



SURREY SHOWCASE

*A year of learning,
discovery and inspiration*

BRINGING SMART TO LIFE



INTRODUCTION FROM THE

Vice-Chancellor

These are difficult times for many of us, as we adapt to the changes that Covid-19 brings. The health and safety of our community is of paramount importance, and Surrey is following all necessary guidelines. But there are better times ahead – new opportunities and exciting possibilities await us.

Since our establishment, the University of Surrey has been a trailblazer in higher education and research. We have been a valued partner for institutions and businesses across the globe. Our legacy in practice-centred education and cutting-edge innovation has made — and continues to make — a positive impact on society.

At Surrey, you'll find a vibrant and productive environment for research and teaching across the disciplines, bringing together expertise from around the world to create new ideas and solutions to the challenges we face.

I hope this publication will help show you our passion for collaboration and the impact of our exciting programmes and projects.

Professor G Q Max Lu

President and Vice-Chancellor

Wonderful things HAPPEN HERE

▶▶▶ The University of Surrey has a rich heritage spanning almost 130 years. For more than 50 years we've been based in Guildford, Surrey, and we've continued to make an impact through our research, teaching, innovation and enterprise.



1891

Battersea Polytechnic Institute, the forerunner to the University, is founded.

1966

HM The Queen grants a Royal Charter, establishing the University of Surrey.

1968

Students arrive on the new university campus.

1995

The European Institute of Health and Medical Sciences is established.

2010

Surrey Sports Park opens, and is used by elite sports stars and the local community, as well as students and staff.

2011

The Ivy Arts Centre opens.

2015

The 5G Innovation Centre (5GIC) is officially opened.

2016

125 years since we opened our doors as Battersea Polytechnic Institute and our 50th anniversary in Guildford.

2019

£5 million School of Psychology facilities open.

1934

The Students' Union is established.

1966

Construction begins on the new campus in Guildford, Surrey.

1985

Surrey Research Park's first tenants take up residence.

1998

HM The Queen officially opens the Surrey Space Centre.

2010

Guildford School of Acting (GSA) merges with the University.

2015

HM The Queen officially opens the School of Veterinary Medicine's new buildings.

2016

Surrey is named University of the Year and University of the Year for Student Experience (*The Times and Sunday Times Good University Guide 2016*).

2018

Surrey receives a Queen's Anniversary Prize for food and nutrition research at a ceremony at Buckingham Palace.

2020

The Countess of Wessex officially opens the Kate Granger Building, home to the School of Health Sciences.



Students are AT THE HEART OF OUR ▶▶▶ university

We place students at the centre of what we do, ensuring that their experience meets their ambitions and potential. This is strengthened by the fact that we are an international community of staff and students, from over 140 countries, and that learning takes place not just on campus, but around the world.

Over
13,000
undergraduate
students


Over
700
students studying
at our joint academic
partnership institution
in China



Over
3,800
postgraduate
students


Over
6,200
international
students




Around
3,000
students on formal
placements*




Nearly
2,500
active student
volunteers*



Working with over
2,300
partner organisations
worldwide to
provide placement
opportunities


Over
1,000
postgraduate research
students


Over
120,000
University of Surrey
alumni

Collaboration

ACROSS BORDERS ▶▶▶

At Surrey, our ambitions are not constrained by distance or geographical borders. We recognise that tackling global issues requires global solutions and partnerships.



University Global Partnership Network (UGPN)

We are proud to be part of an international network bringing together some of the world's leading universities to address the global challenges we face.

Established in 2011, the UGPN is made up of the University of Surrey, the University of São Paulo (Brazil), North Carolina State University (USA) and the University of Wollongong (Australia).

The network aims to develop sustainable world-class research, education and knowledge transfer. This enables students and staff from UGPN universities to collaborate through innovative transnational education programmes such as dual PhDs, student exchanges and summer schools, and co-funded research projects, including the Research Collaboration Fund.

The UGPN has achieved global impact through publications in top journals (over 500 co-publications since 2011), leveraging external funding, and catalysing spin-off projects and collaborative research centres with a focus on addressing global challenges.



