



Ensure sustainable consumption and production patterns



Composting plastics to tackle waste

The Big Compost Experiment – led by UCL’s Plastic Waste Innovation Hub – is using ‘citizen scientists’ to find out what the UK public think of biodegradable and compostable plastics, and whether the products live up to their name.

The hub is a multidisciplinary team of UCL scientists, engineers, designers and social scientists, who are taking design-led approaches to creating and testing new interventions to eliminate plastic waste.

The team designed an online survey and a simple home-based experiment to see how long packaging labelled as ‘biodegradable’ and ‘compostable’ takes to degrade in a household composter. The survey has elicited almost 10,000 responses to date with more than 2,700 people setting their own composting experiment, with data feeding into a live map of home-composting activities across the UK.



Improving designs to reduce plastic waste

A multidisciplinary UCL team is seeking to ‘design out’ plastic waste by devising innovative new ways to reuse, recycle or compost plastic.

The group, led by the Professor Mark Miodownik (UCL Institute of Making), includes a wide range of UCL experts, from biochemical engineers and chemists to psychologists, economists and sustainability researchers.

“Each design failure affects and compromises the whole system, leading to leakage of plastic into the environment.”



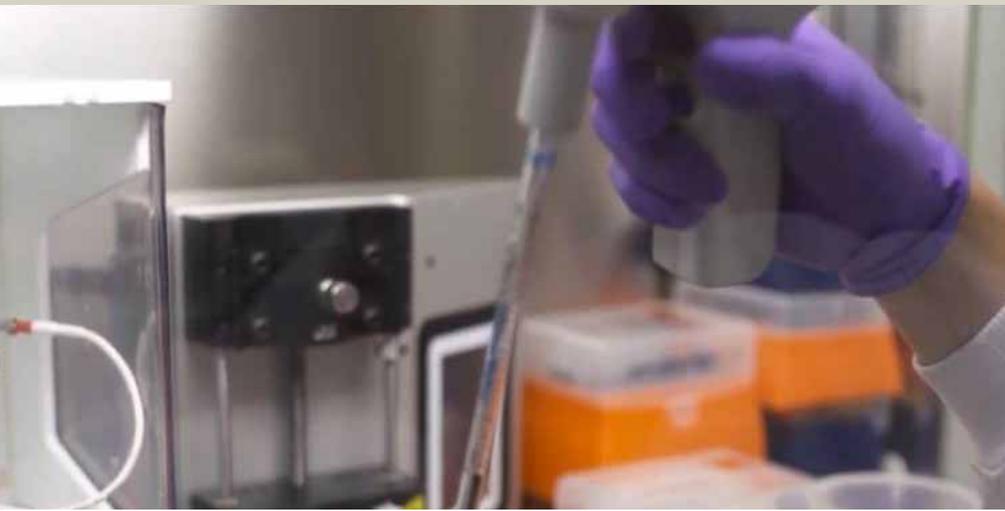
**Professor Mark Miodownik
(UCL Institute of Making)**

“We believe that waste is a failure of design,” says Professor Miodownik. “Each design failure affects and compromises the whole system, leading to leakage of plastic into the environment, and creating an economic burden on the UK.”

The project is identifying changes in design that will make it easier to recycle plastics, as well as developing novel technologies to recycle plastics that currently cannot.

“For example, plastic laminate films have been identified by the retail and manufacturing sector as fundamental to their business, but are currently problematic to recycle,” explains Professor Miodownik. “We’re hoping to develop a new bacteria-based recycling technology that will consume plastics, breaking them down into reusable material.”





detailed understanding of the key challenges surrounding the sustainable use of the Earth's resources.

The course explores how patterns of use and consumption of resources are shaped, the role of people and governments, and approaches such as the resource nexus and the Circular Economy. The multidisciplinary programme draws on UCL experts in disciplines as diverse as economics, law, political science, development planning, engineering and the natural sciences.

As well as receiving a grounding in the concepts, challenges, policies and economics of sustainable resources, students are able to focus on topics including the impacts of climate change on hydro-ecological systems, sustainable entrepreneurship and resource governance in the Global South.



Surplus items reused across the university

Staff redistribute thousands of items for reuse around UCL, diverting them from recycling and waste and reducing carbon emissions.

Using Warp-it, an online redistribution platform, staff can donate and claim surplus reusable items from elsewhere at the university. They include electrical items, educational resources, thousands of chairs, specialist laser equipment – and even a reed longboat made for a theatre prop.

In 2018–19, UCL staff reused more than 70,000 items, diverting more than 26 tonnes of waste from recycling and waste, and saving almost 167,000kg of carbon emissions – the equivalent of taking 53 cars off the road or planting 203 trees. The effort is contributing to UCL's target of

reducing waste per person by 20% by 2024.

The platform complements other schemes at UCL that encourage staff to reuse chemicals and research equipment, as well as swap shops and repair cafes.

