



**SURREY
SHOWCASE**
**Forward thinking.
And doing**



UNIVERSITY OF
SURREY



INTRODUCTION FROM THE

Vice-Chancellor

Welcome to the annual Surrey Showcase – an inspirational celebration of the University of Surrey community's achievements, resilience and determination over the past year. It underscores how our mission since our earliest days – to improve lives through practical education and research – is alive and flourishing.

The theme of this year's Surrey Showcase is 'Forward thinking. And doing'. This is particularly appropriate because at Surrey our momentum doesn't stop. Despite the challenges of recent months, we are going from strength to strength.

At the end of a year like no other, we have gathered some of our leading academics to look beyond these turbulent times to outline a vision for a more optimistic and exciting future. How do we build that future in times of rapid change, encompassing geopolitical upheaval, economic uncertainty, climate crisis and global pandemic? How do we continue to make a difference to shaping society and changing lives for the better?

On these pages, our academics share how their research and innovation is creating transformative benefits for improving the human condition, and we showcase highlights of our most recent discoveries and insights around the outstanding learning our students have experienced. You'll also see the incredible contributions Surrey graduates are making to the world.

Some amazing things have been happening at Surrey. And they are a powerful platform from which we will aim for even greater heights in the future.

Read on and be inspired.

Professor Max Lu AO DL FREng FAA FTSE
President and Vice-Chancellor

Our journey

CREATING POSSIBILITIES

The University of Surrey has a rich heritage spanning almost 130 years. For over 50 years we have 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

Surrey Research Park



HM The Queen opens new buildings



Kate Granger Building

Placing students AT OUR CORE

By placing students at the centre of what we do, we ensure that their experience meets their ambitions and potential. This is reinforced by our global community of staff and students, and that learning takes place not just on campus, but around the world.

 Students and staff from over
140 countries**

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

Over
12,500 undergraduate students*

 Over
620 students studying at our joint academic partnership institution in China*

 Over
1,000 postgraduate Research students*

 Over
127,000 University of Surrey alumni*

Over
3,500 postgraduate students*

Over
3,500 student volunteers**

Nearly
1,300 students on formal placements**



Facilitating GLOBAL COLLABORATION

Looking outwards to our global community, we forge international partnerships to enhance our research, education and student experience, facilitated by the University's International Engagement Office.

➤ BROADENING HORIZONS

Despite recent challenges, we have still managed to facilitate international opportunities for our undergraduate students. Our International Engagement Office has helped arrange virtual study exchanges, where students can study online with one of our international exchange partners. Students have also been able to take part in virtual summer programmes with our global partners. These opportunities have added an international and impactful dimension to our students' education and research, giving them the space and context to think differently and critically.



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During my placement year, I have completed a remote, year-long study exchange with the University of Wollongong. It has been a highly valuable experience. I have been able to pursue my academic interests with more freedom than the average degree allows – completing a biology module in my first semester and a philosophy one in my second, along with several creative writing modules too.

Chelsey King, English Literature, University of Wollongong, Australia

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My tutor had a lot of experience alongside knowledge which made the course enjoyable. He was easily accessible and ensured that although we were studying the course online, we had a sense of community. A WhatsApp group chat was created which gave us the opportunity to speak and socialise outside the Zoom calls during the day. Through this, we were able to form friendships and get to know each other better.

Adesuwa Obasohan, Business Management (MBus), VU Amsterdam University



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➤ COLLABORATIVE TEACHING AND LEARNING

We run the Dual PhD programme with the University of Milan-Bicocca, offering students the chance to study for their PhD at two world-class universities. Students can conduct their research based in Guildford and Milan, benefitting from support from supervisors and facilities at both institutions. Despite the challenges of the past few years, the University of Surrey continues to forge new connections across the world, in the strong belief that together, we can achieve so much more.



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The Dual PhD programme is an amazing opportunity for any PhD student studying mathematics. There is a large variety of modules to choose from, allowing incredible flexibility in the choice of topics.

Romeo Segnan Dalmasso, PhD Mathematics

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Collaboration and learning are key to a successful PhD. The Dual PhD programme is an amazing opportunity for personal growth and research development.

