



University of Brighton



FOREWORD



I am delighted to share with you the University of Brighton's Research and Enterprise Strategic Plan 2017–2021. It has been developed with extensive input from staff and represents a collective endeavour, of which I am extremely proud. It is intended to provide a framework for the actions we take, and the decisions we make, to ensure that research and enterprise contribute fully to 'Practical Wisdom', the university's strategy.

Delivery of this plan will increase our research and enterprise capacity in priority areas, enhance the quality and leadership of our research, ensure interdisciplinary contributions will result in major advances and maximise the impact of our activities. The Brighton Futures will be the focus of our research and enterprise. This new thematic agenda will galvanise existing and emerging research avenues across the university and will add value through the establishment of new collaborations, both within and outside the institution, that will deliver significant benefits to local, regional, national and international communities.

I look forward to us working together to build on the university's already well-established reputation and to ensure that this plan enables university staff and our partners to fulfil their aspirations to improve people's lives and environments through research and enterprise.

Professor Taraneh Dean
Pro Vice Chancellor, Research and Enterprise

INTRODUCTION

The university strategy, launched in October 2016, states that our mission is: to realise potential and shape futures through high-quality, practice-based learning, teaching, research and enterprise.

Research and enterprise are interlinked and, together, they drive the university’s contribution to the broader knowledge economy. Research focuses on generating knowledge that leads to new insights that are shared; enterprise covers a diverse portfolio of activities that draw on and, in turn, enrich our research. Enterprise activities span collaborations with companies and public sector agencies, knowledge transfer partnerships, consultancy, commercialisation of research, community engagement, hiring out our facilities and short courses for workforce development. These activities build on our research and teaching strengths and provide a variety of mechanisms to deliver benefits and impact to the world outside the university.

We have a sector-leading reputation for delivering significant social, cultural and economic impact from our research, for the co-creation of distinctive research and educational programmes and for establishing partnerships that provide an enduring benefit to communities. To deliver the university mission, we will build on these strengths and integrate our research and enterprise expertise, so that our activities and impact are productive and mutually reinforcing. The last Research Excellence Framework (REF) in 2014 ranked us 27 out of 128 universities for our world-leading research impact. We will act as a collective body, each contributing to one or more aspects of the research and enterprise agenda, playing to our strengths and identifying where excellence in teaching, research and enterprise can be combined.

We will continue to raise the quality of our research and to exert greater influence on research and enterprise agendas. This includes developing strong and sustainable partnerships that benefit our local, regional, national and international communities, allowing us to maximise our contribution to addressing the future challenges that face us all.

This Research and Enterprise Strategic Plan 2017–2021 sets ambitious goals for research and enterprise and identifies a framework of corresponding strategic objectives informed by extensive evidence gathering and by consultation with key internal and external stakeholders. This consultation has shaped a new thematic agenda – the Brighton Futures. The Brighton Futures are at the heart of this Strategic Plan and will promote our identity as a locally-embedded, globally-influential university. The consultation has also established a set of principles to guide our planning and investment decisions for research and enterprise.

ENTERPRISE ACTIVITY

Academic knowledge generated through research and teaching



KNOWLEDGE EXCHANGE

- Collaborative research and initiatives with businesses, the public sector and community organisations
- Consultancy and problem-solving solutions
- Commissioned research
- Knowledge transfer partnerships
- Expert leadership and advisory roles on policy, governance and investment decisions of city, regional and national partnerships

WORKFORCE DEVELOPMENT

- Mainstream professional training provision for large regional and national employers
- Continuing professional development programmes, in-service upskilling and short courses
- Internships, work placements and staff exchanges
- Collaborative curriculum development
- Degree apprenticeships

DRIVING ECONOMIC AND SOCIAL SUCCESS

- Generating new 'spin-outs' and 'spin-ins', including social enterprises
- Developing new intellectual property and licensing arrangements
- Community projects and knowledge diffusion
- Business incubation and development services
- Providing access to specialist facilities and equipment



Impact of research and teaching

PRINCIPLES

- We undertake high-quality research and enterprise that is disseminated widely to build our local, regional, national and international reputation;
- Through partnerships, we engage in the co-production of research and enterprise that addresses strategically important questions, has the potential to generate impact and is of value to society;
- Research and enterprise underpin our teaching, and our students engage with our research and enterprise activities;
- We value the expertise of our staff and the contributions of our students and support them in enhancing their research and enterprise skills;
- Our research and enterprise infrastructure and environment support sustainable activity and the achievement of our strategic goals;
- Our structures and decision-making processes are efficient, transparent and meet the highest standards of integrity and we are accountable for the return on investments made.