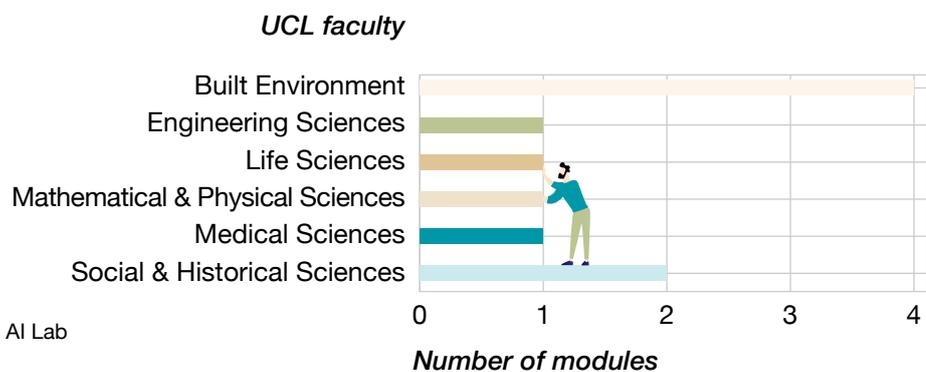


Equipping the next generation to manage resources sustainably

UCL's MSc in Sustainable Resources: Economics, Policy & Transitions gives the next generation of policymakers, researchers, leaders of non-governmental organisations and business entrepreneurs a

Taught modules at UCL supporting SDG12 in 2021–22

Source: PPMI, a partner in the UN AI Lab – more details in the [methodology](#)



885

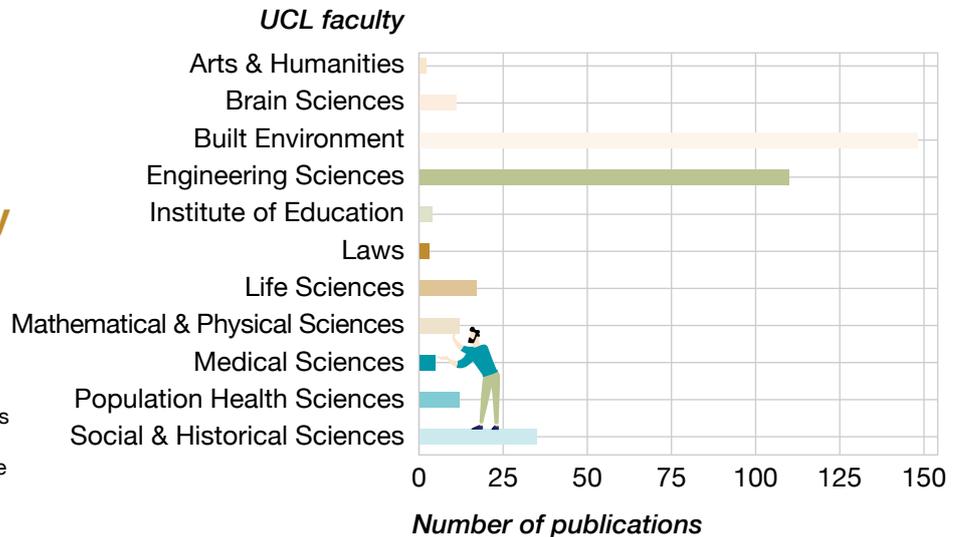
SDG12-related policy citations in 2016–20

Source: Overton – see [methodology](#)



Number of UCL's research publications supporting SDG12 by faculty in 2016–20

Graph based on keywords searches of publication databases using a set of SDG keywords developed by Elsevier. Read more about the methodology used on the [SDGs Initiative website](#)



Student reduces glass bottles going to landfill

After founding a company to address the dumping of glass bottles in landfill in New Delhi, India, a UCL student became one of the UN's 17 Young Leaders for the SDGs.

Then a 16-year-old student at The British School, New Delhi, Udit Singhal (Management Science student 2) discovered that collecting glass bottles for recycling was no longer viable for the city's army of

informal waste collectors (kabadis) because demand was dropping, they needed large storage spaces and transport costs were high.

It was this realisation that motivated Udit to found Glass2Sand, a company that prevents glass bottles being sent to landfill by crushing them into commercially valuable silica sand.

Udit was selected from more than 8,000 applications to become one of the UN's 17 Young Leaders for the SDGs, 2020–22. Convened by the

UN Secretary General's Envoy on Youth, the Young Leaders are chosen for their leadership and contribution to creating a more sustainable world.

Helping to achieve Target 11.6

Helping to achieve Target 12.5

Helping to achieve Target 17.16

25.7%

of UCL's SDG12-related publications are in the top 10% most cited for all research of similar papers in 2016–20

Source: Scopus and Clarivate – see [methodology](#)

63.5%

of UCL's SDG12-related research publications are international collaborations, 2016–20

Source: Scopus and Clarivate – see [methodology](#)

DISCOVER MORE

Read more on these activities and other examples of how UCL is helping to achieve SDG12 are on the [UCL SDGs Initiative website](#).