

# GW4



## Strategic Vision 2023-2028

Change doesn't happen alone



University  
of Exeter

# The GW4 Alliance Mission

Founded in 2013, GW4 is an alliance of four of the most research-intensive and innovative universities in the UK: Bath, Bristol, Cardiff and Exeter.

Collaboration is at the heart of everything we do and it makes us greater together than the sum of our parts. We work with other universities, businesses and civic bodies, acting as the anchor institutions to support a knowledge-intensive economy.

Change doesn't happen alone.

## GW4 works at pace and scale to:

- **Add value** by creating research and innovation that address some of the biggest challenges and priorities facing society. Our activities inform policy and attract investment to support regional economic growth, respond to skills needs, and raise the national and international profile of our universities' activities;
- **Help our universities** to identify and develop new internal and external collaborations, building strategic partnerships to provide co-created solutions and increase our impact;
- **Provide sector-leading opportunities** in research and training for our postgraduate and early career researchers and our technical staff, increasing diversity and inclusion, and enhancing research culture;
- **Enable and support** shared cutting-edge equipment, infrastructure and capabilities.



# Our Role in Driving Transformative Research and Innovation

Since 2013, through GW4 collaboration, our universities have worked together with more than 400 business and non-academic partners to create and deliver bespoke activities to develop our people and build on our research and innovation strengths.

We are the only research alliance to collaborate across England and a devolved nation, and the only university alliance in the UK that provides both an annual programme of professional development for our early career researchers and funding for novel internal and external partnerships.

In doing so, we support our people to develop and build research and innovation activities with each other and with a huge network of external partners. We support engagement between the universities and other organisations to drive research, innovation, policy development and economic growth.

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## Our Collective Scale

The South West England and South Wales region is uniquely placed to support the UK Government's levelling up agenda and boost economic growth through our internationally leading research and innovation strengths.

The GW4 universities contribute substantially to the global knowledge economy with a combined annual research income of over £465 million and a £2.4 billion annual turnover. Our universities employ over 13,000 academic staff and educate over 33,000 postgraduate and 82,000 undergraduate students. Our institutions host over 40 externally funded Doctoral Training Centres and Partnerships and are home to over 7000 doctoral researchers.

Of these, 14 are GW4 programmes, and we work with other universities, research institutes, businesses and charities to create a highly skilled workforce for the UK and worldwide. Universities are global endeavours, driving foreign direct investment in research and development that supports local growth, high-skilled job creation and innovation, and promote social good. Our universities' research income budget at the end of 2022 totalled £2.4 billion.

# Our Complementary Strategic Focus

GW4 interventions do not just focus on our areas of collective strength, but also consider how, together, we can best address major national and international policy and strategic priorities.

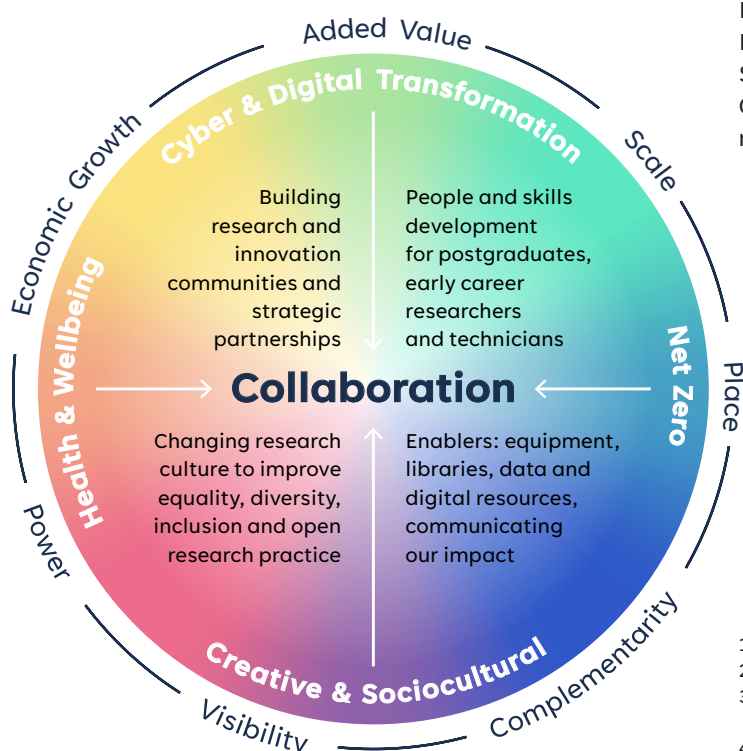
Despite its tradition of innovation and expertise, our region lags behind in productivity. GW4 works with the pan-regional partnerships of the Western Gateway and Great South West to contribute to the economy and address our region's inequalities. The Western Gateway area generates £110 billion of Gross Value Added per year, contributing 6% of UK output. However, improving productivity could add £34 billion to the UK economy by 2030, if half the current productivity gap to the UK average is bridged.<sup>1</sup> Wales has the highest poverty rate among the four nations of the UK, with 24% people living in poverty; by region, only the North East has a higher poverty rate, at 26%.<sup>2</sup> In the South West, serious and severe deprivation is dispersed.<sup>3</sup> The Great South West economy is worth £64.4 billion. If the productivity gap was closed to the UK productivity average, it would be worth £84.1 billion today and £121.7 billion by 2035.<sup>4</sup>