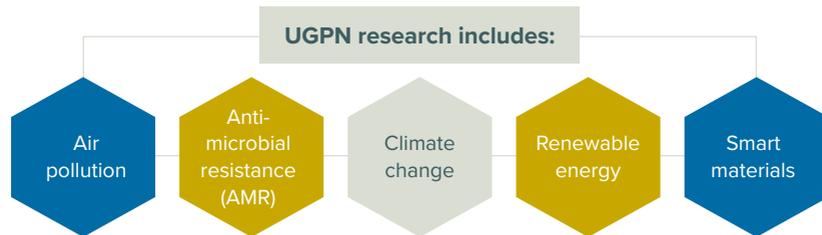
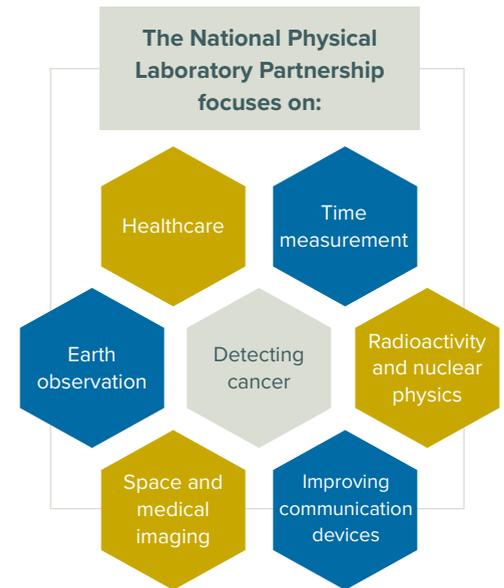
National Physical Laboratory Partnership

To help shape the UK's scientific priorities over the coming decades, the University of Surrey is part of a key partnership along with the University of Strathclyde and the National Physical Laboratory (NPL).

The NPL Partnership enables its partners to consider the large problems that challenge the world and gives access to each other's experts.

“It's critical that an organisation like the National Physical Laboratory is there to underpin the measurements that are being made by the whole range of scientists across the world.”

”
Dr Nigel Fox
Head of Earth Observation and Climate,
National Physical Laboratory



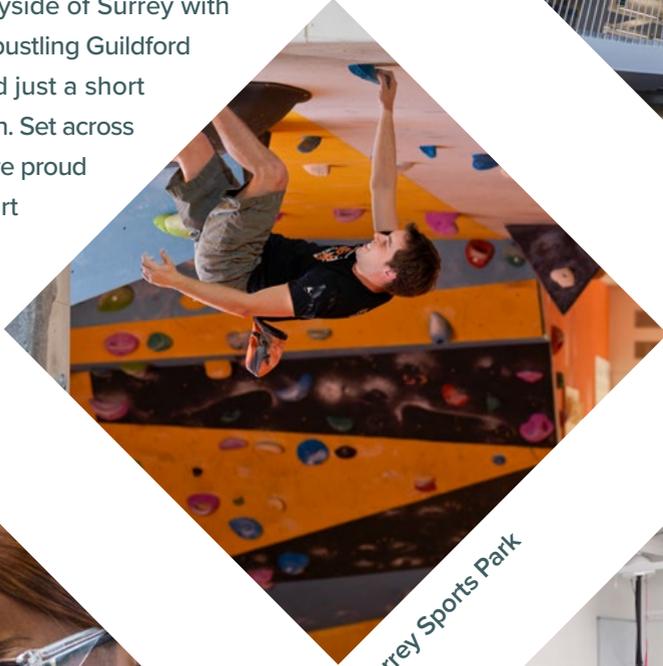
For more information, visit: ugpn.org

Spaces to learn, work AND PLAY

►►► Our stunning University is located within the beautiful countryside of Surrey with the convenience of bustling Guildford on our doorstep and just a short distance from London. Set across two campuses, we are proud of our state-of-the-art facilities that benefit both students and staff.



Surrey Research Park



Surrey Sports Park



Health & Medical Sciences Facility



5G Innovation Centre



School of Veterinary Medicine



Surrey Space Centre



Ivy Arts Centre

Research that matters

TEACHING WITH INSIGHT

We are proud to be producing impactful research and excellent teaching. Our achievements have been recognised on a number of occasions with acclaimed awards.