THE BRIGHTON FUTURES

Brighton's five research and enterprise Futures will be the focus of the university's globally-influential research and enterprise activities. Staff from a broad range of disciplines will generate new knowledge, theoretical insights, creative ideas and practical solutions that improve the lives and experiences of people and environments in the twenty-first century. The five Futures are based on our principles and characterise the type of research and enterprise that we currently do and plan to expand by 2021. They also highlight our distinctive approach to research and enterprise that involves co-developing our work with partners to ensure that our thinking, analyses and findings challenge accepted ideas and bring unexpected and novel solutions to practical problems. The Brighton Futures will help in delivering the university's strategic goals for research and enterprise. They will influence our investments in staff development, new projects and the commercialisation of novel ideas.

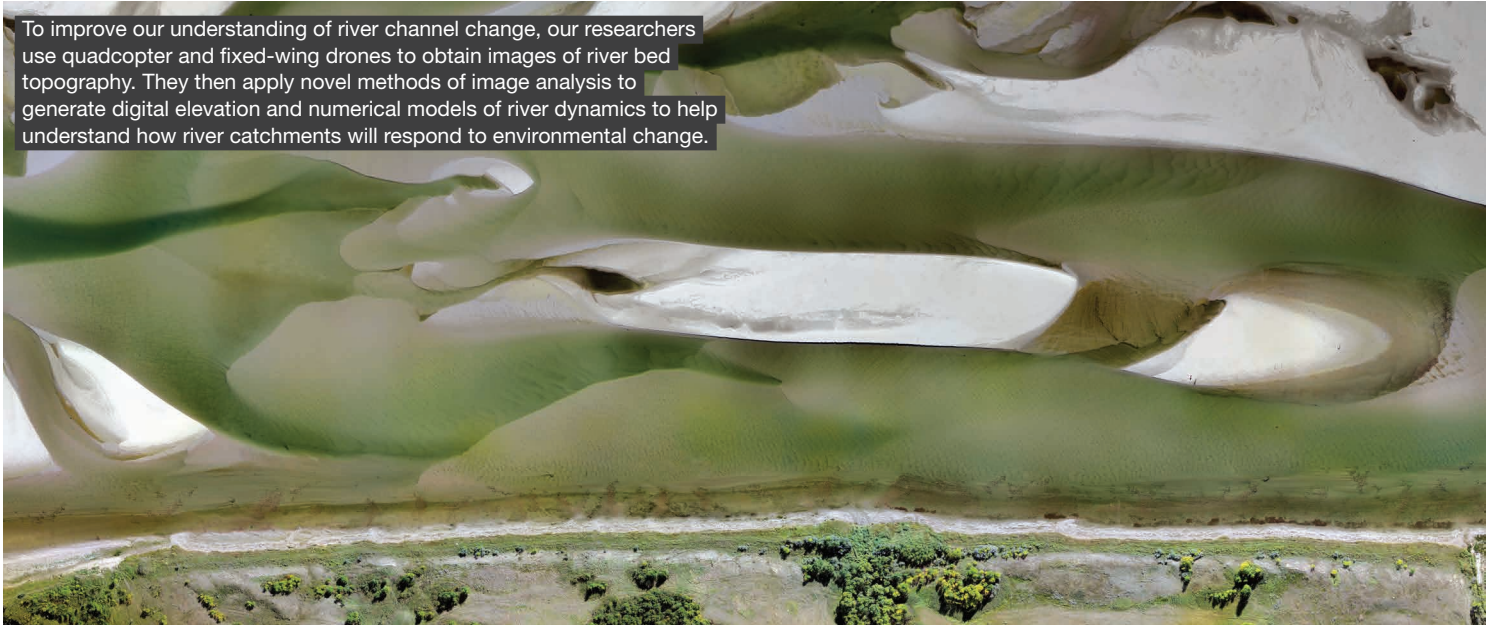
We will invest in new Centres of Excellence for Research and Enterprise that will reflect the Brighton Futures. The new Centres will support innovative activities that challenge disciplinary boundaries by integrating interdisciplinary research across the five Futures. The Brighton Futures and our new Centres will ensure we coordinate research and enterprise systematically. They will allow us to integrate research and teaching, work closely with our partners and create valuable knowledge that impacts a wide range of research users. Here we provide a description of each Future and some examples of strategic investments in research and enterprise.