In the next phase of investment, we will create shared research missions to add value in:

- Tackling global challenges through advanced **cyber and digital transformation**
- Effective routes to accelerate the transition to **sustainable Net Zero**
- Capitalising on **creative communities** to foster sociocultural growth
- Advancing **health and wellbeing** research and innovation for all

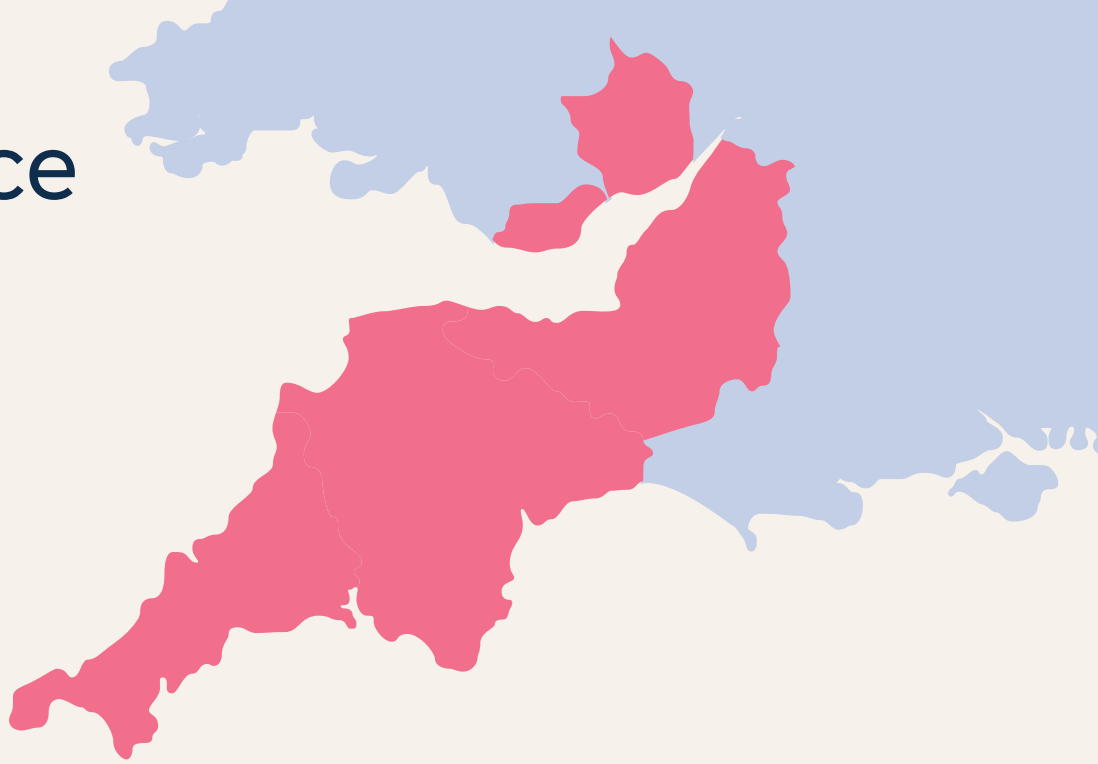
**These priorities relate directly to:**

the 2023 UK Science and Technology Framework to make the UK a science and technology superpower by 2030; Wales innovates: creating a stronger, fairer, green Wales; the UK's 2020 Ten Point Plan for a green industrial revolution – Building a Stronger, Greener Economy; the UN Sustainable Development Goals; UK Research and Innovation, Wellcome and Advanced Research and Invention Agency strategies; the Life Sciences Vision; the NHS Long Term Plan; the UK Government's Levelling Up agenda; and the civic mission of our universities.



1. Western Gateway – Independent Economic Review II.
2. Joseph Rowntree Foundation – Poverty rate by region, 2018-21.
3. Ministry of Housing, Communities & Local Government – The English Indices of Deprivation 2019.
4. Great South West – Securing Our Future.