THE QUEEN'S
ANNIVERSARY PRIZES
FOR HIGHER AND FURTHER EDUCATION

▶▶▶ Queen's Anniversary Prize

This prestigious award is given every two years in acknowledgement of world-leading research and teaching. The University of Surrey has received the award four times, including for our research in satellite technology, ion beams and optoelectronic devices, improving access to safe drinking water and sanitation, and most recently for our teaching and research in food and nutrition.



Teaching
Excellence
Framework

▶▶▶ TEF Gold

Our teaching underpins the success of our University, and that of our students. In 2017, this was formally recognised in the first Teaching Excellence Framework (TEF). We received the highest possible 'Gold' award.

We were particularly commended for challenging and supporting students through rigorous course design and assessment, and for delivering academic provision which is innovative, personalised and well-resourced.



“Our TEF Gold award is recognition of our longstanding ethos of working with our students to put their learning experience, personal development and future career opportunities at the heart of our approach to education.”

Professor Osama Khan
Vice-Provost of Education

A connected FUTURE



To meet the needs of our connected society and digital economy, the University of Surrey's 5G Innovation Centre (5GIC) is dedicated to the development of the next generation of mobile and wireless communications.

With the support of leading academic expertise and key industry partners, we're defining and developing the 5G infrastructure that will determine the way we communicate, work and live our lives in the future.

Our independent and large-scale testbed is at its heart, enabling innovation through testing of 5G technologies and applications in an industry-relevant situation. The University was one of the first in the world to demonstrate a fully operational 5G network, creating patents and contributing to the 5G standards bodies that will be included in future technology.

5GIC SHOWS EUROPE'S FIRST 5G-CONTROLLED CAR

5GIC hosted the country's first Transport on Demand (ToD) demonstration of an autonomous vehicle at its unique 5G testbed. 5GIC and its partners, Huawei, Vodafone and the Technical University of Munich, showed a fully operational Audi Q7 located on the Stag Hill campus in Guildford being operated from a control panel in the London ExCeL conference centre – all made possible thanks to the power of 5G.





Creating a sustainable WORLD OF TOURISM

Surrey researchers are working with governments and businesses across Europe and beyond, to help make tourism sustainable for generations to come.

Although people around the world are becoming more aware of global sustainability issues, many tourists don't consider it as a factor when choosing a holiday destination.

Our School of Hospitality and Tourism Management is determined to change this through collaboration with businesses and local governments across Europe, who in turn could help convey the benefits of sustainability to the industry.

Projects have included preparing the Catalan Tourism Agency's

sustainability action plan in 2016, and advising the government of Barcelona to change its marketing functions to promote more sustainable development in the city. Some of these proposals are now incorporated into the city's 2020 tourism strategy.

The European Tourism Indicator System, prepared by our School for the European Commission, has been downloaded over 60,000 times. Case studies on tourist destinations using sustainability indicators for policy making were presented by Surrey staff at the European Parliament in 2019.

“

I love sharing examples and ideas that will make businesses more unique and profitable as a result of implementing more creative sustainability practices. We're working with industry to respond to their challenges, and together we can make tourism sustainable.

”

Professor Xavier Font
Sustainability Marketing

Surrey in ►►► THE LIMELIGHT

For over 80 years, the Guildford School of Acting (GSA) has been developing a community of performers, performance makers, creative practitioners and technicians. The forefather of GSA was founded in 1935, and moved to Guildford at the beginning of World War 2. GSA became part of the University of Surrey in 2010 when the School moved to the Stag Hill campus, and is established as one of the most highly regarded theatre schools in the UK.



“

An Olivier Award is the most sought-after and highly regarded accolade in British theatre and we're thrilled to see Kobna recognised as one of the profession's very best performers.

”

Sean McNamara
Head of GSA

HIGHLY ACCLAIMED AWARD FOR FORMER STUDENT

In 2019, GSA graduate Kobna Holdbrook-Smith won a coveted Olivier Award for Best Actor in a Musical for his West End role as Ike Turner in *Tina – The Tina Turner Musical*.

