of Sustainable Built Environment.

The buildings have green roofs and external landscaping to complement the ecology and biodiversity of its location in Queen Elizabeth Olympic Park. Regulation of internal temperatures is improved through the buildings' thermal mass. This means that heat is slowly absorbed and released by the dense building materials (particularly concrete), which helps to reduce temperature fluctuations. Construction materials with lower environmental impact and recycled content have been prioritised, and waste is minimised.

Sustainability measures such as solar panels and mechanical ventilation with heat recovery are incorporated into the buildings. Heat is also recovered from waste-water in student bedrooms and water consumption is minimised, for example through efficient toilet flushing systems.

Elsewhere, UCL's first net-zero-carbon building also opened in 2022–23. PEARL (Person-Environment-Activity Research Laboratory) provides state-of-the art space for researchers to explore how people interact with their environment.

It is 4,000 square metres and 10m high, allowing teams to create life-sized, controlled-condition environments including a railway station and a high street. Researchers use these facilities to examine how people interact with the environment, modes of transport and each other.

The building, which received an A+ rating Energy Performance Certificate (EPC), has excellent thermal performance for a building of this type, efficient mechanical and electrical systems and solar panels that cover the entire roof. It is UCL's largest on-site renewable energy installation to date. Surplus energy from solar panels is used to supply neighbours on the estate, with the potential to run as a 'carbon negative' building.

"Ensuring our buildings are more sustainable is an essential part of the university's increasing efforts to reduce our carbon emissions, as well as providing students and staff with a more comfortable and healthier environment in which to study sustainability," says Ben.

*"Ensuring our buildings are more sustainable is an essential part of the university's increasing efforts to reduce our carbon emissions."*

**Ben Stubbs (Sustainable UCL)**

Helping to achieve **Target 6.3**

Helping to achieve **Target 7.4**

Helping to achieve **Target 13.3**

Helping to achieve **Target 15.5**

## THE SDGS AND ME

**Aleksandr Ignatev** (UCL Institute of Epidemiology & Healthcare) appeared in episodes 1 and 3 of the UCL podcast series 'Unlocking the SDGs' (see page 37).

**Which SDG is the most important for humanity to address?**

*It is difficult to pinpoint one because different regions and communities face unique challenges, making various goals more urgent for them. Nevertheless, I believe that SDG4 (Quality Education) is essential because it serves as a foundation for achieving many other SDGs.*

**If there was an 18th Goal, what should it be?**

*Digital inclusion and access to the internet technology. I believe that goal would complement existing SDGs by promoting equal opportunities in the digital age.*

**If you could bring in one law or societal shift to help the UK address the SDGs, what would it be?**

*Implementing a Green Deal strategy, focusing on transitioning the UK to a sustainable low-carbon economy, while promoting social and economic justice.*

## Making UCL catering services more sustainable

UCL is trialling ways to improve the sustainability of its catering services, by increasing plant-based food offerings, reducing plastic waste and using locally sourced, sustainable products.

Its Healthy and Sustainable Food Policy and Strategy is helping to ensure the university meets high environmental and social responsibility standards for the food it offers through its catering partners.

To meet its commitment to encourage healthy and sustainable food production and consumption, the university has established a range of sustainable food initiatives and partnerships, ranging from ethical food sourcing to food waste reduction, which are helping to inform best practice across the university.

It is also carrying out trials of new sustainable initiatives in campus catering outlets that will be fed back as potential opportunities to further improve the sustainability of its catering service. The research is being carried out collaboration with UCL's catering partner, Gather & Gather.

One trial at UCL's Wilkins Refectory explored the impacts of reducing meat portion size for meat-eating customers to help reduce the overall carbon footprint of UCL's catering services. Researchers

invited chefs to design new menus so that on Mondays all meals served were composite dishes such as stews and curries. The researchers then adapted the recipes to reduce the meat content by 70%, replacing meat ingredients with legumes, pulses and vegetables.