# Our Place



Our region is recognised for its world-leading research and innovation, but there is also substantial deprivation. The latest South West England and South East Wales Science and Innovation Audit<sup>5</sup> revealed:

- The region is the **second most productive digital economy in the UK**, outside of London; a deep tech powerhouse synonymous with digital innovation. Tech Nation reported £12 billion of turnover in 2020 in digital tech businesses in the South West and Wales.
- Bristol is one of only two areas outside London to have **top-ten clusters** for both creative and high technology sectors, and over 15% of all businesses in Cardiff are in the creative industries sector.
- The region has the **world's first compound semiconductor cluster**. IQE has a 55% global market share in compound semiconductor technology, manufactured at its bases in Cardiff and Newport. The Compound Semiconductor Applications Catapult in Newport has initiated over £100 million in projects.
- We have the **UK's largest aerospace sector and 14 of the 15 largest aerospace companies**. Airbus and GKN have invested \$212 million in composites and advanced materials research and development. The Bath and Bristol Science Park is home to the National Composites Centre Catapult and IAPPS which form part of a world leading cluster in smart and sustainable aviation.<sup>6</sup>
- There is **more expertise in climate and environmental sustainability here than in any other local region worldwide**. Exeter is home to the Met Office and the Joint Centre for Excellence in Environmental Intelligence. The area is rapidly becoming a global leader in environmental technology.<sup>7</sup>
- The **UK's first nuclear power station in a generation** is here, as well as world-leading expertise in energy systems and huge planned investments in **offshore floating wind** in the Celtic Sea.

Our universities, along with Southampton and Surrey, also work together as the SETSquared enterprise partnership. SETSquared is the world's leading business incubator supporting the development of ideas into thriving businesses. Companies supported by SETSquared have contributed £15.7 billion to the UK economy over the last 20 years and created 15,600 jobs.

Despite these strengths, our region faces substantial deprivation challenges. An average of 1.1 million people (19%) in the South West and 700,000 people (22%) in Wales lived in a low-income household between April 2019 and April 2022. In both the South West and Wales, approximately one in three children lived in a low-income household. Poverty, deprivation and hunger have increased following the COVID-19 pandemic and cost-of-living crisis. It is estimated that in September 2022, over half the population of Bath, Bristol, Cardiff and Exeter had to reduce their use of hot water, heating or electricity; over a third cut back on food spending and one in seven missed meals or went without food. Almost one in ten had not been able to pay their household bills. There is much to be done in terms of using our collective strengths to further support regional economic growth, equality and productivity.

5. BEIS – South West England and South East Wales Science and Innovation Audit.

6. Invest Bristol and Bath – South West Aerospace.

7. techSPARK – South West tech sector set to create 125,000 jobs and grow to nearly £20bn.

# Collaborative Research and Innovation Communities

>100

Over 100 research  
communities

750+

Over 750 GW4 academics

Over 400  
non-academic  
partners

400

HIGHEST  
ROI  
TO DATE:  
25:1

For every £1  
GW4 spends on  
collaborative research  
communities,  
GW4 captures over  
£25 in external  
research awards

**£89.4M**

The GW4 Alliance has invested over **£3.5M** in over 100 collaborative research communities, which have generated **£89.4M** in research income from **44 different funders**

Number of papers published/in progress:  
**103 publications**

(papers, books and book chapters)

**103**

Academic partners from over **100 institutions** in **41 countries**



# Our Strategic Priorities

## Tackling global challenges through advanced cyber and digital transformation

Digital transformation represents the convergence of key technologies that are fuelling innovation.

These include the generation, organisation and handling of big data (including Internet of things, blockchain, cloud computing) and its exploitation for automation, insights, and new functionality (including artificial intelligence and machine learning). Together, these developments are accelerating the fourth industrial revolution and enabling cognition to be embedded in machines, products, and services.

Digital transformation also supports research and innovation in health, engineering, and social and physical sciences. It increasingly plays a role in the creative sector and in enabling new understanding of the environment. The disruptive nature of digital transformation is also significant, leading to potential job displacement, cybersecurity and privacy threats, and even subversive influences on culture and democracy. Tackling these challenges is important to social and economic prosperity.

**GW4 is uniquely placed to take a leading role in advancing cyber and digital transformation, from human behaviour to hardware, building on its reputation for strength in these areas. We are recognised by the UK's National Cyber Security Centre (NCSC) as having academic centres of excellence. The region is home to key national activity at the cutting edge of the technological revolution, including GCHQ, the Office for National Statistics (ONS) and CSConnected – the UK's Strength in Places funded semiconductor cluster. The wider compound semiconductor cluster brings together EPSRC-funded academic research centres, a UK Research and Innovation (UKRI) Catapult, and businesses from the complete technology chain. The cluster generates more than £600 million in revenue each year and employs more than 2000 people. No other region in the UK is home to similar nationally important digital-focused activity in areas of such growing significance to UK policy and sovereignty.**

The South West and South Wales host a cluster of defence and security expertise, including the Business Cyber Centre in Corsham, which supports the SME sector in partnership with the Ministry of Defence and University of Bath. Our region is home to 25% of national activity in cyber.