Kobna graduated in 2000 after studying musical theatre at GSA. Since then, he has also played the role of Laertes in *Hamlet*, alongside Benedict Cumberbatch, among many other roles.

Pushing boundaries

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BEYOND OUR WORLD

Since 1979, the Surrey Space Centre (SSC) has been pioneering small-satellite activities. Over the past 40 years, we've earned an international reputation in cost-effective space technologies and microsatellites.

Operating in three different areas – academic research, space missions and education – SSC has the capability to deliver complete missions from concept study to spacecraft development and MAIT (Manufacture, Integration, Assemble and Test), to mission operation and development of applications.

“

With these experiments, we've proven that nets and harpoons are viable technologies to capture large space debris. We've also shown that vision-based-navigation system cameras were able to provide accurate information about a piece of debris, its behaviour and its flight of travel – information crucial in an active debris removal mission.

”

Professor Guglielmo Aglietti
Director of the Surrey Space Centre

INNOVATIVE IDEAS FOR CLEARING SPACE DEBRIS

There are an estimated 40,000 pieces of space debris currently orbiting the Earth, and these are a major threat to the world's space assets. Some move faster than a speeding bullet, approaching speeds of 20,000 miles an hour.

Surrey's RemoveDEBRIS project, led by SSC and in collaboration with Surrey Satellite Technology Ltd, Airbus UK and other partners, has developed key active debris removal (ADR) technology to find the best way to capture the debris.

The RemoveDEBRIS platform was launched to the International Space Station in 2018 and then released to test technologies to gather the space junk. Its ground-breaking net and harpoon capture tests proved successful and attracted significant media attention.

Celebrating our

NURSES AND MIDWIVES

To celebrate the International Year of the Nurse and Midwife 2020, we asked our nurses and midwives to share their stories, why they chose their careers and what inspired them to help others.



Helen's story

Helen Stanley began her career as an Adult Nurse over 40 years ago and fell in love with the science of nursing after joining St John Ambulance.

"I treated British soldiers injured in the 1981 IRA bombing of the Chelsea Barracks. Moments like those were the reason I became a nurse and why I continue to care for others today."



Laurence's story

Laurence Drew became a Mental Health Nurse to help people with their mental health needs, in particular men who may struggle to acknowledge their feelings.

"The more time I spent working in mental health, the more I wanted to learn. I realised that for many people, things are rarely straightforward – it's important to see everyone as individuals and think holistically about how to meet their care needs."



Wendy's story

Wendy Barrie was inspired to train as an Adult Nurse after she lost both of her parents to cancer when they were in their early 50s.

"Through my placements, I've learnt that it's the little things that matter the most. Competence, professionalism and technical skills are essential, but it's kindness, a smile, a welcome cup of tea, and a genuine warmth that patients appreciate and remember."

Read more of our nurses' and midwives' stories:

surrey.ac.uk/iynm2020

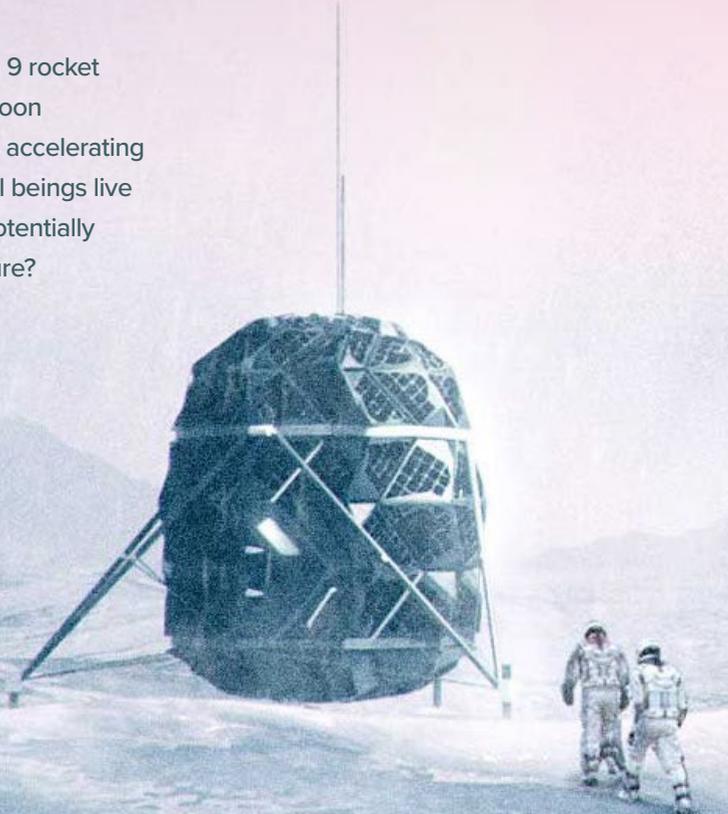


2020
INTERNATIONAL YEAR
OF THE NURSE AND
THE MIDWIFE

Looking to the stars

PREPARING FOR LIFE ON THE MOON ▶▶▶

With the recent launch of SpaceX Falcon 9 rocket and with another NASA mission to the Moon scheduled for 2024, space exploration is accelerating at a rapid pace. But how can we as social beings live and thrive in space environments, and potentially have successful habitats there in the future?



©SAGA Space Architects

Researchers at the University of Surrey and the University of Milano-Bicocca have partnered with SAGA Space Architects to investigate the psychological impacts of social isolation in harsh environments, like the Moon. This research forms part of the LUNARK project.

Two space architects, Sebastian Aristotelis and Karl-Johan Sørensen, will live inside a pod habitat for 91 days in northern Greenland, a place that reflects the harsh environment of the Moon and its freezing temperatures. The pod has been built to withstand external threats, such as polar bears, and has been designed to leave no trace of waste in the environment.

To investigate the impact of social isolation on the men, researchers will measure their perceptions of time, emotions (positive and negative), levels of satisfaction of basic psychological needs (e.g. self-esteem and control), behavioural intentions (e.g. aggressive tendencies) and coping strategies. To record this data, Sebastian and Karl-Johan will keep daily diaries and complete a 20-minute questionnaire.

Results of this study will bring to light the effects of social isolation in harsh environments and will help create strategies to combat these, to improve the psychological wellbeing of astronauts embarking on future long-term missions in space. The outcomes of this could also be applied to periods of confinement and isolation like those seen in the Covid-19 pandemic.

“

It's important to learn as much as possible about the psychological impact of living in these environments, so we can develop coping mechanisms to overcome any difficulties. This will not only be beneficial to astronauts but also future human populations that could live in space.

”

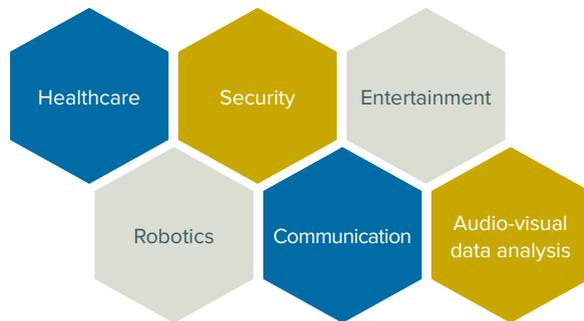
Dr Patrice Rusconi
Lecturer in Psychology

Harnessing the boundless

OPPORTUNITIES OF AI

Our advances in artificial intelligence and machine perception have brought us closer to creating machines that can see and hear to understand the world around them. At Surrey, we aim to harness these advancements to benefit society.

Surrey's Centre for Vision, Speech and Signal Processing (CVSSP) was established over 30 years ago, and focuses on flagship research projects in:



CVSSP facts

- ▶ We have the largest activity in audio-visual machine perception in the UK – with 150 researchers, including 20 academics
- ▶ We conduct award-winning immersive spatial audio research
- ▶ Our research in medical imaging has pioneered the use of proton imaging for improved cancer detection and personalised treatment
- ▶ We pioneered the visual recognition of human movement capable of translating sign language into written English.