The so-called 'Flexitarian Flip' dishes were reviewed by the chefs who assessed their nutritional value and carbon footprint. The nutritional value of the meals increased dramatically, while the environmental impact was significantly reduced.

"Despite concerns that customers may choose to eat elsewhere, customer feedback was positive and their enjoyment of the meal was similar, whether or not the meat content had been reduced," explains Charlotte Thwaite, Gather & Gather Sustainability Manager.

Another recent trial, led by Gather & Gather in the university's Brew Bar, collected data on interventions to reduce single-use plastics. All disposable coffee cups, confectionary with plastic wrapping and pre-packaged sandwiches

were removed from sale. Customers either used ceramic mugs or their own cup and were offered alternative foods such as paninis.

"As a result, almost half of customers brought their own cups to the café with most others using the ceramic mugs provided," Charlotte reports. "Almost all customers felt the removal of customer-facing single-use plastics was a positive experience." Next year, the trial may be extended to a larger catering venue on one of UCL's campuses.

"By trialling initiatives to reduce the carbon footprint of our catering services, minimise plastic waste and maximise opportunities to source products locally and sustainably, we can ensure future changes to our catering services meet the needs of customers, as well as helping us with our aims to be a sustainable university," says Evan Landy (Sustainable UCL).

Helping to achieve **Target 3.4**

Helping to achieve **Target 13.2**

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**£1.7m**

of furniture and equipment re-used to date, the most for a UK university for savings to date using the Warp-it reuse platform.
Source: Sustainable UCL.

## Fourth Gold Athena Swan award recognises UCL's commitment to equality and inclusion

UCL's commitment to gender equality has been recognised in the latest round of Athena Swan awards, where it gained a gold for Chemical Engineering, increasing the number of top-rated departments.

Inequalities in career progression and pay still exist for women in UK universities and research institutes. The Athena Swan charter provides a framework for higher education institutes to improve gender representation, progression and the working environment for all staff, and to help them to address inequalities.

In 2023, UCL Chemical Engineering received a Gold award for the first time, having held silver awards since 2009. Its award recognises the department's ongoing commitment to championing initiatives that promote inclusivity and gender equity.

It brings the number of gold departmental awards at UCL to four, joining the Great Ormond Street Institute of Child Health, Institute for Women's Health and MRC Lab for Molecular Cell Biology. They are among 22 university departments across the UK to hold gold Athena Swan awards.

The department's Deputy Head of Equality, Diversity & Inclusion (EDI) Professor Panagiota Angeli, who led the submission, says: "Equality and inclusion is the backbone of our department, it is part of our ethos, and we will continue to strive towards ensuring that all members of the department feel included and appreciated, and that we have the policies and procedures in place to monitor this."

Over the next five years, priorities for the department include to: resource and champion inclusivity and gender equity initiatives and role-model best practices; enhance its support to Research Fellows for their career progression; maintain high proportions of female taught students and further increase the number of female researchers and

academics; support the continual improvement of the performance of female and male BAME students; and support the UCL and sector community with gender equality and inclusivity initiatives.

UCL now boasts a Silver institutional Athena Swan award and 51 departmental awards, including Silver awards for UCL Division of Biosciences and UCL Division of Infection & Immunity. UCL Information Studies, Science & Technology Studies and the UCL Institute for Global Health also received awards for the first time in the 2023 round.

"These latest awards illustrate UCL's founding commitment to equity and inclusion and evidence how we are embedding best practice across the university," adds Tom Glynn, UCL Equality, Diversity & Inclusion Manager.

Helping to achieve **Target 5.1**

Helping to achieve **Target 10.2**

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**19.9%**

reduction in energy per full-time equivalent (staff and students) between 2017–18 and 2021–22
Source: Sustainable UCL.

**33%**

of meals sold in catering outlets on UCL campuses were vegan or vegetarian – January to July 2023
Source: Sustainable UCL.

### DISCOVER MORE

Read more on these activities and other examples of how our operations are helping to address the SDGs on the UCL SDGs Initiative website. Filter by 'Our operations'.