Federica Orsenigo, PhD Innate Immunology, currently researching Covid-19



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Adapting the way WE DELIVER TEACHING



The global pandemic prompted our Surrey Institute of Education, along with academic colleagues from across the faculties, to consider our online learning offer. The result of this collaboration was Hybrid Education Principles – a blend of online and campus-based learning, while ensuring the safety of our students and staff.

Our Hybrid Education approach has enabled Surrey to provide significantly more face-to-face opportunities than many of our competitors. Underpinned by the principle of equity of learning opportunities, it presents a spectrum of blended learning approaches, centred on our established virtual learning environment, SurreyLearn. Based upon the Community of Inquiry Framework, it facilitates active student-centred learning.

Our students learn through a mix of online course delivery and face-to-face sessions, in line with government guidelines.

Online, they can interact with their lecturers, ask questions and be assessed. In-person attendance is possible for most tutorials, seminars and workshops, along with sessions based in labs and studios.

In 2021–22, with the continued uncertainty around Covid-19, we will build upon the success of the approach and continue our hybrid delivery. The blended approach will be augmented to provide more support for students and increase the amount of face-to-face interactions and social learning opportunities.

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Our academics have been truly amazing in the adoption of Hybrid Education. Their work and dedication to support our students has been outstanding.

I am so proud of our students for the remarkable resilience they have shown in adapting and succeeding in their studies during the pandemic.

We will continue to work with both our students and academics to ensure the perceived benefits of Hybrid Education are not lost as we gradually return to normality.

Osama Khan
Pro-Vice-Chancellor Education

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Fantastic plastic?

DISCOVERING SUSTAINABLE SOLUTIONS

Plastic waste is a blight on our society. At Surrey we are conducting multidisciplinary research and teaching, which integrates social and natural sciences to address this global challenge. This focus has been spearheaded by Sustainability

Research Theme champion, Professor Richard Murphy.

Approximately 300 million tons of plastic are produced each year globally, and up to 13 million tons end up in rivers and oceans. Most plastics, even several 'biodegradables', are not generally degradable in the open environment and this has been a key part of Professor Murphy's research. In 2015, he was part of an advisory group that agreed, on the basis of his and other research, not to derogate biodegradable carrier bags from the highly effective carrier bag charge policy.

Our Plastics in the Environment Special Interest Group is led by Professor Rosalind Malcolm, whose co-leadership of a Surrey/SOAS/Essex workshop focused on Designing Law and Policy Towards Managing Plastics in a Circular Economy. The outcome of this included key insights on the dos and don'ts for plastics use, their interaction with the environment, governance impact and future policy which were published in a Special Issue of the Law, Environment and Development (LEAD) Journal.



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Surrey's excellent work, supported through our plastics Special Interest Group in the Sustainability Research Theme, is providing new knowledge enabling the world to learn better ways to live with the benefits – and the consequences – of plastics.

Professor Richard Murphy, Centre for Environment and Sustainability

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Through our Governing Plastics Network, we have built knowledge exchange platforms between the global north and south using our multidisciplinary expertise in plastics represented by the Special Interest Group on Plastics in the Environment.

Professor Rosalind Malcolm, School of Law





▶ Supporting OUR ENTREPRENEURIAL STUDENTS

Our students are encouraged to explore their ideas, build skills and develop their confidence, with the support of our Student Enterprise programme. Through workshops, enterprise challenges and dedicated space on campus to work on their ventures, students from all disciplines are offered mentorship and support to get their ideas off the ground.

There are three cohorts based on the entrepreneurial stage:

- Explore potential through our practical enterprise workshops
- Experience developing an idea through our enterprise challenges
- Execute a business idea in our dedicated campus incubator

Student Enterprise, with the help of philanthropic funding from Santander Universities, has funded seven student entrepreneurs and recent graduate entrepreneurs to work full-time on their business over the summer months. Along with a financial prize, this Foundership Programme also provides practical entrepreneurship-focused workshops and a dedicated industry mentor to each founder to help students excel as entrepreneurs and grow their business. Student Enterprise is proud to take positive action to challenge the inequalities faced by black founders, offering two Founderships within the programme specifically for black founders and engaging a diverse network of workshop coaches, mentors and panellists to help create a more inclusive business community on campus and for the future.