CREATIVE FUTURES

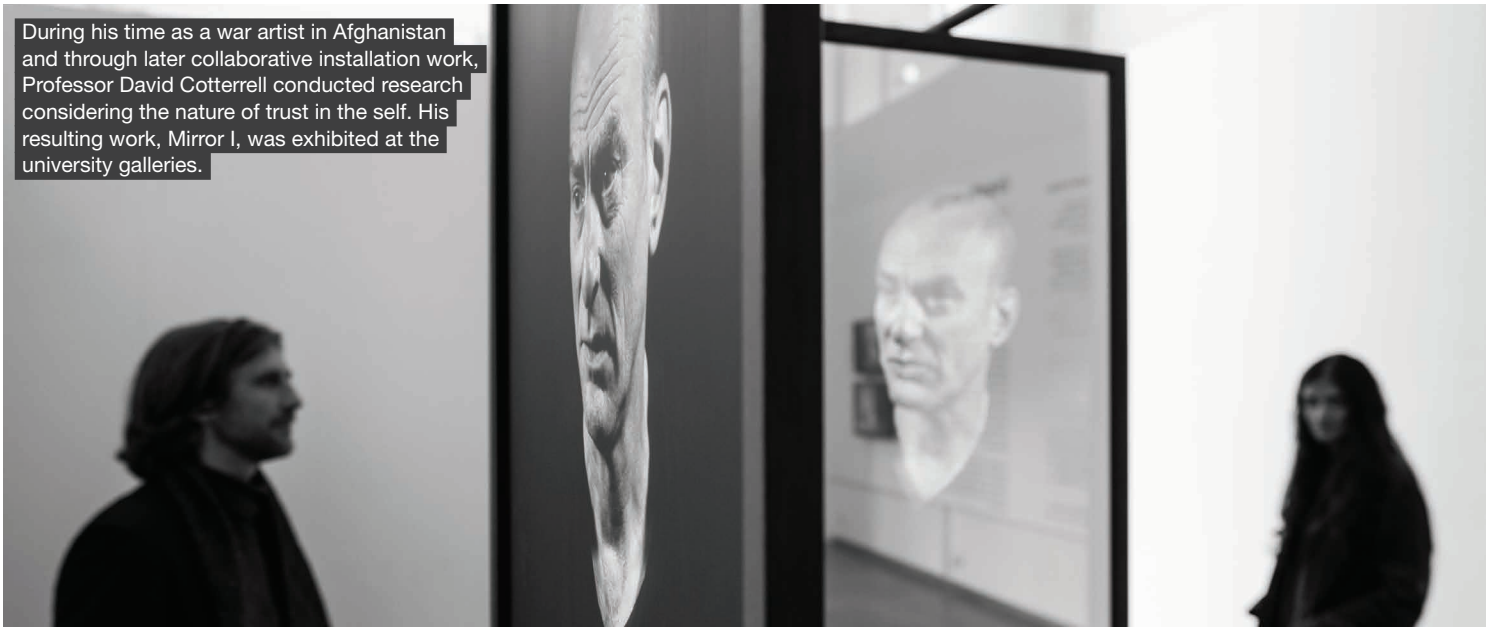
Brighton researchers are a creative community.

Across the arts and humanities, physical, natural and social sciences, we work with creative practices and methodologies to envision, design, reconsider and transform everyday activities, digital media cultures, complex material objects and advanced technologies.

We will nurture and celebrate our creativity so that the ideas generated by research combine with our enterprise to advance fundamental science, challenge cultural and social discourses, and create new world-leading contemporary arts practice.



To improve our understanding of river channel change, our researchers use quadcopter and fixed-wing drones to obtain images of river bed topography. They then apply novel methods of image analysis to generate digital elevation and numerical models of river dynamics to help understand how river catchments will respond to environmental change.



During his time as a war artist in Afghanistan and through later collaborative installation work, Professor David Cotterrell conducted research considering the nature of trust in the self. His resulting work, *Mirror I*, was exhibited at the university galleries.



We look for creative, progressive solutions for challenges facing society. Using various sports, the Football for Peace programme promotes conflict resolution and peaceful co-existence in divided societies. With over 8,000 participants and significant international presence, the programme has promoted intercultural understanding, changed policies of sporting organisations and inspired peace ambassadors.