# Our external partnerships

**We are working with a variety of external partners to help achieve the SDGs, including with local communities – both around our campuses in London and across the world – industry, non-governmental organisations, corporate and individual donors, and local and national governments.**

## Strategic alliance fuels talent pipeline in the real asset sector

A new industry partnership is bringing together industry and UCL staff and students through a new centre to address sustainable development challenges in real estate.

Sustainable technologies that reduce the costs and environmental impacts of building processes and materials are needed to design, build and manage real estate suitable for a net-zero future.

A new strategic alliance, established between UCL and PGIM Real Estate, is nurturing new talent, leveraging world-class research and building an innovation ecosystem that combines AI, property technologies and environmental, social and governance (ESG) objectives.

To help deliver the SDG targets, large multinational companies ▶

▶ like PGIM Real Estate are adapting their business models to work and invest sustainably. PGIM Real Estate applies industry ESG criteria to screen potential investments and to develop its own socially responsible corporate policies.

As a first step for the alliance, the UCL Centre for Sustainability & Realtech Innovation, powered by PGIM Real Estate opened in October 2023. It brings together PGIM Real Estate's industry experts with academic expertise from across UCL, including from UCL Computer Science and the UCL Bartlett Faculty of the Built Environment.

The centre provides a physical space where thought leadership, innovation and education can thrive across emerging digital technologies, architectural materials, construction and design.

To nurture new talent in these disciplines, the alliance is supporting a number of PhD scholarships including several venture PhDs. It is also encouraging research that can be commercialised through spin-out companies. MSc scholarship places are also being funded, including places on UCL's Master's courses in Bio-Integrated Design, AI for Sustainable Development, Financial Risk Management and Computational Finance.

Workshops and events bringing together PGIM Real Estate, UCL staff and students, spin-outs and startups, and other industry players will help build an ecosystem of knowledge and innovation and how they can be used to improve efficiency in regulating and managing buildings. For example, hackathons will bring students together to develop business ideas, design and programme code, write business proposals and pitch ideas to industry experts.

"Developing long-term transformational partnerships between universities and RealAssetX is vital to creating new, sustainable solutions to advance innovation in the industry," says Naqash Tahir, Executive Director, CIO Office at PGIM Real Estate.

Professor Geraint Rees, UCL Vice-Provost (Research, Innovation & Global Engagement), adds: "At UCL, we are at the forefront of innovative partnerships. This new centre epitomises such innovation in real estate tech through the combination of philanthropy, entrepreneurially focused research and innovation and thought leadership events."

*"At UCL, we are at the forefront of innovative partnerships. This new centre epitomises such innovation in real estate tech through the combination of philanthropy and entrepreneurially focused research and innovation."*

**Professor Geraint Rees, UCL Vice-Provost (Research, Innovation & Global Engagement)**

Helping to achieve **Target 9.4**

Helping to achieve **Target 17.17**

**Suzanna Chen** (UCL Arts & Science) was one of UCL's Millennium Fellows 2022–23 (see page 24) and appeared in episodes 1 and 5 of the UCL podcast series 'Unlocking the SDGs' (see page 37).

**Which SDG is the most important for humanity to address?**

*SDG17 (Partnerships for the Goals), to strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development.*

**If there was an 18th Goal, what should it be?**

*Cultural conservation: respecting different cultures around the world; reversing the ideas of some cultures being superior to others; and trying to preserve and revive the cultures endangered by politics or discrimination.*

**If you could bring in one law or societal shift to help the UK address the SDGs, what would it be?**

*To make sure accessibility is thoroughly considered when planning and constructing infrastructures. Right now it is often treated like an afterthought.*

## UCL-led hub increases membership and engagement

Membership of the UK Hub of the Sustainable Development Solutions Network (SDSN), hosted at UCL Institute for Innovation & Public Purpose (IIPP), has grown to more than 20 institutions since its launch in January 2022.

