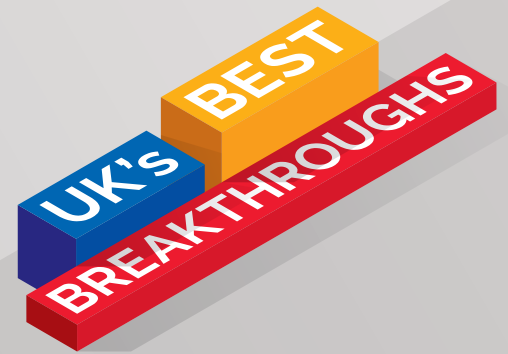


MADE AT UNI

THE 100+ WAYS
UNIVERSITIES
HAVE IMPROVED
EVERYDAY LIFE





The UK's Best Breakthroughs List is a celebration of the everyday impact that universities have on people, lives and communities across the UK.

UK universities are at the forefront of some of the world's most important discoveries, innovations and social initiatives, including work tackling plastic pollution, ultrasound scans to check the health of unborn babies and the establishment of the Living Wage.

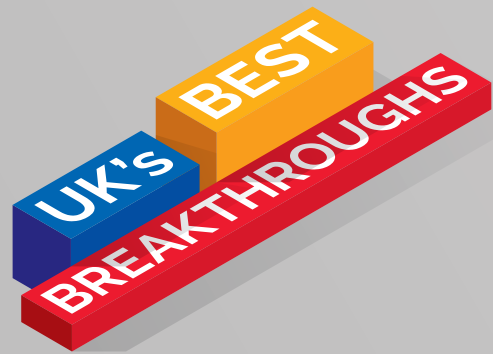
The list also highlights the less celebrated but vital breakthroughs that transform lives, regardless of whether you've been to university or not. These include a specially-designed bra to improve the treatment of women undergoing radiotherapy;

a toilet that flushes human waste without the need for water; the development of a new scrum technique to make rugby safer; a sports initiative that aims to use football to resolve conflict in divided communities – and even work to protect the quality of the chocolate we eat.

It was put together in partnership with universities across the UK. As part of the MadeAtUni campaign, universities around the country were invited to nominate the one thing from their institution which they believe has had the biggest impact on people, lives or communities.

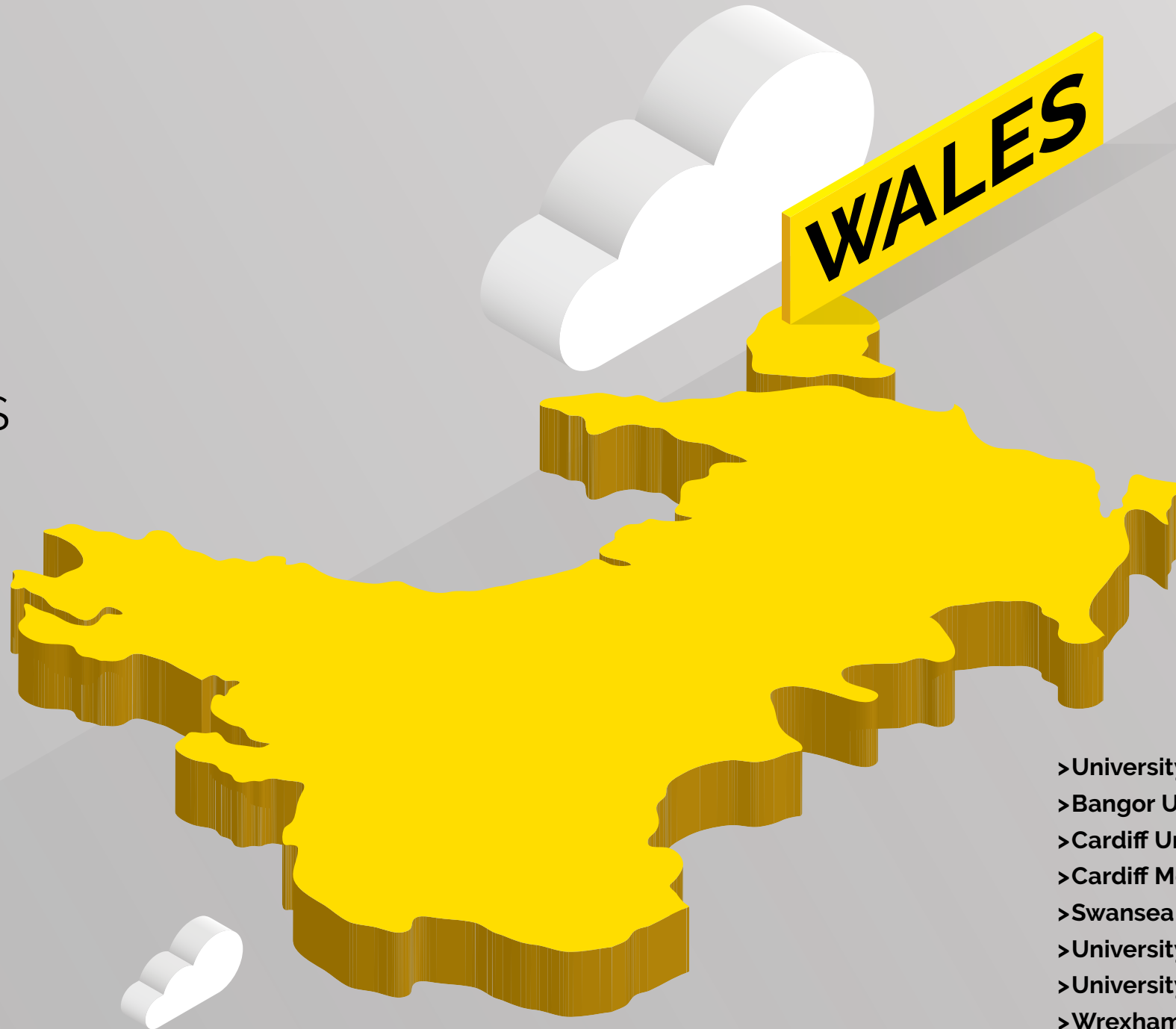
Over 100 universities submitted a nomination and the entries cover health, technology, environment, family, community and culture & sport.