RADICAL FUTURES

Disruptive ideas, open debate and progressive thinking based on multi-disciplinary research are core to Brighton's radical research and enterprise. Researchers in arts, humanities and social sciences supported by our award-winning Community University Partnership Programme (CUPP) will reveal and address inequalities and social injustices by linking research to acts of political, artistic and spatial resistance.

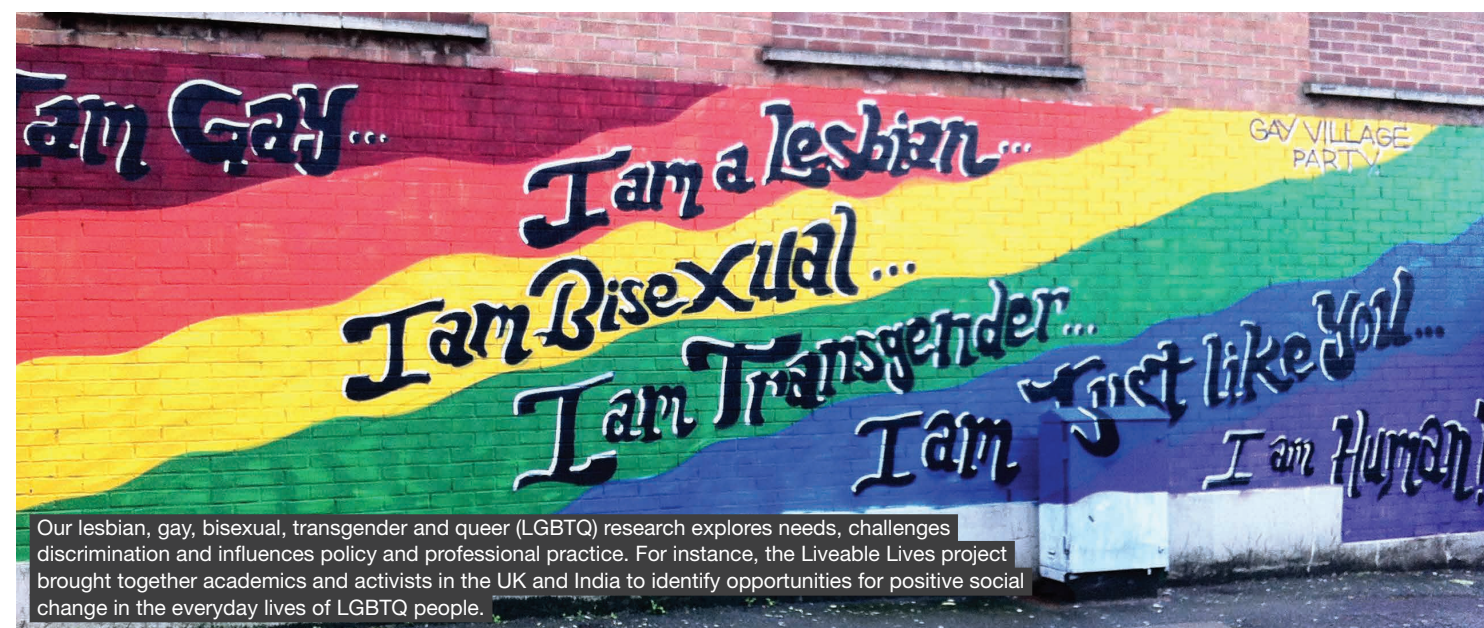
We will invest in supporting the disruptive thinking of our scientists to develop new biomedical interventions and change how key areas of research in engineering are conducted.

Radical Futures research will change the lives of people around the world by developing new knowledge of the natural and built environment, exposing the perpetrators of injustices and violence, and challenging governments that fail to address the inequitable distribution of social, educational, cultural and natural resources.



Our expertise in critical and analytical disciplines leads to rigorous intervention in the public arena, extending the practice of research and philosophical debate beyond academic boundaries and making the university a forum for influential contemporary dialogue.

Working closely with international partners from different academic disciplines and community sectors, university researchers are co-working with young people affected by recurrent drought in sub-Saharan Africa. Knowledge on the physical and mental impacts of drought on young people and vulnerable communities will help build resilience to future climate change.