MAKING THE WORLD SAFER

One of CVSSP's key specialisms is pattern recognition, and the Centre's research in this sector is leading to exciting new applications in security, border control and access to facilities and services.

Using advanced super-resolution techniques, the Centre's researchers are tackling the problem of recognising individuals from low-resolution images such as CCTV – a capability that could have a far-reaching impact in security applications.

Building on its expertise in face analysis techniques, the Centre develops biometric solutions that exploit information such as face shape and texture, lip dynamics and soft biometrics.

Responsive and proactive

LISTENING TO OUR STUDENTS

At Surrey, one of our main priorities is our students' experiences. That's why we listen to their feedback and constantly strive to improve their time here.

As a response to feedback from students, we launched MySurrey – a brand that covers everything related to student life at Surrey, making support and advice for our students easily accessible to all. We've also created MySurrey Nest, a quiet, relaxing space aimed to promote wellbeing.



MYSURREY

OUR ONLINE PORTAL

Developed with support from our student ambassadors, the Students' Union and other members of the student community, MySurrey is an online portal featuring all the information our students need while studying and living at Surrey. This includes information about accommodation, exams and assessments, wellbeing, transport, and employability and careers.



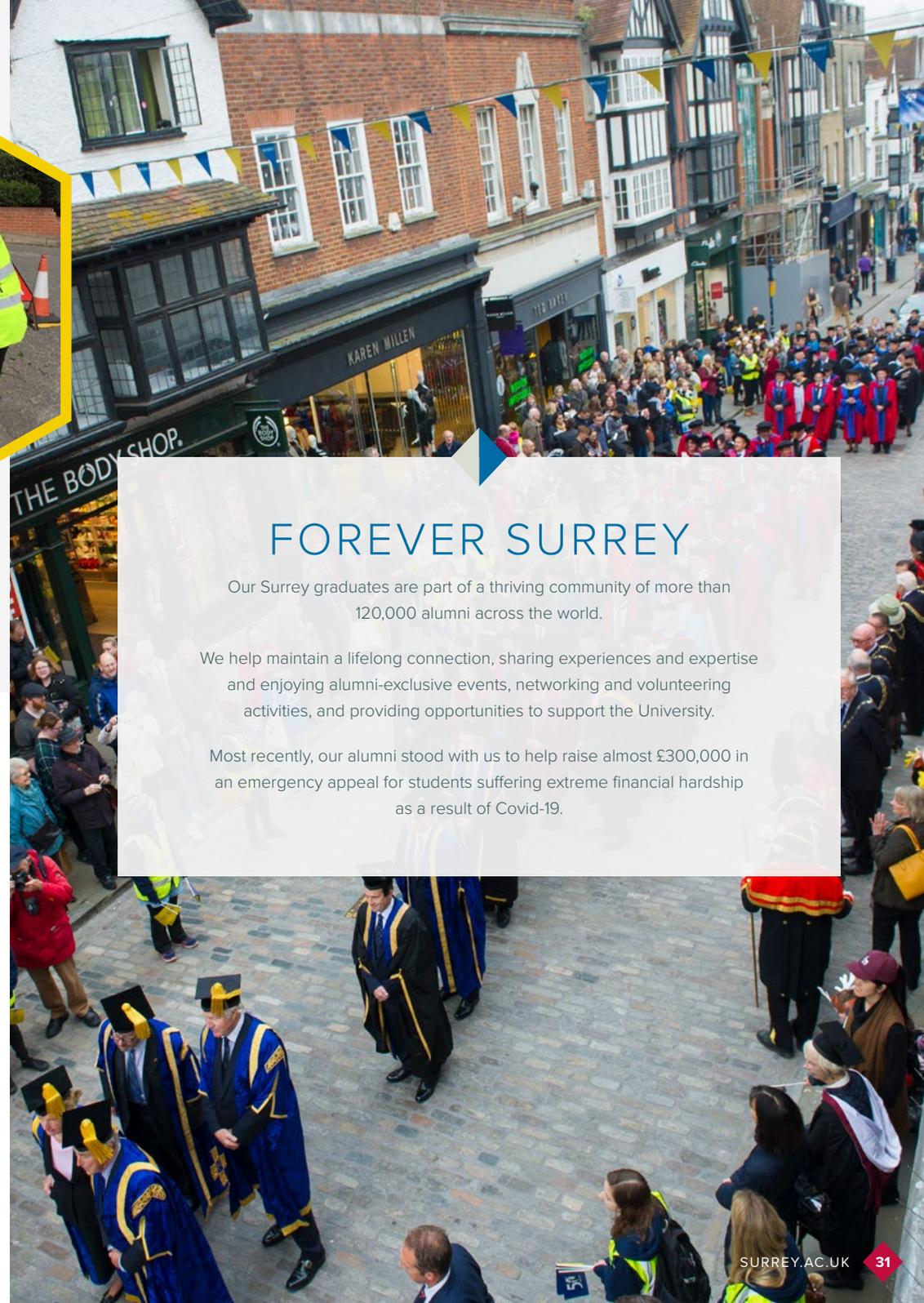
MYSURREY HIVE

A SPACE TO MEET AND LEARN

MySurrey Hive is a central space on campus where students can access support and advice on student-life-related queries. More commonly referred to as 'The Hive', it's where our students can go for support, but also somewhere to meet friends for informal study, to learn through events at our live@hive series and to socialise.



Beyond THE UNIVERSITY



Our impact extends beyond the campus and the academic and student population. We are driven to make contributions to local, national and global society, tackling the many challenges facing us.

We build greater and stronger partnerships within and between communities, fostering a sense of civic pride and responsibility throughout the University and beyond. The opportunities for creating social, economic and environmental change at Surrey are made possible by our local and global partnerships.

FOREVER SURREY

Our Surrey graduates are part of a thriving community of more than 120,000 alumni across the world.