The hub convenes UK universities and research centres to advance practical solutions that contribute to achieving the UN's 2030 Agenda for Sustainable Development.

Activities coordinated by the Hub include a research project carried out in collaboration between IIPP, Newcastle University and the UK's Office of National Statistics (ONS), which aims to improve the scope and use of UK government data for the SDGs.
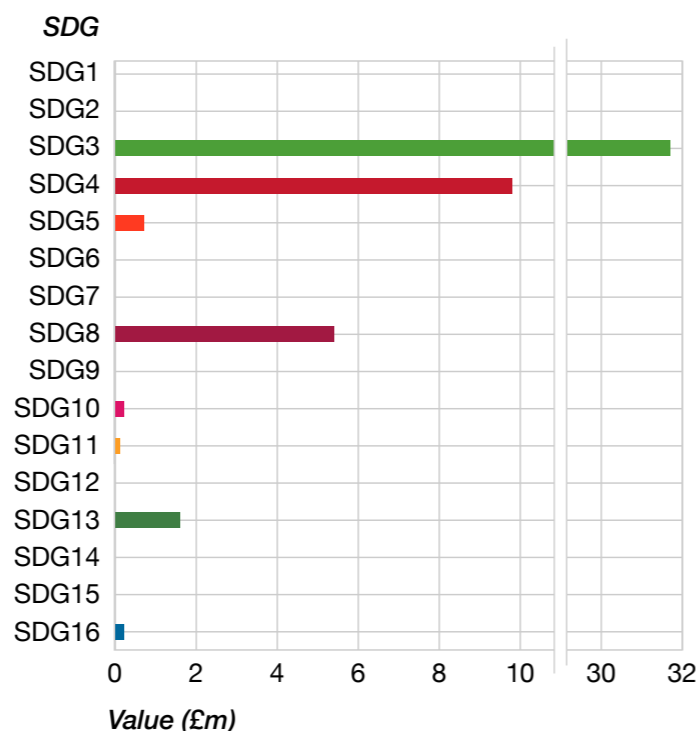
Building upon the publication of the Measuring Up 2.0 report (see page 13) published in September 2022, the research focuses on key challenges faced by stakeholders in relation to SDG data and barriers to addressing these challenges.

Dr Kate Roll (UCL IIPP) and Dr Graham Long (Newcastle University) presented the initial findings of the research at an SDSN UK Hub event attended by 40 academic, public-sector and civil-society stakeholders.

"Although the ONS has made progress on gathering and presenting data across the SDGs in the UK context, 'Measuring Up 2.0' identified a series of remaining challenges," explains Dr Roll. "These include gaps in the data compilation, failure to address challenges in the UK context, and a lack of assessment of UK progress."

The UK Hub also formed a working group to explore how UK higher education institutions could better coordinate data collection and submission to the Times Higher Impact Rankings.

Helping to achieve **Target 17.17**

### Figure 7: Value of solicited gifts received by UCL for activity addressing the SDGs, 2023–23

Source: UCL Vice-Provost (Advancement) – see Methodology, pages 4–5



## Student-industry partnerships tackle complex business challenges in UCL Sustainability Lab

Collaborations between academia and industry are helping to fuel progress towards the SDG targets. A new initiative conceptualised and founded by MBA student Tom Weston (UCL School of Management), provides a platform to bring together UCL students and industry partners in collaborations that are helping to make business more sustainable.

Tom's vision for UCL Sustainability Lab is to create opportunities for undergraduate and postgraduate students across UCL's 11 faculties to collaborate with companies and delve into the complex issues surrounding sustainable innovations and help to develop strategic business models to deliver them.

Based in the UCL School of Management, the Lab draws participants from a range of subjects at UCL, including urban planning, business analytics, law, civil engineering, sciences and the humanities. The industry-student collaborations are undertaken as an extra-curricular activity, complementing the students' courses. They typically last six months and include regular discussion meetings, presentations and networking events.

Students carry out research and analysis on a defined topic in collaboration with stakeholders from partner organisations and present their recommendations in a final report to the industry representatives.