Our lesbian, gay, bisexual, transgender and queer (LGBTQ) research explores needs, challenges discrimination and influences policy and professional practice. For instance, the Liveable Lives project brought together academics and activists in the UK and India to identify opportunities for positive social change in the everyday lives of LGBTQ people.

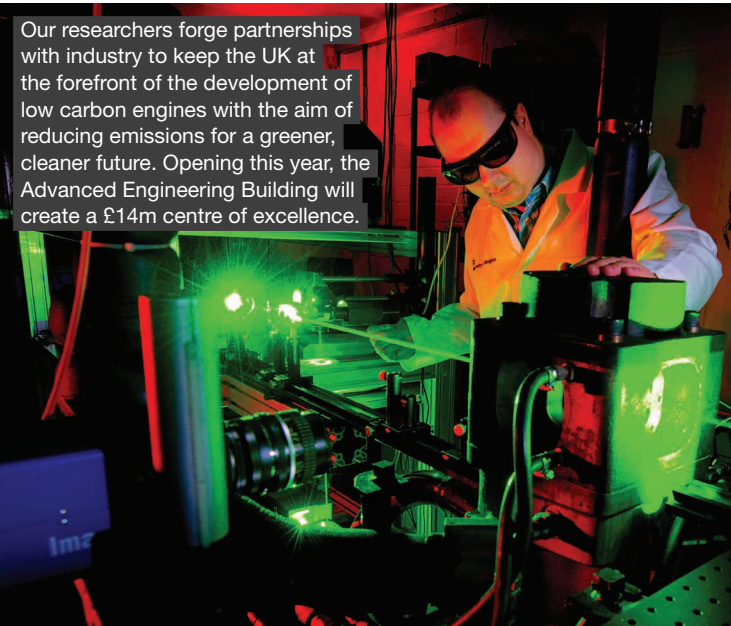
RESPONSIBLE FUTURES

A long-standing feature of research at Brighton has involved identifying how technology, ideas, innovation and organisational change in a range of social, business, educational and creative contexts can be managed better and designed to contribute to economic growth, improved environments and a more inclusive society.

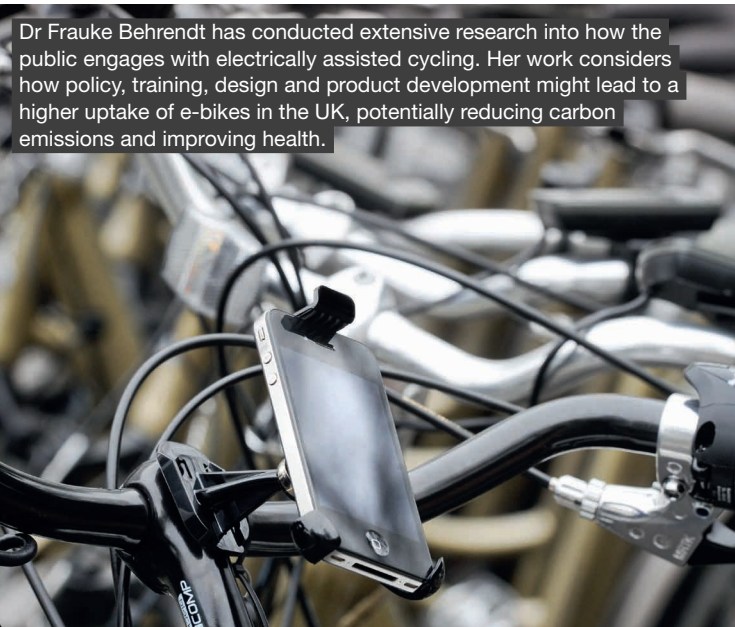
Our future research investments will aim to create knowledge and interventions that change political, scientific, artistic, education, legal and business cultures. Our researchers will also generate new ideas for managing responsible change in policy, business and the voluntary sector. Responsible Futures research will contribute to the creation of a more just and environmentally sustainable society.



Our Waste House is Europe's first permanent public building made almost entirely from discarded material. It is a living laboratory for ecological architectural design and has an A* energy-efficient rating. Brighton & Hove City Council has incorporated research resulting from the build into its award-winning sustainable planning policy.



Our researchers forge partnerships with industry to keep the UK at the forefront of the development of low carbon engines with the aim of reducing emissions for a greener, cleaner future. Opening this year, the Advanced Engineering Building will create a £14m centre of excellence.