CASE STUDIES

James Buck is currently studying BSc Accounting and Finance. He had a business idea after his first year at Surrey and got the help he needed from Student Enterprise. His app, Roome, connects students with other likeminded people to find their perfect student home.



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Since being involved, I have become the first student at Surrey to do a professional training year for my own business, paving the way for many others in the future. I have won over £7,000 to support my business, had weekly mentor sessions with the Entrepreneur-In-Residence and been entered (and won) a few competitions within the University, Guildford Borough Council, nationally and even globally!

Surrey Student Enterprise is the best thing that ever happened to me and my business, I couldn't have got to where I am now without them!

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Graduate, **Dr Sarah Campbell**, got involved with Student Enterprise three years ago, winning SEED funding from the Wates Foundation through a Student Enterprise competition. Her business, Play Well For Life, is an educational games company, delivering a games-based emotional intelligence training programme to children, young people and parents.



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The Student Enterprise scheme has supported my personal and professional development, helped me build a great network to help me navigate building a start-up, get practical advice about the basics of turning an idea into a viable business, and given me the confidence to keep doing it, as well as invaluable access to initial funding. It is a fantastic scheme and I recommend all students thinking about starting a company engage with Student Enterprise.

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Connectivity

OUR FUTURE IS IN OUR HANDS

Alongside our industry partners, we are looking towards the next generation of mobile technology, addressing global challenges such as the climate crisis, pandemic control and sustainable economic growth.

Our new 6G Innovation Centre (6GIC), launched in November 2020, is a global research hub focusing on advanced telecommunications engineering to bring together the physical and virtual worlds.

The 6GIC has two research themes underpinning its work:

- Ambient information: a fusion of the physical and virtual worlds, powered by the integration of high-resolution sensing, geolocation and wireless technologies to enable a new level of digital services that link human senses with ambient and remote data.
- Ubiquitous coverage: making the digital divide a thing of the past by significantly improving coverage indoors and using intelligent surfaces and researching satellite technology that makes exciting 6G services available everywhere.

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Since its inception in 2013, the 5G Innovation Centre has epitomised the University of Surrey's ethos to collaborate with industry on societal and industry challenges, to enable innovations that change lives. We affirm our mission on this journey to the digital future with 6GIC, our vision and research strategy for the next ten years. Now is the time for the University, industry and the UK to begin the journey together towards 6G in collaboration with our international partners.

Professor Max Lu, President and Vice-Chancellor of the University of Surrey

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Pioneering new ways

TO DETECT COVID-19

Covid-19 has had a devastating effect on the world and how we live our lives. At Surrey, we are pioneering a cross-faculty project investigating new methods of diagnosis and surveillance of new diseases. This research is vital in helping to control outbreaks of diseases such as Covid-19.

In collaboration with Frimley NHS Trust, and the Universities of Manchester and Leicester, chemists from Surrey's Faculty of Engineering and Physical Sciences (FEPS) have discovered that non-invasive skin swabs can quickly detect the presence of Covid-19. Our researchers analysed the samples by using liquid chromatography mass spectrometry and a statistical modelling technique called Partial Least Squares.

The Surrey team discovered that patients with a positive Covid-19 result showed lower lipid levels than those with a negative test.



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Unfortunately, the spectre of future pandemics is firmly on the top of the agenda for the scientific community. Our study suggests that we may be able to use non-invasive means to test for diseases such as Covid-19 in the future – a development which I am sure will be welcomed by all.

Dr Melanie Bailey, Faculty of Engineering and Physical Sciences

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Research that adapts TO OUR CHANGING WORLD



Surrey's Technology and Society

Theme Champion, Dr Ranjana Das from the Department of Sociology, has been working on the impacts of the pandemic, and the subsequent social distancing measures, on maternal mental health. In particular, she has focused on the nuances of digital and online support.