The GW4 universities also play a key role as anchor organisations with significant industry and government collaborations, and collectively represent a critical mass with the track record to match. We have the strengths needed to deliver a step change in research and innovation, including strategic partnership with and academic leadership within the Alan Turing Institute and the PETRAS (Privacy, Ethics, Trust, Reliability, Accessibility and Security) National Centre of Excellence for Internet of Things (IoT) Systems Cybersecurity. Our work goes beyond technical solutions, and includes how humans engage with digital systems, with new cross-disciplinary teams tackling socio-technical challenges. For instance, the ESRC Digital Security by Design Social Science Hub+ (Discribe Hub) addresses human error as a cause of cybersecurity breaches and Bristol is home to The Research Institute for Sociotechnical Cyber Security (RISCS).

**GW4 is uniquely placed to take a leading role in advancing cyber and digital transformation**



## Our Strategic Priorities

**Our capacity to address wider global problems through data, digital and artificial intelligence is reflected in four complementary cross-cutting institutes across the GW4 region**, namely the Bath Institute for Digital Security and Behaviour, the Bristol Jean Golding Institute, the Cardiff Digital Transformation Innovation Institute and the Exeter Institute for Data Science and Artificial Intelligence.

**Through new exascale-enabling technologies embedded in our GW4 Isambard facility, we are leading in key aspects of high-performance computing for the UK – a vital component for digital science and artificial intelligence.** Isambard 3 will be one of the world's most comprehensive and diverse multi-architecture comparison systems and one of the top 500 supercomputers in the world. This wider environment provides strong foundations for skills development and training. GW4 is home to multiple UKRI centres for doctoral training in this area, including Environmental Intelligence: Data Science and AI for Sustainable Futures; Accountable, Responsible and Transparent AI; and Interactive Artificial Intelligence.

The innovation agenda and digital transformation go hand in hand. Effective routes to impact involve co-creation and engagement, with significant collaborative projects already pushing the boundaries in different domains. The National Research Centre on Privacy, Harm Reduction and Adversarial Influence Online – the Strategic Priorities Funded UKRI Centre for Protecting Citizens Online – is anchored in GW4. Equally, we are engaging with SMEs through a world-first partnership model, the Cyber Innovation Hub, bringing together major multi-national companies in the region, such as CGI, Thales, and Airbus, with a buoyant SME community for new enterprise creation. We continue to build on these collaborations to accelerate understanding and address key cross-sector challenges in cyber and digital.



**12 GW4  
DTEs**

**£228M**

Total investment across  
GW4 Doctoral Training Entities

### GW4 Isambard

## GW4 Isambard is the world's first Arm-based supercomputer to go into production use.

Since 2016, there has been a total investment in GW4 Isambard of over £17 million from UK Research and Innovation. Through this investment, Isambard is an award winning, internationally leading service, with over 800 registered users from across the alliance and around the world, including industry partners.

Isambard 2 expanded the supercomputer facility to offer one of the largest Arm systems in the world and supported the Met Office's efforts in developing more accurate weather forecasting and more detailed climate prediction modelling.

Isambard 3 will utilise a new NVIDIA Grace-based Arm production system of at least 55,000 cores to enable at-scale experiments and meet projected demand over the next four years, making it one of the top 500 supercomputers in the world.

Isambard has been used to investigate next-generation healthcare and develop innovations in medicine. GW4 researchers are using it for scientific research, running molecular level simulations to understand the mechanisms behind Parkinson's disease, and to find ways to treat osteoporosis. Research conducted on Isambard was also vital in the fight against COVID-19, contributing to the design of the vaccines by modelling the virus and how vaccines might work against it.

Isambard 3 will provide an expanded and upgraded multi architecture comparison system to enable scientifically rigorous performance comparisons and benchmarking across diverse computer architectures, and support training courses and hackathons for these new architectures.

Employing the latest sustainability techniques and best practice, Isambard 3 will also be one of the most energy-efficient, lowest carbon emission supercomputers in the world, reusing waste energy to heat to surrounding buildings.

## Research conducted on Isambard was also vital in the fight against COVID-19



## Effective routes to accelerate the transition to sustainable Net Zero

Our world faces significant challenges in moving to an equitable, sustainable Net Zero, and leadership within Higher Education is urgently needed.

Our universities have all declared a climate emergency, we have all committed to fully decarbonising our operations within ambitious timeframes and understand the need to accelerate the pace of transition. **As a regional Alliance, we are perfectly placed to accelerate the transition to a sustainable Net Zero.** The South West has one of the highest concentrations of businesses in the Net Zero economy in the UK, and the Net Zero economy in Wales is over three times more productive than the regional average.<sup>9</sup>

Our region also has a significant task at hand: between 2006-2014, households in the South West had the highest carbon footprint (tons of CO<sup>2</sup>-equivalent) per capita in the UK, and the highest in Europe excluding Luxembourg, driven by our shelter and mobility emissions.<sup>9</sup> The effects of climate change are already being felt by marginalised urban, rural and coastal communities, which are particularly vulnerable to impacts such as flooding, heat stress, coastal erosion and a loss of biodiversity.