DISCOVER NOMINATIONS
FROM WELSH UNIVERSITIES
OR EXPLORE ALL THE
BREAKTHROUGHS
BY THEME

THEMES



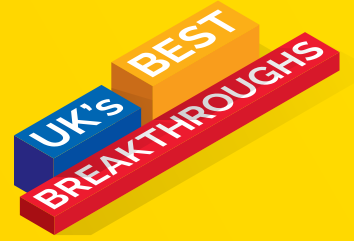
- > University of Aberystwyth
- > Bangor University
- > Cardiff University
- > Cardiff Metropolitan University
- > Swansea University
- > University of South Wales
- > University of Wales Trinity St Davids
- > Wrexham Glyndŵr University





Cardiff
Metropolitan
University

Prifysgol
Metropolitan
Caerdydd



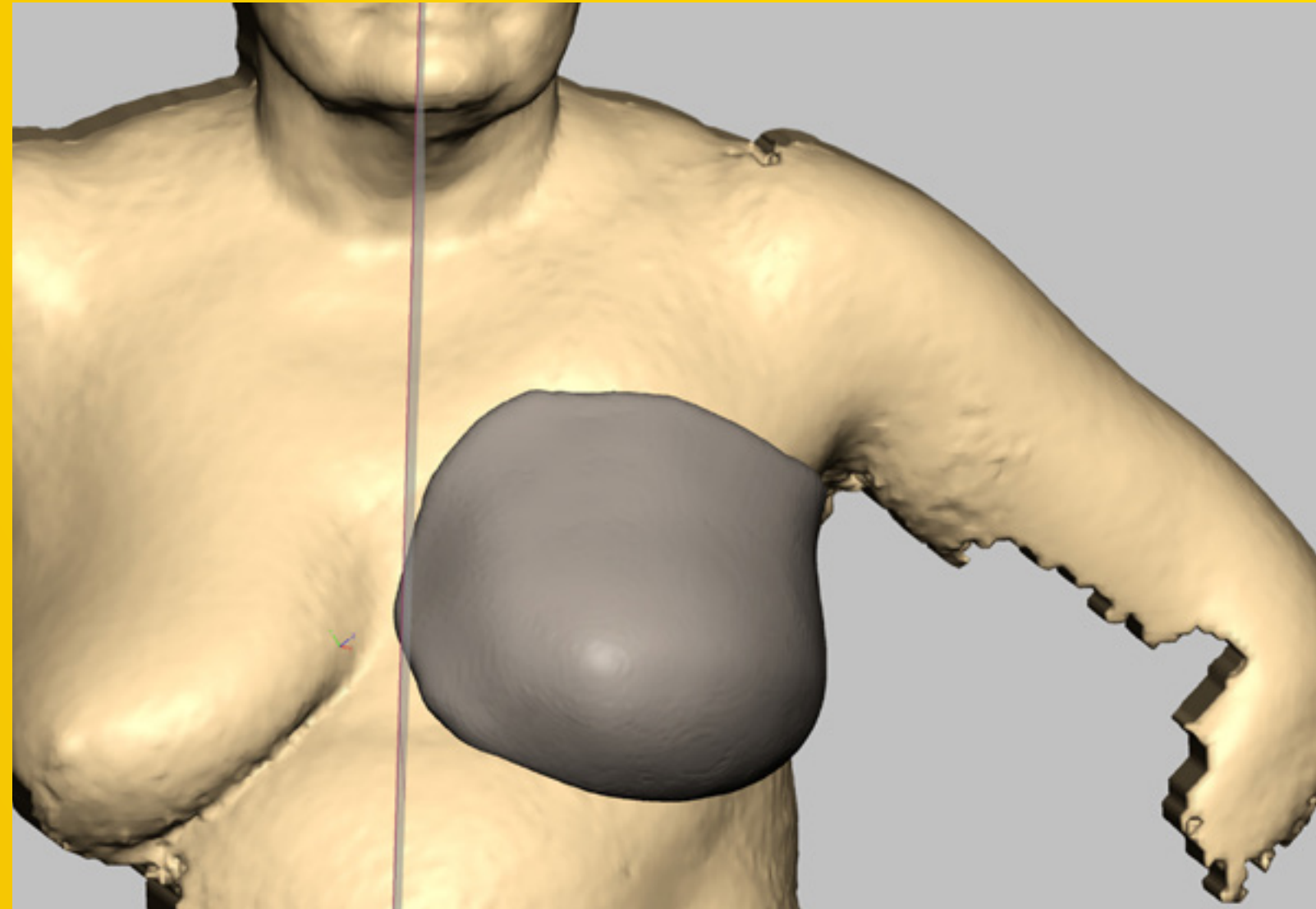
CARDIFF METROPOLITAN UNIVERSITY

Breast prosthetics for breast cancer patients

Design researchers at Cardiff Metropolitan University's International Centre for Design and Research have worked with NHS clinicians to develop bespoke prosthetic breasts for women who have undergone a mastectomy.

The research project, which is informing the development of more realistic and better fitting breast prostheses, has developed from a partnership of more than 20 years. This partnership has seen product and design specialists work closely with medical professionals to offer a wide range of cutting-edge solutions for patients.

The aim is to reduce the psychological impact on patients of post-surgical rehabilitation and help them and their families cope better with the emotional strain of breast cancer.

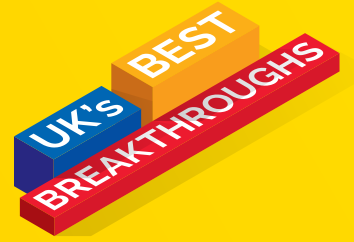


THEMES

HEALTH



Swansea University
Prifysgol Abertawe



SWANSEA UNIVERSITY

Using Salmonella to improve cancer treatment

Research at Swansea University Medical School has shown that Salmonella could be used to create better cancer treatments. Unlike chemotherapy and radiotherapy, these treatments would be non-toxic and would target only the tumour (leaving healthy tissue unaffected) and could require only one dose.

The technology at the heart of the approach is called RNAi, a natural process that cells use to turn down, or silence, the activity of specific genes.

Professor Paul Dyson, who is leading this work, has previously used this technology to develop a pesticide-free weapon against insects that cause sleeping sickness and damage crops.

In the next phase, the team will test whether bacterial strains can be combined to target the different cancer-causing genes ('oncogenes') in different types of cancer including breast cancer and colorectal cancer.