Mothers of babies in 2020 have had post-childbirth experiences different from any others. With social distancing comes significant issues of anxiety, social isolation and a range of other mental health difficulties, and specific and targeted support for these mothers is urgently needed.

Dr Das said: "Being able to engage digitally is not necessarily the solution or a quick-fix to problems. In fact, we need to stay away from any kind of techno-euphoria (the idea that technology sweeps in to solve all of our problems – it does not and may even exacerbate numerous problems)."

But her study has shown that digital solutions can be an enormous help for new mothers. She interviewed pregnant women and those who had recently given birth and found that the pandemic has deeply affected many women post-childbirth.



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In this study, I found that people with difficult relationships with their family and friends *offline*, generally found fewer supportive connections online. For those who already had strong connections, technology helped massively to strengthen them during the lockdown.

Dr Ranjana Das,
Department of Sociology

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Leading the way

IN AI RESEARCH

At Surrey, we have been working with the BBC and Lancaster University on a five-year 'Prosperity Partnership' to develop artificial intelligence that allows future media experiences to be hyper-personalised. Funded by the UK government and led by Surrey's Professor Adrian Hilton, the partnership will enable the UK creative industry to lead the way in personalised media experiences.



It is expected that personalisation will be the primary driver of growth in the media industry over the next ten years. The UK media industry is worth over £100 billion in the UK each year and employs over 3.2 million people. Looking forward, it is expected that personalised media will drive growth by £2 billion a year by 2030, generating 100,000 additional jobs.

The Prosperity Partnership builds on over 20 years of successful research collaboration between Surrey's Centre for Vision, Speech and Signal Processing – number one in the UK for computer vision research and the UK's top centre of excellence in AI and machine perception – and the BBC. The Centre will lead the research to transform captured audio and visual content into media objects, enabling the creation and production of customisable media experiences, and allowing the BBC to create personalised media experiences and AI-enabled storytelling for mass audiences.



► Shaping OUR STUDENT EXPERIENCE

MYSURREY NEST

In 2020 we launched a wellbeing hub for our students where they can rest and relax, meet with friends and enjoy some downtime from their studies. We listened to advice and guidance from our Students' Union, as well as feedback from students, to ensure that it serves its purpose as a work-free, social space on campus.

MySurrey Nest offers a homely environment, encouraging digital-free downtime, in the heart of our campus. As well as a range of comfy seating areas, there are rooms for workshops to take place, plus pods where students can get some headspace and rest. Open seven days a week, the Nest also offers ground-level access to ensure all members of our community can enjoy the space.



MYSURREY HIVE

In response to the pandemic, we have launched an online booking system for students, advertising available appointments at MySurrey Hive support services. Along with an online chat function on our webpages, this provides a flexible way to access help and advice. Over the past year, the MySurrey Hive team have received over 20,000 enquiries.



MYSURREY APP

We launched the MySurrey app in 2020 to give our students single sign-on access to a range of our systems and services. Despite the pandemic, it has proven very popular, with an excellent take-up.

Users can access University emails, interactive campus maps, up-to-date coronavirus advice, library search and timetables, plus other services.

13,000 ► new users

650,000 ► user sessions

6.5M ► user actions

Supporting EACH OTHER

► Our Self-isolation Buddies Scheme has been a highly valued support resource for students during the pandemic. Set up in the 2020/2021 academic year, the scheme has supported students undergoing self-isolation by matching them with a volunteer buddy.



Volunteer buddies – fellow students – provide a range of help, including sourcing food and medicine, collecting and sending post, or just being someone to talk to. The volunteers themselves also benefit from getting valuable volunteering experience.

The scheme has recruited 200 volunteer buddies and helped over 1,000 self-isolating students over the past year.



“
The Self-isolation Buddies Scheme has been a wonderful initiative that I've immensely enjoyed being a part of. It's been great to meet new people, support students suffering from Covid, and help those who are isolating after travelling to the university from abroad. Having the opportunity to help fellow students when they may be feeling the most isolated and alone has been really valuable.

Lily Pearce, University of Surrey student and Self-isolating Buddy

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Our Covid CHAMPIONS

Veterinary Medicine student, **Hannah Whitelegg**, has been utilising her skills to support the national response to the virus at London's Nightingale Hospital, one of several temporary critical-care centres, and University Hospital Lewisham.