Sixty students are currently working in one of 13 collaborations across six partner organisations. They include three projects focusing on the built environment in collaboration with global engineering company Mott MacDonald and the Institute of Structural Engineers.

In one project, UCL students have developed a methodology for assessing the impact of construction materials on the natural environment, to help reverse the negative impact on biodiversity during construction processes.

Their recommendations included: a three-step approach for companies to become 'nature-positive'; creating an industry overview (to establish key stakeholders, market trends,

and sustainable initiatives); mapping the value chain of the material from extraction to the construction site; and making a detailed assessment of direct and indirect impacts on nature from each stage of the value chain so that improvements can be made to help construction companies become nature-positive.

"Bringing together the team members' different disciplinary knowledge, skills and diverse backgrounds helps the projects to deliver positive impact, through co-created solutions," says Tom.

"The Lab's collaborations focus on co-creation practices that generate positive impact, drive solutions and develop knowledge," he adds. "This will ensure that sustainability approaches deliver consistent, measurable and increasing value."

Helping to achieve **Target 9.1**

Helping to achieve **Target 17.17**

## UCL start-up takes 'living walls' to new level of sustainability

A company founded by a UCL graduate is using cork to improve the biodiversity and sustainability of living walls, with designs that reduce running costs, while boosting plant health.

Access to nature within cities plays a vital role in improving residents' health and wellbeing. Plants and trees help to reduce pollution, ambient temperatures and human stress, while supporting biodiversity. Increasingly town planners and architects are using innovative ways to include green spaces in city designs, including vertical green walls. However, the materials commonly used to build such 'living walls' are not sustainable and the containers often prevent plants from maturing.
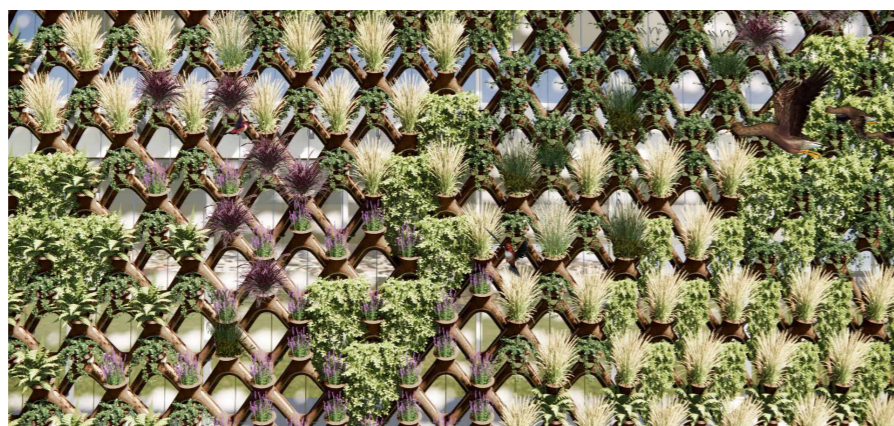


With support from the Hatchery, UCL's start-up incubator within UCL's BaseKX at King's Cross, UCL Architecture graduate Mac Van Dam founded a company to develop more sustainable living walls.

The Vertical Grounds Design Lab's first product is the 'Living Lattice' that uses cork-based modules to create wall coverings, ornamental shading systems for windows and free-standing partition walls. The lattice modules are designed to keep plant roots healthy, and to improve water flow, reducing maintenance, minimising environmental impacts and maximising biodiversity.

"Our Living Lattice product is made of cork, which is a highly sustainable replacement for plastic and provides numerous functional benefits for plant health," explains Mac. The modules are designed to be easily assembled and optimise plant health by increasing the amount of soil each module contains, allowing plants to establish and mature more easily.

For every square metre, the lattice accommodates six large plants, or 12–24 small plants, 28 litres of soil and 300 square centimeters of bio-receptive fabrics (which are home to numerous microorganisms), as well as a variety of insect and animal species. According to the team's research, this represents an increase in biodiversity compared to a conventional living wall.