Dr Frauke Behrendt has conducted extensive research into how the public engages with electrically assisted cycling. Her work considers how policy, training, design and product development might lead to a higher uptake of e-bikes in the UK, potentially reducing carbon emissions and improving health.



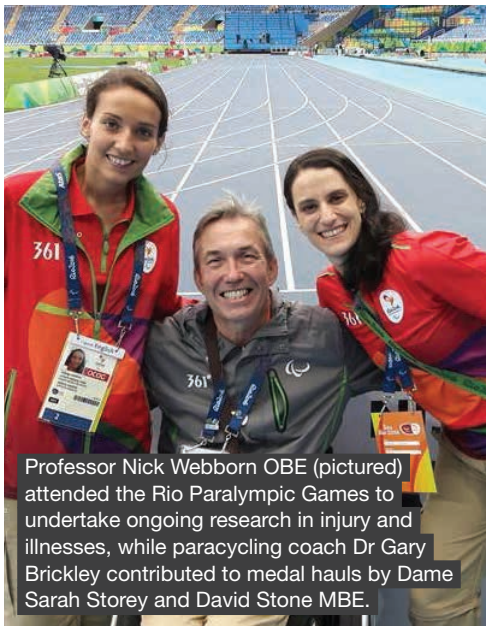
Our Green Growth Platform offers business and innovation support to green companies. Support with branding, strategy, innovation and funding applications helped Nafici Environmental Research (pictured) develop and commercialise a process for producing paper pulp from waste straw.



Our researchers explore mentoring designed to enhance teachers' professional learning, development and wellbeing at home and abroad.



Research by Professor Peter Squires has directly influenced legislation and policing innovations to tackle gun-related violence and gun control. © Sussex Police.



Professor Nick Webb OBE (pictured) attended the Rio Paralympic Games to undertake ongoing research in injury and illnesses, while paracycling coach Dr Gary Brickley contributed to medal hauls by Dame Sarah Storey and David Stone MBE.

HEALTHY FUTURES

Healthy Futures at Brighton integrates leading interdisciplinary research in bio-medical sciences, bio-ethics, regenerative medicine, sport science, health and social care professions, medical humanities, health informatics and mental health.

Researchers generate new knowledge on how people's health is determined by our global metabolism, all our proteins and all our genes. Work in this area is known as 'omics' and includes metabolomics, proteomics and genomics.

Clinicians and scientists work together to optimise medicines-related clinical practice, analyse bacterial viruses and transform how diseases are treated. We will continue to support our extensive collaborations with our partners in the health and social care sectors to enhance our established reputation for delivering practical solutions.

Our researchers will work with service users to co-produce research that improves the care of adolescents and adults by developing services that can be customised to take account of socio-economic status.



Cells cultured from the human gut are selectively stained to show major components of the cell. Nuclei, which contain the genetic information are stained blue/purple, while the internal support structure of the cell – the cytoskeleton – is stained red. This approach enables our researchers to understand the effects of various disease treatments on these cells.



As part of international consortia, our researchers have developed nanostructured adsorbent and smart polymer technologies. These biomaterials remove toxins and inflammatory products associated with the development of life-threatening infection, disease and organ failure. Novel, cost-effective solutions have significant clinical impact; improving survival rates and enhancing quality of life.



Our researchers generate new thinking about mental health issues and influence practice and policy. Dr Matt Adams focuses on the social and psychological value of experiences of nature, in the context of wellbeing, mental health and sustainability and has also published his own monograph, *Ecological Crisis, Sustainability & the Psychosocial Subject: Beyond Behaviour Change*.



Alice Fox, delivers participatory arts projects and staff training for institutions such as The British Council, Tate Modern and The National Gallery. Her work has changed the way inclusive arts is practised nationally and internationally by government-funded bodies, non-governmental organisations, museums, education, arts and community organisations.

CONNECTED

FUTURES

Connected Futures research focuses on the rapid contemporary changes in the interactions between people, material objects and digital media worlds.

Our research at the interface between the arts, humanities, social and computing sciences will integrate new digital imaging techniques, artificial intelligence, computational modelling and security engineering to enhance and protect the information infrastructures that underpin our economy and society.

Investment will enable our Connected Futures researchers to use innovative methods that build trust so that new understandings of the relationships between individuals, communities, businesses and non-profit organisations will ensure people benefit from our research and innovation.



Our research on digital technologies and participation has had a major impact on community development. Nick Gant's development of Community 21 has helped marginalised groups and communities to co-produce digital tools which support inclusive and sustainable community development.