Our areas of national and international expertise lend themselves to **whole systems and interdisciplinary approaches and established paths to ensure knowledge exchange and impact.** Collectively we have critical mass in climate modelling, transport infrastructure and mobility, advanced engineering, data and digital innovation, circular economy, integrated energy systems (including nuclear, hydrogen and future fuels), water systems, health impacts, environmental

intelligence, behaviour change, land use and food research, technology and nature-based carbon capture, and just transitions.

**Our innovation landscape supports the transformation towards sustainable mobility in hard-to-decarbonise industries such as aviation and maritime.** Our region is home to the largest aerospace sector in the UK, benefitting from substantial research and development investment to drive research and innovation and is the largest element of global export from Wales. Our innovative facilities such as the National Composites Centre, IAAPS and the Exeter Centre for Future Clean Mobility are leading the way in unlocking green and inclusive growth opportunities.

**Our region is home to more climate expertise than any other area worldwide.**

5. BEIS – South West England and South East Wales Science and Innovation Audit.

8. Energy & Climate Intelligence Unit – Mapping The Net Zero Economy.

9. Environmental Research Letters – Mapping the carbon footprint of EU regions.



## Our Strategic Priorities

We have the **strategic partnerships and ambition to tackle the urgent challenges the UK must address in order to decarbonise and drive economic growth.** Working with industry, local authorities and community stakeholders in our region, we can identify cross-sector opportunities to enable a green revolution. Through our strategic partnerships with Western Gateway and Great South West, we are pursuing research and innovation to achieve a Net Zero economy faster through the power of hydrogen. Working with Western Gateway, we have delivered a vision for the area to become a hydrogen ecosystem and developed an interactive map showing the scale of regional hydrogen activity.

In the first two years since creating a GW4 Climate community, we have amassed a coalition of 450 researchers, local authorities, businesses, and community organisations working together to build our unique approach to sustainable Net Zero. We place climate action in the wider contexts of society, economy and environment, focusing on whole-systems approaches that take into account the need to both mitigate and adapt to a changing climate. Working

together, and with local and regional stakeholders, we **share best practice and innovation and collectively lobby for positive change and social transformation.**

We champion co-created solutions to local, regional, national and international challenges. In addition to supporting technological innovation, we work with trailblazer communities and through 'what works' living labs, deployed in partnership and at scale, building fairer and greener economies that recognise the need to reduce demand and consumption and embrace a circular economy through recycling, repairing and reusing. Our researchers continue to explore effective and creative ways to strengthen climate dialogue and democratic governance, collaborating with communities on cultural responses to the green transition and fair, inclusive and better living. We help build new narratives in climate action and environmental regulation, harnessing our expertise in data and digitalisation, health and wellbeing and creative communication to develop public and private sector policy for clarity, certainty, consistency and continuity in the accelerated transition.



## Capitalising on creative communities to foster sociocultural growth

UK Government recognises the digital and creative industries as a major success story, increasing innovation and growth.

The sector grew more than twice as fast as the rest of the UK economy between 2011 and 2019 and contributed £115.9 billion in 2019.<sup>10</sup> Wales and the South West are an established powerhouse in cultural, digital and creative industries, employing 110,000 people across almost 14,000 businesses.

The sector is made up of nine sub-sectors, with the region having significant strengths in architecture, film and TV, IT software and computer services, journalism and publishing. The academic expertise to support this spans arts and humanities, social sciences, law, engineering and computing. Our creative communities link across our strategic priorities. For example, architectural designs influence human health and wellbeing; testing and modelling the human and ethical impact of cyber and AI; and harnessing new creative production technologies support the decarbonisation of the entertainment industry.

GW4 is ideally positioned to consolidate and catalyse innovation in the creative industries. Our institutions are home to multi-million-pound, multidisciplinary investments. These include Bristol and Bath Creative R&D, Clwstwr, and two Strength in Places Fund awards at Media.Cymru and MyWorld, where GW4 institutions are already working with the region's other universities. Current partners in this work include Aardman, BBC, BT, Netflix, Ffilm Cymru, Silverback Films and numerous SMEs and micro-organisations that typify the sector. Our complementary investments, and strengths in

research and teaching, enable us to work across sectors to build a critical mass in the region. This should be leveraged to create a shared regional infrastructure that will translate world-leading research into job creation, levelling up, civic identity, cultural vitality and sociocultural growth.