"We believe living ecosystems can become architectural – integrated into our buildings as a service," says Mac. "A building service that manages stormwater, reduces heat gain, produces oxygen, provides vital habitat for migratory insects and animals, and ultimately improves the wellbeing of urban citizens."

### Figure 8: UCL student start-ups supporting the SDGs, 2022–23

Source: UCL Innovation & Enterprise – see Methodology, pages 4–5



*SDG*

*Number of students*

Helping to achieve **Target 15.5**
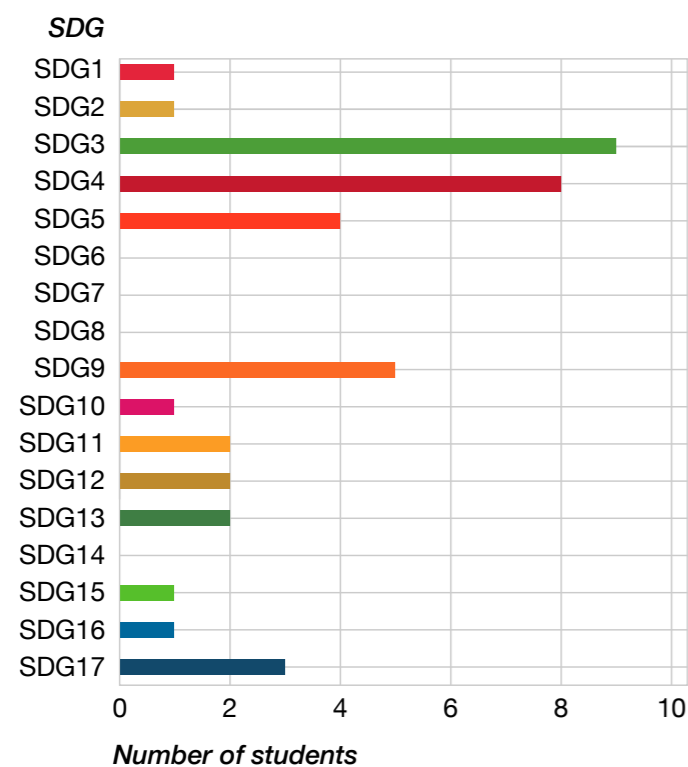
## UCL SDGs podcast returns for new series

A second series of UCL's podcast series Unlocking the SDGs: A Blueprint for the Future was released in Autumn 2023. It follows the success of the first series and attracted an average of 250 listeners per episode.

Topics covered in the new series included: mental health, the place of culture and the humanities in the SDGs; whether the world can afford to achieve the SDGs in the face of other financial pressures; and 'What next for the SDGs?', which the UN hopes are achieved by 2030.

Each episode also includes 'vox-pops' from students at UCL explaining which of the SDGs they believed were most important to achieve.

Guests included academics from across the range of disciplines at UCL, and other universities. The series was again co-hosted by Professor Monica Lakhanpaul (UCL Great Ormond Street Institute of Child Health) and Dr Priti Parikh (UCL Bartlett School).

Helping to achieve **Target 3.4**

Helping to achieve **Target 11.4**

Helping to achieve **Target 11.5**



Pictured recording episode 4 (l-r): guests Dr Simon Chin-Lee (UCL Political Science) and Dr Louisa Acciari with co-hosts Professor Priti Parikh and Professor Monica Lakhanpaul

## 40

UCL student start-ups supporting the SDGs, 2022–23
Source: UCL Innovation & Enterprise – see Methodology, pages 4–5

## £49.7m

of solicited gifts received by UCL for activity addressing the SDGs, 2022–23
Source: UCL Office of the Vice-President (Advancement) – see Methodology, pages 4–5

### DISCOVER MORE

Read more on these activities and other examples of how UCL's external partnerships are helping to address the SDGs on the UCL SDGs Initiative website. Filter by 'Our external partnerships".