THEMES

HEALTH

UNIVERSITY OF SOUTH WALES

Improving patient hydration in hospital

A group of adult nursing students at the University of South Wales have come up with a simple idea that could help hospital staff monitor a patient's fluid intake. They are proposing that hospitals introduce jugs with yellow lids, rather than the traditional blue lids, for patients who are either having their fluids restricted or monitored.

The lids, which cost as little as 70p each, would provide hospital staff on busy wards with an easy visual clue about which patients require careful monitoring.

One student nurse said:

"Although nursing staff make every effort to ensure patients are getting the correct fluids, we all agreed that it can be quite difficult to know which patients are having their fluids monitored on a ward.

"Some patients, for example, may be on fluid restrictions following complications such as heart failure, while others might be being encouraged to drink more because they are dehydrated."

Yellow was chosen because it is thought to be a colour that is positive for people living with dementia as well as for people with impaired vision.



WREXHAM GLYNDŴR UNIVERSITY

Assistive technology suite to support students

Wrexham Glyndŵr University is nationally recognised for its inclusion services which provides tailored support and educational opportunities for people, regardless of their background. Support includes a specialised Assistive Technology suite which provides specialist equipment and support and training for students.



ABERYSTWYTH UNIVERSITY

New varieties of grass to help the environment

There is science behind the green, green grass of home. Science has led to the production of new varieties of high sugar grasses for feeding livestock with huge environmental and economic benefits. Greenhouse gas emissions from livestock have been drastically reduced while at the same time the yield from livestock products has increased, so helping to feed the world's population.

The research has been carried out at the Institute of Biological, Environmental and Rural Sciences at Aberystwyth University, which celebrates 100 years of plant breeding in 2019.

Today almost a third of the perennial ryegrass grown by UK farmers comes from seed developed by Aberystwyth University researchers, with varieties including AberMagic, AberDart and AberGreen also used internationally.

The development of these high sugar grasses is just one example of how the university's scientists are combining fundamental research on plant genetics with plant breeding techniques to develop new commercially viable plant varieties that are designed to tackle the challenges of food, water and energy security facing communities across the world.



BANGOR UNIVERSITY

Helping farmers in Nepal and India

Research by Professor John Witcombe at Bangor University led to the creation of 10 new rice varieties which have brought huge benefits for farmers in Nepal and India and has helped improve the livelihoods of over five million households. These varieties of rice are superior in their taste, drought tolerance and have high pest-resistance properties.

They are grown on at least 500,000 hectares and provide up to 40% yield advantage over the traditionally grown varieties. It is estimated that two of the rice varieties – known as Ashoka – are providing benefits of £17 million annually to the poorest farming households in India.



CARDIFF UNIVERSITY

Community project to strengthen local ties

Cardiff University's award-winning Community Gateway is helping to make the diverse Cardiff district of Grangetown a better place to live and work.

Working closely with community partners Grangetown Community Action and Grange Pavilion Project, it is helping to strengthen relationships with Grangetown residents. Projects so far have included the award-winning Grangetown Youth Forum; a regular Grangetown Business Forum which led to the launch of Grangetown's first World Street Market; and a research project to identify the needs of the Somali communities in Grangetown.

Grangetown also has an annual mental health day event, arts therapy programmes, a citizen scientists programme and a safety week involving the emergency services.

A major piece of work has been the renovation of a vacant bowls pavilion to trial community-led activities. This includes the launch of the locally-run community-focused Hideout Café, which hosts a monthly Culture Café aimed at bringing the communities of Grangetown closer together through discussion and debate.



UNIVERSITY OF WALES TRINITY ST DAVIDS

Supporting children with neurological conditions

The Assistive Technologies Innovation Centre (ATiC), combines creativity and practice-based research to support medical companies and healthcare charities. ATiC has an established partnership with Cerebra, a leading research charity working to support children with neurological conditions.

The team has developed several bespoke product design solutions to enable children to play, increase their mobility and to make family life easier.

Over 10 years, the team has developed many bespoke products to aid the daily living challenges of children with conditions such as autism and cerebral palsy. These include a stable canoe and a running/cycling wheelchair to enable children to take part in triathlons; and a scanning and moulding process to enable the manufacture of a bespoke helmet to make horse riding accessible.



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