This sector needs a wide range of traditional creative skills, digital skills, and expertise in technology for sustainability and growth. However, industry recognises that a skills and talent gap will be a major blockage to the regional growth potential in creative and cultural industries. Our established excellence in doctoral training means we are well placed to work with industry, local government, Further Education colleges and universities in the wider region to build capacity in creative skills that can create future-proof jobs and support creativity in other sectors. This approach supports the continued socioeconomic growth of the digital and creative industries through upskilling and new jobs creation, promoting economic recovery and the creative and cultural experiences that are necessary for the healthy functioning and enrichment of society.



... translate world-leading research into job creation, levelling up, civic identity, cultural vitality and sociocultural growth.

10. DCMS – Economic Estimates 2019 (provisional): Gross Value Added.

## National Trust Partnership

Our partnership with the National Trust supports research, innovation and creative collaborations across key areas where we share ambitious strategic priorities. These priorities include sustainability, creative industries and health and wellbeing.

The regional partnership is the first of its kind for the National Trust and builds on previous strategic investment from GW4. The National Trust is the biggest conservation charity in Europe, with more than 780 miles of coastline and 500 historic properties, gardens and nature reserves and 5.37 million members.

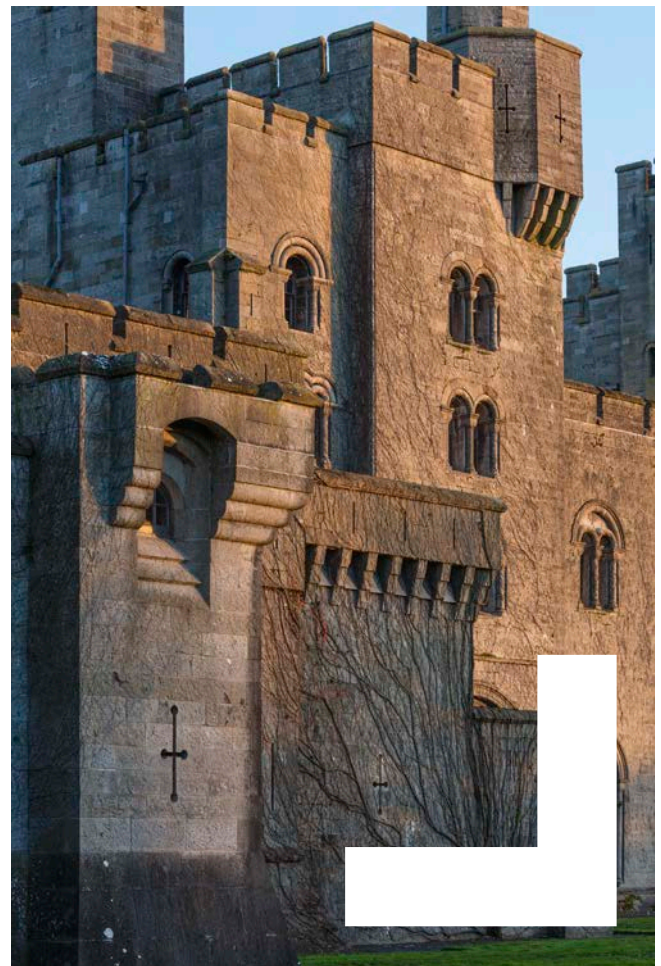
We are working across four National Trust properties in our region to explore the theme of Colonial Connections. Together, we are advancing future understanding of collections and properties from different perspectives and consider how conversations offer a route to explore the value and significance of places for different publics.

Within the theme of Creative Industries and Audience Experience, we are supporting the development of a new immersive experience for visitors to the Bath Assembly Rooms. Using new digital technologies, this project will bring alive the sound and feel of 18th Century Bath's social and cultural life to evoke the history of the Assembly Rooms.

Our collaborative research is advancing understandings of nature, culture and heritage, generating the evidence we need to meet some of the most challenging environmental and social issues of our time. Together

we are developing new approaches to conservation and curation, ensuring the long-term sustainability and relevance of National Trust places and collections and supporting the sociocultural economy.

**With more than  
780 miles of coastline  
and 500 historic  
properties, gardens  
and nature reserves and  
5.37 million members.**



© National Trust Images/James Dobson

# Advancing health and wellbeing research and innovation for all

## The demands facing our health and social care services are changing.

The UK has an ageing population, with the Great South West having a much higher proportion of older people than the UK average: 24.4% are over 65.<sup>11</sup> The number of people over 85 in England has nearly tripled since the 1970s<sup>12</sup>, placing new demands on health and social care services. As in the rest of the UK, life expectancy the South West and South Wales varies by gender, socioeconomic factors and geography. In Wales, men in the most disadvantaged neighbourhoods die on average 7.5 years earlier than men in the most affluent areas, and women can expect to have on average 17 fewer years in good health if living in the most disadvantaged areas.<sup>13</sup> **Working together provides an opportunity to address the health inequalities across our region which has coastal, rural and city poverty and socioeconomic inequality.**

We bring together 3 Medical Schools, 2 Dental Schools, a Veterinary School and 5 University NHS Health Trusts. We further collaborate with the NHS through our National Institute for Health and Care Research (NIHR) Biomedical Research Centres in Bristol and Exeter, the Centre for Trials Research and Clinical Innovation Hub in Cardiff, the Centre for Healthcare Innovation and Improvement in Bath, the South West Clinical Research Network, the NIHR Applied Research Collaborations and Schools, UK Health Security Agency and Public Health Wales. GW4 represents the South West in national discussions between the life science clusters.