We help maintain a lifelong connection, sharing experiences and expertise and enjoying alumni-exclusive events, networking and volunteering activities, and providing opportunities to support the University.

Most recently, our alumni stood with us to help raise almost £300,000 in an emergency appeal for students suffering extreme financial hardship as a result of Covid-19.

WORKING IN PARTNERSHIP

3,000

students on formal placements across the globe

1,310

students on placements in NHS trusts

SUPPORTING LIVELIHOODS

17,800

jobs supported, including 13,900 in Surrey

£1.75bn

gross value added*
*2016-17

ENGAGING OUR COMMUNITY

2,464

active Surrey student volunteers

100+

community-focused projects and initiatives

2018-2019 data

Our research ▶▶▶

HELPING TO FIGHT COVID-19

The University of Surrey has over 100 Covid-19 related research projects under way or completed. Here are some of our highlights:



RAPID TESTING

Researchers from our School of Veterinary Medicine and our Centre for Vision, Speech and Signal Processing are working with partner universities to develop an easy-to-use Covid-19 test which can give results in under 30 minutes. The team have joined forces with three industrial partners to help bring the test to market.



MENTAL HEALTH AND WELLBEING

Researchers from our School of Health Sciences have developed guidance to support the mental health of NHS nurses. And researchers from our School of Psychology are working with a local sixth form college to examine the impact of lockdown on the wellbeing of young people at home.



AIRBORNE TRANSMISSION

Our Global Centre for Clean Air Research is investigating ways to mitigate indoor airborne transmission of Covid-19.



UNDERSTANDING COVID-19

Researchers from our Department of Chemistry are using mass spectrometry to better understand Covid-19 and help partners develop a vaccine.



VITAMIN D

Researchers from our Department of Nutritional Sciences are investigating whether there's a link between vitamin D and Covid-19.



VACCINE

Surrey immunology researchers are examining biomarkers in blood that will help analyse vaccine responses in the future.



TREATMENT

Researchers from our Department of Biochemical Sciences are working with the Royal Free Hospital to monitor haematological markers in the blood of Covid-19 patients, to better inform treatment.



VIRUS ADAPTATION

Researchers from our School of Biosciences and Medicine are working to understand how Covid-19 evades the antiviral response of human cells.



To find out more about what we do and
how we can work together, contact:
tom.windle@surrey.ac.uk

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