The University's Faculty of Engineering and Physical Science has been manufacturing vital PPE for frontline NHS and care home workers. Led by **Steve Bower**, Technical Manager of the Mechanical Engineering Workshop, his team have been manufacturing modular face visors, where the frame can be re-used and the shield easily replaced. Typically, they can produce about 120 frames and up to 2,000 shields per day.

Unitemps Manager, **Nikki Prior**, has been volunteering in her local community, supporting vulnerable and elderly residents. She has been helping out a couple of local residents by picking up their prescriptions and getting their shopping for them. When required, she has simply chatted on the phone to them to help ease the sense of isolation and loneliness.



I LEFT THE LAWNMOWER
SOMEWHERE IN HERE!



Dr Maureen Galea, Associate Tutor in the Department of Music and Sound Recording, has been using her skills and experience as a concert pianist to launch an online project – Album for the Young. Each day she records a short piano piece and shares the link with schools in Guildford and Windsor. This initiative has been a great way to keep young people connected with classical music and lift spirits.

Neil Hornsey, Project Manager in Surrey's Estates and Facilities, has been putting smiles on the faces of our University staff and students. He has been using his artistic flair and sense of humour to create cartoons which he shares in Campus News, a fortnightly Estates department newsletter that he launched with two colleagues.

Liz Franklin-Kitchen, an Administrator at Surrey's Centre for Wellbeing, wanted to ensure that the University choir continued meeting, despite the pandemic restrictions. As a trained opera singer, she understands the positive effect of singing. She therefore arranged for the Stag Hill Singers choir that she runs to continue to 'meet' and sing at Facebook Live rehearsals.

Surrey's frontline heroes

ALL IN A DAY'S WORK



Paramedic students from Surrey's School of Health Sciences have been supporting medical staff at the Royal Surrey County Hospital's intensive care unit during the Covid-19 pandemic. Volunteering in this capacity, alongside their ambulance placements and studies, has proved invaluable experience.

The twelve final-year students found themselves working 50 12-hour shifts between them, undertaking a range of tasks to support the doctors and nurses, including patient care, observations and retrieving and preparing treatments.

Professor Melaine Coward, Head of the School of Health Sciences, said: "I am beyond proud of these students, who volunteered their own time to support their NHS colleagues when it was most needed. This shows the calibre and integrity of our students here at Surrey and I would like to extend my thanks to every one of them who have used their skills and knowledge during these unprecedented times to help patients with Covid-19 and to assist medical staff."



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Seeing the true impact of Covid-19 and the effects of it was at times overwhelming but the staff at Royal Surrey ICU were very welcoming and supportive and we were proud to be part of their team.

Amy Herkes, *final-year Paramedic student*

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▶ Creating opportunities CHANGING LIVES

Our alumni are a crucial part of the Surrey community, and throughout the pandemic we have worked to create new opportunities for them to learn, network and volunteer to support our current students.

SurreyConnects is a new platform, uniting students and graduates for one-off careers advice or short-term mentoring over a virtual coffee. Over 1,000 graduates have volunteered to share their professional expertise and life experiences to help students make the transition into work.



▶ Join SurreyConnects at surreyconnects.co.uk



Philip Barracough graduated in 1996 and was keen to keep in touch with the University, as well as give something back. He volunteered as a mentor and has found that he has benefitted too. He said:

“While preparing for my meetings with my mentee I started to reflect upon my own career and the journey which I took to get here. Additionally, it has been extremely rewarding hearing how valuable my mentee has found our sessions and it is excellent news that he has got himself a job ready for when he graduates.”

Forever SURREY

All Surrey graduates are part of a thriving community of over 127,000 alumni across the globe. We continue to help alumni maintain a lifelong connection to the University, with exclusive events and graduate benefits, networking and volunteering activities, as well as providing opportunities to support the University.

▶ Keep in touch with the University and fellow Surrey graduates worldwide and find out all about the latest alumni news, events and benefits at surrey.ac.uk/alumni