## The life sciences industry generated £2.62 billion in turnover in Wales and £2.85 billion in the South West.

Our universities have a growing portfolio of life sciences spinouts and active partnerships with globally leading pharmaceutical and biotechnology companies. Pharmaceuticals are in the top five products exported from Wales, with an annual value of £1.1 billion.<sup>14</sup> In a recent report on UK life sciences spinouts, the University of Bristol was ranked joint 5th with Edinburgh, behind only Oxford, Cambridge, UCL and Imperial.<sup>15</sup> There are 31 ambitious businesses that have been ‘spun out’ of academic institutions. They represent 6% of the city’s high-growth companies, twice as many as the wider UK, and include engineering biology spin outs to help deliver new therapies, vaccines and diagnostics and novel advanced therapies. An Office for Life Sciences sector analysis for 2021 showed that the life sciences industry generated £2.62 billion in turnover in Wales and £2.85 billion in the South West.<sup>16</sup>

Our universities have internationally leading strength in population health, supported by large studies such as the Avon Longitudinal Study of Parents and Children, PROTECT, School Health Research Network, HealthWise Wales and DECIPHer. This means we can help identify what makes people healthy or unhealthy and use this to design better health policies and interventions. **We are especially well placed to trial new approaches to prevent chronic diseases and long-term illnesses associated with ageing and to support research in neuroscience and mental health.** Mental health research is an area of complementary strength between the universities, supported by cutting-edge human imaging facilities at CUBRIC and PETIC in Cardiff and the Mirielle Gillings Institute in Exeter. This is a critical societal challenge, with 1 in 4 people experiencing a mental health problem each year.

11. Great South West – Securing Our Future.

12. PHE – Health Profile for England: 2018.

13. People’s Health Profile – The National Picture: Wales.

14. Business & Industry – A time and place to be bold: why Wales is the place of choice for life science innovation.

15. Beahurst – Top UK Universities for Life Sciences Spinouts.

16. BEIS, HSC and OLS – Bioscience and health technology sector statistics 2021.

## Our Strategic Priorities

GW4 universities also have **significant strengths in digital health and clinical informatics, including smart technologies, and the digitisation of health services and health data to relieve current pressures.** We are home to one of the EPSRC Digital Health Hubs and our institutions are leading the development of regional secure patient data environments. This allows access to linked healthcare records on a large scale, which is a key factor in addressing health inequalities.

Building on our successful **GW4 Climate and GW4 Antimicrobial Resistance (AMR) Alliances, we take a One Health approach to combatting these two complex global health emergencies and the nexus between them.** This approach applies both in the UK, and in low and middle income countries where the impacts of climate change and AMR will be most acutely borne. AMR, which gives rise to drug resistant infections, directly cause 1.27 million deaths and contribute to ~4.95 million deaths globally every

year. GW4 is well placed to participate in this 'call to arms' with the Exeter Medical Research Council Centre for Medical Mycology, the UK Health Security Agency Bristol Mycology Reference Laboratory and the Cardiff-led UK Research and Innovation Centre for Doctoral Training on the Environmental Drivers of, and Solutions to, Zoonoses. Our AMR Alliance connects 300 researchers, at all career stages, across human, animal, plant and environmental health research.

GW4 will support work between our universities, the NHS, policy makers and industrial partners on ways to **improve population and mental health, reduce health inequalities and deal with the growing global threats to health posed by climate change and AMR – in doing so, supporting the growth of the South West and Wales life science clusters.**