The Digital Catapult Centre Brighton is a vibrant technology and innovation hub, connecting university research, people and businesses to transform ideas into new digital products and services, generating economic growth and demonstrating impact.



We explore how individuals and communities connect and interact. Professor Howard Rush's research into humanitarian assistance has influenced policy and promoted responsible, sustainable innovation in support of affected communities.



Professor Marie-Bénédicte Dembour has advocated for migrants' rights extensively and published an award-winning monograph, *When Humans Become Migrants*.

INVESTMENT IN RESEARCH FUTURES

We will support our Research Futures by making strategic investments in staff, estates, events and equipment. Each year we will invest in researcher development including sabbaticals and support for early career researchers. The Creative Research Methods and Psychology Laboratories will be expanded, offering spaces where staff and students meet to conduct research, using state-of-the-art visual, digital and audio recording equipment. We will continue to increase the number of events held in our theatre and galleries which are an essential part of Brighton's cultural quarter and leading spaces for the visual and performing arts in the city. We will develop a greater international role for our Community University Partnership Programme (CUPP) whilst maintaining its connectivity and embeddedness with local communities.

Our new facilities will include £1.2 million 'omics' laboratories on our Brighton and Eastbourne campuses that will allow researchers to apply 'omics' approaches to understand complex biological systems. We will continue to support commercialisation and business collaborations for the development of pioneering health technologies that will build on our previous work with GlaxoSmithKline plc. The heart of our extensive planned campus developments at Moulsecoomb will include a satellite Digital Catapult allowing high-growth Small to Medium Enterprises (SMEs) to co-create digitally based solutions to drive innovation across all industries. The opening of a new £14 million Advanced Engineering Building will provide cutting-edge laboratories for automotive, mechanical and aerospace engineering research, including the quest for a near-zero carbon emissions internal combustion engine. The facilities in the new building will also be used to train the next generation of professional engineers and provide a focus to continue our long-standing partnership with Ricardo plc.



We have made significant integrated investments in academic staff and technical expertise alongside infrastructure. The Brighton Functional Genomics Laboratory is a new, dedicated space and home to specialist equipment for conducting cutting-edge integrative 'omics'. We are developing further capacity to characterise and quantify molecules from the genome, providing expertise within the university and on a collaborative or service basis for external institutions and industry.



Our pioneering work in the history of design has changed the way design is taught and the way it is viewed. Central to this, the University of Brighton Design Archives is an internationally significant research base with a curatorial team that initiates and promotes collaborative activity.



Participants on the Developing Community University Partnerships Course came from universities in Ethiopia, Canada and the UK to learn together about developing community partnerships in their institutions, building on work done at Brighton since the Community University Partnership Programme (CUPP) was established in 2003.



Developing our early career researchers is a vital part of our ambition. We have an Early Career Research Ambassador and provide opportunities for networking, collaboration and celebration such as poster competitions (pictured) held in our city centre gallery.

STRATEGIC GOALS

In order to achieve our research and enterprise ambitions we have identified seven strategic goals to guide our activities and investments. These will nurture Brighton Futures and emerging areas of research and enterprise excellence.

STRATEGIC GOAL 1

To enhance our capabilities and performance in areas of current and emerging research and enterprise excellence (Our R&E excellence).

OBJECTIVES

- attract, retain and reward staff (at all career stages) and students who undertake research and enterprise activities of the highest quality and impact;
- increase the volume and quality of our research and enterprise outputs;
- invest in new capabilities that will most effectively strengthen our research and enterprise portfolio and offer potential for the generation of income;
- develop systems for the annual monitoring of research and enterprise performance as relevant to national and international benchmarking exercises;
- establish Centres of Excellence in Research and Enterprise that foster a vibrant and productive environment and demonstrably enhance our profile and partnerships in key sectors.

STRATEGIC GOAL 2

To improve our research and enterprise reputation and to deliver maximum benefit to society and to the economy from our activities (Our R&E impact).

OBJECTIVES

- maximise and promote the impact of our research and enterprise, building both impact case studies for future REF 2021 and demonstrating the value of our activities to our students, the wider community and economy;
- engage and involve end users throughout the research and enterprise lifecycle, developing these relationships further and recognising and rewarding staff who demonstrate talent in this area;
- embed our research and enterprise activities into the curriculum such that our students are provided with the relevant skills and experience to secure rewarding careers;
- undertake extensive and targeted external marketing, public engagement and press activity, maintaining a strong presence for research and enterprise on our university website;
- use the Brighton Futures to enhance the profile and performance of our major interdisciplinary research and enterprise activities and to support new interdisciplinary collaborations.

STRATEGIC GOAL 3

To invest in and support staff to develop research and enterprise capabilities that will enhance our local, regional, national and international profile (Our R&E staff).

OBJECTIVES

- provide guidance, training, mentoring and support to equip staff to undertake research and enterprise activity of the highest quality and integrity;
- promote opportunities and provide support for the development of research and enterprise leadership, including serving on expert panels, working across disciplinary interfaces, building consortia, knowledge exchange and advocacy;
- provide early career researchers and emergent leaders with training and support programmes aimed at broadening skills and experience;
- continue our strong commitment to ensuring equal career opportunities for all, as demonstrated in our work with Athena SWAN, the Race Equality Charter and other initiatives;
- facilitate and share best practices in research and enterprise leadership and management, including integrity, ethics, equal opportunities and diversity.

STRATEGIC GOAL 4

To increase the number of staff and students engaging in and/or generating income from research and enterprise activities in all Schools (Our R&E engagement).

OBJECTIVES

- ensure that all staff engaged in research and enterprise will generate income (directly or indirectly) to advance our activities;
- develop principles for identifying and assessing research and enterprise activity amongst staff and to integrate these into workload planning, staff development reviews, recognition of success and promotion;
- provide appropriate institutional leadership and a professional and coherent support service to facilitate staff participation in research and enterprise bids, projects and postgraduate research (PGR) supervisory teams;
- make resources available to support staff in the development of large funding applications in our areas of strength;
- extend and improve our offer to students for career-enhancing activities linked to research and enterprise through, for example, course modules, student placements and projects, summer internships, industrial bursaries and enterprise opportunities.

STRATEGIC GOAL 5

To establish an environment that sustains a balanced portfolio of research and enterprise activities (Our R&E sustainability).

OBJECTIVES

- plan for staff succession in key areas of research and enterprise excellence to ensure that our outputs, profile and associated impacts are sustained;
- diversify the sources of income generation from our research and enterprise activities;
- use our facilities, infrastructure and expertise to generate income and develop sustainable partnerships in key industrial sectors, e.g. health, creative industries and green business;
- develop a portfolio of high-quality workforce development programmes and Continuing Professional Development (CPD), building on our sector-leading expertise and facilities and responding to local, regional, national and international skills needs;
- direct targeted investment toward key infrastructure, leadership, management and support structures which foster and sustain high-quality research and enterprise and respond promptly to emerging opportunities.

STRATEGIC GOAL 6

To establish ourselves as a key partner in research and enterprise collaborations at local, regional, national and international levels (Our R&E partnerships).

OBJECTIVES

- maximise the use of internal and external funding schemes to develop sustained, mutually beneficial partnerships, especially in the key sectors which contribute to our regional economic strengths and in response to challenges for global economic and social development;
- establish comprehensive social partnerships that deliver social, cultural and economic benefits and strengthen our reputation as a world-leading university for community and economic engagement, nationally and internationally;
- contribute expertise and thought leadership to key local, regional, national and international partnerships in order to generate the best possible policy, governance and investment decisions at all levels;
- strengthen our links with key knowledge-intensive businesses in the sectors that match our academic strengths in order to learn from and add value to the leading edge innovation that will drive economic growth and social development;
- deepen our partnership with the University of Sussex in all relevant areas of research and enterprise and, via our existing Brighton and Sussex Medical School partnership, deliver enhanced patient care and services, facilitating access to clinicians and funding streams.

STRATEGIC GOAL 7

To increase the number of our excellent postgraduate research (PGR) students and enhance the quality of their experience (Our next R&E generation).

OBJECTIVES

- increase our PGR supervisory expertise and capacity;
- integrate PGR students as active members of the wider research and enterprise community within and outside the university;
- provide programmes for PGR student training and employability skills development that are amongst the best in the sector and support our PGR students in undertaking high-quality research;
- maximise the recruitment of home, EU and international PGR students supported by public and private sector organisations and establish double awards and innovative models of delivery that accommodate the needs of part-time, distance and work-based research students;
- pursue sustained membership of multi-disciplinary, multi-sector Doctoral Training programmes and consortia.