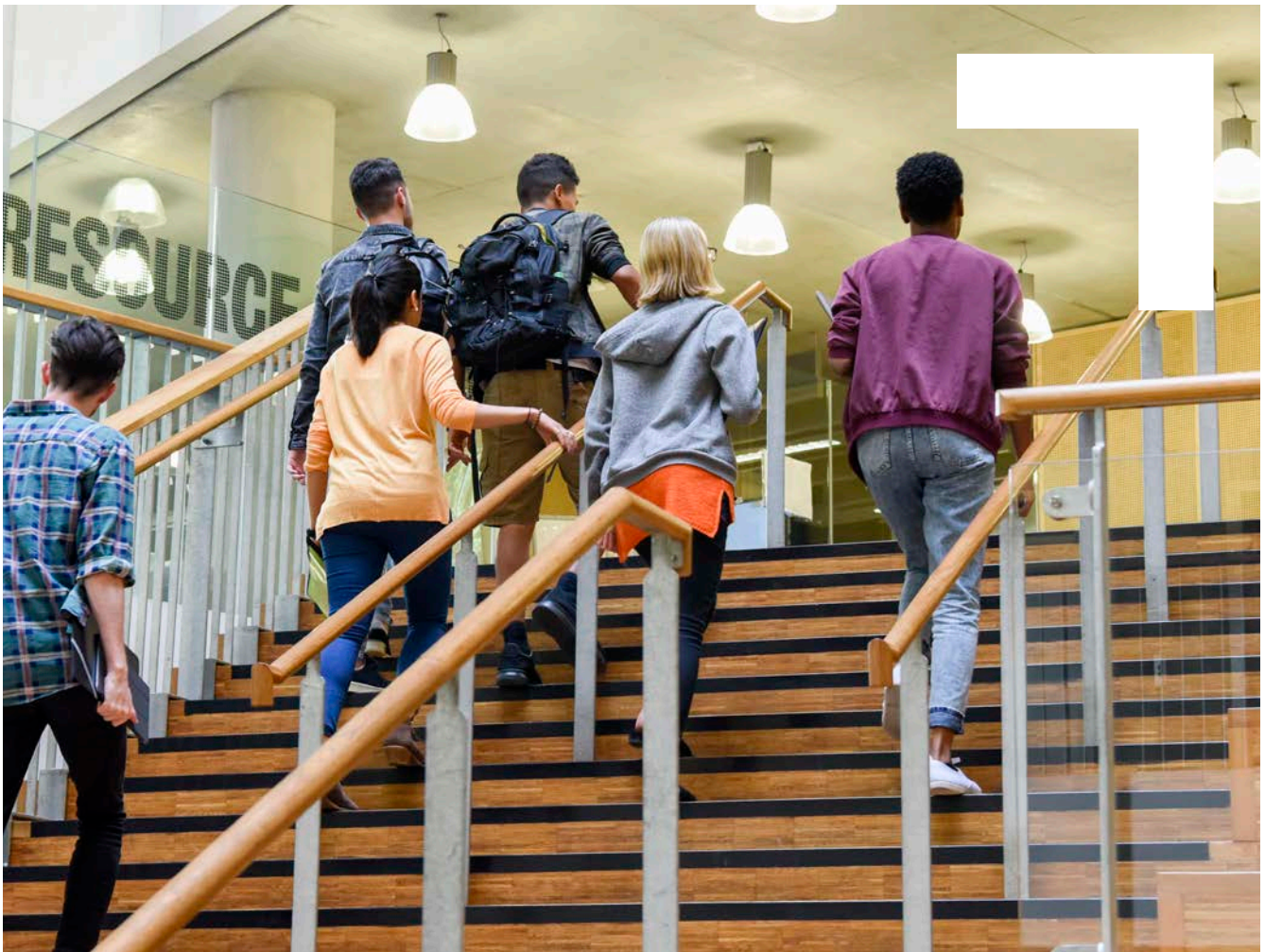




# Our Success

Successful delivery of our collective mission over the next five years means we will have:

- Delivered impact at scale across our priority areas, bringing together thought leaders, external partners and teams of teams in new ways to raise our visibility;
- Enabled new internal and external collaborations in line with our strategic priorities, answering societal and governmental challenges, supporting economic growth, and increasing our international impact;
- Championed the professional development and multi-disciplinarity of early and mid-career researchers and technicians and supported doctoral training, helping to build a highly skilled workforce, improved research culture, and strengthened the equality, diversity and inclusiveness in higher education;
- Provided more shared cutting-edge equipment, infrastructure and capabilities to support our universities and external partners, ensuring our region grows and is recognised for its research and innovation excellence.



# Research Excellence Framework (REF)

# GPA

All 4 institutions are in the **top 20%** of UK institutions in terms of overall **Grade Point average (GPA)**

# Research Power

All 4 institutions are in the **top 20%** of UK institutions in terms of overall research power

# 383

**Impact Case studies** submitted by GW4, with every GW4 institution submitting above the UK average

# TOP TEN

The GW4 institutions have representation across 33 of the 34 Units of Assessment in REF2021. **In 28 of the 33 at least one GW4 institution is the top 10 UK institutions ranked by overall GPA.**

# GWA



# GW4

# GW4

Greater than the sum of our parts

For more information about GW4

visit our website: [gw4.ac.uk](http://gw4.ac.uk)

follow us: @GW4Alliance

find us on LinkedIn: GW4 Alliance

